

ctrlX DRIVE

Parameters of Runtime AXS-V-03RS

Reference Book

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1 Safety instructions for electric drive and control systems

1.1 Definitions of terms

Application documentation	Application documentation comprises the entire documentation used to inform the user of the product about the use and safety-relevant features for configuring, integrating, installing, mounting, commissioning, operating, maintaining, repairing and decommissioning the product. The following terms are also used for this kind of documentation: Operating Instructions, Commissioning Manual, Instruction Manual, Project Planning Manual, Application Description, etc.
Axis processor	The axis processor is a micro processor in which the control algorithms to operate the actor (e.g. a motor) are running.
B sample	To a large extent, the B sample comes with the technical function. However, there are restrictions, e.g. insufficient testing. Therefore, errors or product variations are to be expected. The product may only be used after a prototype agreement was signed.
Compatibility	Compatibility of a new function or functional enhancement means that, for example, a parameter file from a previous version can be used in the new firmware.
Component	A component is a combination of elements with a specified function, which are part of a piece of equipment, device or system. Components of the electric drive and control system are, for example, supply units, drive controllers, mains choke, mains filter, motors, cables, etc.
Control system	A control system comprises several interconnected control components placed on the market as a single functional unit.
Device	A device is a finished product with a defined function, intended for users and placed on the market as an individual piece of merchandise.
Drive	A drive (electric drive) consists of a drive controller with an electric motor.
Electrical equipment	Electrical equipment encompasses all devices used to generate, convert, transmit, distribute or apply electrical energy, such as electric motors, transformers, switching devices, cables, lines, power-consuming devices, circuit board assemblies, plug-in units, control cabinets, etc.
Electric drive system	An electric drive system comprises all components from mains supply to motor shaft; this includes, for example, electric motor(s), motor encoder(s), supply units and drive controllers, as well as auxiliary and additional components, such as mains filter, mains choke and the corresponding lines and cables.
Grid system	A grid system is a large-scale, supraregional network of power plants (with respect to electric power). It is operated by a power supply company that is responsible for the mains and thus also specifies the rules for mains supply.
Incompatibility	Incompatible new functions or incompatible functional enhancements produce a device behavior which does not correspond to the previous version.
Installation	An installation consists of several devices or systems interconnected for a defined purpose and on a defined site which, however, are not intended to be placed on the market as a single functional unit.
Island grid	An island grid supplies a limited area and is not connected to the public grid system or other power networks. The power supply company has to control the balance between consumed and generated power in the island grid. An

Safety instructions for electric drive and control systems

	<p>energy storage system can be used. The operator of an island grid can determine individual standards for the island grid. These standards can deviate from rules of public power supply companies.</p>
Machine	A machine is the entirety of interconnected parts or units at least one of which is movable. Thus, a machine consists of the appropriate machine drive elements, as well as control and power circuits, which have been assembled for a specific application. A machine is, for example, intended for processing, treatment, movement or packaging of a material. The term "machine" also covers a combination of machines which are arranged and controlled in such a way that they function as a unified whole.
Mains operation/island grid mode	Mains operation and island grid mode are differentiated. In mains operation, the grid system defines the grid properties. Supply units that supply a grid system have to synchronize their voltages and frequencies to the existing grid system. In island grid mode, however, the supply unit defines the properties of the island grid. The supply unit controls the voltage and frequency in the island grid and thus assumes a "grid generator function". The power output is determined by the loads and, where applicable, other supply units in the island grid.
Manufacturer	The manufacturer is an individual or legal entity bearing responsibility for the design and manufacture of a product which is placed on the market in the individual's or legal entity's name. The manufacturer can use finished products, finished parts or finished elements, or contract out work to subcontractors. However, the manufacturer must always have overall control and possess the required authority to take responsibility for the product.
Patch	A patch corrects errors in the firmware.
Product	Examples of a product: Device, component, part, system, software, firmware, among other things.
Project Planning Manual	A Project Planning Manual is part of the application documentation used to support the sizing and planning of systems, machines or installations.
Qualified personnel for handling functionally safe products	Individuals configuring, commissioning and operating functionally safe products must have the knowledge specified under " Qualified persons ". Additionally, these individuals must be familiar with technical safety concepts as well as prevailing standards and regulations in the field of functional safety.
Qualified persons	In terms of this application documentation, qualified persons are those individuals who are familiar with the installation, mounting, commissioning and operation of the components of the electric drive and control system, as well as with the hazards this implies, and who possess the qualifications their work requires. To comply with these qualifications, it is necessary, among other things, <ul style="list-style-type: none"> • to be trained, instructed or authorized to switch electric circuits and devices safely on and off, to ground them and to mark them. • to be trained or instructed to maintain and use adequate safety equipment. • to attend a course of instruction in first aid.
Release, firmware/Runtime release	A new release makes available compatible functional enhancements or corrects errors in the firmware, see "RS" in AXS-V-VSRS.
Technology Function	The ctrlX DRIVE technology function refers to the PLC firmware function in which the use of customized PLC programs or technology apps is facilitated by the axis processor of the ctrlX DRIVE system.
User	A user is a person installing, commissioning or using a product which has been placed on the market.

Version, firmware/Runtime version	Compared to the previous version, a new version of a firmware contains important changes in the scope of functions. The scope of functions may also contain incompatible changes, see "VS" in AXS-V- VSRS .
--	--

1.2 General information

1.2.1 Using the Safety instructions and passing them on to others

Do not attempt to install and operate the components of the electric drive and control system without first reading all documentation provided with the product. Read and understand these safety instructions and all user documentation prior to working with these components. If you do not have the user documentation for the components, contact your responsible Rexroth sales partner. Ask for these documents to be sent immediately to the person or persons responsible for the safe operation of the components.

If the component is resold, rented and/or passed on to others in any other form, these safety instructions must be delivered with the component in the official language of the user's country.

Improper use of these components, failure to follow the safety instructions in this document or tampering with the product, including disabling of safety devices, could result in property damage, injury, electric shock or even death.

1.2.2 Requirements for safe use

Read the following instructions before initial commissioning of the components of the electric drive and control system in order to eliminate the risk of injury and/or property damage. You must follow these safety instructions.

- Rexroth is not liable for damages resulting from failure to observe the safety instructions.
- Read the operating, maintenance and safety instructions in your language before commissioning. If you find that you cannot completely understand the application documentation in the available language, please ask your supplier to clarify.
- Proper and correct transport, storage, mounting and installation, as well as care in operation and maintenance, are prerequisites for optimal and safe operation of the component.
- Only qualified persons may work with components of the electric drive and control system or within its proximity.
- Only use accessories and spare parts approved by Rexroth.
- Follow the safety regulations and requirements of the country in which the components of the electric drive and control system are operated.
- Only use the components of the electric drive and control system in the manner that is defined as appropriate. See chapter "Appropriate Use".
- The ambient and operating conditions given in the available application documentation must be observed.
- Applications for functional safety are only allowed if clearly and explicitly specified in the application documentation "Integrated Safety Technology". If this is not the case, they are excluded. Functional safety is a safety concept in which measures of risk reduction for personal safety depend on electrical, electronic or programmable control systems.

Safety instructions for electric drive and control systems

- The information given in the application documentation with regard to the use of the delivered components contains only examples of applications and suggestions.

The machine and installation manufacturers must

- make sure that the delivered components are suited for their individual application and check the information given in this application documentation with regard to the use of the components,
- make sure that their individual application complies with the applicable safety regulations and standards and carry out the required measures, modifications and complements.
- Commissioning of the delivered components is only allowed once it is sure that the machine or installation in which the components are installed complies with the national regulations, safety specifications and standards of the application.
- Operation is only allowed if the national EMC regulations for the application are met.
- The instructions for installation in accordance with EMC requirements can be found in the section on EMC in the respective application documentation.

The machine or installation manufacturer is responsible for compliance with the limit values as prescribed in the national regulations.

- The technical data, connection and installation conditions of the components are specified in the respective application documentations and must be followed at all times.

National regulations which the user has to comply with

- European countries: In accordance with European EN standards
- United States of America (USA):
 - National Electrical Code (NEC)
 - National Electrical Manufacturers Association (NEMA), as well as local engineering regulations
 - Regulations of the National Fire Protection Association (NFPA)
- Canada: Canadian Standards Association (CSA)
- Other countries:
 - International Organization for Standardization (ISO)
 - International Electrotechnical Commission (IEC)

1.2.3 Hazards by improper use

- High electrical voltage and high working current! Danger to life or serious injury by electric shock!
- High electrical voltage by incorrect connection! Danger to life or injury by electric shock!
- Dangerous movements! Danger to life, serious injury or property damage by unintended motor movements!
- Health hazard for persons with heart pacemakers, metal implants and hearing aids in proximity to electric drive systems!
- Risk of burns by hot housing surfaces!

- Risk of injury by improper handling! Injury by crushing, shearing, cutting, hitting!
- Risk of injury by improper handling of batteries!
- Risk of injury by improper handling of pressurized lines!

1.3 Instructions with regard to specific dangers

1.3.1 Protection against contact with electrical parts and housings



This section concerns components of the electric drive and control system with voltages of **more than 50 volts**.

Contact with parts conducting voltages above 50 volts can cause personal danger and electric shock. When operating components of the electric drive and control system, it is unavoidable that some parts of these components conduct dangerous voltage.

High electrical voltage! Danger to life, risk of injury by electric shock or serious injury!

- Only qualified persons are allowed to operate, maintain and/or repair the components of the electric drive and control system.
- Follow the general installation and safety regulations when working on power installations.
- Before switching on, the equipment grounding conductor must have been permanently connected to all electric components in accordance with the connection diagram.
- Even for brief measurements or tests, operation is only allowed if the equipment grounding conductor has been permanently connected to the points of the components provided for this purpose.
- Before accessing electrical parts with voltage potentials higher than 50 V, you must disconnect electric components from the mains or from the power supply unit. Secure the electric component from reconnection.
- With electric components, observe the following aspects:

Always wait **30 minutes** after switching off power to allow live capacitors to discharge before accessing an electric component. Measure the electrical voltage of live parts before beginning to work to make sure that the equipment is safe to touch.

- Install the covers and guards provided for this purpose before switching on.
- Never touch any electrical connection points of the components while power is turned on.
- Do not remove or plug in connectors when the component has been powered.
- Under specific conditions, electric drive systems can be operated at mains protected by residual-current-operated circuit-breakers sensitive to universal current (RCDs/RCMs).
- Secure built-in devices from penetrating foreign objects and water, as well as from direct contact, by providing an external housing, for example a control cabinet.

High housing voltage and high leakage current! Danger to life, risk of injury by electric shock!

- Before switching on and before commissioning, ground or connect the components of the electric drive and control system to the equipment grounding conductor at the grounding points.

- Connect the equipment grounding conductor of the components of the electric drive and control system permanently to the main power supply at all times. The leakage current is greater than 3.5 mA.
- Establish an equipment grounding connection with a minimum cross section according to the table below. With an outer conductor cross section smaller than 10 mm² (8 AWG), the alternative connection of two equipment grounding conductors is allowed, each having the same cross section as the outer conductors.

Cross section outer conductor	Minimum cross section equipment grounding conductor Leakage current ≥ 3.5 mA	
	1 equipment grounding conductor	2 equipment grounding conductors
1.5 mm ² (16 AWG)	10 mm ² (8 AWG)	2 × 1.5 mm ² (16 AWG)
2.5 mm ² (14 AWG)		2 × 2.5 mm ² (14 AWG)
4 mm ² (12 AWG)		2 × 4 mm ² (12 AWG)
6 mm ² (10 AWG)		2 × 6 mm ² (10 AWG)
10 mm ² (8 AWG)		-
16 mm ² (6 AWG)	16 mm ² (6 AWG)	-
25 mm ² (4 AWG)		-
35 mm ² (2 AWG)		-
50 mm ² (1/0 AWG)	25 mm ² (4 AWG)	-
70 mm ² (2/0 AWG)	35 mm ² (2 AWG)	-
...

Tab. 1-1: Minimum cross section of the equipment grounding connection

1.3.2 Protective extra-low voltage as protection against electric shock

Protective extra-low voltage is used to allow connecting devices with basic insulation to extra-low voltage circuits.

On components of an electric drive and control system provided by Rexroth, all connections and terminals with voltages up to 50 volts are PELV ("Protective Extra-Low Voltage") systems. It is allowed to connect devices equipped with basic insulation (such as programming devices, PCs, notebooks, display units) to these connections.

Danger to life, risk of injury by electric shock! High electrical voltage by incorrect connection!

If extra-low voltage circuits of devices containing voltages and circuits of more than 50 volts (e.g., the mains connection) are connected to Rexroth products, the connected extra-low voltage circuits must comply with the requirements for PELV ("Protective Extra-Low Voltage").

1.3.3 Protection against dangerous movements

Dangerous movements can be caused by faulty control of connected motors. Some common examples are:

- Improper or wrong wiring or cable connection
- Operator errors
- Wrong input of parameters before commissioning
- Malfunction of sensors and encoders
- Defective components
- Software or firmware errors

These errors can occur immediately after equipment is switched on or even after an unspecified time of trouble-free operation.

The monitoring functions in the components of the electric drive and control system will normally be sufficient to avoid malfunction in the connected drives. Regarding personal safety, especially the danger of injury and/or property damage, this alone cannot be relied upon to ensure complete safety. Until the integrated monitoring functions become effective, it must be assumed in any case that faulty drive movements will occur. The extent of faulty drive movements depends upon the type of control and the state of operation.

Dangerous movements! Danger to life, risk of injury, serious injury or property damage!

A **risk assessment** must be prepared for the installation or machine, with its specific conditions, in which the components of the electric drive and control system are installed.

As a result of the risk assessment, the user must provide for monitoring functions and higher-level measures on the installation side for personal safety. The safety regulations applicable to the installation or machine must be taken into consideration. Unintended machine movements or other malfunctions are possible if safety devices are disabled, bypassed or not activated.

To avoid accidents, injury and/or property damage:

- Keep free and clear of the machine's range of motion and moving machine parts. Prevent personnel from accidentally entering the machine's range of motion by using, for example:
 - Safety fences
 - Safety guards
 - Protective coverings
 - Light barriers
- Make sure the safety fences and protective coverings are strong enough to resist maximum possible kinetic energy.
- Mount emergency stopping switches in the immediate reach of the operator. Before commissioning, verify that the emergency stopping equipment works. Do not operate the machine if the emergency stopping switch is not working.
- Prevent unintended start-up. Isolate the drive power connection by means of OFF switches/OFF buttons or use a safe starting lockout.
- Make sure that the drives are brought to safe standstill before accessing or entering the danger zone.

- Additionally secure vertical axes against falling or dropping after switching off the motor power by, for example,
 - mechanically securing the vertical axes,
 - adding an external braking/arrester/clamping mechanism or
 - ensuring sufficient counterbalancing of the vertical axes.
- The standard equipment **motor holding brake** or an external holding brake controlled by the drive controller is **not sufficient to guarantee personal safety!**
- Disconnect electrical power to the components of the electric drive and control system using the master switch and secure them from reconnection ("lock out") for:
 - Maintenance and repair work
 - Cleaning of equipment
 - Long periods of discontinued equipment use
- Prevent the operation of high-frequency, remote control and radio equipment near components of the electric drive and control system and their supply leads. If the use of these devices cannot be avoided, check the machine or installation, at initial commissioning of the electric drive and control system, for possible malfunctions when operating such high-frequency, remote control and radio equipment in its possible positions of normal use. It might possibly be necessary to perform a special electromagnetic compatibility (EMC) test.

1.3.4 Protection against electromagnetic and magnetic fields during operation and mounting

Electromagnetic and magnetic fields!

Health hazard for persons with active implantable medical devices (AIMD) such as pacemakers or passive metallic implants.

- Hazards for the above-mentioned groups of persons by electromagnetic and magnetic fields in the immediate vicinity of drive controllers and the associated current-carrying conductors.
- Entering these areas can pose an increased risk to the above-mentioned groups of persons. They should seek advice from their physician.
- If overcome by possible effects on above-mentioned persons during operation of drive controllers and accessories, remove the exposed persons from the vicinity of conductors and devices.

1.3.5 Protection against contact with hot parts

Hot surfaces of components of the electric drive and control system. Risk of burns!

- Do not touch hot surfaces of, for example, braking resistors, heat sinks, supply units and drive controllers, motors, windings and laminated cores!
- According to the operating conditions, temperatures of the surfaces can be **higher than 60 °C (140 °F)** during or after operation.
- Before touching motors after having switched them off, let them cool down for a sufficient period of time. Cooling down can require **up to 140**

Safety instructions for electric drive and control systems

minutes! The time required for cooling down is approximately five times the thermal time constant specified in the technical data.

- After switching chokes, supply units and drive controllers off, wait **15 minutes** to allow them to cool down before touching them.
- Wear safety gloves or do not work at hot surfaces.
- For certain applications, and in accordance with the respective safety regulations, the manufacturer of the machine or installation must take measures to avoid injuries caused by burns in the final application. These measures can be, for example: Warnings at the machine or installation, guards (shieldings or barriers) or safety instructions in the application documentation.

1.3.6 Protection during handling and mounting

Risk of injury by improper handling! Injury by crushing, shearing, cutting, hitting!

- Observe the relevant statutory regulations of accident prevention.
- Use suitable equipment for mounting and transport.
- Avoid jamming and crushing by appropriate measures.
- Always use suitable tools. Use special tools if specified.
- Use lifting equipment and tools in the correct manner.
- Use suitable protective equipment (hard hat, safety goggles, safety shoes, safety gloves, for example).
- Do not stand under hanging loads.
- Immediately clean up any spilled liquids from the floor due to the risk of falling!

1.3.7 Protection against pressurized systems

According to the information given in the Project Planning Manuals, motors and components cooled with liquids and compressed air can be partially supplied with externally fed, pressurized media, such as compressed air, hydraulics oil, cooling liquids and cooling lubricants. Improper handling of the connected supply systems, supply lines or connections can cause injuries or property damage.

Risk of injury by improper handling of pressurized lines!

- Do not attempt to disconnect, open or cut pressurized lines (risk of explosion).
- Observe the respective manufacturer's operating instructions.
- Before dismounting lines, relieve pressure and empty medium.
- Use suitable protective equipment (safety goggles, safety shoes, safety gloves, for example).
- Immediately clean up any spilled liquids from the floor due to the risk of falling!



Environmental protection and disposal! The agents (e.g., fluids) used to operate the product might not be environmentally friendly. Dispose of agents harmful to the environment separately from other waste. Observe the national regulations of your country.

1.4 Explanation of signal words and the Safety alert symbol

The Safety Instructions in the available application documentation contain specific signal words (DANGER, WARNING, CAUTION or NOTICE) and, where required, a safety alert symbol (in accordance with ANSI Z535.6-2011).

The signal word is meant to draw the reader's attention to the safety instruction and identifies the hazard severity.

The safety alert symbol (a triangle with an exclamation point), which precedes the signal words DANGER, WARNING and CAUTION, is used to alert the reader to personal injury hazards.

⚠ DANGER

In case of non-compliance with this safety instruction, death or serious injury **will occur**.

⚠ WARNING

In case of non-compliance with this safety instruction, death or serious injury **could occur**.

⚠ CAUTION

In case of non-compliance with this safety instruction, minor or moderate injury **could occur**.

NOTICE

In case of non-compliance with this safety instruction, property damage **could occur**.

2 General information

Editions of this documentation

Edition	Release date	Notes
03	2021-11	Revised edition adapted to firmware version AXS-V-0306
02	2021-07	Revised edition adapted to firmware version AXS-V-0304
01	2021-03	First edition AXS-V-0302

Tab. 2-1: Record of revisions

2.1 Trademark information

	<p>Sercos is a registered trademark of Sercos International e.V..</p>
	<p>EtherCAT® is a registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.</p>
	<p>TwinCAT® is a registered and licensed trademark of Beckhoff Automation GmbH, Germany</p>
	<p>HIPERFACE® is a registered trademark of SICK-STEGMANN GmbH</p>
	<p>ACURO®link is registered trademark of Hengstler GmbH</p>

2.2 Document structure

2.2.1 General information

All standard and product-specific parameters are listed in this documentation in numerically ascending order. In addition to the data contained in the Functional Description, it represents a complete description of all parameters used in the drive firmware.

The description of the individual parameters is divided into four subsections.

1. Parameter number, parameter name, structure index and structure element:

The description specifies the parameter number (P-0-1621.0.1), the parameter name and, optionally, the structure index and the structure element.

Structure index (SI): Addresses the structure of the same type within a sub-unit. One sub-unit may contain 255 units of the same structure.

Structure element (SE): Used to address elements. There may be up to 256 elements. Structure elements 1... 127 are standardized (Sercos specification). The remaining structure elements 128... 255 are manufacturer-specific.

2. Allocation:

General information

This overview shows in which firmware version, in which functional package(s) and for which hardware the parameter is available.

3. Function, structure, use:

The function and structure of the parameter, as well as information on its parameterization (use), are contained in the general description.

4. Attributes:

The characteristic values and features specified help to classify the parameter.

3 Product-specific parameters

3.1 P-0-0000 to P-0-0099 General functions

3.1.1 P-0-0001, Switching frequency of the power output stage

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter can be used to set the switching frequency of the power output stage (f_{PWM}) as desired within the frequencies supported by each power section.	

 Only set switching frequencies that are supported by the components being used. Observe the technical data for drive controllers and motors.

See also Functional Description "Current controller"

Use Observe the following aspects when configuring:

- The effective switching frequency can be reduced according to the settings in "[P-0-0016, Power section configuration](#)", bits 10 to 12. This reduction can be made in relation to the load, in relation to the velocity or synchronously with the output frequency.
- The maximum switching frequency is specified by "[P-0-1519.0.1, Output stage type data: axis, type-specific](#)".

The cycle time of the current control results from the combination of the switching frequency of the output stage.

The higher the switching frequency selected, the shorter the cycle time.

 The higher the clock frequency selected, the lower the continuous output current of the controller.

P-0-0001 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	Hz	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 5

AXS:	min./max.: s. Text / s. Text	Default value: s. Text
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3.1.2 P-0-0004, Speed controller smoothing time constant

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The time constant which can be activated in this parameter acts in the velocity controller and is suitable for suppressing quantization effects and for limiting the bandwidth of the velocity control loop.	
	See also Functional Description "Velocity control"	
Use	The limit frequency is derived from the smoothing time constant T via the relationship:	

$$fg = 1 \div (2 \times \pi \times T)$$

Tab. 3-1: Bandwidth

Product-specific parameters



The filter is deactivated by entering a smoothing time constant that is less than or equal to the sampling time (clock rate "TA_vel") of the velocity controller.

P-0-0004 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	us	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 2
AXS:	min./max.: s. Text / s. Text			Default value:	800

3.1.3 P-0-0006, Diagnostic message configuration**Allocation**

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter enables switching the representation of diagnostics in "S-0-0390" to compatibility mode. Afterwards, only bits 19 to 0 are written to "S-0-0390". Bits 31 to 20 are "0".

Bit	Designation/function	Comment
0	32-bit diagnostics (use of bits 31-20) 0: active - Sercos-specific 32-bit diagnostics (default) 1: inactive - 20-bit diagnostics (without "source type" and "specification")	

Tab. 3-2: Structure of diagnostic message configuration

P-0-0006 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value:	s. Text
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3.1.4 P-0-0008, Activation E-Stop function**Allocation**

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter is used to activate the E-Stop input and select a reaction for stopping the drive.

See also Functional Description "E-Stop function"

Structure

Bit	Designation/function	Comment
0	Activation E-Stop 0: Inactive 1: Active	
1	Error class when interpreted as error (bit 2 = 0) 0: Stopping with F4 error (F4034) 1: Stopping with F6 error (F6034)	
2	Bit 2: Interpretation 0: as non-fatal error 1: as fatal warning	

Tab. 3-3: P-0-0008, Activation E-Stop function

	The input is always "0-active". " P-0-0223 " has to be assigned to a digital input via the parameters " P-0-0300 " and " P-0-0301 ".
---	--

P-0-0008 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: SUBD:CM+PM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: s. Text / 0x7	Default value: 0x0

3.1.5 P-0-0010, Excessive position command value

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	In mode "Cyclic position control" (e.g. S-0-0032 ... 35 = 0x0003, 0x0004, 0x000B or 0x000C), position command values are specified by the NC in even intervals " S-0-0001 , NC cycle time (TNcyc)". In this process, the difference of two sequential position command values is monitored in the drive for exceeding of " S-0-0091 , Bipolar velocity limit value"		
	If exceeded, error F4037 Excessive position command difference warning (up to firmware AXS-V-0302 F2037) is triggered and the "excessive position command value" $X_{command}(k)$ triggering the error is written to parameter " P-0-0010 ".		
P-0-0010 - Attributes	Function: Par Memory: -- Unit: S-0-0076 Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.1.6 P-0-0011, Last valid position command value

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	In mode "Cyclic position control" (e.g. S-0-0032 ... 35 = 0x0003, 0x0004, 0x000B or 0x000C), position command values are specified by the NC in even intervals " S-0-0001 , NC cycle time (TNcyc)". In this process, the difference of two sequential position command values is monitored in the drive for exceeding of " S-0-0091 , Bipolar velocity limit value"		
	If exceeded, error F4037 Excessive position command difference warning (up to firmware AXS-V-0302 F2037) is triggered and the "last valid position command value" $X_{command}(k-1)$ is written to parameter " P-0-0011 ".		
P-0-0011 - Attributes	Function: Par Memory: -- Unit: S-0-0076 Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.1.7 P-0-0014, C1400 Command Get marker position

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The command " P-0-0014 " is used to check the reference mark detection of an incremental measuring system. See also Functional Description "Detecting the marker position"	

Product-specific parameters

Use If the command has been activated and the reference mark is detected, the actual position value of the measuring system is stored in the parameter "S-0-0173, Marker position A" and the command is signaled to have been completed.

If the drive has been equipped with an encoder 2, the bit 3 of "S-0-0147, Homing parameter" defines the encoder of which the position of the reference mark is stored.



In the case of incremental encoders with distance-coded reference marks, the actual position value of the other reference mark is stored in "S-0-0174, Marker position B".

P-0-0014 - Attributes

Function:	Cmd	Editable:	SUBD:OM	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: 0x0 / 0x3	Default value: ---
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3.1.8 P-0-0016, Power section configuration

Allocation	Hardware Funct. package(s): Device parameter:	--																					
Function	This parameter is used to configure the power output stage. See also Functional Description "Motor control"																						
Structure	<table border="1"> <thead> <tr> <th>Bit</th> <th>Designation/function</th> <th>Comment</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>PWM phase offset 0: Not active (default) 1: Active</td> <td></td></tr> <tr> <td>1-4</td> <td>Reserved</td> <td></td></tr> <tr> <td>5</td> <td>Compensation in power output stage (not with V/Hz [U/f] operation of asynchronous motors) 0: Disabled 1: Enabled (default)</td> <td></td></tr> <tr> <td>6-9</td> <td>Reserved</td> <td></td></tr> <tr> <td>10-13</td> <td>Setting the type of PWM clocking Bit 13, bit 12, bit 11, bit 10 0 0 0 0: Static PWM 0 0 0 1: PWM switching depending on load 0 0 1 0: PWM frequency halved in standstill 0 1 0 0: PWM switching depending on velocity 1 0 0 0: Open-loop-controlled PWM frequency switching 0 0 1 1: PWM switching depending on load + PWM frequency halved in standstill</td> <td></td></tr> <tr> <td>13-31</td> <td>Reserved</td> <td></td></tr> </tbody> </table>	Bit	Designation/function	Comment	0	PWM phase offset 0: Not active (default) 1: Active		1-4	Reserved		5	Compensation in power output stage (not with V/Hz [U/f] operation of asynchronous motors) 0: Disabled 1: Enabled (default)		6-9	Reserved		10-13	Setting the type of PWM clocking Bit 13, bit 12, bit 11, bit 10 0 0 0 0: Static PWM 0 0 0 1: PWM switching depending on load 0 0 1 0: PWM frequency halved in standstill 0 1 0 0: PWM switching depending on velocity 1 0 0 0: Open-loop-controlled PWM frequency switching 0 0 1 1: PWM switching depending on load + PWM frequency halved in standstill		13-31	Reserved		
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13-31	Reserved																						

Tab. 3-4: P-0-0016

Use **Bit 0:** This function is only required if the axes are synchronized via master communication. The function serves to reduce ground leakage currents in an

axis group. For this purpose, the function has to be activated for half of the drive controllers connected to the same DC bus.

Bit 13-10 = 1000 Open-loop-controlled PWM frequency switching: If this function is active, the PWM frequency can be switched by setting/resetting bit 0 in the parameter "P-0-0017, Power output stage control word". Thereby, a control can select a frequency depending on the situation in order to allow a higher peak current or continuous current, for example. As may be the case, with a disadvantage regarding the control quality or noise.

P-0-0016 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	+

AXS: min./max.: --- / --- Default value: s. Text

3.1.9 P-0-0017, Power output stage control word

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function Structure

This parameter is used to control the output stage.

Bit	Designation/function	Comment
0	PWM frequency switching 0: PWM frequency set in "P-0-0001, Switching frequency of the power output stage" is active 1: $\frac{1}{2} * \text{value of P-0-0001}$ as PWM frequency is active	
15-1	Reserved	

Tab. 3-5: P-0-0017, Power output stage control word



The PWM frequency switching has to be enabled in the parameter "P-0-0016, Current controller control word 2".

See also Functional Description "Motor control frequency" (PWM frequencies)

P-0-0017 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

3.1.10 P-0-0018, Number of pole pairs/pole pair distance

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

The following settings can be made depending on bit 9 of parameter "P-0-4014, Type of construction of motor":

- Number of pole pairs in the case of rotary motors (no decimal place)
- Pole pair distance/pole pair length in the case of linear motors (two decimal places)

Product-specific parameters



The correct value is written to this parameter as follows:

- For Rexroth motors with encoder data memory:
Automatic when controller is switched on.
- In the case of Rexroth motors without encoder data memory:
By loading the motor parameters with the "ctrlX DRIVE Engineering" commissioning software.
- In the case of other motors:
By manual input according to the manufacturer's specification.

See also Functional Description "Motor, axis mechanics, measuring systems"

See also Functional Description "Rexroth housing motors with encoder data memory"

P-0-0018 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	Pole pairs	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS:	min./max.: s. Text / s. Text	Default value: 3
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3.1.11 P-0-0019, Initial position value

Allocation Hardware --
 Funct. package(s):
 Device parameter:

Function In the case of relative position evaluation for the generation of "[S-0-0051](#), Position feedback value of encoder 1" and "[S-0-0053](#), Position feedback value of encoder 2", if applicable, the position feedback value is set to the value of "[P-0-0019](#), Initial position value" during initialization (transition command CM to PM).

See also Functional Description "Absolute measuring systems"

P-0-0019 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	+	Decim. pl.:	--
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: 0
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3.1.12 P-0-0020, Oscilloscope: Operation mode

Allocation Hardware --
 Funct. package(s):
 Device parameter:

Function Parameter "[P-0-0020](#)" can be used to activate special functions.

The parameter can only be changed when all oscilloscope functions of a device have been deactivated ([P-0-0028](#), Oscilloscope: Control word).

Each axis has a separate oscilloscope. One common oscilloscope for all axes of one device is not available. If necessary, the individual measurements of the axes have to be connected externally.

Structure	Bit	Designation/function	Comment
	4	Mode 0: Standard mode: The shortest recording cycle is the position control cycle 1: Expert mode: The current or velocity control cycle can be selected as the shortest recording cycle. Recording in these cycles is not guaranteed. Subject to the work load of the control section, the recording cycle can therefore also be longer.	The bit is not persistent. After having been switched on, the device is always in standard mode.
	5	Trend mode 0: Standard recording with trigger signal. Multiple device measurement is possible. 1: Recording is continuous without trigger signal. Measured values are provided via " P-0-0280 " which can be read cyclically.	

Tab. 3-6: P-0-0020, Oscilloscope: Operation mode

See also Functional Description "Oscilloscope function"

P-0-0020 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: 0x0

3.1.13 P-0-0021, Oscilloscope: List of measured values 1

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In parameter " P-0-0021 ", the measured values of channel 1 of the oscilloscope function are written in sequential order. The oldest measured value is the first element in the list of measured values. Via the IDN entered in " P-0-0023 , Oscilloscope: Signal selection 1", the signal to be recorded is defined.	
 Attribute, unit etc. are automatically adjusted to this selected signal.		

See also Functional Description "Oscilloscope function"

P-0-0021 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	4
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

3.1.14 P-0-0022, Oscilloscope: List of measured values 2

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In parameter " P-0-0022 ", the measured values of channel 2 of the oscilloscope function are written in sequential order. The oldest measured value is the first element in the list of measured values.	

Product-specific parameters

 Attribute, unit etc. are automatically adjusted to this selected signal.

See also Functional Description "Oscilloscope function"

P-0-0022 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	4
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.1.15 P-0-0023, Oscilloscope: Signal selection 1

Allocation **Hardware** --

Funct. package(s):
Device parameter:

Function The IDN entered in "[P-0-0023](#)" defines the signal that is to be recorded by channel 1. Only such IDNs are allowed that are contained in the list "[P-0-0149](#), Oscilloscope: Signal selection list".

 The measuring channel is deactivated by entering "0" or using "[S-0-0000](#)".

After recording has been completed, the recorded measured values are contained in parameter "[P-0-0021](#), Oscilloscope: List of measured values 1".

 The maximum allowed number of measured values depends on the number of used channels. The number of measured values is configured in "[P-0-0032](#), Oscilloscope: Size of memory". The configurable size of memory is reduced if more than 4 channels are used.

See also Functional Description "Oscilloscope function"

P-0-0023 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	IDN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: s. Text
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3.1.16 P-0-0024, Oscilloscope: Signal selection 2

Allocation **Hardware** --

Funct. package(s):
Device parameter:

Function The IDN entered in "[P-0-0024](#)" defines the signal that is to be recorded by channel 2. Only such IDNs are allowed that are contained in the list "[P-0-0149](#), Oscilloscope: Signal selection list".

 The measuring channel is deactivated by entering "0" or using "[S-0-0000](#)".

After recording has been completed, the recorded measured values are contained in parameter "[P-0-0022](#), Oscilloscope: List of measured values 2".



The maximum allowed number of measured values depends on the number of used channels. The number of measured values is configured in "[P-0-0032](#), Oscilloscope: Size of memory". The configurable size of memory is reduced if more than 4 channels are used.

See also Functional Description "Oscilloscope function"

P-0-0024 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	IDN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: s. Text
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3.1.17 P-0-0025, Oscilloscope: Trigger mask

Allocation Hardware
Funct. package(s):
Device parameter: --

Function By means of parameter "P-0-0025", an additional trigger mask can be applied over the trigger signal and the trigger level in case of trigger signals with "binary", "hexadecimal" or "decimal" display format before comparison. The parameter does not have any impact on any other display formats of the trigger signal.

If the mask has a value of "0" or "0xFFFFFFFF", the mask is ignored. Only values that are not equal to "0" or "0xFFFFFFFF" are useful values and used as trigger mask.

See also Functional Description "Oscilloscope function"

P-0-0025 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: 0xFFFFFFFF
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3.1.18 P-0-0026, Oscilloscope: Trigger signal selection

Allocation Hardware
Funct. package(s):
Device parameter: --

Function Parameter "P-0-0026" determines for the trigger unit the signal from "[P-0-0149](#), Oscilloscope: Signal selection list" for comparison with the trigger level ([P-0-0027](#)).

Selecting a trigger signal ([P-0-0026](#)) also determines the unit and format for "[P-0-0027](#), Oscilloscope: Trigger level".

See also Functional Description "Oscilloscope function"

Use At the start of the recording ([P-0-0036](#)) the trigger error bit ([P-0-0037](#); bit 7) is then set in the status word.

Changing the parameter is only possible when the oscilloscope has been deactivated ([P-0-0028](#), Oscilloscope: Control word).

When "[S-0-0000](#)" is preset as IDN, the trigger function is not active. In this case, activation of the oscilloscope is possible and is acknowledged with an error bit in "[P-0-0029](#)".

Product-specific parameters

P-0-0026 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: IDN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

3.1.19 P-0-0027, Oscilloscope: Trigger threshold

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Parameter "P-0-0027"	is the comparison value for the trigger function. See also Functional Description "Oscilloscope function"
Use	Depending on the selected trigger edge (P-0-0030), the bit for "internal trigger" (P-0-0037) is set in the status word on reaching the trigger condition. Before, bit 8 and bit 9 in the status word (P-0-0029) indicate whether the value of the selected trigger source is over or under the trigger level or whether the value corresponds to the trigger level.	
 Changing the parameter is also possible when the recording has been started (P-0-0028, Oscilloscope: Control word). Depending on the selected IDN in "P-0-0026, Oscilloscope: Trigger signal selection", attribute and unit are adjusted to the selected signal.		

P-0-0027 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: 0

3.1.20 P-0-0028, Oscilloscope: Control word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Parameter "P-0-0028"	contains (except for the operation mode) all requirements for control of the oscilloscope. This is the selection for trigger offset measurement and activation (start/stop) of the oscilloscope. See also Functional Description "Oscilloscope function"
 For synchronous measurement of several axes, the start bit has to be set synchronously in the axes. Additionally, offset measurement has to be activated in the triggering axis.		

Structure	Bit	Designation/function	Comment
	0	Recording 0: Stop 1: Start	
	1	Trigger type 0: Internal trigger (without offset measurement) 1: External trigger with offset measurement	

Tab. 3-7: P-0-0028, Oscilloscope: Control word

P-0-0028 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: 0x0

3.1.21 P-0-0029, Oscilloscope: Status word

Allocation	Hardware Funct. package(s): Device parameter:	--																		
Function	Parameter " P-0-0029 " displays the current status of the oscilloscope function. See also Functional Description "Oscilloscope function"																			
Structure	<table border="1"> <thead> <tr> <th>Bit</th><th>Designation/function</th><th>Comment</th></tr> </thead> <tbody> <tr> <td>0</td><td>Recording 0: Recording stopped by "P-0-0028; bit 0" 1: Recording started by "P-0-0028; bit 0" Changing of some oscilloscope parameters locked.</td><td></td></tr> <tr> <td>1</td><td>Trigger 0: Trigger function completed 1: Trigger function started Internal trigger not yet activated. Comparison still running</td><td></td></tr> <tr> <td>2</td><td>Internal trigger 0: Internal trigger not activated. 1: Internal trigger activated Comparison successfully completed</td><td></td></tr> <tr> <td>3</td><td>Trigger function completed 1: When triggering via external trigger signal (P-0-0028; bit 1 = 1), external trigger signal was recognized. When triggering only via internal source, this bit is set together with bit 2.</td><td></td></tr> <tr> <td>4</td><td>Delay function 0: Delay function still active 1: Delay function completed New measured values can be read out. Bit 0 is deleted.</td><td></td></tr> </tbody> </table>	Bit	Designation/function	Comment	0	Recording 0: Recording stopped by " P-0-0028 ; bit 0" 1: Recording started by " P-0-0028 ; bit 0" Changing of some oscilloscope parameters locked.		1	Trigger 0: Trigger function completed 1: Trigger function started Internal trigger not yet activated. Comparison still running		2	Internal trigger 0: Internal trigger not activated. 1: Internal trigger activated Comparison successfully completed		3	Trigger function completed 1: When triggering via external trigger signal (P-0-0028 ; bit 1 = 1), external trigger signal was recognized. When triggering only via internal source, this bit is set together with bit 2.		4	Delay function 0: Delay function still active 1: Delay function completed New measured values can be read out. Bit 0 is deleted.		
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4	Delay function 0: Delay function still active 1: Delay function completed New measured values can be read out. Bit 0 is deleted.																			

Product-specific parameters

Bit	Designation/function	Comment
7	Trigger error 0: Trigger function on recording start (P-0-0028 ; bit 0 ↑) correctly initialized 1: Trigger function on recording start (P-0-0028 ; bit 0 ↑) incorrectly initialized (e.g. no correct trigger source (P-0-0026)). This way, the trigger function cannot be executed.	
9/8	Status of trigger signal Comparison is only carried out with active trigger function and up to reaching the internal trigger (bit 2). 00: No comparison 01: Trigger signal > Trigger level (P-0-0027) 10: Trigger signal < Trigger level (P-0-0027) 11: Trigger signal = Trigger level (P-0-0027)	

Tab. 3-8: *P-0-0029, Oscilloscope: Status word***P-0-0029 - Attributes**

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.:	--- / ---	Default value:	---

3.1.22 P-0-0030, Oscilloscope: Trigger edge

Allocation	Hardware -- Funct. package(s): Device parameter:	
Function	Parameter " P-0-0030 " defines the edge at which the "internal trigger" (P-0-0029 ; bit 2) is released.	
Structure	See also Functional Description "Oscilloscope function"	
Bit	Designation/function	Comment
0	Trigger edge positive 1: Internal trigger is released on transition from "less than or equal to" to "greater than".	
1	Trigger edge negative 1: Internal trigger is released on transition from "greater than or equal to" to "less than".	
2	Trigger equal to 1: Internal trigger is released if the trigger level and the value of the trigger source are identical.	

Tab. 3-9: *P-0-0030, Oscilloscope: Trigger edge*

Even if both edges are activated, the triggers are not released until the value goes above or falls below this value. The trigger is not released in the event of parity.

Use The equality of the trigger level and the trigger source can be checked. Combinations of several conditions (e.g. ↑↓) are possible.

Changing the parameter is also possible when the recording has been started ([P-0-0028](#)). However, this may lead to unintended release of the "internal trigger".

P-0-0030 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: 1 / 4

Default value: 3

3.1.23 P-0-0031, Oscilloscope: Time resolution

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

The time resolution of the oscilloscope function (sampling rate) can be defined by parameter "[P-0-0031](#)". Via the time resolution in combination with "[P-0-0032](#), Oscilloscope: Size of memory", the recording duration can be defined.

For parameterization of "[P-0-0031](#)", the following applies:

- The input range of "[P-0-0031](#)" depends on the used hardware and firmware (or the performance set in "[P-0-0556](#)").
- The minimum value of the time resolution is defined by the context of the measurement. If this is the position controller, the minimum value is equal to the position controller clock.
- If new values are entered, these are automatically replaced by a multiple of the minimum value.



Changing the parameter "[P-0-0031](#)" is only possible when the oscilloscope has been deactivated ([P-0-0028](#), Oscilloscope: Control word).

See also Functional Description "Oscilloscope function"

P-0-0031 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	us	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: s. Text / 8000000

Default value: 1000

3.1.24 P-0-0032, Oscilloscope: Size of memory

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

In parameter "[P-0-0032](#)", the size of memory of the measurement is defined by means of the number of measured values to be recorded. By means of the size of memory in combination with "[P-0-0031](#), Oscilloscope: Time resolution", the recording duration can be defined.

The maximum allowed number of measured values depends on the number of used channels. The total available memory for measured values in the axis covers 32768 measured values. Per channel, a maximum of 8192 measured values can be recorded.

This way, the configurable size of memory is reduced as follows:

1. If up to four channels are used, the number of measured values to be recorded is limited to 8192 measured values.

Product-specific parameters

2. If five channels are used, the number of measured values to be recorded is limited to 6553 measured values.
3. If six channels are used, the number of measured values to be recorded is limited to 5461 measured values.
4. If seven channels are used, the number of measured values to be recorded is limited to 4681 measured values.
5. If eight channels are used, the number of measured values to be recorded is limited to 4096 measured values.



The set size of memory is automatically reduced if the configurable number of measured values to be recorded is reduced due to an additional channel.

In general, the following applies:

Time of recording = Time resolution x Size of memory [μ s]

By means of the size of memory, the size of the lists of measured values can be adjusted to user requirements (e.g. available memory).



Changing the parameter "P-0-0032" is only possible when the oscilloscope has been deactivated (P-0-0028, Oscilloscope: Control word).

See also Functional Description "Oscilloscope function"

P-0-0032 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: 1 / s. Text

Default value: 4096

3.1.25 P-0-0033, Oscilloscope: Number of measured values after trigger event

Allocation Hardware
Funct. package(s):
Device parameter: --

Function Parameter "P-0-0033" defines the number of measured values that are still recorded after the trigger event (P-0-0029; bit 3 = 1) (delay function).

After recording of these measured values, the bit delay function completed (P-0-0029; bit 4) is set in "P-0-0029". Afterwards, recording is completed and the lists of measured values can be read out.

See also Functional Description "Oscilloscope function"

P-0-0033 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0

AXS:

min./max.: 0 / s. Text

Default value: 0

3.1.26 P-0-0035, Oscilloscope: Trigger control offset

Allocation Hardware
Funct. package(s):
Device parameter: --

Function The parameter "P-0-0035 Oscilloscope: Trigger control offset" - when "trigger offset measurement" (P-0-0028; bit 1 = 1) is selected - contains the number of measurement recorded between reception of the "internal trigger"

([P-0-0029](#); bit 2) and "external trigger for trigger offset measurement" ([P-0-0036](#); bit 0). The parameter specifies the offset between these two trigger sources and can be used for synchronization of the lists of measured values of several axes.

See also Functional Description "Oscilloscope function"

P-0-0035 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---		Default value: ---	

3.1.27 P-0-0035.0.1, Oscilloscope: Trigger time

Allocation

Hardware	--
Funct. package(s):	--
Device parameter:	--
Alias:	P-0-3918

Function

The parameter "[P-0-0035.0.1](#)" contains the current system time when the trigger of the oscilloscope function of the drive was released. The parameter contains the trigger time with a resolution of 100 ns. On release of the trigger of the drive oscilloscope, filled with the content of parameters "[S-0-1305.0.2](#)" and "[S-0-1305.0.3](#)".

Structure

Parameter "[P-0-0035.0.1](#)" is a 64-bit value structured as list with two elements with a length of 4 bytes.

Element		Content
1	Low word	Trigger time (fine), value from " S-0-1305.0.2 , System time (fine)"
2	High word	Trigger time (coarse), value from " S-0-1305.0.3 , System time (coarse)"

Tab. 3-10: Structure of P-0-0035.0.1

Use

Parameter "[P-0-0035.0.1](#)" serves for synchronization of measurements to be carried out simultaneously on the PC and in the drive. For this purpose, the system time of the drive has to be synchronized beforehand with the system time of the PC connected via "ctrlX DRIVE Engineering". Synchronization can also be carried out via a bus master. In this case, measurements can be synchronized on multiple drives.

P-0-0035.0.1 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---		Default value: ---	

3.1.28 P-0-0036, Oscilloscope: External trigger signal

Allocation

Hardware	--
Funct. package(s):	--
Device parameter:	--

Function

Parameter "[P-0-0036](#)" is a control bit-capable parameter in real time and can be parameterized in the real-time channel of the interface or as hardware input.

See also parameter description "[P-0-0028/P-0-0136](#)"

See also Functional Description "Oscilloscope function"

Product-specific parameters

Structure	Bit	Designation/function	Comment
	0	External trigger signal 0: External trigger signal = Low 1: External trigger signal = High	

Tab. 3-11: P-0-0036, Oscilloscope: External trigger signal

P-0-0036 - Attributes	Function:	Par	Editable:	ALWAYS	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	BIN
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---		Default value: ---		

3.1.29 P-0-0037, Oscilloscope: Internal trigger signal

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Parameter "P-0-0037" returns the status of the internal trigger. This is a status bit-capable parameter and can be parameterized in the real-time channel of the interface or as hardware output.	
See also Functional Description "Oscilloscope function"		

Structure	Bit	Designation/function	Comment
	0	Internal trigger 0: Not triggered. Comparison still active. 1: Triggered. Comparison successfully completed	

Tab. 3-12: P-0-0037, Oscilloscope: Internal trigger signal

P-0-0037 - Attributes	Function:	Par	Editable:	--	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	BIN
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---		Default value: ---		

3.1.30 P-0-0038, Torque-generating current, command value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Display parameter for torque proportion or force-generating proportion of the current command value.	
The velocity controller generates the torque or force command value that is then converted via "P-0-0051, Torque/force constant" to the torque-generating current command value. The value is updated during the velocity controller cycle time (e.g. 125 µs).		

See also Functional Description "Torque/force control"

P-0-0038 - Attributes	Function:	Par	Editable:	--	Data length:	4Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_MV
	Unit:	A	Extr. val. ch.:	--	Decim. pl.:	3
	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---		Default value: ---		

3.1.31 P-0-0039, Flux-generating current, command value

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	Display parameter for the proportion of the current command value generating the magnetic flux in the motor. The flux-generating current is the output of the flux controller adjusted in the position controller cycle time. For asynchronous motors, the flux-generating current nominally corresponds to " P-0-4004 , Magnetizing current." Deviating from this value, the flux-generating current command value is reduced if:		
	<ul style="list-style-type: none"> • P-0-0532, Premagnetization factor has been selected lower than 100% and the motor is operated in no-load mode. • the motor is operated in the field weakening range. 		
	For synchronous motors, no flux-generating current is required. Field suppressor operation is an exception. Here, the controller applies a negative flux-generating current to weaken the permanent field.		
P-0-0039 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: SUBD:OM Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: ---

3.1.32 P-0-0040, Velocity feedforward evaluation

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	" P-0-0040 " enables setting the following distance for a constant velocity to a desired percentage. A minimum (ideally = 0) is applied at 100 %. The degree of feedforward can be set in a range of 0...120 %.		
	 Activating the lagless operation (S-0-0032 , S-0-0033 , S-0-0034 , S-0-0035) causes a feedforward value determined from the position command value (velocity command value) to be added to the velocity command value at the position controller output.		
P-0-0040 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: Grp. 2
	AXS:	min./max.: s. Text / 120,00	Default value: 100,00

3.1.33 P-0-0041, Position command average value filter time constant

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Parameter " P-0-0041 " allows filtering of the position command values at the input of the position loop with a moving average filter. As a result, the position command value profile can be smoothed and the acceleration and/or jerk reduced, measures which are required in some mechanical systems to avoid excitation of machine resonances by the command value characteristic.	
Use	Parameter " P-0-0041 " is only used for parameterizing the jerk in cyclic position control mode.	

Product-specific parameters

The following points must be considered:

- The effective filter order M is always currently displayed in "P-0-0042, Current position command average value filter order" ($P-0-0042 = P-0-0041/TNcyc$)
- The interpolation cycle time of the control system (S-0-1050.x.10) defines the clock for the generator function and the mean value filter.

Additional details

With this filter type, the changes at the output are always equal with constant input variable:

Position command value as filter output: $\Delta Y = X \div M$

With constant input variable X, the filter output Y rises linearly and reaches its end value at the filter output after the following time interval has elapsed:

Time base of mean value filter: $t = M \times T_A$

 This filter type therefore does not exhibit the typical "creep behavior" (filter output rises and drops according to an e-function) of the usual PT1 and PT2 filters.

P-0-0041 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	us	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 1
AXS:		min./max.: s. Text / s. Text		Default value: 0	

3.1.34 P-0-0042, Current position command average value filter order

Allocation	Hardware -- Funct. package(s): Device parameter:
Function	The parameter displays the effective filter order M of the position command value filter which is designed as a moving average filter.

 [P-0-0042](#) cannot be changed by the user!

See also Functional Description "Drive-controlled positioning"

Use The efficient filter order M depends on the active operation mode and the performance.

See also Functional Description "Performance data"

We distinguish the following cases:

- **External position command value input** (position control with cyclic position command value input):

[P-0-0042 = P-0-0041/TNcyc](#)

→ Parameterization of [P-0-0041](#) (max. filter order M = 64)

- **Drive-internal position command value generation**

– Interpolation mode (drive-internal interpolation, drive-controlled positioning)

[P-0-0042 = min \(S-0-0260; S-0-0359\)/S-0-0193/TNcyc](#)

→ Parameterization of [S-0-0260](#), [S-0-0359](#), [S-0-0193](#)!

With position command average value filter time constant ([P-0-0641](#)), the average value filter can be set to a fixed value.

[P-0-0042 = P-0-0641/TNcyc](#)

- Positioning block mode:

[P-0-0042](#) = min ([P-0-4008](#); [P-0-4063](#))/[P-0-4009](#)/TNcyc

→ Parameterization of [P-0-4008](#), [P-0-4063](#), [P-0-4009](#)

With position command average value filter time constant ([P-0-0641](#)), the average value filter can be set to a fixed value.

[P-0-0042](#) = [P-0-0641](#)/TNcyc



In operation modes with drive-internal position command value generation, the calculated filter order is limited. The maximum value **M = 512**.



The filter properties and their parameterization are included in the description of "[P-0-0041](#), Position command average value filter time constant".

P-0-0042 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---			
Default value: ---					

3.1.35 P-0-0043, Torque-generating current, actual value

Allocation **Hardware** --
 Funct. package(s):
 Device parameter:

Function Display parameter for the active torque-generating content of the actual measured current value. The value is updated during the current controller cycle time.



The phase currents of the three-phase AC motor are measured. The resulting active torque-generating content of the total current is calculated within the controller and displayed through this parameter.

P-0-0043 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	A	Extr. val. ch.:	--	Decim. pl.:	3
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---			
Default value: ---					

3.1.36 P-0-0044, Flux-generating current, actual value

Allocation **Hardware** --
 Funct. package(s):
 Device parameter:

Function Display parameter for the proportion of the measured actual current value generating the magnetic flux in the motor. The value is updated during the current controller cycle time.



The phase currents of the three-phase AC motor are measured. The resulting active flux-generating content of the total current is calculated within the controller and displayed through this parameter.

Product-specific parameters

P-0-0044 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.1.37 P-0-0045, Motor operation configuration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used to configure the current controller. See also Functional Description "Motor control"	
Structure		

Bit	Designation/function	Comment
0	Reserved	
1	Maximum motor voltage (with V/Hz [U/f] operation of asynchronous motors) 0: DC bus voltage unfiltered 1: DC bus voltage filtered	
2	Reserved	
3	Reserved	
4	Monitoring with regard to interruption of motor power cable 0: Active 1: Switched off	
5	Reserved	
6	Manual command value input for flux-generating current 0: Disabled 1: Enabled	
7	Reserved	
8	Enabling velocity search mode (with V/Hz [U/f] and SVC operation of asynchronous motors) 0: Search mode switched off 1: Search mode enabled	
9	Velocity search mode configuration (only with V/Hz [U/f] operation of asynchronous motors) 0: Search mode after "AF", only with the same sign of n_cmd 1: Search mode after "AF", bidirectional	
10/11	Selection of V/Hz [U/f] characteristic 00: Linear characteristic 01: Square characteristic 10: User-defined characteristic 11: Not admissible	

Bit	Designation/function	Comment
12	Enabling stall protection controller (with V/Hz [U/f] operation of asynchronous motors) 0: Disabled 1: Enabled	
13	Reserved	
15/14	Selecting the motor operation 00: Current control with motor encoder 01: V/Hz (U/f)-controlled operation (asynchronous motor only) 10: Reserved 11: Flux-controlled motor operation, sensorless (SVC; synchronous and asynchronous motors)	

Tab. 3-13: Current controller configuration

Use The following aspects have to be taken into account:

- **Bit 1:** With U/f control, the motor voltage is limited to the unfiltered DC bus voltage by default. In this way, maximum motor power can be obtained in the field weakening range. This voltage, however, is relatively unstable due to the rectifier and other effects. If this causes too much instability in the motor current (high harmonic component, unexpectedly high rise in motor temperature, already in no-load operation), the maximum motor voltage can be limited to the filtered DC bus voltage. This stabilizes the motor current considerably. But it also reduces the maximum motor power in the field weakening range.
- **Bit 2:** This function can be switched off with bit 2 = 1. Only applies to closed-loop control of asynchronous motors.
See also "[P-0-0532](#), Premagnetization factor"
- **Bit 6:** Manual command value input is recommended, if a command value jump is to be added within the scope of optimization activities without thereby accelerating the motor. Is only possible for synchronous motors without reluctance effect and without field weakening.
- **Bit 10/11:** The user-defined U/f curve is described by the parameters "[P-0-0614](#), User-defined U/f curve frequencies" and "[P-0-0615](#), User-defined U/f curve voltages".

P-0-0045 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	Grp. 5

AXS: min./max.: --- / --- Default value: s. Text

3.1.38 P-0-0046, Status word of current controller

Allocation Hardware --
Funct. package(s):
Device parameter:

Function This parameter indicates states which have an effect on the proper behavior of the current controller.

Product-specific parameters

Structure	Bit	Designation/function	Comment
	0	Internal controller enable 0: Not active 1: Active	
	1	Absolute value of actual current > 1.2 times the allowed output current 0: No 1: Yes	
	2	Ovvervoltage in DC bus 0: No 1: Yes	
	3	Voltage limitation in current controller 0: Not active 1: Active	
	4	Closed loop output - integrated flux-generating content in pos. limitation 0: No 1: Yes	
	5	Closed loop output - integrated flux-generating content in neg. limitation 0: No 1: Yes	
	6	Closed loop output - integrated torque/flow-generating content in positive limitation 0: No 1: Yes	
	7	Closed loop output - integrated torque/force-generating content in negative limitation 0: No 1: Yes	
	11... 8	Reserved	
	12	V/Hz (U/f) operation (sensorless): stall protection controller active 0: Not active 1: Active	
	13	V/Hz (U/f) operation (sensorless): current limitation controller active 0: Not active 1: Active	
	14	Reserved	
	15...22	Reserved	
	23	for internal use only	

Bit	Designation/function	Comment
24	Regenerative voltage limitation 0: No 1: Yes	
25	Motive voltage limitation - torque-generating component greater than flux-generating component 0: No 1: Yes	
26	Motive voltage limitation - torque-generating component equal to flux-generating component 0: No 1: Yes	
27	Motive voltage limitation - torque-generating component less than flux-generating component 0: No 1: Yes	
28	Status of automatic PWM frequency switching 0: Higher PWM frequency active 1: Lower PWM frequency active	
29	Short-circuit braking 1: active - At least for 100 ms; if there is no current flowing during short-circuit braking, for at least 200 ms. 0: Other states	
31/30	Reserved	

Tab. 3-14: Relevant bits of the current controller status word



The current controller status word can be configured in the AT. It is therefore possible to apply the status messages to a digital output or have them evaluated by the higher-level control.

P-0-0046 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---		Default value: ---	

3.1.39 P-0-0047, Position command value of control

Allocation

Hardware --

Funct. package(s):

Device parameter:

Function

In the "Position control" mode, the control writes the cyclic position command values in the cycle of its interpolation cycle time into the drive by means of "[S-0-0047](#)". These position command values coming from the control can be read out via "[P-0-0047](#)", if necessary.



The interpolation cycle time of the control ([S-0-1050.x.10](#)) may be a multiple of the communication time ([S-0-1002](#)) so that "[P-0-0047](#)" is also updated in the same time grid.

Product-specific parameters

P-0-0047 - Attributes	Function: Par Memory: -- Unit: S-0-0076 Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
AXS:		min./max.: --- / ---	Default value: ---

3.1.40 P-0-0048, Effective velocity command value

Allocation	Hardware Funct. package(s): Device parameter: --
Function	The parameter displays the effective velocity command value at the velocity controller input. " S-0-0347 , Velocity error" is generated by subtracting " S-0-0535 , Active velocity feedback value".



This parameter is limited by the following velocity limit values:

- [P-0-0113](#), Bipolar velocity limit value of motor
- [S-0-0038](#), Positive velocity limit value
- [S-0-0039](#), Negative velocity limit value
- [S-0-0091](#), Bipolar velocity limit value
- [S-0-0113](#), Maximum motor speed
- Limitation from the maximum motor control frequency due to obligatory export licensing (590 Hz)

Intervention by the limitation is displayed by the warning "E2059 Velocity command value limit active".



When using the firmware function Velocity control with reference model, the effective velocity command value for the I-term is filtered in the velocity control loop by means of a reference model and displayed in "[P-0-0430](#), Velocity command value reference model".

See also Functional Description "Velocity controller"

P-0-0048 - Attributes	Function: Par Memory: -- Unit: S-0-0044 Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
AXS:		min./max.: --- / ---	Default value: ---

3.1.41 P-0-0049, Effective torque/force command value

Allocation	Hardware Funct. package(s): Device parameter: --
Function	This parameter is used to display the torque/force command value after static torque/force limitation via " S-0-0082 " and " S-0-0083 ".
	See also Functional Description "Torque/force control"
	See also Functional Description "Velocity controller"
	See also Functional Description "Current and torque/force limitation"
Use	When using the parameter, observe the following aspects:
	<ul style="list-style-type: none"> • Possibly effective additive torque command value proportions (P-0-0455) of acceleration feedforward are not included in "P-0-0049". However, this depends on parameter "P-0-0556; bit 14".

- The torque command value contained in "P-0-0049" is again limited by the subsequent dynamic torque/current limitation. The result is "P-0-0051, Torque-generating current, command value" which results from multiplication with "P-0-0038, Torque/force constant" and is transmitted to the current loop.



By simultaneously considering P-0-0049, P-0-0038 and P-0-0445, it is possible to determine all intermediate values.

P-0-0049 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0086	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---			
					Default value: ---

3.1.42 P-0-0051, Torque/force constant

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

The torque/force constant specifies the ratio between the motor torque/force and the current of a motor, which generates the associated torque-generating current of a motor.

The following requirements must have been fulfilled:

Synchronous motor:

- Motor temperature 20°C
- Motor current up to the level of the continuous current

Asynchronous motor:

- correct value in "P-0-4004, Magnetizing current"
- "P-0-0532, Premagnetization factor" of 100%
- operation without field weakening

When the motor is operated under deviating conditions, the active torque/force constant changes. It is displayed in "P-0-0450, Torque/force constant".



"Correction of torque/force constant" can be activated with synchronous motors!

See also Functional Description "Torque/force control"

See also Functional Description "Operating motors with ctrlX DRIVE"

P-0-0051 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	Nm/A	Extr. val. ch.:	+	Decim. pl.:	2
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4
AXS:		min./max.: s. Text / s. Text			
					Default value: 1,00

3.1.43 P-0-0055, Return distance

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

In the event of an error and depending on the setting of parameter "Best possible deceleration", the error reaction "Return" can be set. The drive generates a position command value profile for the return distance in consideration of the adjustable return velocity and return acceleration and in compliance with the position limit values. The return distance is entered in

Product-specific parameters

parameter "[P-0-0055](#)". A positive return distance leads to a positive motion in reference to the selected coordinate system. Parameter "[P-0-0055](#)" can be transmitted in a cyclic telegram (MDT).

See also Functional Description "Best possible deceleration"

P-0-0055 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	+	Decim. pl.:	--
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: s. Text / s. Text

Default value: 0

3.1.44 P-0-0056, Return velocity**Allocation**

Hardware --
Funct. package(s):
Device parameter:

Function

In the event of an error and depending on the setting of parameter "Best possible deceleration", the error reaction "Return" can be set. The drive generates a position command value profile for the return distance in consideration of the adjustable return velocity and return acceleration and in compliance with the position limit values. The return velocity is entered in parameter "[P-0-0056](#)".

See also Functional Description "Best possible deceleration"

P-0-0056 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	S-0-0044	Extr. val. ch.:	--	Decim. pl.:	--
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: s. Text / s. Text

Default value: 1000000

3.1.45 P-0-0057, Return acceleration**Allocation**

Hardware --
Funct. package(s):
Device parameter:

Function

In the event of an error and depending on the setting of parameter "[P-0-0119](#), Best possible deceleration", the error reaction "Return" can be set. The drive generates a position command value profile for the return distance in consideration of the adjustable return velocity and return acceleration and in compliance with the position limit values. The return acceleration is entered in parameter "[P-0-0057](#)".

See also Functional Description "Best possible deceleration"

P-0-0057 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0160	Extr. val. ch.:	--	Decim. pl.:	--
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: s. Text / s. Text

Default value: 10000000

3.1.46 P-0-0058, Return jerk**Allocation**

Hardware --
Funct. package(s):
Device parameter:

Function

In the event of an error and depending on the setting of parameter "Best possible deceleration", the error reaction "Return" can be set. The drive generates a position command value profile for the return distance in consideration of the adjustable return velocity and return acceleration and in compliance with the position limit values. The position command values can be additionally smoothed by means of a position command average value

filter. The return jerk is entered in parameter "[P-0-0058](#)". It has influence on the effect of the position command average value filter.

See also Functional Description "Best possible deceleration"

[P-0-0058 - Attributes](#)

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0160	Extr. val. ch.:	+	Decim. pl.:	
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: 10000000
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3.1.47 [P-0-0059, Additive position command value, controller](#)

Allocation

Hardware	--
Funct. package(s):	
Device parameter:	

Function

This parameter serves to add an additional (additive) position command value to the position command value generated by command value adjustment. This additional command value is not subject to any limitation or change. This is why the user has to make sure that absolute value, characteristic and the derived variables are within their allowed ranges of values.

See also Functional Description "Drive-controlled positioning" and "Positioning block mode"

Use

Feedforward values (velocity feedforward, acceleration feedforward) are derived from the position command value characteristic. In "[P-0-0556, Config word of axis controller](#)", set whether the values of "[P-0-0059, Additive position command value, controller](#)" are included in the generation of the feedforward values or whether they are afterwards added to the position command value generated by command value adjustment. Parameter "[P-0-0059, Additive position command value, controller](#)" is overwritten with "0" if there is an internal error reaction in the drive.



If the values of "[P-0-0059](#)" have been used for generating the feedforward values, the time at which the additive position command value takes effect is delayed by one position clock.

"[P-0-0059](#)" can only be used in position-controlled operation modes, such as cyclic position control, drive-internal interpolation, drive-internal positioning and positioning block mode.



The actually effective position command value (addition of position command value from command value adjustment of current operation mode and "additive position command value, controller") is displayed in parameter [P-0-0434](#).

This parameter is used, for example, by the drive firmware to set command values from the firmware-internal command value generator without limitation and deformation (noise generator for control loop analysis). It can, for example, also be used by the control master for adding feedforward values.

[P-0-0059 - Attributes](#)

Function:	Par	Editable:	SUBD:OM	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: ---
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Product-specific parameters

3.1.48 P-0-0062, Velocity-dependent PWM switching: Switching velocity

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	If velocity-dependent PWM switching is active (P-0-0045 , Control word of current controller), the drive switches to the higher PWM frequency when the velocity entered in this parameter is exceeded. If the value = 0 has been entered, the switching threshold is defined depending on the PWM frequency that was set. See Functional Description Motor control frequency (PWM frequencies)	
P-0-0062 - Attributes		
Function:	Par	Editable: SUBD:CM
Memory:	PARAM_SP	Validity ch.: SUBD:CM->PM
Unit:	s. text	Extr. val. ch.: +
Cycl. tra.:	--	Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: s. Text

3.1.49 P-0-0063, Torque-generating voltage, actual value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Display parameter for the torque-generating content of the voltage output by the current controller. The value is updated during the current controller cycle time.	
P-0-0063 - Attributes		
Function:	Par	Editable: --
Memory:	--	Validity ch.: --
Unit:	V	Extr. val. ch.: --
Cycl. tra.:	AT	Comb. check: --
AXS:	min./max.: -500,0 / 500,0	Default value: ---

3.1.50 P-0-0064, Flux-generating voltage, actual value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Display parameter for the flux-generating content of the voltage output by the current controller. The value is updated during the current controller cycle time.	
P-0-0064 - Attributes		
Function:	Par	Editable: --
Memory:	--	Validity ch.: --
Unit:	V	Extr. val. ch.: --
Cycl. tra.:	AT	Comb. check: --
AXS:	min./max.: -500,0 / 500,0	Default value: ---

3.1.51 P-0-0065, Voltage modulus, actual value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter serves for display of the absolute proportion of the voltage output by the current controller made up by the voltage components Ud and Uq.	



The displayed voltage value corresponds to the measured value at the motor terminals (line-related) and is updated with the current controller cycle time.

See also Functional Description "Motor control"

P-0-0065 - Attributes	Function: Par Memory: -- Unit: V Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --
	AXS: min./max.: --- / ---		Default value: ---

3.1.52 P-0-0067, Phase current U, actual value

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter displays the actual current value measured in the current controller clock ($T_{A, \text{current}}$) in motor phase U.		
	See also Functional Description "ctrlX DRIVE clock rates"		
P-0-0067 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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3.1.53 P-0-0068, Phase current V, actual value

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter displays the actual current value measured in the current controller clock ($T_{A, \text{current}}$) in motor phase V.		
	See also Functional Description "ctrlX DRIVE clock rates"		
P-0-0068 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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3.1.54 P-0-0070, Effective additive torque/force command value

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter displays the additive torque/force command value effective in the controller. The value of the parameter is applied from the additive torque/force command value (S-0-0081). Usually, this is done without any delay.		
	See also Functional Description "Velocity controller"		
P-0-0070 - Attributes	Function: Par Memory: -- Unit: S-0-0086 Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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3.1.55 P-0-0077, Assignment of encoder 1->interface

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter specifies the encoder interface to be evaluated as "encoder 1 function".	

Product-specific parameters

P-0-0077	Assignment in type code	Notes
0	No interface	
10	XG20.n (onboard interface, n represents the axis number)	Digital onboard encoder interface
2	XG21.n (optional interface, n represents the axis number)	
3	--	

Tab. 3-15: Interface number assignment for the "encoder 1 function" (motor control encoder)

P-0-0077 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 5

AXS:	min./max.: 0 / 10	Default value: 0
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3.1.56 P-0-0078, Assignment of encoder 2->interface

Allocation Hardware --
 Funct. package(s):
 Device parameter:

Function This parameter specifies the interface intended for the "encoder 2 function".

P-0-0078	Interface for connection of encoder 2
0	No interface
10	XG20.n (onboard interface, n represents the axis number)
2	XG21.n (optional interface, n represents the axis number)
3	--

Tab. 3-16: Specifying the interface for the "encoder 2 function" (optional control encoder)

P-0-0078 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: 0 / 10	Default value: 0
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3.1.57 P-0-0082, Actual current value filter time

Allocation Hardware --
 Funct. package(s):
 Device parameter:

Function Setting bit 3 = 1 in the parameter "[P-0-3945](#), Motor control configuration" activates filtering of the actual current value. If the filtering is active, the measured actual current value for current control is filtered with the time constant specified in parameter "[P-0-0082](#)".

If bit 2 = 1 has been set in "[P-0-3945](#), Motor control configuration", the actual current value filter is active in addition to the actual current value prediction. In this case, the time constant for the filter set in the parameter "[P-0-0082](#), Actual current value filter time" also takes effect in the actual current value adjustment.

P-0-0082 - Attributes	Function: Par Memory: PARAM_SP Unit: us Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: Grp. 4
	AXS:	min./max.: s. Text / s. Text	Default value: 0

3.1.58 P-0-0095, Absolute encoder monitoring window, encoder 1

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	When switching on a drive with an absolute encoder 1, a check is run to determine whether the current position feedback value differs from the position feedback value at the time the drive was switched off the last time. If the difference exceeds the value defined in this parameter, error message "F2074 Actual pos. value 1 outside absolute encoder window" is returned. When switching the drive off, the current encoder data of the encoder 1 are saved in " P-0-0177 ".	



Monitoring can be deactivated by writing "0" to this parameter.

See also Functional Description "Monitoring the measuring systems"

P-0-0095 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0076 Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: 100000

3.1.59 P-0-0096, Absolute encoder monitoring window, encoder 2

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	When switching on a drive with an absolute encoder 2 (optional control encoder), a check is run to determine whether the current position feedback value of the encoder differs from the position feedback value at the time the drive was switched off the last time. If the difference exceeds the value defined in this parameter, the error message "F2075 Actual pos. value 2 outside absolute encoder window" is output. When the drive is switched off, the current encoder data of the absolute encoder are stored in " P-0-0178 ".	



Monitoring may be deactivated by writing the value "0" to this parameter.

See also Functional Description "Monitoring the measuring systems"

P-0-0096 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0076 Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: 100000

3.1.60 P-0-0098, Max. model deviation

Allocation	Hardware Funct. package(s): Device parameter:	--
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Product-specific parameters

Function In operation modes with drive-internal position control, the position control loop is monitored in the drive. For this purpose, an "actual position value for the model" is calculated and compared with the real position feedback value ([S-0-0051](#)). The maximum value of the deviation is stored in "[P-0-0098](#)" and helps define the value of the following error monitoring window ([S-0-0159](#)).



Before the "test run" for an axis is started, "[P-0-0098](#)" must be set to "0".

See also Functional Description "Position control"

Use There are two different cases for the "model position feedback value":

- **Position control (or interpolation) with lag error**

The model position feedback value is the difference between the position command value and the temporal derivative of the position command value curve, divided by the position controller Kv factor (if an additive velocity command value ([S-0-0037](#)) is added, it is also divided by the position controller Kv factor and subtracted from the position command value).

- **Lagless position control (or interpolation)**

In this case, the model position feedback value corresponds to the position command value (if an additive velocity command value ([S-0-0037](#)) is added, it is also divided by the position controller Kv factor and subtracted from the position command value).

[P-0-0098 - Attributes](#)

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	--	Decim. pl.:	--
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: s. Text / s. Text Default value: ---

3.1.61 P-0-0099, Position command smoothing time constant

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

The position command smoothing time constant defines the maximum jerk with operation modes with position control.

The maximum jerk is defined by:

$$\text{max.jerk} = \frac{\text{2}^{\text{nd}} \text{derivation of the position command values}}{\text{P-0-0099, Pos. command smoothing time constant}}$$

Fig. 3-1: Maximum jerk



Parameter "[P-0-0099](#)" is only effective in the mode for cycl. position control.

[P-0-0099 - Attributes](#)

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	ms	Extr. val. ch.:	+	Decim. pl.:	2
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: s. Text / s. Text Default value: 0,00

3.2 P-0-0100 to P-0-0199 General functions

3.2.1 P-0-0100, Position command value extension

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Parameter "P-0-0100" extends parameter "S-0-0047" by 16 bits to 48 bits. This way, the resolution is increased by approx. 4 decimal places.	
	Function can only be used if the control supports command value extension.	
P-0-0100 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: --- / ---	Default value: ---

3.2.2 P-0-0101, Configuration STO

Allocation	Hardware Funct. package(s): Device parameter:	--									
Function	The parameter configures the behavior of the "Safe Torque Off" safety option.										
Structure											
	<table border="1"> <thead> <tr> <th>Bit</th> <th>Designation/function</th> <th>Comment</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Diagnosis on selection in AF mode: 0: Diagnosis with fatal error F8027 (default) 1: Diagnosis with fatal warning E8027</td> <td></td> </tr> <tr> <td>1</td> <td>Diagnostic message: 0: Complete diagnostic message (default) 1: Restricted diagnosis output</td> <td></td> </tr> </tbody> </table>	Bit	Designation/function	Comment	0	Diagnosis on selection in AF mode: 0: Diagnosis with fatal error F8027 (default) 1: Diagnosis with fatal warning E8027		1	Diagnostic message: 0: Complete diagnostic message (default) 1: Restricted diagnosis output		
Bit	Designation/function	Comment									
0	Diagnosis on selection in AF mode: 0: Diagnosis with fatal error F8027 (default) 1: Diagnosis with fatal warning E8027										
1	Diagnostic message: 0: Complete diagnostic message (default) 1: Restricted diagnosis output										

Tab. 3-17: P-0-0101, Configuration STO

P-0-0101 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: +	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: --- / ---	Default value: 0x0	

3.2.3 P-0-0106, Operating status STO

Allocation	Hardware Funct. package(s): Device parameter:	--						
Function	This parameter provides binary status signals regarding the current state of "Safe Torque Off".							
Structure	The individual bits of the parameter have the following significances:							
	<table border="1"> <thead> <tr> <th>Bit</th> <th>Designation/function</th> <th>Comment</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Diagnostic message: 0: Limited 1: Complete</td> <td></td> </tr> </tbody> </table>	Bit	Designation/function	Comment	0	Diagnostic message: 0: Limited 1: Complete		
Bit	Designation/function	Comment						
0	Diagnostic message: 0: Limited 1: Complete							

Product-specific parameters

1	STO operating state: 0: Normal operation (NO) 1: Special mode (STO)	
2	Status of output stage: 0: Output stage enabled by STO 1: Output stage locked by STO	
3	Error status: 0: No error 1: Error	

STO Safe Torque OffTab. 3-18: *STO operating state***P-0-0106 - Attributes**

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: ---

3.2.4 P-0-0109, Torque/force peak limit

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Torque/force limit value that acts on the sum of all torque/force command values:	
	<ul style="list-style-type: none"> Command values from the acceleration feedforward parameters (S-0-0348, P-0-1126) Command values from the velocity controller (P-0-0049) 	
	See also Functional Description "Torque/force limitation"	
Use	The parameter has a bipolar effect, i.e., positive and negative command values are limited to the value that has been input. It does not allow cyclic write access and therefore serves to absolutely define the maximum allowed drive torque and/or the maximum allowed drive force.	
	This limit value should be defined according to the machine limits. It acts during drive-controlled deceleration, i.e., during the drive-controlled error reaction as well.	
	The unit for the values of this parameter depends on the scaling that has been set (S-0-0086 , Torque/force data scaling type).	



The effective limit value is displayed in "[P-0-0444](#), Actual value peak torque limit". This value may be less than "[P-0-0109](#)" if, for example, the value of "[S-0-0092](#)" is less than that of "[P-0-0109](#)" or if load-dependent current limitation by motor or controller is active.

The torque limit values ([S-0-0082](#), [S-0-0083](#), [S-0-0092](#)) for limiting the torque during the machining process do not have any effect during drive-controlled deceleration.

P-0-0109 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0086	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 3

AXS:	min./max.: s. Text / s. Text	Default value: s. Text
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3.2.5 P-0-0110, Device control: Status word 2

Allocation Function Structure	Hardware -- Funct. package(s): Device parameter: The parameter P-0-0110.0.0 is used to call several status messages.													
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; padding: 2px;">Bit</th> <th style="text-align: left; padding: 2px;">Designation/function</th> <th style="text-align: left; padding: 2px;">Comment</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; padding: 2px;">1</td> <td style="padding: 2px;"> Reserved Error class: F4, F6 and F7 1: No error 0: Error </td> <td style="text-align: left; padding: 2px;"></td> </tr> <tr> <td style="text-align: center; padding: 2px;">2</td> <td style="padding: 2px;"> Reserved Error class: F8 (fatal errors) 1: No error 0: Error </td> <td style="text-align: left; padding: 2px;"></td> </tr> <tr> <td style="text-align: center; padding: 2px;">7</td> <td style="padding: 2px;"> Locked by hardware 0: The axis has not been locked by hardware inputs or safety inputs. 1: The axis has been locked due to a hardware input (e.g., E-Stop) or STO. Drive enable cannot be set. </td> <td style="text-align: left; padding: 2px;"></td> </tr> </tbody> </table>	Bit	Designation/function	Comment	1	Reserved Error class: F4, F6 and F7 1: No error 0: Error		2	Reserved Error class: F8 (fatal errors) 1: No error 0: Error		7	Locked by hardware 0: The axis has not been locked by hardware inputs or safety inputs. 1: The axis has been locked due to a hardware input (e.g., E-Stop) or STO. Drive enable cannot be set.		
Bit	Designation/function	Comment												
1	Reserved Error class: F4, F6 and F7 1: No error 0: Error													
2	Reserved Error class: F8 (fatal errors) 1: No error 0: Error													
7	Locked by hardware 0: The axis has not been locked by hardware inputs or safety inputs. 1: The axis has been locked due to a hardware input (e.g., E-Stop) or STO. Drive enable cannot be set.													

Tab. 3-19: *Device control: Status word 2*



Since [S-0-0135](#) is only available for Sercos, parameter [P-0-0110](#) is used to read the state for all other master communications.

Bit 2,1: The bits 1 and 2 show whether or not errors of the error classes F4 (interface errors) to F8 (fatal errors) had been signaled since the last time the command "S-0-0099, C05 Reset class 1 diagnostics" was executed. Depending on the error class that is signaled, the drive carries out different error reactions ([P-0-0119](#), Best possible deceleration).

Executing the command "S-0-0099, C05, Reset class 1 diagnostics" sets the bits to 1 again.



If the command "S-0-0099, C05 Reset class 1 diagnostics" cannot clear all errors or other errors are signaled during the execution of the command C05, it is not ensured whether the bits 1/2 show 1 or 0 when the command is completed. Therefore, the command "S-0-0099, C05 Reset class 1 diagnostics" cannot be executed if the axis is in control and the bits 1 and 2 are evaluated. Drive enable (AF) can only be set for the axis if the bits 1/2 are 1 and the bit 13 (drive error) of "[P-0-0115](#), Device control: Status word" has not been set.

P-0-0110 - Attributes

Function:	Par	Editable:	--
Memory:	--	Validity ch.:	--
Unit:	--	Extr. val. ch.:	--
Cycl. tra.:	AT	Comb. check:	--

AXS:	min./max.: --- / ---	Default value: ---
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Product-specific parameters

3.2.6 P-0-0112, Actual velocity value of motor

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter displays the motor velocity irrespective of scaling.	
	If velocity scaling is set to load reference, the motor velocity is displayed without consideration of the gear and the feed constant.	

The unit is rpm or mm/min in the case of linear motors.

See also parameter description "[S-0-0040, Velocity feedback value](#)"

P-0-0112 - Attributes	Function: Par Memory: -- Unit: s. text Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.2.7 P-0-0113, Bipolar velocity limit value of motor

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used to limit the motor velocity. The load gear and the feed constant are not allowed for. The parameter is not affected by the scaling of the velocity data. The parameter acts like " S-0-0113, Maximum motor speed ". The value can be parameterized for all motor types.	
	S-0-0113 is loaded from the memory when motors with encoder data memory are switched on.	

P-0-0113 - Attributes	Function: Par Memory: PARAM_SP Unit: s. text Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: Set-depend.: Grp. 4
	AXS:	min./max.: s. Text / s. Text	Default value: 0

3.2.8 P-0-0114, Undervoltage threshold

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter can be used to configure the undervoltage threshold for the DC bus voltage. The active undervoltage threshold results from the operation mode of the converter and the value in " P-0-0114 ".	
The infeed part of the converter monitors the DC bus voltage at approx. 75 % (3-phase operation) of the mains peak from " S-0-1702.0.1, Mains peak ". If the DC bus voltage falls below this value, the undervoltage in the DC bus is generated. For protection of the device, the infeed part is switched to soft start mode.		
If the converter is operated at the energy buffer (P-0-0860), the infeed part is only switched to soft start mode if the threshold is fallen below. The undervoltage message is generated depending on P-0-0114 and the DC bus voltage.		
For the inverter or "inverter in converter", the message bb/Ab or the undervoltage message depend on the value in P-0-0114 .		

Undervoltage threshold at inverter depending on the configuration in P-0-0118 bit 15 and 14

Source of power status (P-0-0118) ¹⁾	bb -> Ab	Undervoltage message only if axis in AF
00: Axis receives power status from converter/supply unit	P-0-0114 > S-0-0380 and S-0-0240 bit 0 == 1	P-0-0114 < S-0-0380 or S-0-0240 bit 0 == 0
10: Axis internally generates power status	P-0-0114 > S-0-0380	P-0-0114 < S-0-0380
Converter mode with energy buffer	P-0-0114 > S-0-0380 and S-0-0240 bit 0 == 1	P-0-0114 < S-0-0380



If the actual value of "S-0-0380, DC bus voltage" is below the active undervoltage threshold, undervoltage is detected in the DC bus and the drive reaction defined in P-0-0118 bit 5... 3 is executed.

Use Adjustment of the undervoltage threshold to the output voltage of the energy buffer in "converter mode with energy buffer". The value in "P-0-0114" has to be parameterized such that it is less than the output voltage of the energy buffer.

P-0-0114 - Attributes	Function: Par	Editable:	SUBD:CM	Data length:	2Byte
	Memory: PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
	Unit: V	Extr. val. ch.:	+	Decim. pl.:	0
	Cycl. tra.: --	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: s. Text / s. Text				Default value: s. Text

3.2.9 P-0-0115, Device control: Status word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Using this parameter, it is possible to read the drive state (device control), independent of the master communication that is used. See also Functional Description "Operation modes" See also Functional Description "Master communication" See also Functional Description "Drive Halt"	
Structure	The individual bits have the following significances:	

Bit	Designation/function	Comment
0	Ready for Power Supply: Enabling power supply of inverter 0: The inverter does not allow power to be enabled. The power supply has to be switched off. 1: The inverter allows power to be enabled. The supply may be switched on.	depending on P-0-0118; bit 7
1	Ready signal 1: Drive ready (ready for power output)	
2	Drive warning 1: Warning (class 2 diagnostics) is present	

Product-specific parameters

Bit	Designation/function	Comment
3	Status of ext. command value processing (primary op. mode + secondary op. modes 1-7) 0: Drive ignores external command value input 1: Drive follows external command value input	
4	"Drive Halt" acknowledgment 1: "Drive Halt" is active and axis is in standstill	
5	Command change bit 0: No change in command state 1: Command state has changed	
6	Status of int. command value processing (secondary op. modes 8-15 of PLC) 0: Drive ignores int. command value input of PLC 1: Drive follows int. command value input of PLC	
7	Operation mode initialized 1: Primary op. mode or secondary op. mode active and initialization completed, otherwise 0	
11-8	Actual operation mode 0000: Primary operation mode is active 0001: Secondary operation mode 1 is active ... 0111: Secondary operation mode 7 is active 1000: Internal secondary oper. mode 1 is active ... 1111: Internal secondary oper. mode 8 is active	
12	Command value attained 1: Drive has attained command value input (see Detailed information on bit 12)	

Bit	Designation/function	Comment
13	Drive error 0: No error 1: Drive error	
15/14	Ready for operation 00: Control and power sections not ready for operation Axis has not been completely initialized (since in parameter mode (PM) or configuration mode (CM); or the axis has been parked (see command " S-0-0139 , Parking axis procedure command") 01: Control section ready for operation (bb) Axis has been completely initialized and has not been parked. DC bus is not ready for power output. 10: Control and power sections ready for operation (Ab) Axis has been completely initialized and has not been parked. DC bus is ready for power output. 11: Drive with torque (AF) Axis has been completely initialized and has not been parked. DC bus is ready for power output and drive enable has been set.	

Tab. 3-20: Device control: Status word

Use Ready signal (bit 1)

The drive signals ready (bit 1 = 1) if the power voltage has been switched on and the internal device state machine is in the operating mode (OM) or the drive is in Ab.

If the drive has an error or the operating mode (OM) is exited or power voltage is switched off, the ready signal is set to 0.

Extended details of the command value processing (bit 6/3)

Combining bit 6 and bit 3, the following cases can be clearly differentiated:

Bit 6	Bit 3	State	Comment
0	0	Drive carries out internal deceleration	Error; safety technology: drive-controlled transition *1
0	1	Drive follows command value of external control unit in active operation mode	Normal operating state
1	1		Not possible

*1 With active safety technology and drive-controlled transition configured, if additionally bit 2 = 0 and bit 13 = 0, this is a selection of the safety function with subsequent drive-controlled deceleration.

Tab. 3-21: Cases to be distinguished for bit 6 and bit 3



In the easy startup mode, "bit 6 = 0" and "bit 3 = 1" are also set, since the drive follows the command value input!

Detailed information on "command value attained" (bit 12)

Product-specific parameters

Bit 12 "Command value attained" is generated as described in the table, depending on the active operation mode:

Active operation mode	Bit 12 command value attained
None	0
Torque control	No message
Velocity control	n_feedback = n_command (S-0-0330)
Cycl. Position control	IN_POSITION (S-0-0336)
Drive-internal interpolation	IN_TARGET POSITION (S-0-0437; bit 1)

P-0-0115 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.2.10 P-0-0116, Device control: Control word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter shows the effective input of the drive control word. The value written to this parameter is the respective drive control word of the active master communication of easy startup mode.	
	Analog interface, parallel interface: P-0-4028	
	CanOpen, DeviceNet and Interbus: P-0-4077 or P-0-4068	
	Ethernet/IP™: P-0-4077 or P-0-4068	
	Sercos and EtherCAT: S-0-0134	
	Easy Startup mode: P-0-0120	

Structure

Bit	Designation/function	Comment
12/11/ 9/8	Command operation mode 0000: Primary operation mode 0001: Secondary operation mode 1 0010: Secondary operation mode 2, and so on. 0111: Secondary operation mode 7 1000: Internal secondary operation mode 8 ... 1111: Internal secondary operation mode 15 Bit 12 activates the internal secondary operation modes 8 to 15 These are used by the Easy Startup mode.	
13	Drive Halt 0: active; The drive was decelerated while maintaining the maximum acceleration (S-0-0138) if bits 14 and 15 were "1" with 1 → "0". 1: Inactive	

Bit	Designation/function	Comment
14	Drive enable 0: inactive; The driving torque was switched off without delay if the drive was active with 1 → 0. 1: Active	
15	Drive on 0: inactive; The drive was decelerated in the best possible manner if bit 14 was "1" with 1 → "0". 1: Active	

Tab. 3-22: Relevant bits of P-0-0116

The control bits contained in parameter "[P-0-0116](#)" are also contained in the control words depending on the master communication ([S-0-0134](#)) and can therefore be written via the control words.

P-0-0116 - Attributes	Function: Par	Editable: --	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: BIN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: ---

3.2.11 P-0-0117, Activation of control unit reaction on error

Allocation	Hardware --
	Funct. package(s): Device parameter:
Function	The parameter enables the activation of an error reaction controlled by the control unit. If an error reaction controlled by the control unit is active, the control (external control unit/NC) can specify command values for the drive within a delay time. It is therefore possible to carry out an error reaction coordinated by the control in the event of an error.
	 After expiry of the delay time, the error reaction set in " P-0-0119, Best possible deceleration " is carried out.

See also Functional Description "Control unit reaction on error"

Structure	Bit	Designation/function	Comment
	0	NC error reaction F2, F3 errors 0: Deactivated 1: Activated	
	1	Reserved	
	2	NC error reaction F4 errors 0: Deactivated 1: Activated	
	3	NC error reaction F6, F7 errors 0: Deactivated 1: Activated	

Tab. 3-23: P-0-0117, Activation of control unit reaction on error

Use When using the function, the following has to be observed:

Product-specific parameters

- The NC error reaction in the case of non-fatal errors (F2xxx, F3xxx) uses the NC reaction time F2/F3 ([P-0-0117.0.1](#)) as waiting time.
- The NC error reaction in the case of communication errors (F4xxx) uses the NC reaction time F4/F6/F7 ([P-0-0117.0.2](#)) as waiting time.
- The NC error reaction in the case of fatal errors (F6xxx, F7xxx) uses the NC reaction time F4/F6/F7 ([P-0-0117.0.2](#)) as waiting time.
- Bit 0 = "0":** The drive carries out its error reaction without delay after recognizing the error according to the setting in "[P-0-0119](#), Best possible deceleration".
- Bit 0 = "1":** The drive carries out its error reaction according to the setting in "[P-0-0119](#)" only delayed by the waiting time ([P-0-0117.0.1](#)) after recognizing the error. The drive, for the duration of the waiting time after detection of the error, continues following the command values of the master and therefore allows an NC error reaction.
- Bit 2 = "0":** The drive carries out its error reaction without delay after recognizing the error according to the setting in "[P-0-0119](#), Best possible deceleration".
- Bit 2 = "1":** The drive carries out its error reaction according to the setting in "[P-0-0119](#)" only delayed by the waiting time ([P-0-0117.0.2](#)) after recognizing the error. The drive, for the duration of the waiting time after detection of the error, continues following the command values of the master and therefore allows an NC error reaction.
- Bit 3 = "0":** The drive carries out its error reaction without delay after recognizing the error according to the setting in "[P-0-0119](#), Best possible deceleration".
- Bit 3 = "1":** The drive carries out its error reaction according to the setting in "[P-0-0119](#)" only delayed by the waiting time ([P-0-0117.0.2](#)) after recognizing the error. The drive, for the duration of the waiting time after detection of the error, continues following the command values of the master and therefore allows an NC error reaction.

P-0-0117 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: +	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: 0x0

3.2.12 P-0-0117.0.1, NC reaction time F2/F3

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-3892
Function	Input parameters for the NC reaction time in case of F2 and F3 errors. For this waiting time (ms), the drive will block its own error reaction.
Use	Activation of control unit reaction on error (P-0-0117 , bit 0 = 1) enables the NC error reaction F2, F3 errors. The NC reaction time F2/F3 takes effect for the NC error reaction.

The reaction time may be set to a maximum of 60 s.

P-0-0117.0.1 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: 0 / 60000	Default value: 0

3.2.13 P-0-0117.0.2, NC reaction time F4/F6/F7

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-3893	
Function	Input parameters for the NC reaction time in case of F4, F6 and F7 errors. For this waiting time (ms), the drive will block its own error reaction.		
Use	Activation of control unit reaction on error (P-0-0117, bit 2 = 1) enables the NC error reaction F4 errors. Activation of control unit reaction on error (P-0-0117, bit 3 = 1) enables the NC error reaction F6, F7 errors. The NC reaction time F4/F6/F7 takes effect in both cases. The reaction time may be set to a maximum of 60 s.		
P-0-0117.0.2 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: 0 / 60000	Default value: 0

3.2.14 P-0-0118, Power supply, configuration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In parameter "P-0-0118", power off on error is set for drives connected via the DC bus (drive system). The handling of DC bus undervoltage is set, and the source of the power section status is defined.	
	 The errors potentially leading to the destruction of the device always lead to a deactivation of the power supply to the DC bus (power bus). If all errors are to lead to a disconnection of the power supply, this has to be configured. The power supply is disconnected via the bb relay.	
Structure	See also Functional Description "Power supply"	

The individual bits of the parameter have the following significances:

Bit	Designation/function	Comment
2-0	Reserved	
5-3	Behavior in case of undervoltage in DC bus or mains failure These bits determine how the drive reacts to undervoltage in the DC bus: 000: Non-fatal error (F2026/F2819), see "P-0-0119, Best possible deceleration" 001: Fatal warning (E8026/E8819), motive torque switched off 100: Non-fatal warning (E2026/E2819), no error reaction of drive	
6	Reserved	
7	Power off on error Determines whether the drive initiates disconnection from power supply when errors occur: 0: Mains separation only in case of supply unit error (F88xx) 1: Disconnection from power supply with any error	

Product-specific parameters

Bit	Designation/function	Comment
13-8	Reserved	
15/14	<p>Source for "status power section bb/Ab"</p> <p>Inverter generates "Ab" status according to "DC Bus Power Control" signal.</p> <p>"Ab" if S-0-0240; bit 0 ==1</p> <p>"bb" if S-0-0240; bit 0 ==0</p> <p>If the axis was in AF \Rightarrow F2026, E2026 or E8026</p> <p>00: Axis receives power status from converter/supply unit (S-0-0240)</p> <p>01: Reserved</p> <p>10: Axis internally generates the power status: The inverter generates the power supply status only according to the DC bus voltage. If it exceeds "P-0-0114, Undervoltage threshold", the axis displays "Ab". Control section and power section are ready for operation. If the DC bus voltage is below "P-0-0114", the axis displays "bb". The control section is ready for operation.</p> <p>11: Reserved</p>	

Tab. 3-24: Relevant bits of P-0-0118

P-0-0118 - Attributes	Function: Par	Editable:	SUBD:CM	Data length:	2Byte
	Memory: PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	BIN
	Unit: --	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.: --	Comb. check:	+	Set-depend.:	--
AXS:		min./max.: --- / ---			
Default value: 0x0					

3.2.15 P-0-0119, Best possible deceleration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter determines the way the drive is decelerated.	

Type of deceleration	Intended use	Parameterization for deceleration as a reaction to			
		- Non-fatal errors F2xxx and F3xxx - Interface errors F4xxx - Fatal warnings E83xx, E8034 - Removing "Drive On" (P-0-0116 , bit 15) - Drive-controlled transition to the special mode standstill SMST1/SMST2/SMES	- Travel range errors F6xxx - Safety technology errors (F7xxx)	- Fatal errors F8xxx ²⁾ - Removing drive enable (P-0-0116 , bit 14)	Fatal error F8022 ⁷⁾
"Emergency stop" Velocity command value reset	Fastest possible deceleration	$\square\square\square 0_{\text{hex}}$	$\square\square 0\square_{\text{hex}}$	Not possible	
"Emergency stop" Velocity command value reset with ramp and jerk limit	Deceleration that protects the mechanics while complying with the "emergency stop" properties	$\square\square\square 4_{\text{hex}}$	$\square\square 4\square_{\text{hex}}^5)$	Not possible	

Type of deceleration	Intended use	Parameterization for deceleration as a reaction to			
		- Non-fatal errors F2xxx and F3xxx - Interface errors F4xxx - Fatal warnings E83xx, E8034 - Removing "Drive On" (P-0-0116 , bit 15) - Drive-controlled transition to the special mode standstill SMST1/SMST2/SMES	- Travel range errors F6xxx - Safety technology errors (F7xxx)	- Fatal errors F8xxx ²⁾ - Removing drive enable (P-0-0116 , bit 14)	Fatal error F8022 ⁷⁾
Quick stop Velocity command value reset with ramp and jerk limit	Deceleration that protects the mechanics while complying with quick stop properties	□□□2 _{hex}	Not possible	Not possible	
Return motion	For systematic return motion in the case of error.	□□□3 _{hex} ³⁾	Not possible	Not possible	
Torque reset with ramp ⁶⁾	Disabling the torque with ramp (reduced jerk) and protection from overvoltage in the DC bus in case of motors in the field weakening range	□□□5 _{hex}	□□5□ _{hex}	Not possible	
"Emergency stop" by means of motor phase short circuit ¹⁾	Deceleration of the axis in the case of fatal errors, if control is not possible	□□□8 _{hex}	□□8□ _{hex}	□1□□ _{hex}	01□□ _{hex}
Torque disable	For slave axes, provided they have been connected to the master axis in friction-locked form	□□□1 _{hex}	□□1□ _{hex}	□0□□ _{hex}	00□□ _{hex}
Controlled deceleration, sensorless ⁴⁾	Deceleration of the axis in the case of fatal encoder error, if control is not possible	Not possible	Not possible	Not possible	1□□□ _{hex}

- 1) The braking effect with motor short circuit torque which is considerably smaller than the continuous torque
 See also [External link could not be resolved.]
 2)
 3) When removing "Drive On" ([P-0-0116](#), bit 15) and with some fatal warnings, the return motion is not possible. The set reac-

Product-specific parameters

tion bit 4-7 will be implemented instead. The return motion must be activated by enabling the function.

4) Sensorless motor operation must be separately put into operation with checking of the error reaction.

5) The behavior of the quick stop via probe input and the fatal warnings E8029, E8030, E8042, E8043 and E8044 is derived from this setting. If this value is set, the bipolar acceleration value (without jerk limit) is taken into consideration in the command velocity value reset. For all other settings, the command velocity value is reset.

6) Only with device type EDS

7) See also [External link could not be resolved.]

Tab. 3-25: Options for parameterizing "P-0-0119, Best possible deceleration"

See also Functional Description "Error reactions"

See also Functional Description "Best possible deceleration"

Structure

Nibble	Parameterization and description of error reaction
00000 hex	<p>Parameterizable best possible deceleration as error reaction (see table "Options for parameterization ..." column 3).</p> <p>0_{hex}: Velocity command value reset (without ramp)</p> <ul style="list-style-type: none"> The closed-loop-controlled servo motor is decelerated taking parameter "P-0-0109" into account ($v_{cmd} = 0$). There is no acceleration limitation. With U/f control, "P-0-0109" is only used for deceleration if the stall protection controller has been activated (P-0-0045). Maximum deceleration is determined by parameter "P-0-0569". <p>The maximum braking time to be expected under the most unfavorable operating conditions is entered in "S-0-0273, Maximum drive off delay time".</p> <p>Once "S-0-0273" elapses:</p> <ul style="list-style-type: none"> For servo drives ("servo brake" function, P-0-0525), the holding brake is activated and drive enable is internally switched off after "S-0-0207". For main spindle drives (main spindle brake function, P-0-0525), drive enable is internally switched off and the holding brake is activated, if the velocity has fallen below 10 rpm. <p>1_{hex}: Torque disable</p> <p>In the event of an error, the drive torque is disabled, i.e. the drive "coasts to stop". The drive is only decelerated by the friction torque. If the drive is additionally equipped with a motor holding brake, the brake is</p> <ul style="list-style-type: none"> immediately activated for servo drives ("servo brake" function, P-0-0525). only activated at a velocity of less than 10 rpm in case of main spindle drives ("main spindle brake" function, P-0-0525). <p>2_{hex}: Quick stop (velocity command value reset with ramp)</p> <p>In the event of an error, the closed-loop-controlled servo drive in velocity control, or the open-loop-controlled drive in V/Hz (U/f) operation is decelerated with a command value ramp, determined by "S-0-0372" and the jerk limit value "S-0-0349". If the value of S-0-0372 = "0", the value is effective in "S-0-0138". The torque/force limitation is derived from the parameter "P-0-0109".</p> <p>Note: With U/f control, the maximum deceleration is given by the value entered in "P-0-0569".</p> <p>3_{hex}: Return motion (activation code required, not possible for work machines)</p>

Nibble	Parameterization and description of error reaction
	<p>The drive generates a position command value profile, in order to move by the desired travel distance, if an error occurs. In the event of an error, a relative process block is therefore activated, which is defined by the following parameters:</p> <p>P-0-0055, Return distance P-0-0056, Return velocity P-0-0057, Return acceleration P-0-0058, Return jerk</p> <p>4_{hex}: Emergency stop (velocity command value reset with ramp)</p> <p>In the event of an error, the closed-loop-controlled servo drive in velocity control, or the open-loop-controlled drive in V/Hz (U/f) operation is decelerated with a command value ramp, determined by "S-0-0429, Emergency stop deceleration" and "S-0-0349, Bipolar jerk limit". If the value "S-0-0429" = "0", the value in "S-0-0138, Bipolar acceleration limit value" takes effect. The torque/force limitation is derived from the parameter "P-0-0109".</p> <p>Note: With U/f control, the maximum deceleration is given by the value entered in "P-0-0569, Maximum stator frequency slope".</p> <p>5_{hex}: Torque reset with ramp (only for mobile work machines)</p> <p>Motor in basic speed range: In case of error, the drive torque is controlled to zero, starting at its current value. In "P-0-0119.0.1", the time duration of the ramp function is set, during which the torque is reduced to zero. If the ramp time has elapsed, drive enable is deactivated.</p> <p>Motor in field weakening range: In case of error, a short-circuit braking is executed in the motor. As soon as the basic speed range is reached (EMF < DC bus voltage), the short circuit is reset via a ramp time. Subsequently, drive enable is deactivated.</p>
□□■□ hex	<p>Parameterizable best possible deceleration as error reaction to F6 and F7 error messages</p> <p>0_{hex}: Velocity command value reset (without ramp)</p> <ul style="list-style-type: none"> The closed-loop-controlled servo motor is decelerated taking parameter "P-0-0109, Torque/force peak limit" into account ($v_{cmd} = 0$). There is no acceleration limitation. "P-0-0109" is used for deceleration with U/f control if the stall protection controller has been activated (P-0-0045). Maximum deceleration is determined by parameter "P-0-0569". <p>The maximum braking time to be expected under the most unfavorable operating conditions is entered in "S-0-0273, Maximum drive off delay time".</p> <p>Once S-0-0273 elapses:</p> <ul style="list-style-type: none"> For servo drives ("servo brake" function, P-0-0525), the holding brake is activated and drive enable is internally switched off after "S-0-0207". For main spindle drives (main spindle brake function, P-0-0525), drive enable is internally switched off and the holding brake is activated, if the velocity has fallen below 10 rpm. <p>1_{hex}: Torque disable (can only be combined with □□■□ = 1_{hex})</p> <p>In the event of an error, the drive torque is disabled, i.e. the drive "coasts to stop". The drive is only decelerated by the friction torque. If the drive is additionally equipped with a motor holding brake, the brake is:</p> <ul style="list-style-type: none"> immediately activated for servo drives ("servo brake" function, P-0-0525). only activated at a velocity of less than 10 rpm in case of main spindle drives ("main spindle drive" function, P-0-0525). <p>2_{hex}: Not possible</p> <p>3_{hex}: Not possible</p>

Product-specific parameters

Nibble	Parameterization and description of error reaction
$\square\square\square\square$ _{hex}	<p>4_{hex}: Emergency stop (velocity command value reset with ramp)</p> <p>In the event of an error, the closed-loop-controlled servo drive in velocity control, or the open-loop-controlled drive in V/Hz (U/f) operation is decelerated with a command value ramp, determined by "S-0-0429" and the jerk limit value "S-0-0349". If the value "S-0-0429" = "0", the value in "S-0-0138" takes effect. The torque/force limitation is derived from the parameter "P-0-0109".</p> <p>Note: With U/f control, the maximum deceleration is given by the value entered in "P-0-0569, Maximum stator frequency slope".</p> <p>Exception: In the case of fatal warnings E8029, E8030, E8042, E8043, E8044 and quick stop with probe detection (AR), the drive is decelerated with the ramp "S-0-0138, Bipolar acceleration limit value" if P-0-0119 $\square\square\square\square \neq 4_{\text{hex}}$ has been parameterized.</p> <p>If the parameterization is P-0-0119 $\square\square\square\square \neq 4_{\text{hex}}$, the drive reacts by resetting the velocity command value (vcmd = 0) without taking any acceleration limitation into account. The available torque is determined by parameter "P-0-0109, Torque/force peak limit".</p> <p>5_{hex}: Torque reset with ramp (only for mobile work machines)</p> <p>Motor in basic speed range: In case of error, the drive torque is initially reset via the ramp time defined via the time in parameter "P-0-0119.0.1" and based on the current torque until the time the error occurs. If the ramp time has elapsed, drive enable is deactivated.</p> <p>Motor in field weakening range: In case of error, short-circuit braking is executed in the motor, as soon as the basic speed range is reached (EMF < DC bus voltage), the short circuit current is reset via a ramp time. Subsequently, drive enable is deactivated.</p>
$\square\square\square\square$ _{hex}	<p>Activation of motor phase short circuit in the case of F8 error messages</p> <p>0_{hex}: No motor phase short-circuit, immediate torque disable</p> <p>Motor brake is immediately applied, if available</p> <p>1_{hex}: Motor phase short circuit</p> <p>Motor brake is immediately applied, if available</p> <p>9_{hex}: Motor phase short circuit</p> <p>Short-circuit braking maintained also after deceleration (to replace the holding brake if no holding brake is available).</p> <p>2, 4 and 6_{hex}: reserved</p>
$\blacksquare\square\square\square$ _{hex}	<p>Controlled deceleration in the case of encoder error F8022 (not allowed for mobile work machines)</p> <p>0_{hex}: no controlled deceleration</p> <p>Reaction as with normal F8 error (according to bit 8)</p> <p>1_{hex}: Controlled deceleration</p> <p>Note: Can also be used in combination with the settings of $\square\square\square\square$ _{hex}.</p>

Tab. 3-26: Setting the way the drive is decelerated with the above criteria

Type of deceleration	Use Torque/ Force limit	Acceleration limit values					Jerk limit values	
		S-0-0138	S-0-0429	S-0-0372	P-0-0057	S-0-0349	P-0-0058	
"Emergency stop" Velocity command value reset	■	Limitations not active						
"Emergency stop" Velocity command value reset with ramp and jerk limit	■	■	■	-	-	■	-	
Quick stop Velocity command value reset with ramp and jerk limit	■	■	-	■	-	■	-	
Return motion	■	-	-	-	■	-	-	■
"Emergency stop" by means of motor phase short circuit	Synchronous motors: Motor-dependent and speed dependent braking torque, if required, brake support by servo brake Asynchronous motors: no braking action	Limitations not active						
Torque reset with ramp	Synchronous motor: In the field weakening range, braking by motor phase short circuit In the basic speed range and in case of asynchronous motors, no braking	Limitations not active						
Torque disable	Servo brake: Friction torque of brake Main spindle brake: no deceleration	Limitations not active						

Product-specific parameters

Type of deceleration	Torque/ Force limit	Acceleration limit values					Jerk limit values	
	P-0-0109	S-0-0138	S-0-0429	S-0-0372	P-0-0057	S-0-0349	P-0-0058	
"Emergency stop" by controlled standstill	max. torque corresponds to approx. 80% of P-0-0109	■	-	■	-	■	-	
"Emergency stop" Velocity command value reset with ramp	■	■	-	-	-	-	-	

S-0-0138 Bipolar acceleration limit value
S-0-0349 Bipolar jerk limit
S-0-0372 Drive Halt acceleration bipolar
S-0-0429 Emergency stop deceleration
P-0-0058 Return jerk
P-0-0109 Torque/force peak limit

P-0-0119 - Attributes	Function:	Par	Editable:	SUBD:CM+PM	Data length:	2Byte
	Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	HEX
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--

AXS: min./max.: --- / --- Default value: s. Text

3.2.16 P-0-0119.0.1, Ramp torque reset

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-2413																								
Function	For the "torque reset" setting with ramp, the command torque value is reset in the ramp time based on the current torque at the time the error is triggered. Drive enable is deactivated after the ramp time has elapsed.																								
Use	 Set the ramp time so that the energy fed in the DC bus by switching off the motor current does not result in an overvoltage in the DC bus.																								
P-0-0119.0.1 - Attributes	<table> <tr> <td>Function:</td><td>Par</td><td>Editable:</td><td>SUBD:CM+PM</td><td>Data length:</td><td>2Byte</td></tr> <tr> <td>Memory:</td><td>PARAM_SP</td><td>Validity ch.:</td><td>SUBD:PM->OM</td><td>Format:</td><td>DEC_OV</td></tr> <tr> <td>Unit:</td><td>ms</td><td>Extr. val. ch.:</td><td>--</td><td>Decim. pl.:</td><td>0</td></tr> <tr> <td>Cycl. tra.:</td><td>--</td><td>Comb. check:</td><td>--</td><td>Set-depend.:</td><td>--</td></tr> </table>	Function:	Par	Editable:	SUBD:CM+PM	Data length:	2Byte	Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV	Unit:	ms	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
Function:	Par	Editable:	SUBD:CM+PM	Data length:	2Byte																				
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV																				
Unit:	ms	Extr. val. ch.:	--	Decim. pl.:	0																				
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																				

AXS: min./max.: 0 / 500 Default value: 50

3.2.17 P-0-0120, Control word easy startup

Allocation	Hardware Funct. package(s): Device parameter:
Function	In "easy startup mode", this parameter is used to control the drive.
	 Bit 12 is set automatically when the command "easy startup mode" is started. If bit 12 is cleared during the "easy startup mode", operation modes 0-8 can be addressed

See also Functional Description "Master communication"

See Functional Description "Initial start in easy startup mode"
 See also Functional Description "Operation modes"

Structure

Bit	Designation/function	Comment
12/11/9/8	Command operation mode 10x00: Internal secondary oper. mode (velocity control) 10x01: Internal secondary oper. mode (torque control) 10x11: Internal secondary oper. mode (drive-controlled positioning)	Bit 12 is automatically set.
13	Drive Halt 1-0 change: Deceleration of drive while maintaining maximum acceleration (S-0-0372 - only possible if bits 14 and 15 = 1)	
14	Drive enable 1-0 change: Torque disable without delay (independent of bit 15 or 13)	
15	Drive on 1-0 change: Best possible deceleration (only possible if bit 14 = 1)	

Tab. 3-27: Relevant bits: Control word easy startup

P-0-0120 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.:	--- / ---	Default value:	---

3.2.18 P-0-0121, Encoder 1 gearbox revolutions, mechanical side

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Between encoder 1 and motor, a mechanical gear may be installed in special cases.	The gear ratio is defined as follows:

<i>P - 0 - 0122 Encoder 1 gearbox revolutions, encoder side</i>
<i>P - 0 - 0121 Encoder 1 gearbox revolutions, mechanical side</i>

Fig. 3-2: Motor encoder gear ratio (gear 1)

Example:

5 motor revolutions result in 2 encoder 1 revolutions

→ [P-0-0121](#) : 5→ [P-0-0122](#) : 2

With synchronous motors in combination with encoder 1/motor encoder which can be evaluated in absolute form, the advantage of setting the commutation offset only once (see above) can only be used at a respective gear ratio.

Product-specific parameters

See also Functional Description "Effect of an encoder gearbox"					
P-0-0121 - Attributes	Function: Par	Editable:	SUBD:CM	Data length:	4Byte
	Memory: PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
	Unit: U	Extr. val. ch.:	+	Decim. pl.:	0
	Cycl. tra.: --	Comb. check:	--	Set-depend.:	Grp. 5
	AXS:	min./max.: 1 / 65535		Default value: 1	

3.2.19 P-0-0122, Encoder 1 gearbox revolutions, encoder side

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Between encoder 1 and motor, a mechanical gear may be installed in special cases.	
	The gear ratio is defined as follows:	

P - 0 - 0122 Encoder 1 gearbox revolutions, encoder side
P - 0 - 0121 Encoder 1 gearbox revolutions, mechanical side

Fig. 3-3: Motor encoder gear ratio (gear 1)

Example:

5 motor revolutions result in 2 encoder 1 revolutions

- [P-0-0121](#) : 5
- [P-0-0122](#) : 2



With synchronous motors in combination with encoder 1/motor encoder which can be evaluated in absolute form, the advantage of setting the commutation offset only once (see above) can only be used at a respective gear ratio.

See also Functional Description "Effect of an encoder gearbox"

P-0-0122 - Attributes	Function: Par	Editable:	SUBD:CM	Data length:	4Byte
	Memory: PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
	Unit: U	Extr. val. ch.:	+	Decim. pl.:	0
	Cycl. tra.: --	Comb. check:	--	Set-depend.:	Grp. 5
	AXS:	min./max.: 1 / 65535		Default value: 1	

3.2.20 P-0-0123, Encoder 2 feed constant

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is only active if "feed constant 2" has been activated in parameter " P-0-0185 , Encoder 2 control word". The value of this parameter defines the length of the linear distance that is run per revolution of a rotary position transducer (e.g., measuring wheel).	
		The unit depends on bit 4 in parameter " S-0-0076 , Position data scaling type".

The following applies:

[S-0-0076](#) bit 4 = 0 → mm/rev

[S-0-0076](#) bit 4 = 1 → inch/rev

See also Functional Description "E-Stop function"

P-0-0123 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	+	Decim. pl.:	--

Cycl. tra.: -- Comb. check: --

AXS:	min./max.: s. Text / s. Text	Default value: 1000000
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3.2.21 P-0-0124, Encoder 2 gearbox revolutions, mechanical side

Allocation

Hardware --

Funct. package(s):

Device parameter:

Function

Between load and encoder 2, a mechanical gear may be installed.

The gear ratio is defined as follows:

P-0-0125 Encoder 2 gearbox revolutions, encoder side

P-0-0124 Encoder 2 gearbox revolutions, mechanical side

Fig. 3-4: Encoder 2 gear ratio (optional control encoder)

Example:

2 load revolutions result in 5 encoder revolutions

→ [P-0-0124](#) : 2

→ [P-0-0125](#) : 5

See also Functional Description "Operating motors with ctrlX DRIVE"

P-0-0124 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	U	Extr. val. ch.:	--	Decim. pl.:	0

Cycl. tra.: -- Comb. check: --

AXS:	min./max.: 1 / 65535	Default value: 1
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3.2.22 P-0-0125, Encoder 2 gearbox revolutions, encoder side

Allocation

Hardware --

Funct. package(s):

Device parameter:

Function

Between load and encoder 2, a mechanical gear may be installed.

The gear ratio is defined as follows:

P-0-0125 Encoder 2 gearbox revolutions, encoder side

P-0-0124 Encoder 2 gearbox revolutions, mechanical side

Fig. 3-5: Encoder 2 gear ratio (encoder 2)

Example:

2 load revolutions result in 5 encoder revolutions

→ [P-0-0124](#) : 2

→ [P-0-0125](#) : 5

See also Functional Description "Operating motors with ctrlX DRIVE"

P-0-0125 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	U	Extr. val. ch.:	--	Decim. pl.:	0

Cycl. tra.: -- Comb. check: --

Product-specific parameters

AXS:	min./max.: 1 / 65535	Default value: 1
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3.2.23 P-0-0136, Oscilloscope: Manual trigger signal

Allocation	Hardware Funct. package(s): Device parameter:	--						
Function	<p>The parameter "P-0-0136, Oscilloscope: Manual trigger signal" can be used as alternative external trigger signal. Particularly if "P-0-0036, Oscilloscope: External trigger signal" is already configured in a multi-device measurement as real-time control bit.</p> <p>See also Functional Description "Oscilloscope function"</p>							
Structure	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center; padding: 2px;">Bit</th> <th style="text-align: left; padding: 2px;">Designation/function</th> <th style="text-align: center; padding: 2px;">Comment</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; padding: 2px;">0</td> <td style="text-align: left; padding: 2px;"> Manual trigger signal 0: Manual trigger signal = Low 1: Manual trigger signal = High </td> <td style="text-align: center; padding: 2px;"></td> </tr> </tbody> </table>		Bit	Designation/function	Comment	0	Manual trigger signal 0: Manual trigger signal = Low 1: Manual trigger signal = High	
Bit	Designation/function	Comment						
0	Manual trigger signal 0: Manual trigger signal = Low 1: Manual trigger signal = High							

Tab. 3-28: P-0-0036, Oscilloscope: Manual trigger signal

P-0-0136 - Attributes	Function: Par	Editable: ALWAYS	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: BIN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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3.2.24 P-0-0141, Thermal controller load

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	<p>Parameter "P-0-0141" is used to check the thermal load of the amplifier. 0% corresponds to a chip overtemperature of 0 K; 100% corresponds to the maximum chip overtemperature. If the drive is designed properly, the thermal load should not exceed 80% for the specified machining cycles.</p>	
Use	<p>The typical duration for heating a control unit power output stage to final temperature can be several minutes. To check the thermal load of a drive during start-up without waiting for the thermal settling process (e.g. by traveling of machining cycles), the load of the drive control unit can be preset. This can be set to any value by writing parameter "P-0-0141". However, the input value must be greater than the load currently displayed.</p>	



- Due to the switching loss of the inverter, "P-0-0141" always shows a value > 0 at drive enable, even if the output current "P-0-0440, Actual output current value (absolute value)" equals zero. The level of the basic load depends on "P-0-0001, Switching frequency of the power output stage".
- Amplifier current is limited when the load reaches approx. 97%. This is displayed with the warning "E8057 Amplifier overload, current limit active".
- A default warning threshold can be parameterized by means of "P-0-0441".

P-0-0141 - Attributes	Function: Par	Editable: ALWAYS	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: DEC_OV
	Unit: %	Extr. val. ch.: +	Decim. pl.: 1
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --

AXS:	min./max.: 0,0 / 100,0	Default value: ---
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3.2.25 P-0-0142, Synchronization acceleration

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	This parameter specifies the acceleration or deceleration value for estimation of the synchronous velocity for dynamic synchronizing (velocity adaptation).			
P-0-0142 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0160 Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: Set-depend.: --	
		AXS:	min./max.: s. Text / s. Text	Default value: 1000000

3.2.26 P-0-0143, Synchronization velocity

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	This parameter specifies the value of the positioning velocity for travel of the distance to absolute synchronization during dynamic synchronizing (position adjustment).			
P-0-0143 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0044 Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: Set-depend.: --	
		AXS:	min./max.: s. Text / s. Text	Default value: 1000000

3.2.27 P-0-0145, Oscilloscope: List of measured values 3

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	In parameter "P-0-0145, Oscilloscope: List of measured values 3", the measured values of channel 3 of the oscilloscope function are written in sequential order. The oldest measured value is the first element in the list of measured values. The recorded signal is defined via the IDN entered in "P-0-0147, Oscilloscope: Signal selection 3".			
	Attribute, unit etc. are automatically adjusted to this selected signal.			
<hr/>				
P-0-0145 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: DEC_MV Decim. pl.: 4 Set-depend.: --	
		AXS:	min./max.: --- / ---	Default value: ---

3.2.28 P-0-0146, Oscilloscope: List of measured values 4

Allocation	Hardware Funct. package(s): Device parameter:	--
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Product-specific parameters

Function In parameter "[P-0-0146](#)", the measured values of channel 4 of the oscilloscope function are written in sequential order. The oldest measured value is the first element in the list of measured values.

The recorded signal is defined via the IDN entered in "[P-0-0148](#), Oscilloscope: Signal selection 4".

 Attribute, unit etc. are automatically adjusted to this selected signal.

See also Functional Description Oscilloscope function

[P-0-0146 - Attributes](#)

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	4
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

3.2.29 P-0-0147, Oscilloscope: Signal selection 3

Allocation Hardware --
Funct. package(s):
Device parameter:

Function The IDN entered in "[P-0-0147](#)" defines the signal that is to be recorded by channel 3.

Only such IDNs are allowed that are contained in the list "[P-0-0149](#), Oscilloscope: Signal selection list".

 The measuring channel is deactivated by entering "0" or using "[S-0-0000](#)".

After recording has been completed, the recorded measured values are contained in parameter "[P-0-0145](#), Oscilloscope: List of measured values 3".

 The maximum allowed number of measured values depends on the number of used channels. The number of measured values is configured in "[P-0-0032](#), Oscilloscope: Size of memory". The configurable size of memory is reduced if more than 4 channels are used.

See also Functional Description "Oscilloscope function"

[P-0-0147 - Attributes](#)

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	IDN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: s. Text

3.2.30 P-0-0148, Oscilloscope: Signal selection 4

Allocation Hardware --
Funct. package(s):
Device parameter:

Function The IDN entered in "[P-0-0148](#)" defines the signal that is to be recorded by channel 4.

Only such IDNs are allowed that are contained in the list "[P-0-0149](#), Oscilloscope: Signal selection list".



The measuring channel is deactivated by entering "0" or using "[S-0-0000](#)".

After recording has been completed, the recorded measured values are contained in parameter "[P-0-0146](#), Oscilloscope: List of measured values 4".



The maximum allowed number of measured values depends on the number of used channels. The number of measured values is configured in "[P-0-0032](#), Oscilloscope: Size of memory". The configurable size of memory is reduced if more than 4 channels are used.

See also Functional Description "Oscilloscope function"

P-0-0148 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	IDN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: --- / ---			Default value: s. Text	

3.2.31 P-0-0149, Oscilloscope: Signal selection list

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

The parameter "[P-0-0149](#), Oscilloscope: Signal selection list" contains all parameters that are suitable as trigger signal ([P-0-0026](#)) or measuring signal ([P-0-0023](#), [P-0-0024](#), [P-0-0147](#), [P-0-0148](#), [P-0-0270](#), [P-0-0271](#), [P-0-0272](#), [P-0-0273](#)).

See also Functional Description "Oscilloscope function"

P-0-0149 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	--	Validity ch.:	--	Format:	IDN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: --- / ---			Default value: ---	

3.2.32 P-0-0150, Oscilloscope: Number of valid measured values

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

In "[P-0-0150](#)", the number of valid measured values is entered. The number is less or equal to the size of memory defined in "[P-0-0032](#)" and specifies the number of measured values required to fill the lists of measured values.

If the oscilloscope function is activated, the signal to be recorded is continuously added to a list of measured values. In case of the trigger event, the recording is stopped and the list of measured values can be read out. In this list, the oldest measured value is listed first, the newest measured value last.

If the trigger event occurs before this memory for measured values is completely filled, the number of valid measured values in "[P-0-0150](#)" is below the defined size of memory in "[P-0-0032](#)".

See also Functional Description "Oscilloscope function"

P-0-0150 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: --- / ---			Default value: ---	

Product-specific parameters

AXS:	min./max.: --- / ---	Default value: ---
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3.2.33 P-0-0151, Synchronization window for modulo format

Allocation	Hardware -- Funct. package(s): Device parameter:				
Function	The distance to be traveled for transition to absolute synchronization is determined in the second step of dynamic synchronization (position adjustment). If the position difference exceeds the "synchronizing in modulo format" (P-0-0151), the direction of synchronizing is defined by parameter "P-0-0154, Synchronization direction". If the position difference is below the value of parameter "P-0-0151", synchronization is realized by the lowest distance.				
P-0-0151 - Attributes					
Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	+	Decim. pl.:	
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS: min./max.: s. Text / s. Text Default value: 1000000					

3.2.34 P-0-0152, Synchronization completed

Allocation	Hardware -- Funct. package(s): Device parameter:				
Function	During NC-controlled and drive-controlled mode switching, parameter "P-0-0152, Synchronization completed" is used to trigger application on the cyclic command value.				
P-0-0152 - Attributes					
Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS: min./max.: --- / --- Default value: ---					

3.2.35 P-0-0153, Optimum distance home switch-reference mark

Allocation	Hardware -- Funct. package(s): Device parameter:																						
Function	During the commands for "homing procedure", the distance between the switch edge or blocking detection (positive stop) and the reference mark is monitored when the home switch, travel range limit switch or positive stop (axis-side additional device for homing) are evaluated and when the encoder reference marks are evaluated. The optimum distance provided for reference marks with equal distances is half the reference mark distance. The optimum distance is to be entered in parameter "P-0-0153" according to the following table.																						
See also Functional Description "Establishing the position data reference"																							
Structure																							
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">Encoder</th> <th style="width: 20%;">P-0-0153</th> <th colspan="4">Function</th> </tr> </thead> <tbody> <tr> <td>Rotary</td> <td>0</td> <td colspan="4">The distance is monitored. The optimum distance is calculated and is 1/2 encoder revolutions at encoders with at least one revolution as absolute encoder range (single-turn) or incr. rotary encoders with a mark per revolution.</td> </tr> <tr> <td>Rotary</td> <td>(Value)</td> <td colspan="4">The distance is monitored. In "P-0-0153", half the reference mark distance has to be entered.</td> </tr> </tbody> </table>						Encoder	P-0-0153	Function				Rotary	0	The distance is monitored. The optimum distance is calculated and is 1/2 encoder revolutions at encoders with at least one revolution as absolute encoder range (single-turn) or incr. rotary encoders with a mark per revolution.				Rotary	(Value)	The distance is monitored. In "P-0-0153", half the reference mark distance has to be entered.			
Encoder	P-0-0153	Function																					
Rotary	0	The distance is monitored. The optimum distance is calculated and is 1/2 encoder revolutions at encoders with at least one revolution as absolute encoder range (single-turn) or incr. rotary encoders with a mark per revolution.																					
Rotary	(Value)	The distance is monitored. In "P-0-0153", half the reference mark distance has to be entered.																					

Encoder	P-0-0153	Function
Linear	0	The distance is not monitored. The linear encoder does not possess reference marks with a constant distance between them. Make sure that the actual distance between switch edge or blocking detection and reference mark is sufficient to ensure unequivocal detection of the same reference mark edge.
Linear	(Value)	The distance is monitored. In "P-0-0153", half the reference mark distance has to be entered.

Tab. 3-29: Determining the value for P-0-0153

P-0-0153 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	+	Decim. pl.:	--
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: 0
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3.2.36 P-0-0154, Synchronization direction

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The distance to be traveled for transition to absolute synchronization is determined in the second step of dynamic synchronization (position adjustment). For modulo axes, the motion of the drive can be in positive or negative direction. The preferred synchronization direction defines the direction in which the drive is to move. See also functional description "Cyclic position control"	
Structure	P-0-0154	Function

0	Shortest distance
1	Positive direction
2	negative direction

Tab. 3-30: Synchronization direction

If, however, the shortest distance to the absolute synchronization is smaller than "P-0-0151, Synchronization window for modulo format", the shortest distance will be traveled and the specified synchronization direction will be ignored.

P-0-0154 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	HEX
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0

AXS:	min./max.: s. Text / 0x2	Default value: 0x0
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3.2.37 P-0-0161, Drive optimization: Cycle duration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter defines the periodic time of the sine function, which is effective when the inertia is determined in the "automatic setting of axis control".	
Use	When the inertia is determined in the "automatic setting of axis control", the drive travels a sine profile in velocity control mode. The parameter can be used to specify the periodic time of the sine function. A short periodic time	

Product-specific parameters

results in high acceleration values and a long periodic time in low ones. This does not have any effect on the velocity amplitude and offset of the sine function.



We recommend using the "automatic setting of axis control" wizard in "ctrlX DRIVE Engineering" because then the periodic time calculated for inertia determination will be the optimum one.

P-0-0161 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	ms	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: 2 / 4194304			Default value:	1000

3.2.38 P-0-0162, C1800 Drive optimization command**Allocation**

Hardware
Funct. package(s):
Device parameter:

Function

With this command, the automatic calculation and kinematic optimization of the velocity and position control loops (automatic control loop setting) is started.

This command starts the drive-internal (independent of master) command value input. Via the settings of "[P-0-0165](#), Drive optimization, control word", the following function is parameterized:

Automatic calculation and kinematic optimization of the velocity and position control loops ("automatic control loop setting").

NOTICE

Property damage in case of non-compliance with requirements when starting the command C1800!

Axis performs independent movements. By the initial position ensure that the axis does not reach the collision area of machine contours through the internally generated command value!

P-0-0162 - Attributes

Function:	Cmd	Editable:	SUBD:OM	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.2.39 P-0-0163, Damping factor for autom. controller setting**Allocation**

Hardware
Funct. package(s):
Device parameter:

Function

Parameter "[P-0-0163](#)" allows the user to adjust the control loop dynamics achieved by automatic controller setting.



[P-0-0163](#) = 10 \triangleq minimum dynamics

[P-0-0163](#) = 0.5 \triangleq maximum dynamics

P-0-0163 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: 0,5 / 10,0 Default value: 2,5

3.2.40 P-0-0164, Application for autom. controller setting

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	By means of selection of the parameter value, application-related control strategies can be taken into account in the automatic control loop settings. This enables, for example, complete deactivation of the I-term if required.	
Structure	The following parameters refer to the speed controller.	

P-0-0164	Application	I-term	P-term
0	Machine tool → Good load stability	with	normal
1	Nibble machine → Short settling times	without, Tn = 0ms	Big
2	Synchronously running separation equipment → Rel. undynam. controller adjust	without, Tn = 0ms	normal
3	Rollfeed → Very high load inertia	with	Big
4	Handling axis → Systems susceptible to vibration	with	Small

Tab. 3-31: Application-dependent speed controller setting



The table is extended by Bosch Rexroth as required.

As default application, a machine tool is applied.

P-0-0164 - Attributes	Function: Par	Editable: ALWAYS	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_OV
	Unit: --	Extr. val. ch.: +	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --

AXS: min./max.: 0 / 4 Default value: 0

3.2.41 P-0-0165, Drive optimization, control word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	By the start of "P-0-0162, C1800 Command Drive optimization", the drive becomes independent of the command values preset by the master and generates the required command value characteristic on its own. It is the basis for automatic setting of axis control with the following characteristics:	

- Calculating and optimizing the velocity control loop parameters
- Calculating and optimizing the position control loop parameters
- Measuring the frequency response
- Activating the velocity control loop filter
- Determining and storing the load inertia
- Calculating and storing the acceleration feedforward
- Calculating the maximum programmable acceleration
- Using offset for inertia determination
- Using travel distance (instead of position limits)

Product-specific parameters

Structure	Bit	Designation/function	Comment
	0	Optimization with drive enable 0: Off 1: On	
	1	Calculating and storing velocity controller parameters 0: no 1: yes (+ optimization with bit 0 = 1)	
	2	Calculating and storing position controller parameters 0: No 1: yes (+ optimization with bit 0 = 1)	
	3	Identifying the controlled velocity system with resonance and antiresonance frequencies by frequency response analysis 0: no 1: Yes	
	4	Using the velocity control loop filters for oscillation suppression in the resonance frequencies 0: no 1: Yes	
	5	Determining and storing the load inertia 0: Use value of "P-0-4010" 1: Determine	
	6	Determining the acceleration feedforward factor 0: no 1: Yes	
	7	Calculating the maximum programmable acceleration 0: no 1: yes	
	8	Offset for inertia determination 0: Inactive 1: Active	
	9	Determining the travel range 0: Input of limits 1: Input of travel distance	
	31-10	Reserved	

Use Automatic setting of axis control

Bit 2/1/0:

If bit 1 and/or bit 2 are/is equal to "1", the velocity controller and/or position controller parameters are calculated. If bit 0 is additionally set, the controller parameters are optimized; i.e., when command C1800 is started, the drive is internally set in motion and the velocity and/or position controller are/is optimized.

Bit 3: (only takes effect if bit 0 has been set)

If bit 3 has been set, the frequency response measurement is activated and the antiresonance and resonance frequencies are determined.

Bit 4: If bit 4 has been set, velocity control loop filters (2nd order filters) may be set and activated.

Bit 5: If bit 5 has been set, the drive is internally set in motion when command C1800 is started, and the load inertia determined is entered in parameter "[P-0-4010](#)". Otherwise, the value entered in parameter "[P-0-4010](#)" is used for calculation.

Bit 6: Setting bit 6 activates the determination of the acceleration feedforward factor.

Bit 7: Setting bit 7 activates the calculation of the maximum programmable acceleration.

Bit 8: (only takes effect if bit 0 and bit 5 have been set)

If bit 8 has been set, an offset is taken into account for the inertia determination. This does not violate the maximum velocity entered in parameter "[P-0-0171](#)". This offset prevents a sign change in the velocity profile.

Bit 9 (only takes effect if bit 0 has been set)

Setting bit 9 activates the travel distance (instead of position limits).

For "automatic setting of axis control", "[P-0-0165](#), bit 9" defines whether a relative travel distance or the absolute limits will be used. This information is obtained from the configuration of the drive ([S-0-0076](#) and [S-0-0393](#)).

The values for end positions or travel distance are set in the following parameters:

- [P-0-0166](#), Drive optimization, end position negative
- [P-0-0167](#), Drive optimization, end position positive
- [P-0-0169](#), Drive optimization, travel distance

P-0-0165 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: s. Text
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3.2.42 P-0-0166, Drive optimization, end position negative

Allocation Hardware --
 Funct. package(s):
 Device parameter:

Function This parameter is used to enter the negative end position of the travel range within which the axis may move if the drive-internal command value is specified by "[P-0-0162](#), C1800 Command Drive optimization".

"Automatic setting of axis control" requires value input only if "input of position limits" has been selected in parameter "[P-0-0165](#); bit 15".

⚠ WARNING

The limit entered may be exceeded due to overshoots in velocity control mode or deceleration processes in position control mode.

The limit entered should not be equal to the maximum possible mechanical travel range.

Product-specific parameters

P-0-0166 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0076 Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: 0

3.2.43 P-0-0167, Drive optimization, end position positive

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used to enter the positive end position of the travel range within which the axis may move if the drive-internal command value is specified by "P-0-0162, C1800 Command Drive optimization". "Automatic setting of axis control" requires value input only if "input of position limits" has been selected in parameter "P-0-0165; bit 15".	

⚠ WARNING

The limit entered may be exceeded due to overshoots in velocity control mode or deceleration processes in position control mode.

The limit entered should not be equal to the maximum possible mechanical travel range.

P-0-0167 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0076 Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: 0

3.2.44 P-0-0168, Maximum acceleration to be parameterized

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used to enter the maximum acceleration determined in the "automatic setting of axis control" (started by C1800) when "calculation of the maximum acceleration" was activated in "P-0-0165, Drive optimization, control word".	
 "P-0-0168" is a proposed value for later determination of the maximum acceleration values that can be specified in the operation modes.		

P-0-0168 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0160 Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: 0

3.2.45 P-0-0169, Drive optimization, travel distance

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter defines the maximum admissible travel distance of optimization motion at automatic setting of axis control.	

Use The value of "P-0-0169" is relevant only if travel distance input has been selected during determination of the travel range in "P-0-0165".

- The motion type and direction of motion are derived from the configuration of the drive (S-0-0076 and S-0-0393).
- If the motion direction can be selected as desired, the sign of the travel distance is evaluated.
- If the travel distance is in positive direction or the motion can only be made to the right, the travel range is spread in positive direction, starting at the current position.
- If the travel distance is in negative direction or the motion can only be made to the left, the travel range is spread in negative direction, starting at the current position.
- Since a safety reserve is taken into account, the actual travel range is less than the travel distance entered.

P-0-0169 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0076 Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: Set-depend.: --
AXS:		min./max.: s. Text / s. Text	Default value: 0

3.2.46 P-0-0170, Drive optimization, acceleration

Allocation Hardware
Funct. package(s):
Device parameter: --

Function In this parameter, enter the acceleration at which the axis is moved by a drive-internal position command value after starting via "P-0-0162, C1800 Command Drive optimization".

P-0-0170 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0160 Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: Set-depend.: --
AXS:		min./max.: s. Text / s. Text	Default value: 100000

3.2.47 P-0-0171, Drive optimization, velocity

Allocation Hardware
Funct. package(s):
Device parameter: --

Function In this parameter enter the velocity at which the axis is moved by the drive-internal command value after starting by "P-0-0162".

P-0-0171 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0044 Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: Set-depend.: --
AXS:		min./max.: s. Text / s. Text	Default value: 10000000

3.2.48 P-0-0177, Encoder 1, absolute encoder buffer

Allocation Hardware
Funct. package(s):
Device parameter: --

Function With an absolute encoder 1, current encoder data are saved when the. The saved data is displayed in this parameter. They are used for repeated position initialization when the drive is switched on the next time.

Product-specific parameters

The saved data are displayed in a list and cannot be interpreted by customers. They are used by service and development personnel for diagnostic purpose.

See also Functional Description "Monitoring the measuring systems"

P-0-0177 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte var.
Memory:	RETAIN_KUNDE	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---		Default value: ---	

3.2.49 P-0-0177.0.1, Encoder 1, absolute encoder buffer (static)**Allocation**

Hardware --
Funct. package(s):
Device parameter:
Alias: P-0-3819

Function

At absolute encoders, current data on scaling and mechanics are saved during execution of "[S-0-0447](#), C0300 Set absolute position procedure command" or "[S-0-0148](#), C0600 Drive-controlled homing procedure command" if but 7 of "[S-0-0448](#), Set absolute position control" is set. The saved data is displayed in this parameter. They are used for position monitoring at next initialization of the position feedback value of encoder 1.

The saved data are displayed in a list and cannot be interpreted by customers. They are used by service and development personnel for diagnostic purpose.

See also Functional Description "Monitoring the measuring systems"

P-0-0177.0.1 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---		Default value: s. Text	

3.2.50 P-0-0178, Encoder 2, absolute encoder buffer**Allocation**

Hardware --
Funct. package(s):
Device parameter:

Function

With an absolute encoder 2, current encoder data are saved when the drive is switched off. The saved data are displayed in this parameter. They are used for repeated position initialization and position monitoring when the drive is switched on the next time.

The saved data are displayed in a list and cannot be interpreted by customers. They are used by the service and development staff for diagnostic purposes.

See also Functional Description "Monitoring the measuring systems"

P-0-0178 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte var.
Memory:	RETAIN_KUNDE	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---		Default value: ---	

3.2.51 P-0-0178.0.1, Encoder 2, absolute encoder buffer (static)**Allocation**

Hardware --
Funct. package(s):
Device parameter:
Alias: P-0-3919

Function With absolute encoders, current scaling and mechanics data are saved during the execution of "[S-0-0447](#), C0300 Set absolute position procedure command" or "[S-0-0148](#), C0600 Drive-controlled homing procedure command", if bit 7 of "[S-0-0448](#), Set absolute position control" has been set. The saved data are displayed in this parameter. They are used for position monitoring at the next initialization of the position feedback value of encoder 2.

The saved data are displayed in a list and cannot be interpreted by customers. They are used by the service and development staff for diagnostic purposes.

See also Functional Description "Monitoring the measuring systems"

P-0-0178.0.1 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: s. Text

3.2.52 P-0-0180, Acceleration feedforward smoothing time constant

Allocation

Hardware
Funct. package(s):
Device parameter:

Function

The parameter permits filtering of

- the twofold differentiated position command value (cyclic position control)
- the differentiated velocity command value (velocity control)

using a 1st order low-pass filter to achieve acceleration feedforward that does not result in any impermissibly high excitation of the system, even if the position and/or velocity resolution is poor. The twofold differentiation may result in a very noisy feedforward value which, in turn, is used as the additive torque command value.

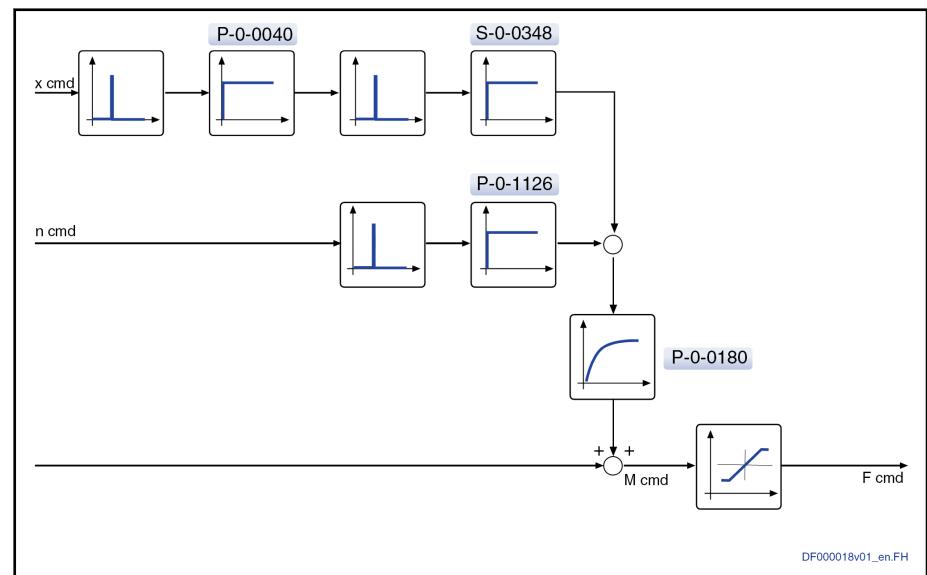


Fig. 3-6: Parameterizable filter cascade

See also Functional Description "Closed-loop axis control (closed-loop operation)"

Product-specific parameters

P-0-0180 - Attributes	Function: Par Memory: PARAM_SP Unit: us Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: Grp. 2
AXS:	min./max.: s. Text / 10000		Default value: 0

3.2.53 P-0-0181, Drive optimization: Antiresonance frequency

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Contains up to five antiresonance frequencies of the drive system, consisting of motor and mechanics. These system frequencies are used when the control parameters are calculated in the "automatic setting of axis control" function.	
Use	To determine the optimum control parameters for command "P-0-0162, C1800 Command Drive optimization/command value box", the antiresonance frequencies of the system are required. The antiresonance frequencies can be determined by means of a frequency response analysis. Antiresonance points usually occur briefly after resonance points in the frequency response and attenuate the amplitudes of the frequencies concerned. In order to determine the optimum control parameters, the antiresonance frequencies of the system are required for the command "P-0-0162" when "automatic setting of axis control" has been selected in "P-0-0165, Drive optimization, control word". The antiresonance frequencies can be determined by means of a frequency response analysis. Antiresonance points usually occur briefly after resonance points in the frequency response and attenuate the amplitudes of the frequencies concerned.	
 It is recommended to have the antiresonance frequencies automatically determined by the "frequency response analysis" or by the "automatic setting of axis control" wizard in "ctrlX DRIVE Engineering".		

P-0-0181 - Attributes	Function: Par Memory: PARAM_SP Unit: Hz Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte var. Format: DEC_OV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: 0,0 / 100000,0		Default value: s. Text

3.2.54 P-0-0182, Drive optimization: Resonance frequency

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Contains up to five resonance frequencies of the drive system, consisting of motor and mechanics. These system frequencies are used when the control parameters are calculated in the "automatic setting of axis control" function.	
Use	To determine the optimum control parameters for command "P-0-0162, C1800 Command Drive optimization/command value box", the resonance frequencies of the system are required. The resonance frequencies can be determined by means of a frequency response analysis. The resonance points should be attenuated by suitable filters of the velocity control loop. In order to determine the optimum control parameters, the resonance frequencies of the system are required for the command "P-0-0162" when "automatic setting of axis control" has been selected in "P-0-0165, Drive optimization, control word". The resonance frequencies can be determined by	

means of a frequency response analysis. The resonance points should be attenuated by suitable filters of the velocity control loop.



It is recommended to have the resonance frequencies automatically determined by the "frequency response analysis" or by the "automatic setting of axis control" wizard in "ctrlX DRIVE Engineering".

P-0-0182 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	Hz	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: 0,0 / 100000,0			Default value: s. Text

3.2.55 P-0-0184, Motor password

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

After a password has been entered, QSK motors can be operated on ctrl DRIVE. The display in "[P-0-0184](#)" is defined as follows:
0x00001: The entered password is valid.
0x00000: The entered password is invalid.



The functional principle of the parameter is documented only internally. Changes or evaluations are reserved to customer support.

P-0-0184 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---			Default value: ---

3.2.56 P-0-0185, Encoder 2 control word

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter is used to make basic settings for encoder 2.

- All operation modes are possible with encoder 2.
- The position feedback value is displayed in "[S-0-0053](#), Position feedback value of encoder 2".
- Encoder 2 is normally used to detect the position on the load side. If position control is closed using encoder 2, it acts as a "position control encoder".
- If the encoder 2 is a position control encoder without slip, it can be used for motor control in specific cases, see table below.
-

See also Functional Description "Monitoring the measuring systems".

See also Functional Description "Measuring wheel mode".

Product-specific parameters

Structure	Bit	Designation/function	Comment
	0	Feed constant 2 0: Not activated 1: Activated	
	2/1	Use of encoder 2 (position control) 00: Position control encoder 01: Reserved 10: Measuring wheel encoder 11: (Not allowed!)	
	8/4/3	Use of encoder 2 (special case motor control) 000: No motor control function of encoder 2 If encoder1/motor encoder available: 001: Encoder 2 is redundant motor control encoder 010: Encoder 2 is commutation initialization encoder 011: Encoder 2 is commutation initialization and redundant motor control encoder With a sensorless motor: 010: Encoder 2 is motor control encoder (commutation initialization with regard to P-0-0515, Commutation offset 2 with FW 20V12 and above) 100: Reserved 101: Reserved 110: Reserved 111: Reserved	
	5	Position data reference if "measuring wheel mode" activated 0: Encoder reference; position data reference of encoder 2 is deleted 1: Position status of encoder; position data reference of encoder 2 is retained	
	7	Encoder 2 mounting position 0: Load-side mounting 1: Actuator-side mounting	
	8	Special function: encoder 1 and encoder 2 as alternative motor control encoders, can be switched to "AF" 0: No special function 1: Special function, see bit 8/4/3 above	(not available)

Tab. 3-32: Relevante bits of P-0-0185

Use Observe the following aspects for parameterization:

- **Bit 2/1:**
 - If encoder 2 is used as a position control encoder, the effective feed constant, in the case of a rotary encoder and a linear axis, has to be entered in "[P-0-0123, Encoder 2 feed constant](#)" and activated (bit 0 = 1). The functions "encoder 2 as motor control

"encoder" and "redundant motor control encoder" can be used, but only if the feed constant is inactive (bit 0)!

- If encoder 2 is used as a spindle encoder, encoder monitoring is deactivated. Thus, the error reaction cannot be triggered if the maximum allowed encoder input frequency is exceeded (at high speeds).



If the maximum encoder input frequency reaches or exceeds the maximum frequency stored in the firmware, the reference is cleared. The position data reference has to be reestablished before drive enable is switched back on.

- If encoder 2 is used as a measuring wheel encoder, "encoder 2 as motor control encoder" at the same time is excluded. If the actual position value of the measuring wheel encoder is to be displayed in linear form, its feed constant has to be entered in "[P-0-0123, Encoder 2 feed constant](#)" and activated (bit 0 = 1). If the actual position value of the measuring wheel encoder is to be displayed in rotary form, the feed constant 2 remains inactive (bit 0 = 0, default).



If "measuring wheel encoder" has been selected, [S-0-0521](#), bit 1 = "1" is automatically set.

- With the "complex actuator" configuration ([P-0-0560](#), with functional package "Sytronix" only), encoder 2 can only be used as a "position control encoder"!

- **Bit 8/4/3 (bit 8 permanently set to "0")**

- Encoder 2 can only be used as a **motor control encoder** if encoder 2 is used as a "position control encoder" (bit 2/1).
- If "redundant motor control encoder" has been activated, it is possible to continue operating the drive after an error has occurred for encoder1/motor encoder! The warning "E2074, Encoder 1: encoder signals disturbed" is displayed. The "redundant motor control encoder" can be simultaneously used as a "commutation initialization encoder" for synchronous motors.
- Using encoder 2 as a "commutation initialization encoder" is generally possible with a position control encoder that can be evaluated in absolute form! In this case, the motor encoder of the synchronous motor can possibly be designed as a cost-saving, relative measuring system since the commutation initialization is carried out using encoder 2.
- It is advantageous to use encoder 2 as a "motor control encoder" in the case of sensorless motors! "Current control with motor encoder" has to be configured in "[P-0-0045, Control word of current controller](#)", "encoder1/motor encoder" cannot be configured (commutation initialization with regard to [P-0-0515, Commutation offset 2](#))



The "redundant motor control encoder" setting only makes sense for motors with encoder1/motor encoder!

Using encoder 2 as a "motor control encoder" is only possible if the connection between the motor and encoder 2 is without slip!

Product-specific parameters



- **Bit 5:** The position data reference can only be maintained in case the measuring wheel mode is activated/deactivated, if it is ensured that the mechanical reference of the position feedback value is not shifted from the measuring wheel encoder to the motor encoder or the material to be measured.



Risk of machine damage or rejects if the material position is not returned correctly due to slip effects between material and motor encoder.

P-0-0185 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--
AXS:		min./max.: --- / ---			
			Default value: 0x0		

3.2.57 P-0-0187, Position command processing mode

Allocation	Hardware Funct. package(s): Device parameter:	--												
Function	This parameter determines the behavior of the position command value processing in the "Position control" and "Drive-controlled position control" modes.													
Structure	See also Functional Description "Position control"													
	<table border="1"> <thead> <tr> <th>Bit</th><th>Designation/function</th><th>Comment</th></tr> </thead> <tbody> <tr> <td>1/0</td><td> Fine interpolation 00: linear fine interpolation 01: cubic approximation (default) 10: cubic fine interpolation according to contour </td><td></td></tr> <tr> <td>14-2</td><td>Reserved</td><td></td></tr> <tr> <td>15</td><td> Reaction to Excessive position command difference 0: Error F4037 (default) 1: Warning E4037 </td><td>from AXS-V-0304</td></tr> </tbody> </table>	Bit	Designation/function	Comment	1/0	Fine interpolation 00: linear fine interpolation 01: cubic approximation (default) 10: cubic fine interpolation according to contour		14-2	Reserved		15	Reaction to Excessive position command difference 0: Error F4037 (default) 1: Warning E4037	from AXS-V-0304	
Bit	Designation/function	Comment												
1/0	Fine interpolation 00: linear fine interpolation 01: cubic approximation (default) 10: cubic fine interpolation according to contour													
14-2	Reserved													
15	Reaction to Excessive position command difference 0: Error F4037 (default) 1: Warning E4037	from AXS-V-0304												

Tab. 3-33: Structure of parameter P-0-0187

⚠ CAUTION

The error case configured as warning means that triggering of the monitoring does not result in an error reaction in the drive anymore. In case there is no reaction by the higher-level control, the system/machine can be damaged or destroyed!

The higher-level control has to react system-specifically to triggering of the monitoring (error case).

Use For jerk-free motion in "position control" mode, the position command values transmitted via the command value channel are fine interpolated.

Bit 0-1 can be used to select the following types of interpolation:

- linear fine interpolation
- Cubic approximation
- cubic fine interpolation according to contour

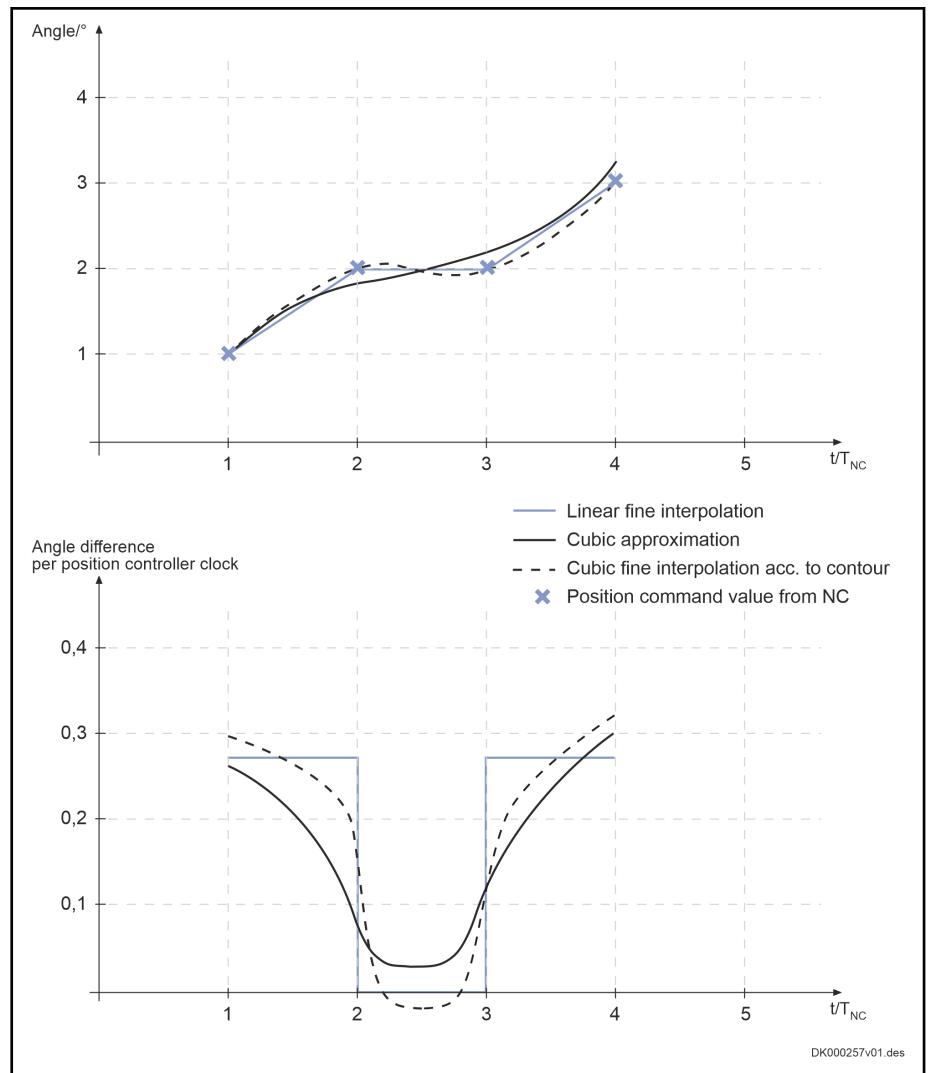


Fig. 3-7: Differences between the types of interpolation

Linear fine interpolation

The cyclically transmitted position command values ([S-0-0047](#)) are interpreted as being connected straightly.

Cubic approximation

The cyclically transmitted position command values ([S-0-0047](#)) are connected by a jerk-optimized polynomial. This can cause slight path deviations, because the main purpose of this type of interpolation is jerk limitation.

Cubic fine interpolation according to contour

The cyclically transmitted position command values ([S-0-0047](#)) are connected by a polynomial according to contour. In this case, it is impossible to generate a jerk-optimized path, because the main purpose is interpolation according to contour. This means the fine-interpolated position command value curve runs exactly through the cyclically transmitted position command values (data points).

Product-specific parameters

 In the case of "cubic approximation" and "cubic fine interpolation according to contour", only defined values are allowed for the clock ratio.

Clock ratios and NC cycle times in case of "cubic approximation" and "cubic fine interpolation according to contour"

$$\text{Clock ratio} = \text{NC_cycle_time} (\text{S-0-0001}) / T_{a_Position}$$

Clock ratio	supported NC cycle times
1 to 8 - steps of one (1,2,3,4,5,6,7,8)	125 µs, 250 µs, 375 µs, 500 µs, 625 µs, 750 µs, 875 µs, 1000 µs
10 to 16 - steps of two (10, 12, 14, 16)	1.25 ms, 1.5 ms, 1.75 ms, 2.0 ms
20 to 32 - steps of four (20, 24, 28, 32)	2.5 ms, 3.0 ms, 3.5 ms, 4 ms

Tab. 3-34: Supported NC cycle times for position clock $T_{a_Position} = 125 \mu s$

Clock ratio	supported NC cycle times
1 to 8 - steps of one (1,2,3,4,5,6,7,8)	250 µs, 500 µs, 750 µs, 1000 µs, 1,25 ms, 1,5 ms, 1,75 ms, 2,0 ms
10 to 16 - steps of two (10, 12, 14, 16)	2,5 ms, 3,0 ms, 3,5 ms, 4,0 ms
20 to 32 - steps of four (20, 24, 28, 32)	5,0 ms, 6,0 ms, 7,0 ms, 8,0 ms

Tab. 3-35: Supported NC cycle times for position clock $T_{a_Position} = 250 \mu s$

P-0-0187 - Attributes	Function: Par	Editable: SUBD:CM+PM	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: BIN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: 0x1

3.2.58 P-0-0189, Debug output: IDN list of last saved parameters

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter shows the IDNs for which storage jobs were generated. Here, it must be noted that storage jobs are only generated if "S-0-0269, Storage mode" is equal to "0". In addition, the generation of a storage job requires that the parameter value be actually changed.	
	The content of the parameter takes the form of an IDN list with element 0 containing the latest entry and the end of the list containing the oldest entry. The entries in the IDN list are each made after the storage process is started.	
P-0-0189 - Attributes	Function: Par	Editable: --
	Memory: --	Validity ch.: --
	Unit: --	Extr. val. ch.: --
	Cycl. tra.: --	Comb. check: --
AXS:		min./max.: --- / ---
		Default value: ---

3.2.59 P-0-0189.0.1, Debug output: Number of pending buffer requests

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The number of pending buffer requests is displayed.	

The detailed functional principle of the parameter is documented only internally. Changes or evaluations are reserved to customer support.

P-0-0189.0.1 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	RETAIN_GERAET	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.2.60 P-0-0190, Operating hours control section

Allocation

Hardware	--
Funct. package(s):	--
Device parameter:	--

Function

In this parameter, the operating time of the control section of the drive is displayed. The total duty cycle of the control electronics since supply of the device can be displayed. In case of an error in class 1 diagnostics, the contents of this parameters are saved at the first position in parameter "P-0-0193, Error memory operating hours of control section".



The value is displayed in seconds and is saved on the control unit section.

See also Functional Description "Operating hours counter"

P-0-0190 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	RETAIN_GERAET	Validity ch.:	--	Format:	DEC_OV
Unit:	s	Extr. val. ch.:	--	Decim. pl.:	1
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.2.61 P-0-0191, Activity hours counter

Allocation

Hardware	--
Funct. package(s):	--
Device parameter:	--

Function

"P-0-2602.80.22" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).

P-0-0191 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	COMPONENT_SP	Validity ch.:	--	Format:	DEC_OV
Unit:	s	Extr. val. ch.:	--	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.2.62 P-0-0192, Error memory of diagnostic numbers

Allocation

Hardware	--
Funct. package(s):	--
Device parameter:	--

Function

If an error of class 1 diagnostics is recognized by the drive, a bit is set in parameter "S-0-0011, Class 1 diagnostics". In the drive status word, bit 13 is set for "error in class 1 diagnostics".

See also Functional Description "Error memory (power section and control section)"

Use

To allow more detailed diagnostics

- the diagnostic message number appears on the display and is stored in parameter "S-0-0390, Diagnostic message number",
- the plain text of the diagnostic message is stored in parameter "S-0-0095, Diagnostic message",

Product-specific parameters

- the corresponding error number is stored in parameter "P-0-0009, Error number".

The diagnostic message number of the fault stored in "[S-0-0390](#), Diagnostic message number" is also stored in parameter "P-0-0192, Error memory of diagnostic numbers". This parameter has a stack structure and contains, in chronological order, diagnostic message numbers of the previous 50 errors that occurred. The last error that occurred is entered at the top.



The parameter is saved in the control section.

See also "[P-0-0193](#), Error memory operating hours of control section"

P-0-0192 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	ON_BOARD_SP	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.2.63 P-0-0193, Error memory operating hours of control section

Allocation

Hardware
Funct. package(s):
Device parameter:

Function

If an error of class 1 diagnostics is recognized by the drive, a bit is set in parameter "[S-0-0011](#), Class 1 diagnostics". In the drive status word, bit 13 is set for "error in class 1 diagnostics".

See also Functional Description "Error memory (power section and control section)"

Use

To allow more detailed diagnostics

- the diagnostic message number appears on the display and is stored in parameter "[S-0-0390](#), Diagnostic message number",
- the plain text of the diagnostic message is stored in parameter "[S-0-0095](#), Diagnostic message",
- the corresponding error number is stored in parameter "P-0-0009, Error number".

The status of parameter "P-0-0190, Operating hours control section" at the time the error is detected is stored in parameter "[P-0-0193](#), Error memory operating hours of control section". This parameter has a stack structure and contains, in chronological order, the operating hour counts of the previous 50 errors that occurred. The count of the last error that occurred is entered at the top.



The parameter is saved in the control section.

See also "[P-0-0192](#), Error memory of diagnostic numbers"

P-0-0193 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	ON_BOARD_SP	Validity ch.:	--	Format:	DEC_OV
Unit:	s	Extr. val. ch.:	--	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.2.64 P-0-0195, IDN list of retain data (replacement of devices)

Allocation

Hardware
Funct. package(s):
Device parameter:

Function In this list, the IDNs of those parameters are stored the values of which are required for replacement of devices.

The parameter values of the IDNs listed in "P-0-0195":

- may only be loaded after a defective controller has been replaced and
- have to be saved directly before the device is replaced

Otherwise the current parameter values of target position, absolute encoder, etc. are overwritten with old values which can cause incorrect drive behavior!

NOTICE

Property damage caused by errors when controlling motors and moving parts!

After having loaded the parameter values according to the IDN list of retain data (P-0-0195), check the actual position values and the current target position!

P-0-0195 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	--	Validity ch.:	--	Format:	IDN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

3.2.65 P-0-0195.0.1, Parameter Retain, new PBF image transaction ID in flash

Allocation

Hardware
Funct. package(s):
Device parameter:

Function

This parameter displays the transaction ID under which the retain data are saved when voltage fails the next time.

The detailed functional principle of the parameter is documented only internally. Changes or evaluations are reserved to customer support.

P-0-0195.0.1 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	ON_BOARD_SP	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

3.2.66 P-0-0195.0.2, Parameter Retain, command PBF image transaction ID in flash

Allocation

Hardware
Funct. package(s):
Device parameter:

Function

This parameter displays the transaction ID under which the retain data should have been saved when voltage failed the last time.

The functional principle of the parameter is documented only internally. Changes or evaluations are reserved to customer support.

P-0-0195.0.2 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

Product-specific parameters

3.2.67 P-0-0195.0.3, Parameter Retain, actual PBF image transaction ID in flash

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter displays the transaction ID under which the retain data were last saved.	The functional principle of the parameter is documented only internally. Changes or evaluations are reserved to customer support.	
P-0-0195.0.3 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.2.68 P-0-0196.x.0, Additional information of control section firmware

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	From this parameter, the build date and the build time of the drive firmware can be read.	See also Functional Description "System Overview"	
P-0-0196.x.0 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.3 P-0-0200 to P-0-0499 General functions

3.3.1 P-0-0200, Start position probe function 2 active

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter is used for setting the lower limit value of the "expectation window" for probe 2. The "expectation window" sets the limits of the position range of an axis or shaft within which probe signal edges cause measured values to be recorded.	The "expectation window" has to be activated in " P-0-0226 , Probe, extended control word".	
 The "expectation window" cannot be used with time measurement!			
See also Functional Description "Probe function"			
P-0-0200 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0076 Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: 0

3.3.2 P-0-0201, End position probe function 2 active

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used for setting the upper limit value of the "expectation window" for probe 2. The "expectation window" sets the limits of the position range of an axis or shaft within which probe signal edges cause measured values to be recorded. The "expectation window" has to be activated in " P-0-0226 , Probe, extended control word".	



The "expectation window" cannot be used with time measurement!

See also Functional Description "Probe function"

P-0-0201 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	--	Decim. pl.:	--
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: 0
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3.3.3 P-0-0202, Difference probe values 1

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter displays the absolute value of the difference between " S-0-0130 , Probe value 1 positive edge" and " S-0-0131 , Probe value 1 negative edge". The value is recalculated every time a new probe value 1, positive or negative, is recorded.	
Use	For determining " P-0-0202 ", axes with a finite travel range have to be distinguished from axes with an infinite travel range:	
	<ul style="list-style-type: none"> Axes with a finite travel range (e.g., linear axes, absolute position data format) 	

$$P-0-0202 = | S-0-0130 - S-0-0131 |$$

Fig. 3-8: Calculating P-0-0202 for axes with a finite travel range

- Axes with an infinite travel range (e.g., rotary axes, position data in modulo format). In this case, the difference of the measured values is limited to half the value of the measuring signal's modulo value. "[P-0-0202](#)" is determined depending on the absolute value of the measured value difference:

$$P-0-0202 = | S-0-0130 - S-0-0131 |$$

Fig. 3-9: Calculating P-0-0202 for axes with an infinite travel range, if $| S-0-0130 - S-0-0131 | \leq (\text{modulo value} / 2)$

$$P-0-0202 = | | S-0-0130 - S-0-0131 | - \text{modulo value} |$$

Fig. 3-10: Calculating P-0-0202 for axes with an infinite travel range, if $| S-0-0130 - S-0-0131 | > (\text{modulo value} / 2)$

Product-specific parameters

P-0-0202 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 4 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.3.4 P-0-0203, Difference probe values 2

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter displays the absolute value of the difference between "S-0-0132, Probe value 2 positive edge" and "S-0-0133, Probe value 2 negative edge". The value is recalculated every time a new probe value 2, positive or negative, is recorded.	
Use	See also Functional Description "Probe function" For determining "P-0-0203", axes with a finite travel range have to be distinguished from axes with an infinite travel range: <ul style="list-style-type: none">• Axes with a finite travel range (e.g., linear axes, absolute position data format)	

$$P-0-0203 = | S-0-0132 - S-0-0133 |$$

Fig. 3-11: Calculating P-0-0203 for axes with a finite travel range

- Axes with an infinite travel range (e.g., rotary axes, position data in modulo format).

In this case, the difference of the measured values is limited to half the value of the measuring signal's modulo value. "P-0-0203" is determined depending on the absolute value of the measured value difference:

$$P-0-0203 = | S-0-0132 - S-0-0133 |$$

Fig. 3-12: Calculating P-0-0203 for axes with an infinite travel range, if $| S-0-0132 - S-0-0133 | \leq (\text{modulo value} / 2)$

$$P-0-0203 = || S-0-0132 - S-0-0133 | - \text{modulo value} |$$

Fig. 3-13: Calculating P-0-0203 for axes with an infinite travel range, if $| S-0-0132 - S-0-0133 | > (\text{modulo value} / 2)$

P-0-0203 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 4 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.3.5 P-0-0204, Start position probe function 1 active

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used for setting the lower limit value of the "expectation window" for probe 1. The "expectation window" sets the limits of the position range of an axis or shaft within which probe signal edges cause measured values to be recorded.	

The "expectation window" has to be activated in "[P-0-0226](#), Probe, extended control word".



The "expectation window" cannot be used with time measurement!

See also Functional Description "Probe function"

P-0-0204 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: --- / ---				Default value: 0

3.3.6 P-0-0205, End position probe function 1 active

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter is used for setting the upper limit value of the "expectation window" for probe 1. The "expectation window" sets the limits of the position range of an axis or shaft within which probe signal edges cause measured values to be recorded.

The "expectation window" has to be activated in "[P-0-0226](#), Probe, extended control word".



The "expectation window" cannot be used with time measurement!

See also Functional Description "Probe function"

P-0-0205 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: --- / ---				Default value: 0

3.3.7 P-0-0206, Probe 1, max. number of marker failures

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

The value entered in this parameter is a threshold for the recorded number of marker failures.

The number of times the expectation window is run through, successively and without a marker event, is added and displayed in "[P-0-0224](#), Probe 1, number of marker failures". When the value in "[P-0-0224](#)" reaches the value of "[P-0-0206](#)", this is signaled in the corresponding bit of "[S-0-0179](#), Probe status".



The display in "[S-0-0179](#)" only occurs if marker failure monitoring has been activated for probe 1 in "[P-0-0226](#), Probe, extended control word"!

See also Functional Description "Probe function"

P-0-0206 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--

Product-specific parameters

AXS:	min./max.: --- / ---	Default value: 0
------	----------------------	------------------

3.3.8 P-0-0207, Probe 2, max. number of marker failures

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The value entered in this parameter is a threshold for the recorded number of marker failures.	
Use	The number of times the expectation window is run through, successively and without a marker event, is added and displayed in " P-0-0225 , Probe 2, number of marker failures". When the value in " P-0-0225 " reaches the value of " P-0-0207 ", this is signaled in the corresponding bit of " S-0-0179 , Probe status".	

 The display in "[S-0-0179](#)" only occurs if marker failure monitoring has been activated for probe 2 in "[P-0-0226](#), Probe, extended control word"!

P-0-0207 - Attributes	Function: Par	Editable: --	ALWAYS	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM		Format: DEC_OV
	Unit: --	Extr. val. ch.: --		Decim. pl.: 0
	Cycl. tra.: AT + MDT	Comb. check: --		Set-depend.: --

AXS:	min./max.: --- / ---	Default value: 0
------	----------------------	------------------

3.3.9 P-0-0208, DA: Analog input 2

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Using this parameter, the value currently present at "analog input 2" of the optional module "DA" can be displayed as input voltage in volt or as input current in mA, depending on " P-0-2900.2.1 , Analog input, control word". The parameter value is updated in the controller cycle or every 2ms.	

 This analog input is available only when an optional module "DA" has been configured!

Use	See also Functional Description "Analog inputs"	--
	The parameter content can be, for example, <ul style="list-style-type: none"> • directly processed in the internal PLC. • transmitted cyclically to the control. • or assigned to an internal drive parameter using "P-0-2900.2.2, Analog input, target parameter". 	

 The assigned parameters are updated depending on the setting in "[P-0-2900.2.1](#), Analog input, control word"

P-0-0208 - Attributes	Function: Par	Editable: --	Data length: 2Byte	
	Memory: --	Validity ch.: --	Format: DEC_MV	
	Unit: V	Extr. val. ch.: --	Decim. pl.: 3	
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --	

AXS:	min./max.: --- / ---	Default value: ---
------	----------------------	--------------------

3.3.10 P-0-0210, Analog input 1

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used to display the input voltage in volts currently applied to analog input 1. The parameter value is updated in the controller cycle or every 2ms. See also Functional Description "Analog inputs"	
Use	The parameter content can be <ul style="list-style-type: none">• transferred cyclically to the control,• or assigned to an internal drive parameter using "P-0-2900.0.2, Analog input, target parameter".	



The assigned parameters are updated depending on the setting in [P-0-2900.0.1](#), Analog input, control word.

P-0-0210 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	V	Extr. val. ch.:	--	Decim. pl.:	3
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: ---

3.3.11 P-0-0212, Analog input, list of assignable parameters

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This list parameter contains the IDNs of the parameters that can be entered in the parameter " P-0-2900.x.2 Analog input, target parameter". These parameters are available for assigning an analog input value. See also Functional Description "Analog inputs"		
P-0-0212 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: IDN Decim. pl.: 0 Set-depend.: --

AXS:

min./max.: --- / ---

Default value: ---

3.3.12 P-0-0221.0.1, HV discharge, configuration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Configuration of the DC bus discharge (HV discharge) for drive controllers for mobile work machines.	

Product-specific parameters

Structure	Bit	Designation/function	Comment
	0	Edge detection bit 0. Actuating the digital input 0: An 1->0 edge of the control bit in parameter P-0-0221.0.2 starts the HV discharge 1: An 1->0 edge of the control bit in parameter P-0-0221.0.2 starts the HV discharge	
	1	HV discharge 0: Not active 1: Active	

Tab. 3-36: Relevant bits of P-0-0221.0.1

P-0-0221.0.1 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: --- / ---				Default value: 0x0

3.3.13 P-0-0221.0.2, HV discharge control word

Allocation	Hardware Funct. package(s): Device parameter:	--						
Function	Control word to start the DC bus discharge (HV discharge) for drive controllers for mobile work machines. The control word can be configured to the digital input or in the signal control word.							
Structure	<table border="1"> <thead> <tr> <th>Bit</th> <th>Designation/function</th> <th>Comment</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>HV discharge start via the digital input 1->0 edge or 0->1 edge depending on the configuration in P-0-0221.0.1</td> <td></td> </tr> </tbody> </table>		Bit	Designation/function	Comment	0	HV discharge start via the digital input 1->0 edge or 0->1 edge depending on the configuration in P-0-0221.0.1	
Bit	Designation/function	Comment						
0	HV discharge start via the digital input 1->0 edge or 0->1 edge depending on the configuration in P-0-0221.0.1							

Tab. 3-37: Relevant bits of P-0-0221.0.2

P-0-0221.0.2 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: --- / ---				Default value: ---

3.3.14 P-0-0221.0.3, HV discharge status word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Status word of the DC bus discharge (HV discharge) in drive controller for mobile work machines.	

Structure	Bit	Designation/function	Comment
	0	HV discharge 0: Not controlled - The discharging resistor is disabled 1: controlled - The discharging resistor is enabled	
	1	HV discharge 0: Not enabled or the DC bus voltage is still greater than 50V 1: By using the HV discharge, the DC bus is discharged to less than 50V	

Tab. 3-38: Relevant bits of P-0-0221.0.3

P-0-0221.0.3 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---			
Default value: ---					

3.3.15 P-0-0221.0.4, HV discharge, lower speed threshold**Allocation**

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter is used to define the speed (amount) according to the "Short circuit torque characteristics via speed", below which the short circuit torque takes a critical value.

In case of motor phase short circuit, the motors generate a relatively high short circuit torque at low speeds. That is why upon activation of the "HV discharge" during travel, the motor phase short circuit must not be selected and/or must be canceled below a certain speed for vehicles for which there is a tipping hazard.



If the parameter is set to zero, the short circuit will persist until standstill.



This threshold will only take effect in case of motor phase short circuit due to the "HV discharge". It will not take effect in case of motor phase short circuit due to an F8 error reaction.

P-0-0221.0.4 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	s. text	Extr. val. ch.:	+	Decim. pl.:	
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---			
Default value: s. Text					

3.3.16 P-0-0222, Travel range limit switch inputs**Allocation**

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter is used to display the signals of the travel range limit switch inputs. It serves for diagnostics of the travel range limit switch inputs.

Product-specific parameters

Structure	Bit	Designation/function	Comment
	0	Signal "Limit switch +" 0: 0 V 1: +24 V	
	1	Signal "Limit switch -" 0: 0 V 1: +24 V	

Tab. 3-39: Relevant bits of P-0-0222, Travel range limit switch inputs

 When activating the travel range limit switches, the respective digital inputs at the control section have to be already assigned via "P-0-0300" and "P-0-0301" to the respective bits of "P-0-0222". This has been implemented as the default setting!

P-0-0222 - Attributes	Function:	Par	Editable:	ALWAYS	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	BIN
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:			min./max.: --- / ---		Default value: ---	

3.3.17 P-0-0223, E-Stop input

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The state of the E-stop input is mapped in this parameter. The parameter can be used to check the "E-Stop input" or for visualization via a commissioning program.	
See also Functional Description "E-Stop function"		
Structure		
	Bit	Designation/function
	0	E-stop input state 0: Activated (0 V) 1: Not activated (+24 V)

Tab. 3-40: Structure of parameter "P-0-0223, E-Stop input"

Use 24 V must be applied to the hardware input to allow operation of the drive. If the "E-Stop function" is activated, "bit 0" of this parameter must be assigned to a digital input. The assignment to a digital input is made via the I/O configuration in parameter "P-0-0300, Digital inputs, assignment list".

P-0-0223 - Attributes	Function:	Par	Editable:	ALWAYS	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	BIN
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:			min./max.: --- / ---		Default value: ---	

3.3.18 P-0-0224, Probe 1, number of marker failures

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	An expectation window may be defined for probe 1. The probe edges have to be within this window so that they can be evaluated.	

If the "expectation window" has been activated, a "trigger marker failure monitoring function" can be activated in "[P-0-0226](#), Probe, extended control word". The monitoring function records the expectation window being run through without a marker event and increments the content of "[P-0-0224](#), Probe 1, number of marker failures".

See also Functional Description "Probe function"

Use The content of "[P-0-0224](#)" is reset to "0" when

- a marker was detected within the expectation window,
- "[P-0-0226](#), Probe, extended control word" is written,
- "[S-0-0170](#), Probing cycle procedure command" is started or
- probe enable is removed in "[S-0-0405](#), Probe 1 enable"

P-0-0224 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: ---

3.3.19 P-0-0225, Probe 2, number of marker failures

Allocation Hardware --

Funct. package(s):

Device parameter:

Function An expectation window may be defined for probe 2. The probe edges have to be within this window so that they can be evaluated.

If the "expectation window" has been activated, a "marker failure monitoring function" can be activated in "[P-0-0226](#), Probe, extended control word". The monitoring function records the expectation window being run through without a marker event and increments the content of "[P-0-0225](#), Probe 2, number of marker failures".

See also Functional Description "Probe function"

Use The content of "[P-0-0225](#)" is reset to "0" when

- a marker was detected within the expectation window,
- "[P-0-0226](#), Probe, extended control word" is written,
- "[S-0-0170](#), Probing cycle procedure command" is started or
- probe enable is removed in "[S-0-0406](#), Probe 2 enable"

P-0-0225 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: ---

3.3.20 P-0-0226, Probe, extended control word

Allocation Hardware --

Funct. package(s):

Device parameter:

Function The probe function specified according to Sercos is configured and activated via "[S-0-0169](#), Probe control parameter". In "[P-0-0226](#)" it is possible to configure extended, manufacturer-specific functionalities of the probe function, such as:

- Time measurement
- Expectation window and marker failure monitoring

Product-specific parameters

- Triggering 2 probe evaluations through one probe input only
- Via this parameter, it is also possible to activate the probe-triggered "quick stop" of an axis

See also Functional Description "Probe function"

See also Functional Description "Quick stop via probe input"

Structure

Bit	Designation/function	Comment
0	Expectation window for probe 1 0: Without expectation window 1: With expectation window	
1	Marker failure monitoring for probe 1 0: Disabled 1: Switched on	
2	Activation of time measurement for probe 1 0: Measurement of selected signals 1: Time measurement	
3	Configuration probe 1 quick stop 0: Not activated 1: Probe 1 quick stop configuration activated.	
4	Expectation window for probe 2 0: Without expectation window 1: With expectation window	
5	Marker failure monitoring for probe 2 0: Disabled 1: Switched on	
6	Activation of time measurement for probe 2 0: Measurement of selected signals 1: Time measurement	
10	Configuration of the signal edge for triggering the quick stop of probe 1 Prerequisite: Bit 3 is set and the subsequently selected signal edge is configured in " S-0-0169 , Probe control word". 0: Switching to speed cmd value = 0 at a 0 -> 1 (positive) edge 1: Switching to speed cmd value = 0 at a 1 -> 0 (negative) edge See also configuration " P-0-0119 , Best possible deceleration"	
11	Activating switch-on level monitoring for probe 1 with single measurement configured for a signal edge 0: Switch-on level monitoring not active 1: Switch-on level monitoring active	

Tab. 3-41: *P-0-0226, Probe, extended control word*

- Use**
- **Bit 0 and bit 4: Activating expectation window for probe 1 and 2**
Via bit 0 or bit 4 it is possible to activate an expectation window for probe 1 or probe 2 within which the selected edges of the probe signal (marker) have to occur in order to be detected. The expectation window is defined with the parameters "[P-0-0204](#), Start position probe function 1 active" and "[P-0-0205](#), End position probe function 1 active".
 - **Bit 1 and bit 5: Marker failure monitoring for probe 1 and 2**
With marker failure monitoring for probe1 or 2 switched on, [P-0-0224](#)/0225, Probe 1/2, number of marker failures is incremented by 1, if the selected signal passes through the expectation window without a probe signal (marker) having occurred. If marker failure monitoring has been switched off, the value in "[P-0-0224](#)" or "[P-0-0225](#)" is not incremented by 1 in the above case.
 - **Bit 2 and bit 6: Activation of time measurement for probe 1 and 2**
If this bit has been set to 1, relative time measurement takes place when a selected edge occurs. The signal selected in [S-0-0426](#)/0427, Signal select probe 1/2 is ignored.
 - **Bit 3: Activating quick stop at probe 1 configuration**
If bit 3 has been set, the drive carries out velocity command value reset via the signal edge of the activated enabled probe 1 ([S-0-0401](#)) defined in bit 10. The velocity command value reset, with or without configurable ramp, is configured in parameter "[P-0-0119](#), Best possible deceleration". With active velocity command value reset, the drive - in case of "quick stop" probe - will display "AR: Automatic drive reaction". When "[S-0-0405](#), Probe 1 enable" is removed, the preselected operation mode becomes active again.
 - **Bit 10: Configuring signal edge for triggering probe 1 quick stop**
Bit 10 is used to specify, if bit 3 has been set, at which signal edge at probe 1 input the "quick stop" at probe 1 is to be triggered. **Prerequisite:** The selected signal edge has been configured in "[S-0-0169](#), Probe control word".
 - **Bit 11: Activating switch-on level monitoring for probe 1 with single measurement configured for a signal edge**
Setting bit 11 activates state monitoring of the probe 1 input ([S-0-0401](#), Probe 1) at activation of probe 1 enable ([S-0-0405](#), Probe 1 enable).
 - Requirements for state monitoring:
 1. "[S-0-0169](#), Probe control parameter" has been configured for probe 1 single measurement,
 2. "[S-0-0169](#), Probe control parameter" has only been configured for evaluating one edge (positive or negative) of probe 1.
- If the requirements have been complied with, the following aspects apply:
- Positive signal edge evaluation configured: With activation of probe 1 enable, a one-time check for "[S-0-0401](#), Probe 1" = 1 (24V) is carried out. If the state of "[S-0-0401](#)" is 1 (24V), the error "F2131 Incorrect switching state of probe 1 input signal" is generated.
 - Negative signal edge evaluation configured: With activation of probe 1 enable, a one-time check for "[S-0-0401](#), Probe 1" = 0 (0V wire break monitoring) is carried out. If the state of "[S-0-0401](#)" is 0 (0V), the error "F2131 Incorrect switching state of probe 1 input signal" is generated.

Product-specific parameters

P-0-0226 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: +	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: 0x0

3.3.21 P-0-0228, DA: Analog input 3

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Using this parameter, the value currently present at "analog input 3" of the optional module "DA" can be displayed as input voltage in volt or as input current in mA, depending on " P-0-2900.3.1, Analog input, control word ". The parameter value is updated in the controller cycle or every 2ms.	
 This analog input is available only when an optional module "DA" has been configured!		
See also Functional Description "Analog inputs"		
Use	The parameter content can be, for example,	
	<ul style="list-style-type: none"> • directly processed in the internal PLC. • transferred cyclically to the control. • or assigned to an internal drive parameter using "P-0-2900.3.2, Analog input, target parameter". 	
 The assigned parameters are updated depending on the setting in " P-0-2900.3.1, Analog input, control word "		

P-0-0228 - Attributes	Function: Par Memory: -- Unit: V Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.3.22 P-0-0229, DA: Analog input 1

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Using this parameter, the value currently present at "analog input 1" of the optional module "DA" can be displayed as input voltage in volt or as input current in mA, depending on " P-0-2900.1.1, Analog input, control word ". The parameter value is updated in the controller cycle or every 2ms.	
 This analog input is available only when an optional module "DA" has been configured!		
See also Functional Description "Analog inputs"		

Use	The parameter content can be, for example,
	<ul style="list-style-type: none"> • directly processed in the internal PLC. • transferred cyclically to the control. • or assigned to an internal drive parameter using "P-0-2900.1.2, Analog input, target parameter".

 The assigned parameters are updated depending on the setting in "P-0-2900.1.1, Analog input, control word"

P-0-0229 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	V	Extr. val. ch.:	--	Decim. pl.:	3
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

3.3.23 P-0-0240, Position command value balancing filter, time constant**Allocation**

Hardware --
Funct. package(s):
Device parameter:

Function

The position command value of controller can be smoothed by means of a PT1 filter.

Filtering is only carried out with active velocity feedforward (position operation mode with feedforward and evaluation in [P-0-0040](#) greater than 0.)



The Filter is used with reference model for velocity control.

P-0-0240 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	us	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: 0 / 10000 Default value: 0

3.3.24 P-0-0241, Actual pos. smoothing time constant for hybrid pos. control**Allocation**

Hardware --
Funct. package(s):
Device parameter:

Function

In hybrid position control (e.g., measuring wheel mode), the entered time constant is used to filter the position feedback difference between encoder 2 and encoder 1 via a 1st order low-pass filter.



Writing the value "0" to the parameter ([P-0-0241](#)) deactivates the filter.

See also functional description "Measuring wheel mode"

P-0-0241 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	ms	Extr. val. ch.:	+	Decim. pl.:	2
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: s. Text / s. Text Default value: 0,00

3.3.25 P-0-0242, Current actual slip value**Allocation**

Hardware --
Funct. package(s):
Device parameter:

Function

With slip monitoring active, this parameter displays the current actual slip value between encoder 1 ([S-0-0051](#)) and encoder 2 ([S-0-0053](#)). The value is specified in percent.

Product-specific parameters



The monitoring function is only active when drive enable has been set. If encoder 2 has been configured as a measuring wheel encoder ([P-0-0185](#)), the monitoring function is only active when control with encoder 2 has been preselected ([S-0-0520](#); bit 0 = 1). When the monitoring function is activated, "0" is written to the value.

See also functional description "Measuring wheel mode"

See also Functional Description "Monitoring the measuring systems"

P-0-0242 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	%	Extr. val. ch.:	--	Decim. pl.:	1
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

3.3.26 P-0-0243, Maximum occurred actual slip value

Allocation Hardware
Funct. package(s):
Device parameter:

Function This parameter stores the maximum actual slip value that occurred between encoder 1 ([S-0-0051](#)) and encoder 2 ([S-0-0053](#)). The current actual slip value is displayed in percent in "[P-0-0242](#)".

The monitoring function is only active when drive enable has been set. If encoder 2 has been configured as a measuring wheel encoder ([P-0-0185](#)), the monitoring function is only active when control with encoder 2 has been preselected ([S-0-0520](#); bit 0 = 1). When the monitoring function is activated, "0" is written to the value.

See also functional description "Measuring wheel mode"

See also Functional Description "Monitoring the measuring systems"

P-0-0243 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	%	Extr. val. ch.:	--	Decim. pl.:	1
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

3.3.27 P-0-0244, Monitoring window of slip

Allocation Hardware
Funct. package(s):
Device parameter:

Function This parameter defines the monitoring threshold for the maximum allowed actual slip value between encoder 1 ([S-0-0051](#)) and encoder 2 ([S-0-0053](#)). When the value is exceeded, the error message F2036 is generated.

The monitoring function is only active when drive enable has been set. If encoder 2 has been configured as a measuring wheel encoder ([P-0-0185](#)), the monitoring function is only active when control with encoder 2 has been preselected ([S-0-0520](#); bit 0 = 1). When the monitoring function is activated, "0" is written to the value.

See also functional description "Measuring wheel mode"

See also Functional Description "Monitoring the measuring systems"

P-0-0244 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	%	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: 0,0 / 2000,0	Default value: 0,0
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3.3.28 P-0-0250, System identification

Allocation

Hardware	--
Funct. package(s):	
Device parameter:	

Function

Parameter for entering the system identification at mechatronic systems. The parameter is not used by the drive for operation and can be used by a higher-order control as desired.

- The UTF-8 character set can be written to this parameter.
- Size in number of bytes: 64
- A UTF-8 character can have a size of 1 to 3 bytes.
- The number of characters that can be entered may be less, depending on the UTF-8 characters used.
- For loading the default values, the parameter is emptied (actual length = 0).

P-0-0250 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	1Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	ASCII
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: s. Text
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3.3.29 P-0-0250.0.1, System data

Allocation

Hardware	--
Funct. package(s):	
Device parameter:	
Alias:	P-0-2320

Function

Parameter for entering the system identification at mechatronic systems. The parameter is not used by the drive for operation and can be used by a higher-order control as desired.



The parameter can receive 40 elements of 32-bit size.

P-0-0250.0.1 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: s. Text
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3.3.30 P-0-0250.0.10, ctrlX DRIVE Engineering view manager

Allocation

Hardware	--
Funct. package(s):	
Device parameter:	
Alias:	P-0-2759

Function

The parameter is used to store the set ctrlX DRIVE Engineering view on the drive.

Use

The basic settings are defined via list element 0:

Product-specific parameters

- 0: No view
- 1: Expert mode
- x: Version of the ctrlX DRIVE Engineering view manager

List elements 1 to 5 serve to store ctrlX DRIVE Engineering data.

P-0-0250.0.10 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: s. Text
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3.3.31 P-0-0257, Error triggered for test purposes

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	For testing of the error reaction of respective categories, "P-0-0257.0.0, Error triggered for test purposes" can be triggered. One bit is defined for each error category.	
 The error message "FXX9X Trigger test error" is returned. The X stands for error category 2, 4, 6 or 8.		
See also Functional Description "Error reaction"		

Number	Value P-0-0257	in	Error reaction axis	Error reaction supply unit
F2099	0x1		non-fatal error axis	-
F2898	0x101		non-fatal error axis	Error with switch-off delay of supply unit
F2899	0x100	-		Error with switch-off delay of supply unit
F4099	0x210		Master communication errors	Error with switch-off delay of supply unit and subsequent DC bus short circuit (ZKS)
F6099	0x2		Emergency stop	-
F6899	0x102		Emergency stop	Error with switch-off delay of supply unit
F8098	0x8		Motor phase short circuit or controlled deceleration or torque disable	-
F8099	0x4		Motor phase short circuit or torque disable	-
F8899	0x404		Torque disable	Fatal error or supply unit, immediate shutdown

Tab. 3-42: Test triggering of errors

P-0-0257 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.3.32 P-0-0260, C9900 Service function command

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The command is used by the manufacturer service department to execute specific functions for debugging and setting the devices.		
P-0-0260 - Attributes	Function: Cmd Memory: -- Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.3.33 P-0-0261, Service function, function presetting

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter is used together with the command "C9900 Service function command". It is used for selecting functions. The command "C9900" is used by the service department for debugging and setting the devices.		
P-0-0261 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.3.34 P-0-0262, Service function status

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter is used together with the command "C9900 Service function command". It returns the status of the function. The command "C9900" is used by the service department for debugging and setting the devices.		
P-0-0262 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.3.35 P-0-0263, Service function control word

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter is used together with the command "C9900 Service function command". It is used for controlling the selected function. The command "C9900" is used by the service department for debugging and setting the devices.		
P-0-0263 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

Product-specific parameters

3.3.36 P-0-0270, Oscilloscope: Signal selection 5

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The IDN entered in "P-0-0270, Oscilloscope: Signal selection 5" defines the signal that is to be recorded by channel 5. Only such IDNs are allowed that are contained in the list "P-0-0149, Oscilloscope: Signal selection list".	

 The measuring channel is deactivated by entering "0" or using "S-0-0000".

After recording has been completed, the recorded measured values are contained in parameter "P-0-0274, Oscilloscope: List of measured values 5".

 The maximum allowed number of measured values depends on the number of used channels. The number of measured values is configured in "P-0-0032, Oscilloscope: Size of memory". The configurable size of memory is reduced if more than 4 channels are used.

See also Functional Description "Oscilloscope function"

P-0-0270 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: Validity ch.: Extr. val. ch.: Comb. check:	ALWAYS SUBD:PM->OM -- --	Data length: Format: Decim. pl.: Set-depend.:	4Byte IDN 0 --
		AXS:	min./max.: --- / ---	Default value:	s. Text

3.3.37 P-0-0271, Oscilloscope: Signal selection 6

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The IDN entered in "P-0-0271, Oscilloscope: Signal selection 6" defines the signal that is to be recorded by channel 6. Only such IDNs are allowed that are contained in the list "P-0-0149, Oscilloscope: Signal selection list".	

 The measuring channel is deactivated by entering "0" or using "S-0-0000".

After recording has been completed, the recorded measured values are contained in parameter "P-0-0275, Oscilloscope: List of measured values 6".

 The maximum allowed number of measured values depends on the number of used channels. The number of measured values is configured in "P-0-0032, Oscilloscope: Size of memory". The configurable size of memory is reduced if more than 4 channels are used.

See also Functional Description "Oscilloscope function"

P-0-0271 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: Validity ch.: Extr. val. ch.: Comb. check:	ALWAYS SUBD:PM->OM -- --	Data length: Format: Decim. pl.: Set-depend.:	4Byte IDN 0 --
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AXS:	min./max.: --- / ---	Default value: s. Text
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3.3.38 P-0-0272, Oscilloscope: Signal selection 7

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The IDN entered in "P-0-0272, Oscilloscope: Signal selection 7" defines the signal that is to be recorded by channel 7. Only such IDNs are allowed that are contained in the list "P-0-0149, Oscilloscope: Signal selection list".	

 The measuring channel is deactivated by entering "0" or using "S-0-0000".

After recording has been completed, the recorded measured values are contained in parameter "P-0-0276, Oscilloscope: List of measured values 7".

 The maximum allowed number of measured values depends on the number of used channels. The number of measured values is configured in "P-0-0032, Oscilloscope: Size of memory". The configurable size of memory is reduced if more than 4 channels are used.

See also Functional Description "Oscilloscope function"

P-0-0272 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	IDN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: s. Text
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3.3.39 P-0-0273, Oscilloscope: Signal selection 8

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The IDN entered in "P-0-0273, Oscilloscope: Signal selection 8" defines the signal that is to be recorded by channel 8. Only such IDNs are allowed that are contained in the list "P-0-0149, Oscilloscope: Signal selection list".	

 The measuring channel is deactivated by entering "0" or using "S-0-0000".

After recording has been completed, the recorded measured values are contained in parameter "P-0-0277, Oscilloscope: List of measured values 8".

 The maximum allowed number of measured values depends on the number of used channels. The number of measured values is configured in "P-0-0032, Oscilloscope: Size of memory". The configurable size of memory is reduced if more than 4 channels are used.

See also Functional Description "Oscilloscope function"

Product-specific parameters

P-0-0273 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: IDN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

3.3.40 P-0-0274, Oscilloscope: List of measured values 5

Allocation	Hardware Funct. package(s): Device parameter: --
Function	In parameter "P-0-0274", the measured values of channel 5 of the oscilloscope function are written in sequential order. The oldest measured value is the first element in the list of measured values. The recorded signal is defined via the IDN entered in "P-0-0270, Oscilloscope: Signal selection 5".



Attribute, unit etc. are automatically adjusted to this selected signal.

See also Functional Description "Oscilloscope function"

P-0-0274 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.3.41 P-0-0275, Oscilloscope: List of measured values 6

Allocation	Hardware Funct. package(s): Device parameter: --
Function	In parameter "P-0-0275, Oscilloscope: List of measured values 6", the measured values of channel 6 of the oscilloscope function are written in sequential order. The oldest measured value is the first element in the list of measured values. The recorded signal is defined via the IDN entered in "P-0-0271, Oscilloscope: Signal selection 6".



Attribute, unit etc. are automatically adjusted to this selected signal.

See also Functional Description "Oscilloscope function"

P-0-0275 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.3.42 P-0-0276, Oscilloscope: List of measured values 7

Allocation	Hardware Funct. package(s): Device parameter: --
Function	In parameter "P-0-0276, Oscilloscope: List of measured values 7", the measured values of channel 7 of the oscilloscope function are written in sequential order. The oldest measured value is the first element in the list of measured values.

The recorded signal is defined via the IDN entered in "[P-0-0272, Oscilloscope: Signal selection 7](#)".

 Attribute, unit etc. are automatically adjusted to this selected signal.

See also Functional Description "Oscilloscope function"

P-0-0276 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.:	--- / ---	Default value:	---

3.3.43 P-0-0277, Oscilloscope: List of measured values 8

Allocation Hardware --
Funct. package(s):
Device parameter:

Function In parameter "[P-0-0277, Oscilloscope: List of measured values 8](#)", the measured values of channel 8 of the oscilloscope function are written in sequential order. The oldest measured value is the first element in the list of measured values.

The recorded signal is defined via the IDN entered in "[P-0-0273, Oscilloscope: Signal selection 8](#)".

 Attribute, unit etc. are automatically adjusted to this selected signal.

See also Functional Description "Oscilloscope function"

P-0-0277 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

3.3.44 P-0-0279, Oscilloscope: Trend mode, time resolution

Allocation Hardware --
Funct. package(s):
Device parameter:

Function The time resolution (sampling rate) determines the time with which the trend records its data.

This setting also determines the time in which the data have to be retrieved. Since the recording capacity of the buffer is limited, the buffer has to be read more often if the time is short.

The trend mode is activated in bit 5 of [P-0-0020](#).

See also Functional Description "Oscilloscope function"

P-0-0279 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	ms	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: s. Text / s. Text Default value: s. Text

Product-specific parameters

3.3.45 P-0-0280, Oscilloscope: Trend mode, list of measured values

Allocation	Hardware Funct. package(s): Device parameter:																																
Function	<p>The list of measured values contains the current trend data. The trend can only record data until the list (buffer) has been filled. When the list is full, the data are cleared and the list is filled with new values. By emptying the list, the measured values are lost. To keep the list from being emptied, the list has to be read before it is full.</p> <p>While the list is read, the data are written to a second buffer in the background and thereafter the buffer is switched. This double buffer mechanism ensures that no data are lost by reading the list.</p>																																
	 Only one program may evaluate the trend, since the buffer is switched every time the list was read, and it is no longer possible to access the old data.																																
	<p>The trend mode is activated in bit 5 of P-0-0020.</p> <p>See also Functional Description "Oscilloscope function".</p>																																
Structure	<table border="1"> <thead> <tr> <th>Element</th><th>Content</th></tr> </thead> <tbody> <tr> <td>0</td><td> The first element is always contained and contains information on the trend mode Byte 0 contains the version of the trend data (currently 3) Byte 1 contains the number of active channels (0..8) Byte 2 contains a continuous and overflowing counter that is incremented every time the double buffer is switched (0..255) Byte 3 contains status information. It currently has the value 0, or the most significant bit has been set if the list had been full before the last reading of the parameter and the list was emptied </td></tr> <tr> <td>1</td><td>Time stamp of S-0-1305.0.2 (fine). First element of the first data set</td></tr> <tr> <td>2</td><td>Time stamp of S-0-1305.0.3 (coarse)</td></tr> <tr> <td>3</td><td>Data of signal selection 1</td></tr> <tr> <td>4</td><td>Data of signal selection 2</td></tr> <tr> <td>5</td><td>Data of signal selection 3</td></tr> <tr> <td>6</td><td>Data of signal selection 4</td></tr> <tr> <td>7</td><td>Data of signal selection 5</td></tr> <tr> <td>8</td><td>Data of signal selection 6</td></tr> <tr> <td>9</td><td>Data of signal selection 7</td></tr> <tr> <td>10</td><td>Data of signal selection 8</td></tr> <tr> <td>11</td><td>Time stamp of S-0-1305.0.2 (fine). First element of the second data set</td></tr> <tr> <td>12</td><td>Time stamp of S-0-1305.0.3 (coarse)</td></tr> <tr> <td>13..20</td><td>Data of signal selection ..</td></tr> <tr> <td>21</td><td>Next data set</td></tr> </tbody> </table>	Element	Content	0	The first element is always contained and contains information on the trend mode Byte 0 contains the version of the trend data (currently 3) Byte 1 contains the number of active channels (0..8) Byte 2 contains a continuous and overflowing counter that is incremented every time the double buffer is switched (0..255) Byte 3 contains status information. It currently has the value 0, or the most significant bit has been set if the list had been full before the last reading of the parameter and the list was emptied	1	Time stamp of S-0-1305.0.2 (fine). First element of the first data set	2	Time stamp of S-0-1305.0.3 (coarse)	3	Data of signal selection 1	4	Data of signal selection 2	5	Data of signal selection 3	6	Data of signal selection 4	7	Data of signal selection 5	8	Data of signal selection 6	9	Data of signal selection 7	10	Data of signal selection 8	11	Time stamp of S-0-1305.0.2 (fine). First element of the second data set	12	Time stamp of S-0-1305.0.3 (coarse)	13..20	Data of signal selection ..	21	Next data set
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13..20	Data of signal selection ..																																
21	Next data set																																

..	
n	Last data set

Tab. 3-43: Structure of list of measured values

 If a signal selection is not used, the corresponding element in the data sets is not used. The list therefore is shorter. The number of active channels in element 0 determines how many elements of the signal selection are contained in a data set.

These data can be saved on a PC and used for long-term recordings or continuous display. Data loss can be recognized by the bigger interval between two time stamps, the continuous counter in element 0 or the status information in element 0.

P-0-0280 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value:	---
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3.3.46 P-0-0300, Digital inputs, assignment list

Allocation Hardware
Funct. package(s): --
Device parameter:

Function The parameter "P-0-0300" is an axis parameter, it exists once per drive address. "P-0-0300" is a list of parameter IDNs. With "P-0-0300" it is possible to set the parameter to which the corresponding input is assigned. Thus, the input bit at bit position 0 of the parameter "P-0-0307" is assigned to the first parameter of the list "P-0-0300". Parameter "P-0-0301" decides to which bit the assignment takes place. IDNs have to be input in P-0-0300.

Input signals: The IDN permitted for the configuration are listed in "S-0-0399, IDN-list of configurable data in signal control word".

Default configurations

 The default configurations depending on the control section are described in the chapter on the digital inputs/outputs in the Functional Description!

P-0-0300 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	IDN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value:	s. Text
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3.3.47 P-0-0301, Digital inputs, bit numbers

Allocation Hardware
Funct. package(s): --
Device parameter:

Function This parameter is used to configure the digital inputs/outputs of the control section.

"P-0-0301" is an axis parameter and it exists once per drive address. "P-0-0301" determines to which bit of the parameter specified in "P-0-0300, Digital inputs, assignment list", assignment list the level of the input is transmitted. "P-0-0301" is a bit word; in this case, too, bit 0 correlates with the first entry in the list "P-0-0300".

Product-specific parameters

P-0-0301 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte var. Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

3.3.48 P-0-0307, Digital inputs, input image sub-device

Allocation	Hardware Funct. package(s): Device parameter: --		
Function	"P-0-0307" is an axis parameter and it exists once per drive address. "P-0-0307" is a bit word. Bit 0 correlates with the first element in the list "P-0-0300", etc. This parameter shows the states of the external inputs at the device. "P-0-0307" is used as a display and cannot be written.		
P-0-0307 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.3.49 P-0-0310, Digital outputs, assignment list

Allocation	Hardware Funct. package(s): Device parameter: --		
Function	The parameter "P-0-0310" is an axis parameter and it exists once per drive address. "P-0-0310" is a list of parameter IDNs. With "P-0-0310", parameterize which parameter (which bit, see P-0-0311) is transmitted to which output bit (P-0-0313). The IDN of the parameter to be output is entered in "P-0-0310".		
	Output signals: The IDN permitted for the configuration are listed in "S-0-0398, IDN-list of configurable data in signal status word".		
	Default configurations		
	 The default configurations depending on the control section are described in the chapter on the digital inputs/outputs in the Functional Description!		
P-0-0310 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: IDN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

3.3.50 P-0-0311, Digital outputs, bit numbers

Allocation	Hardware Funct. package(s): Device parameter: --
Function	"P-0-0311" is an axis parameter and exists in the controller once per drive address. "P-0-0311" is a list of bit words, with the input range 0..31. This corresponds to bit 0 to bit 31. The first element of this list relates to the first element of the parameter list "P-0-0310". The selected bit of the parameter selected in "P-0-0310" is transferred to "P-0-0307".

P-0-0311 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte var. Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

3.3.51 P-0-0313, Digital outputs, output image sub-device

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"P-0-0313" is an axis parameter and it exists once per drive address. "P-0-0313" is a bit word. Bit 0 relates to the topmost parameter in "P-0-0310" and the bit selection in "P-0-0311", and shows the status of this bit. Parameter "P-0-0313" is a display parameter indicating the status of a specific bit within an axis.		
P-0-0313 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.3.52 P-0-0320, Exception data

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter has been implemented for internal functions.		
	 The functional principle of the parameter is documented only internally, and changes or evaluations are reserved to customer support.		
P-0-0320 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.3.53 P-0-0321.x.1, WPU configuration

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter is used for test and diagnostic function configuration.		
	 The function is reserved for development personnel for diagnosing internal sequences and cannot be used by the customer. For this reason, the values for this parameter are only available to development personnel.		
P-0-0321.x.1 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

Product-specific parameters

3.3.54 P-0-0322.x.0, Performance load

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-3921
Function	The performance load display shows the averaged percentage task runtime in relation to the total runtime. This parameter can be used to draw conclusions about the CPU load of the drive controller. The higher the value displayed, the higher the load of the interrupt/task system of the drive controller.	

 If the load rises to a value above approx. 90%, communication and command processing may be slower.

See also parameter description "[P-0-0322.0.1, Performance load config](#)"

P-0-0322.x.0 - Attributes	Function: Par Memory: -- Unit: % Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: --
		AXS: min./max.: --- / ---	Default value: ---

3.3.55 P-0-0322.x.1, Performance load configuration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used to configure P-0-0322.0.0, Performance load .	
	 The functional principle of the parameter is documented only internally, and changes or evaluations are reserved to customer support.	

P-0-0322.x.1 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --
		AXS: min./max.: --- / ---	Default value: ---

3.3.56 P-0-0322.x.2, Performance load prewarning threshold

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-2790
Function	During operation, the average CPU load is calculated (P-0-0322). By means of " P-0-0322.0.2 ", a prewarning threshold can be parameterized for critical CPU load. The parameterized value becomes effective after the parameterization mode is ended for the first time. If the prewarning threshold is exceeded, warning E2004 is generated.	

**Parameterization notice:**

- With [P-0-0322.0.2](#) = 100%, the prewarning threshold is deactivated.
- A value of < 90 % is recommended. In case of loads of > 90 %, the reactions to acyclic communication requests may be delayed and the processing times for commands be increased. In case of loads > 95 %, faultless operation cannot be ensured (F9003 Watchdog).



In case of a very high load, values higher than 100% can be displayed as the internal evaluation functions cannot be activated in time.

P-0-0322.x.2 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	%	Extr. val. ch.:	+	Decim. pl.:	2
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: 0,00 / 100,00

Default value: 90,00

3.3.57 P-0-0322.0.3, Performance load, unfiltered**Allocation**

Hardware	--
Funct. package(s):	
Device parameter:	
Alias:	P-0-2295

Function

"[P-0-0322.0.3](#)" shows the unfiltered value of "P-0-0322, Performance load".

This parameter can be used to draw conclusions about the short-term CPU load of the drive controller. The higher the value displayed, the higher the load of the interrupt/task system of the drive controller.

P-0-0322.0.3 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	%	Extr. val. ch.:	--	Decim. pl.:	2
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: ---

3.3.58 P-0-0322.0.4, Task trace**Allocation**

Hardware	--
Funct. package(s):	
Device parameter:	

Function

This parameter has been implemented for internal diagnostic messages.



The functional principle of the parameter is documented only internally, and changes or evaluations are reserved to customer support.

P-0-0322.0.4 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: ---

3.3.59 P-0-0322.0.5, Performance load, peak value**Allocation**

Hardware	--
Funct. package(s):	
Device parameter:	

Product-specific parameters

Function "P-0-0322.0.5" shows the peak value of "P-0-0322.0.3, Performance load unfiltered".

This parameter can be used to draw conclusions on the maximum CPU load of the drive controller. The higher the value displayed, the higher the load of the interrupt/task system of the drive controller.

P-0-0322.0.5 - Attributes	Function:	Par	Editable:	ALWAYS	Data length:	4Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_OV
	Unit:	%	Extr. val. ch.:	--	Decim. pl.:	2
	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.3.60 P-0-0382, Mains power

Allocation Hardware
Funct. package(s):
Device parameter:

Function This parameter shows the current power consumption from the mains. The value is approximately filtered via a mains period.



The power consumption is only displayed for devices with existing mains supply.

P-0-0382 - Attributes	Function:	Par	Editable:	--	Data length:	4Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_MV
	Unit:	W	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
------	----------------------	--------------------

3.3.61 P-0-0391, Actual position value difference encoder1 - encoder2

Allocation Hardware
Funct. package(s):
Device parameter:

Function This parameter displays the difference of the actual position values of encoder 1 and encoder 2. The value is updated in every controller cycle.

$$P-0-0391 = S-0-0051 - S-0-0053$$

P-0-0391 Actual position value difference encoder1 - encoder2

S-0-0051 Position feedback value of encoder 1

S-0-0053 Position feedback value of encoder 2

Fig. 3-14: Defining actual position value difference P-0-0391

See also Functional Description "Monitoring the measuring systems"

P-0-0391 - Attributes	Function:	Par	Editable:	--	Data length:	4Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_MV
	Unit:	S-0-0076	Extr. val. ch.:	--	Decim. pl.:	--
	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
------	----------------------	--------------------

3.3.62 P-0-0395, Average value filter for display: Signal selection

Allocation Hardware
Funct. package(s):
Device parameter:

Function This list parameter is used for configuring the signals which are to be filtered by means of average value filter for display. It has a maximum of 4 elements (IDNs) for the 4 filters:

- Element 1: Signal selection for display filter 1
- Element 2: Signal selection for display filter 2
- Element 3: Signal selection for display filter 3
- Element 4: Signal selection for display filter 4

 The filters are independent of each other and can be separately activated or deactivated. The average value filter for display is calculated in the controller clock (125µs)!

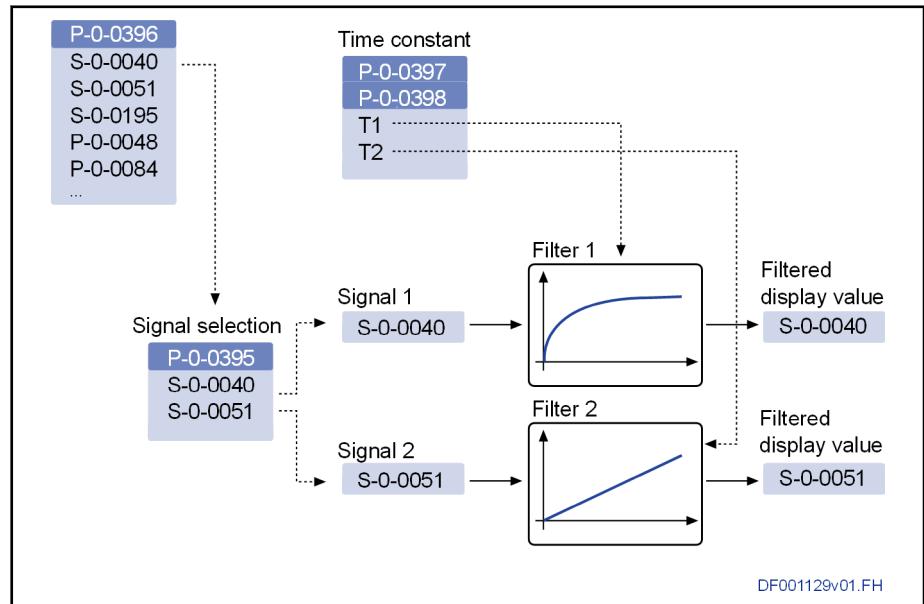


Fig. 3-15: Function - average value filter for display, example: Axis with 2 signals

- Use** When selecting the signals, the following points have to be observed:
- It is only possible to select signals from parameter "P-0-0396, Average value filter for display: Signal selection list".
 - The filter function is deactivated, when the signal "S-0-0000" has been selected.

See also Parameter Description "P-0-0396, Average value filter for display: Signal selection list"

See also Parameter Description "P-0-0397, Average value filter for display: Time constant"

See also Parameter Description "P-0-0398, Average value filter for display: Filter type"

P-0-0395 - Attributes	Function: Par	Editable: ALWAYS	Data length: 4Byte var.
	Memory: PARAM_SP	Validity ch.: --	Format: IDN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: s. Text

3.3.63 P-0-0396, Average value filter for display: Signal selection list

Allocation Hardware
Funct. package(s): --
Device parameter:

Function The parameter "S-0-0396" contains all parameters (IDNs) which can be used as signals for the average value filter for display (cf. [P-0-0395](#)).

Product-specific parameters

- See also Parameter Description "P-0-0395, Average value filter for display: Signal selection"
- See also Parameter Description "P-0-0397, Average value filter for display: Time constant"
- See also Parameter Description "P-0-0398, Average value filter for display: Filter type"
- Structure** The following parameters are contained in the signal list for an axis:
- [S-0-0040](#), Velocity feedback value
 - [S-0-0051](#), Position feedback value of encoder 1
 - [S-0-0053](#), Position feedback value of encoder 2
 - [S-0-0084](#), Torque/force feedback value
 - [S-0-0156](#), Velocity feedback value of encoder 2
 - [S-0-0164](#), Acceleration feedback value 1
 - [S-0-0189](#), Following distance
 - [S-0-0195](#), Acceleration feedback value 2
 - [S-0-0347](#), Velocity error
 - [S-0-0380](#), DC bus voltage
 - [S-0-0381](#), DC Bus Current - cyclic
 - [S-0-0382](#), DC bus power
 - [S-0-0386](#), Active position feedback value
 - [P-0-0048](#), Effective velocity command value
 - [P-0-0049](#), Effective torque/force command value
 - [P-0-0141](#), Thermal controller load
 - [P-0-0440](#), Actual output current value (absolute value)
 - [P-0-0442](#), Actual value torque limit positive (stationary)
 - [P-0-0443](#), Actual value torque limit negative (stationary)
 - [P-0-0444](#), Actual value peak torque limit
 - [P-0-0611](#), Current rms value
 - [P-0-4046](#), Effective peak current
 - ...
- The following parameters are contained in the signal list for a supply unit:
- [S-0-0381](#), DC Bus Current - cyclic
 - [S-0-1702.0.1](#), Mains voltage actual value
 - [S-0-1702.0.2](#), Mains current
 - [S-0-1702.0.12](#), Mains frequency
 - [S-0-1702.0.13](#), Mains power
 - [S-0-1707.0.1](#), Actual DC bus voltage
 - S-0-1701.0.11, Effective active-current generating component, command value
 - [S-0-1707.0.12](#), Effective reactive-current generating component, command value
 - [S-0-1707.0.160](#), Reactive power, actual value
 - [S-0-1711.0.3](#), Current rms value
 - [P-0-0382](#), Mains power

• ...



Since the content of the list may change, it is recommended to read the list at the respective drive to get the current list content..

P-0-0396 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	--	Validity ch.:	--	Format:	IDN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: ---

3.3.64 P-0-0397, Average value filter for display: Time constant

Allocation

Hardware --

Funct. package(s):

Device parameter:

Function

"P-0-0397" is used to parameterize the filter effect (=time constant of the PT1 filter or of the moving average value filter) of the average value filters for display. It has a maximum of 4 elements (IDNs) for the 4 display filters:

- Element 1: Time constant for display filter 1
- Element 2: Time constant for display filter 2
- Element 3: Time constant for display filter 3
- Element 4: Time constant for display filter 4



The filters are independent of each other and can be separately activated or deactivated. The average value filter for display is calculated in the controller clock (125µs)!

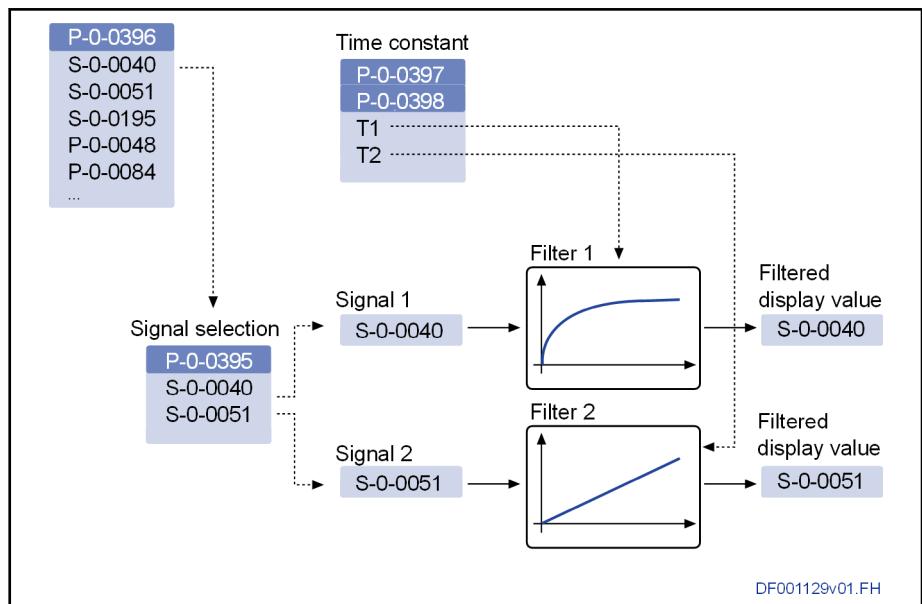


Fig. 3-16: P-0-0397, function - average value filter for display, example: Axis with 2 signals

See also Parameter Description "P-0-0395, Average value filter for display: Signal selection"

See also Parameter Description "P-0-0398, Average value filter for display: Filter type"

Product-specific parameters

	With "0" the filter function is inactive in spite of signal input. Inputs on a time base of 0.125ms (controller clock) are accepted.																								
P-0-0397 - Attributes	<table border="1"> <tr> <td>Function:</td><td>Par</td> <td>Editable:</td><td>ALWAYS</td> <td>Data length:</td><td>4Byte var.</td> </tr> <tr> <td>Memory:</td><td>PARAM_SP</td> <td>Validity ch.:</td><td>--</td> <td>Format:</td><td>DEC_OV</td> </tr> <tr> <td>Unit:</td><td>ms</td> <td>Extr. val. ch.:</td><td>--</td> <td>Decim. pl.:</td><td>3</td> </tr> <tr> <td>Cycl. tra.:</td><td>--</td> <td>Comb. check:</td><td>--</td> <td>Set-depend.:</td><td>--</td> </tr> </table>	Function:	Par	Editable:	ALWAYS	Data length:	4Byte var.	Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV	Unit:	ms	Extr. val. ch.:	--	Decim. pl.:	3	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
Function:	Par	Editable:	ALWAYS	Data length:	4Byte var.																				
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV																				
Unit:	ms	Extr. val. ch.:	--	Decim. pl.:	3																				
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																				
AXS:	min./max.: 0,000 / 2000,000																								
	Default value: s. Text																								

3.3.65 P-0-0398, Average value filter for display: Filter type

Allocation	Hardware Funct. package(s): Device parameter:
Function	<p>The list parameter is used for configuring the filter type with which the signals are to be filtered.</p> <p>It is possible to select a PT1 filter (max. 2000ms) or a moving average filter (max. 8ms ~ 64 clocks)</p>

 The filters are independent of each other, the filter type can be set separately for each signal.

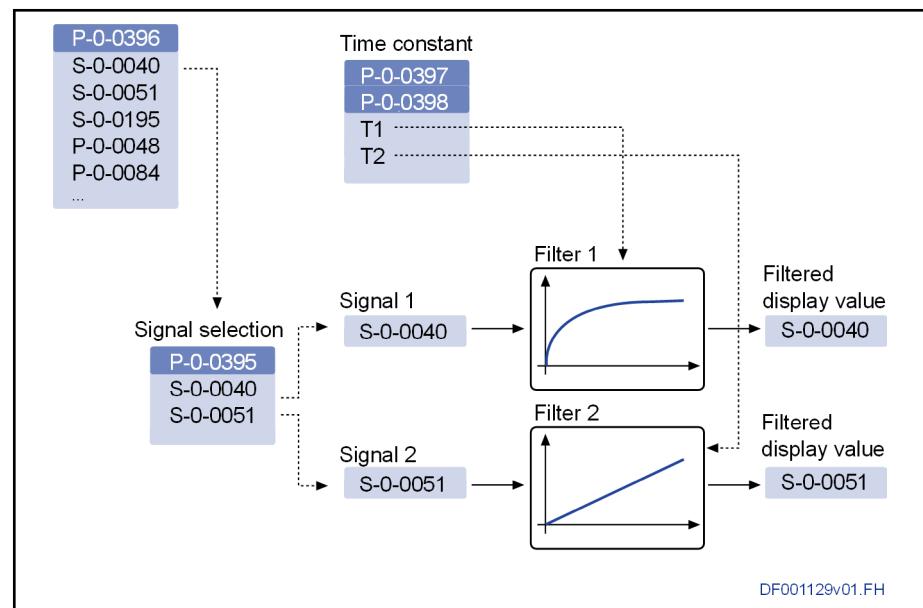


Fig. 3-17: P-0-0397, function - average value filter for display, example: Axis with 2 signals

See also Parameter Description "P-0-0395, Average value filter for display: Signal selection"

See also Parameter Description "P-0-0397, Average value filter for display: Time constant"

Structure The individual bits of the parameter have the following significances:

Bit	Designation/function	Comment
0	Filter type signal 1 0: PT1 filter 1: Moving average filter	
1	Filter type signal 2 0: PT1 filter 1: Moving average filter	
2	Filter type signal 3 0: PT1 filter 1: Moving average filter	
3	Filter type signal 4 0: PT1 filter 1: Moving average filter	

Tab. 3-44: Relevant bits of P-0-0398

P-0-0398 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	BIN
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:				Default value: 0x0	

3.3.66 P-0-0399, Configuration of simulation mode

Allocation Hardware --
 Funct. package(s):
 Device parameter:

Function Structure The axis simulation function is parameterized via "[P-0-0399](#)".

Bit	Designation/function	Comment
0	Axis simulation 0: Inactive 1: Active	
15-1	Reserved	

Tab. 3-45: Relevant bits of P-0-0399

P-0-0399 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:				Default value: 0x0	

3.3.67 P-0-0400, Axis correction external correction value

Allocation Hardware --
 Funct. package(s):
 Device parameter:

Function Via this parameter, the control master can cyclically transmit a position correction value to the drive.



This parameter is only available upon enabling (enabled package: axis error correction, temperature error correction and reversal clearance compensation).

Product-specific parameters

See also Functional Description "Axis error correction"

Use Thus, control-side errors can be corrected in the actual position value of the drive. The values for "[P-0-0400](#)" have to comply with the values according to "[S-0-0076](#), Position data scaling type".

P-0-0400 - Attributes	Function:	Par	Editable:	ALWAYS	Data length:	4Byte
	Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_MV
	Unit:	S-0-0076	Extr. val. ch.:	+	Decim. pl.:	
Cycl. tra.:		AT + MDT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: s. Text / s. Text		Default value: 0		

3.3.68 P-0-0401, Axis correction active correction value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter displays the currently effective correction value for the actual position value.	
	 This parameter is only available upon enabling (enabled package: axis error correction, temperature error correction and reversal clearance compensation or precision axis error correction).	
	 The actual position value system to be corrected is selected via the respective bit of " P-0-0413 , Axis correction control word".	

See also Functional Description "Axis error correction"

See also description of parameter "[S-0-0076](#), Position data scaling type"

P-0-0401 - Attributes	Function:	Par	Editable:	--	Data length:	4Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_MV
	Unit:	S-0-0076	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:		AT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---		Default value: ---		

3.3.69 P-0-0402, Axis correction reference temperature

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The reference temperature for the position-dependent and the position-independent temperature-based axis error correction is entered in this parameter.	
	 This parameter is only available upon enabling (enabled package: axis error correction, temperature error correction and reversal clearance compensation or precision axis error correction).	

See also Functional Description "Axis error correction"

P-0-0402 - Attributes	Function:	Par	Editable:	ALWAYS	Data length:	2Byte
	Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_MV
	Unit:	S-0-0208	Extr. val. ch.:	+	Decim. pl.:	
Cycl. tra.:		MDT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: s. Text / s. Text		Default value: 2000		

3.3.70 P-0-0403, Axis correction reference position for temp. corr.

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The dedicated position for the position-dependent, temperature-based axis error correction is entered in this parameter.	
 This parameter is only available upon enabling (enabled package: axis error correction, temperature error correction and reversal clearance compensation).		

See also Functional Description Axis error correction

P-0-0403 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	+	Decim. pl.:	
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: 0
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3.3.71 P-0-0404, Axis correction actual temperature pos.-dependent

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter informs the controller of the actual temperature of the axis. This value takes effect on the position-dependent, temperature-based axis error correction.	
 This parameter is only available upon enabling (enabled package: axis error correction, temperature error correction and reversal clearance compensation).		

See also Functional Description "Axis error correction"

P-0-0404 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0208	Extr. val. ch.:	+	Decim. pl.:	
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: 2000
------	------------------------------	---------------------

3.3.72 P-0-0405, Axis correction actual temperature pos.-independent

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter informs the controller of the actual temperature of the axis. This value takes effect on the position-independent, temperature-based axis error correction.	
 This parameter is only available upon enabling (enabled package: axis error correction, temperature error correction and reversal clearance compensation).		

See also Functional Description "Axis error correction"

P-0-0405 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0208	Extr. val. ch.:	+	Decim. pl.:	
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: s. Text / s. Text **Default value:** 2000

3.3.73 P-0-0406, Axis correction temperature factor pos.-dependent

Allocation	Hardware Funct. package(s): Device parameter:	--																								
Function	The position-dependent temperature error correction factor is entered in this parameter. The value is scaled with 1/kelvin (1/K).																									
	 This parameter is only available upon enabling (enabled package: axis error correction, temperature error correction and reversal clearance compensation).																									
	 The function should not be used for modulo axes, since modulo overflow causes jumps in the correction value.																									
	See Functional Description "Axis error correction" for how to determine the value of " P-0-0406 "																									
Use	The position-dependent temperature error correction is used to compensate the temperature-dependent linear expansion of the mechanical transfer elements of a servo axis or the measuring system. The function becomes active if the correction factor is unequal "0".																									
- Attributes	<table border="1"> <tr> <td>Function:</td> <td>Par</td> <td>Editable:</td> <td>ALWAYS</td> <td>Data length:</td> <td>4Byte</td> </tr> <tr> <td>Memory:</td> <td>PARAM_SP</td> <td>Validity ch.:</td> <td>--</td> <td>Format:</td> <td>DEC_MV</td> </tr> <tr> <td>Unit:</td> <td>1/K</td> <td>Extr. val. ch.:</td> <td>+</td> <td>Decim. pl.:</td> <td>6</td> </tr> <tr> <td>Cycl. tra.:</td> <td>--</td> <td>Comb. check:</td> <td>--</td> <td>Set-depend.:</td> <td>--</td> </tr> </table>	Function:	Par	Editable:	ALWAYS	Data length:	4Byte	Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_MV	Unit:	1/K	Extr. val. ch.:	+	Decim. pl.:	6	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--	
Function:	Par	Editable:	ALWAYS	Data length:	4Byte																					
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_MV																					
Unit:	1/K	Extr. val. ch.:	+	Decim. pl.:	6																					
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																					

AXS: min./max.: s. Text / 10.000000 **Default value:** 0.000000

3.3.74 P-0-0407, Axis correction temperature factor pos.-independent

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The position-independent temperature correction factor is entered in this parameter. The value is scaled with the position data scaling quotient 10k (S-0-0076/10K)		
	 This parameter is only available upon enabling (enabled package axis error correction, temperature error correction and reversal clearance compensation).		
	See Functional Description "Axis error correction" for how to determine the value of " P-0-0407 "		
Use	The position-independent temperature correction is used to compensate the merely temperature-dependent linear expansion of tools, workpieces and carriages. The function becomes active if the correction factor is unequal "0".		
P-0-0407 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0076 Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: 0

3.3.75 P-0-0408, Axis correction start position

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter determines the start position of the correction range for precision axis error correction. The correction range is between "P-0-0408" and "P-0-0409, Axis correction end position".	



This parameter is only available upon enabling (enabled package: precision axis error correction).



The actual position value system to be corrected is selected via the respective bit of "P-0-0413, Axis correction control word".

See also Functional Description Axis error correction

P-0-0408 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	+	Decim. pl.:	
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: 0
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3.3.76 P-0-0409, Axis correction end position

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter displays the end position of the correction range for precision axis error correction. The correction range is between "P-0-0408, Axis correction start position" and "P-0-0409".	



This parameter is only available upon enabling (enabled package: precision axis error correction).

Hand icon	The actual position value system to be corrected is selected via the respective bit of "P-0-0413, Axis correction control word".
-----------	--

See also Functional Description "Axis error correction"

P-0-0409 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.3.77 P-0-0410, Axis correction support point distance

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used to determine the support point distance for the correction range of precision axis error correction. The correction values entered in "P-0-0411" or "P-0-0412, Axis correction correction table positive" or negative refer to the support points of the correction range.	

Product-specific parameters



This parameter is only available upon enabling (enabled package: precision axis error correction).



With the value "0" in "P-0-0410", the precision axis error correction is deactivated. If the value is greater than "0" it is activated!

See also Functional Description "Axis error correction"

Use The correction range is between "P-0-0408, Axis correction start position" and "P-0-0409, Axis correction end position" and has a number of support points corresponding to the maximum number of rows from "P-0-0411" or "P-0-0412". The value of "P-0-0410" is the distance between the neighboring support points.

P-0-0410 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	+	Decim. pl.:	
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: 0
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3.3.78 P-0-0411, Axis correction, correction table positive

Allocation Hardware
Funct. package(s): --
Device parameter:

Function For precision axis error correction, enter the position correction values for the support points of the correction range in the table rows of this list parameter. The correction values for "P-0-0411" have to be established in the positive direction of motion, since they only become effective in the drive in the positive direction of motion.



This parameter is only available upon enabling (enabled package: precision axis error correction).

See also Functional Description "Axis error correction"

Use The value "0" has to be written to the first and the last table row used. Otherwise, the actual position value changes abruptly at the start position and end position of the correction range!

Table Row index	P-0-0411 (positive direction)
0	(correction value at start position P-0-0408) 0
1	correction value at support point 1
2	correction value at support point 2
3	correction value at support point 3
4	correction value at support point 4
5	correction value at support point 5
....

Table Row index	P-0-0411 (positive direction)
498	correction value at support point 498
499	0 (correction value at end position P-0-0409)

Tab. 3-46: *Assigning the support point correction values to the table row index of the "P-0-0411" correction tables when using 500 support points*

 The number of correction values may be 6... 500, otherwise the error "Data not correct" is signaled when this parameter is written!

P-0-0411 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	+	Decim. pl.:	--
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: s. Text
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3.3.79 P-0-0412, Axis correction, correction table negative

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	For precision axis error correction, enter the position correction values for the support points of the correction range in the table rows of this list parameter. The correction values for P-0-0412 have to be established in the negative direction of motion, since they only become effective in the drive in the negative direction of motion.	
	 This parameter is only available upon enabling (enabled package: precision axis error correction).	

See also Functional Description "Axis error correction"

Use The value "0" has to be written to the first and the last table row used. Otherwise, the actual position value changes abruptly at the start position and end position of the correction range!

Table row index	P-0-0412 (negative direction)
0	(correction value at start position P-0-0408) 0
1	correction value at support point 1
2	correction value at support point 2
3	correction value at support point 3
4	correction value at support point 4
5	correction value at support point 5
....
498	correction value at support point 498
499	0 (correction value at end position P-0-0409)

Tab. 3-47: *Assigning the support point correction values to the table row index of the "P-0-0412" correction tables when using 500 support points*

Product-specific parameters

	The number of correction values may be 6... 500, otherwise the error "Data not correct" is signaled when this parameter is written!
P-0-0412 - Attributes	Function: Par Editable: SUBD:CM+PM Data length: 4Byte var. Memory: PARAM_SP Validity ch.: SUBD:PM->OM Format: DEC_MV Unit: S-0-0076 Extr. val. ch.: + Decim. pl.: Cycl. tra.: -- Comb. check: -- Set-depend.: --
AXS:	min./max.: s. Text / s. Text
	Default value: s. Text

3.3.80 P-0-0413, Axis correction control word

Allocation	Hardware Funct. package(s): Device parameter: --
Function	Axis error correction is used to correct systematic errors of mechanics and the measuring systems in the actual position value system. The actual position value system to be corrected is selected in this parameter.
	This parameter is only available upon enabling (enabled package: axis error correction, temperature error correction and reversal clearance compensation or precision axis error correction).

Structure	See also Functional Description "Axis error correction"						
<table border="1"> <thead> <tr> <th>Bit</th> <th>Designation/function</th> <th>Comment</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Actual position value correction of encoder 1 0: no 1: yes</td> <td></td> </tr> </tbody> </table>		Bit	Designation/function	Comment	0	Actual position value correction of encoder 1 0: no 1: yes	
Bit	Designation/function	Comment					
0	Actual position value correction of encoder 1 0: no 1: yes						

Tab. 3-48: Relevant bits of P-0-0413

Bit	Designation/function	Comment
0	Actual position value correction of encoder 1 0: no 1: yes	
1	Actual position value correction of encoder 2 0: no 1: yes	

Tab. 3-49: Relevant bits of P-0-0413

P-0-0413 - Attributes	Function: Par Editable: SUBD:CM+PM Data length: 2Byte Memory: PARAM_SP Validity ch.: SUBD:PM->OM Format: BIN Unit: -- Extr. val. ch.: + Decim. pl.: 0 Cycl. tra.: -- Comb. check: -- Set-depend.: --
AXS:	min./max.: 0x0 / 0x2

Default value: 0x0

3.3.81 P-0-0414, DA: Analog output 1

Allocation	Hardware Funct. package(s): Device parameter: --
Function	This parameter specifies the voltage value, output via the analog output 1 of the "DA" option module.



This analog output is only available when the option module "DA" is configured!

See also functional description "Analog outputs"

- Use**
- The parameter content can be, for example,
- directly written via the internal PLC.
 - written by the external control.
 - or generated by an internal drive parameter using "[P-0-2911.0.3 Analog output, parameter selection](#)".



The parameter value source is specified in dependency of the setting in "[P-0-2911.0.1 Analog output, control parameter](#)".

P-0-0414 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	V	Extr. val. ch.:	+	Decim. pl.:	3
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: -10,000 / 10,000

Default value: 0,000

3.3.82 P-0-0415, DA: Analog output 2

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter specifies the voltage value output via the analog output 2 of the option module "DA".



This analog output is only available when configuring an option module "DA"!

See also functional description "Analog outputs"

- Use**
- The parameter content can be, for example,
- directly written via the internal PLC.
 - written by the external control.
 - or generated by an internal drive parameter using "[P-0-2911.1.3 Analog output, parameter selection](#)".



The parameter value source is specified in dependency of the setting in "[P-0-2911.1.1 Analog output, control parameter](#)".

P-0-0415 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	V	Extr. val. ch.:	+	Decim. pl.:	3
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: -10,000 / 10,000

Default value: 0,000

3.3.83 P-0-0426, Analog output IDN list of assignable parameters

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

This list parameter contains the IDNs of the parameters that can be entered in the parameter "[P-0-2911.x.3, Analog output, parameter selection](#)". Each of these parameters is available for assigning an analog output value.

See also functional description "Analog outputs"

Product-specific parameters

P-0-0426 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: IDN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.3.84 P-0-0430, Velocity command value reference model

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter allows the velocity command value from the reference model to be displayed before the summing point of the velocity controller. If the reference model is inactive, the parameter corresponds to the effective velocity command value (P-0-0048)	



At the summing point, the actual velocity value is subtracted from the effective velocity command value. The result of this calculation (control difference) is transmitted to the speed controller.

See also Functional Description "Velocity controller"

P-0-0430 - Attributes	Function: Par Memory: -- Unit: S-0-0044 Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.3.85 P-0-0432, Correction value quadrant error correction

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter displays the active correction value of quadrant error correction. The active correction value is used to monitor the quadrant error correction. The value can also be recorded in the oscilloscope.	



This parameter is only available upon enabling (enabled package: quadrant error correction).

See also Functional Description "Quadrant error correction"

P-0-0432 - Attributes	Function: Par Memory: -- Unit: S-0-0044 Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.3.86 P-0-0434, Position command value of controller

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter displays the position command value effective at the position controller input. Depending on the active operation mode, this position command value can be	<ul style="list-style-type: none"> the position command value generated and filtered by the drive itself (e.g., in the case of interpolation modes).

- the position command value cyclically set by a control unit, filtered and fine interpolated in the drive.



The internal position command value "P-0-0434, Position command value of controller" is generated in the position controller clock (125 µs).

See also Functional Description "Positioning block mode"

See also Functional Description "Drive-internal interpolation"

P-0-0434 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: --- / ---				Default value: ---

3.3.87 P-0-0435, Control word of quadrant error correction

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

In this parameter the master can cyclically activate the quadrant error correction.



This parameter is only available upon enabling (enabled package: quadrant error correction).

Structure

Bit	Designation/function	Comment
0	Quadrant error correction 0: Inactive 1: Active	

Tab. 3-50: Relevant bits of P-0-0435

P-0-0435 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: s. Text / s. Text				Default value: s. Text

3.3.88 P-0-0436, Reference radius for quadrant error correction

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter determines the radius of a circular path that is used as reference for quadrant error correction.



This parameter is only available upon enabling (enabled package: quadrant error correction).

Use

This radius is used for calculating the path velocity and should correspond to a radius characteristic of the machine for circularly interpolating machining.

See also Functional Description "Quadrant error correction"

Product-specific parameters

P-0-0436 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0076 Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: Set-depend.: --
AXS:		min./max.: s. Text / s. Text	Default value: 10000000

3.3.89 P-0-0437, Velocity time integral of quadrant error correction

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	In this parameter enter the absolute value of the velocity time range of the velocity pulse that is added to the velocity command value, if the direction of motion changes with quadrant error correction activated.		
	 This parameter is only available upon enabling (enabled package: quadrant error correction).		
	 The value "0" deactivates the quadrant error correction!		
	See also Functional Description "Quadrant error correction"		
P-0-0437 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0044 Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: Set-depend.: --
AXS:		min./max.: s. Text / s. Text	Default value: s. Text

3.3.90 P-0-0438, Table of path velocities for quadrant error correction

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter corresponds with " P-0-0439, Table of velocity pulse for quadrant error correction ". In the lines of this list parameter, a maximum of 20 path velocities may be entered in ascending order. A velocity pulse amplitude for quadrant error correction can be assigned in " P-0-0439 " to each entered path velocity.		
	 This parameter is only available upon enabling (enabled package: quadrant error correction).		
	See also Functional Description "Quadrant error correction"		
P-0-0438 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0044 Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: DEC_MV Decim. pl.: Set-depend.: --
AXS:		min./max.: s. Text / s. Text	Default value: s. Text

3.3.91 P-0-0439, Table of velocity pulse for quadrant error correction

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter corresponds with " P-0-0438, Table of path velocities for quadrant error correction ".	

In the lines of this list parameter, a maximum of 20 velocity pulse amplitudes may be entered in ascending order. The values are assigned to the path velocities of the corresponding lines of "[P-0-0438](#)".



This parameter is only available upon enabling (enabled package: quadrant error correction).

See also Functional Description "Quadrant error correction"

P-0-0439 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0044	Extr. val. ch.:	+	Decim. pl.:	
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: s. Text
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3.3.92 P-0-0440, Actual output current value (absolute value)

Allocation

Hardware	--
Funct. package(s):	
Device parameter:	

Function

Display parameters for the actual measured current value. It is the effective value of the motor phase current.

The phase currents are determined in the current controller cycle, converted to current vectors and used to calculate the RMS value. This parameter indicates the mean value over 2 ms and serves as input value for the overload models of amplifier and motor.

P-0-0440 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	A	Extr. val. ch.:	--	Decim. pl.:	3
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.3.93 P-0-0441, Thermal controller load warning threshold

Allocation

Hardware	--
Funct. package(s):	
Device parameter:	

Function

Parameter for determining a threshold value for the thermal controller work load.

If the value displayed in "[P-0-0141](#), Thermal drive load" exceeds the determined threshold, warning "E2061 Device overload prewarning" is generated. The warning sets bit 1 in parameter "[S-0-0012](#), Class 2 diagnostics".



If values exceeding 100% are entered, "E2061" is not displayed. Warning "E8057 Device overload, current limit active" is generated if the output current is limited by the controller.

P-0-0441 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	%	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: 0 / 110	Default value: 80
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Product-specific parameters

3.3.94 P-0-0442, Actual value torque limit positive (stationary)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Display parameter for the effective positive torque/force limit value. The displayed value is the smallest value of:	
	<ul style="list-style-type: none"> • S-0-0092, Bipolar torque/force limit value • P-0-0109, Torque/force peak limit • S-0-0082, Torque/force limit value positive • S-0-0530, torque/force limit value positive stop (only when traveling and homing at positive stop) • load-dependent limitations by motor and controller • motor-dependent limitations 	
	See also Functional Description "Current and torque/force limitation"	
Use	The unit for the values of this parameter depends on the scaling that has been set (S-0-0086 , Torque/force data scaling type).	
	 "P-0-0442" displays the positive torque/force limit value (with regard to load torque/load force) effective at a stationary (constant) velocity. For acceleration processes, a higher limit value can be effective, if the lower value of "P-0-0109" and "S-0-0092" is greater than "S-0-0082", and acceleration feedforward has been activated. The parameter "P-0-0444, Actual value peak torque limit", shows the maximum allowed drive torque or the maximum allowed drive force (stationary load torque + acceleration torque) effective for acceleration processes.	

P-0-0442 - Attributes	Function: Par	Editable: --	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: DEC_MV
	Unit: S-0-0086	Extr. val. ch.: --	Decim. pl.: --
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: ---

3.3.95 P-0-0443, Actual value torque limit negative (stationary)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Display parameter for the effective negative torque/force limit value. The displayed value is the smallest value of:	
	<ul style="list-style-type: none"> • S-0-0092, Bipolar torque/force limit value • P-0-0109, Torque/force peak limit • S-0-0083, Torque/force limit value negative • S-0-0530, torque/force limit value positive stop (only when traveling and homing at positive stop) • load-dependent limitations by motor and controller • motor-dependent limitations 	
	See also Functional Description "Current and torque/force limitation"	
Use	The unit for the values of this parameter depends on the scaling that has been set (S-0-0086 , Torque/force data scaling type).	



"P-0-0443" displays the negative torque/force limit value (with regard to load torque/load force) effective at a stationary (constant) velocity. For acceleration processes, a higher limit value can be effective, if the lower value of "P-0-0109" and "S-0-0092" is greater than "S-0-0083", and acceleration feedforward has been activated. The parameter "P-0-0444, Actual value peak torque limit", shows the maximum allowed drive torque or the maximum allowed drive force (stationary load torque + acceleration torque) effective for acceleration processes.

P-0-0443 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0086	Extr. val. ch.:	--	Decim. pl.:	--
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

3.3.96 P-0-0444, Actual value peak torque limit

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

Display parameters for the maximum drive torque or the maximum drive power. The value is the limit value for positive and negative torque/force command values.

Displayed is the lower value of

- [P-0-0109](#), Torque/force peak limit
- [S-0-0092](#), Bipolar torque/force limit value
- [S-0-0530](#), torque/force limit value positive stop (only when traveling and homing at positive stop)
- load-dependent limitations by motor and controller
- motor-dependent limitations

The unit for the values of this parameter depends on the scaling that has been set ([S-0-0086](#), Torque/force data scaling type).

See also Functional Description "Current and torque/force limitation"

P-0-0444 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0086	Extr. val. ch.:	--	Decim. pl.:	--
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

3.3.97 P-0-0444.0.1, Power limitation: Torque/force limit, positive

Allocation

Hardware --
Funct. package(s):
Device parameter:
Alias: [P-0-2596](#)

Function

Display parameters for the maximum drive torque or the maximum drive power in motive operation at positive velocity and/or in regenerative operation at negative velocity.

Displayed is the lower value of:

- [P-0-0109](#), Torque/force peak limit
- [S-0-0092](#), Bipolar torque/force limit value
- [S-0-0530](#), torque/force limit value positive stop (only when traveling and homing at positive stop)

Product-specific parameters

- load-dependent limitations by motor and controller
- motor-dependent limitations
- Limitation of the motive DC bus power ([S-0-0561](#))
- Limitation of the motive DC bus current ([S-0-0563](#))

P-0-0444.0.1 - Attributes	Function: Par	Editable: --	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: DEC_MV
	Unit: S-0-0086	Extr. val. ch.: --	Decim. pl.:
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.3.98 P-0-0444.0.2, Power limitation: Torque/force limit, negative

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-2597	--	
Function	Display parameters for the maximum drive torque or the maximum drive power in motive operation at negative velocity and/or in regenerative operation at positive velocity.		
	Displayed is the lower value of:		
	<ul style="list-style-type: none"> • P-0-0109, Torque/force peak limit • S-0-0092, Bipolar torque/force limit value • S-0-0530, torque/force limit value positive stop (only when traveling and homing at positive stop) • load-dependent limitations by motor and controller • motor-dependent limitations • Limitation of the regenerative DC bus power (S-0-0562) • Limitation of the regenerative DC bus current (S-0-0564) • Regenerative limitation, depending on the DC bus voltage 		
P-0-0444.0.2 - Attributes	Function: Par	Editable: --	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: DEC_MV
	Unit: S-0-0086	Extr. val. ch.: --	Decim. pl.:
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.3.99 P-0-0444.0.3, Current power limit value, motive

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-2598	--	
Function	Display parameters for the maximum available power in motive operation. The value is calculated from P-0-0444.0.2 and/or P-0-0444.0.3 and the current velocity.		
P-0-0444.0.3 - Attributes	Function: Par	Editable: --	Data length: 4Byte
	Memory: --	Validity ch.: --	Format: DEC_MV
	Unit: W	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.3.100 P-0-0444.0.4, Current power limit value, regenerative

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-2599
Function	Display parameters for the maximum available power in regenerative operation. The value is calculated from P-0-0444.0.2 and/or P-0-0444.0.3 and the current velocity.	
P-0-0444.0.4 - Attributes	Function: Par Memory: -- Unit: W Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: --- / ---	Default value: ---

3.3.101 P-0-0445, Status word torque/current limit

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter combines status messages (status bits) regarding torque/current limitation.	
Structure	See also Functional Description "Current and torque/force limitation" The individual bits have the following significances:	

Bit	Designation/function	Comment
0	Speed-dependent torque limitation 0: Inactive 1: Active: Maximum torque < min (S-0-0109/S-0-0110)	
1	Peak current limitation by motor overload 0: Inactive 1: Active - the temperature model of the motor reduces the current limit value to a value smaller than the motor peak current or device peak current	
2	Amplifier overload warning (E2061) 0: no: P-0-0141 < P-0-0441 1: yes: P-0-0141 ≥ P-0-0441	
7	U/f operation: Intervention of the stall protection controller 0: not active - Motor target frequency corresponds to the command value and ramp specification 1: active - Motor command frequency is changed by stall protection controller	
8	I_{max} is limited by amplifier (amplifier/temperature model) 0: no 1: yes	
9	I_{max} is limited by motor (motor temperature model) 0: no 1: yes	

Product-specific parameters

Bit	Designation/function	Comment
10	I_q is limited (speed-dependent torque limitation) 0: no 1: yes	
11-15	Reserved	
16	Positive torque command value 0: not restricted: P-0-0442 = S-0-0082 1: restricted: P-0-0442 < S-0-0082	
17	Negative torque command value 0: not restricted: P-0-0443 = S-0-0083 1: restricted: P-0-0443 < S-0-0083	
18	Torque/force limitation is zero (E2056) (P-0-0442 = 0 or P-0-0443 = 0 or P-0-0444 = 0) 0: no 1: yes	
19-23	Reserved	
24	S-0-0092 limits the torque limit 0: Inactive 1: Active	
25	S-0-0109 limits the torque limit 0: Inactive 1: Active	
26	Max. power limiting the torque, motive 0: Inactive 1: Active	
27	Max. power limits the torque, regenerative 0: Inactive 1: Active	
28	Motive torque switched off 0: Inactive 1: Active	
29-31	Reserved	

Tab. 3-51: Structure of status word torque/current limit

P-0-0445 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.3.102 P-0-0446, Thermal motor load

Allocation Hardware --
 Funct. package(s):
 Device parameter:

Function A thermal model is calculated for the motor. This model is based on the time constants of the motor winding, the continuous current and the short-time overload of the motor. If it is at standstill or if it does not feature any temperature measurement function, a motor can only be protected against destruction with the "thermal model". If the load has reached the load limit (100%), the motor current is reduced.

Parameter "[P-0-0446](#)" serves to check the thermal load of the motor.



The parameter can be preset to a value that is higher than the current one to allow checking the thermal motor load on commissioning without having to perform machining cycles within this time interval. If the load value is reduced, the current cycle leads to less load on the motor. The cycle can be run continuously.

See also Functional Description "Motor temperature monitoring"

P-0-0446 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	%	Extr. val. ch.:	--	Decim. pl.:	1
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

3.3.103 P-0-0448, Temperature-dependent torque/force coefficient

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter influences the effective torque/force constant, depending on the measured winding temperature of the motor. Based on the value of "[P-0-0051](#), Torque/force constant", a reduction takes effect. The current value is displayed in "[P-0-0450](#), Current torque/force constant".

- At a winding temperature of 20 °C, no reduction is applied.
- At a winding temperature of 110 °C, "[P-0-0051](#)" is reduced by the percentage of "[P-0-0448](#)".
- At winding temperatures below or exceeding 110° C, interpolated or extrapolated reduction is applied related to the "reduction reference values" of 20° C and 110° C.



The reduction only works correctly, when "[P-0-0051](#)" refers to the ambient temperature 20° C.

The parameter is motor-specific and for synchronous Rexroth motors it is made available on the manufacturer side:

- For MSK motors (encoder memory version 4.5 and above) loaded from the encoder memory
- For MS2N motors with motor data in the encoder memory, the value is loaded from the encoder memory
- For other synchronous Rexroth motors, it is made available via "ctrlX DRIVE Engineering" or the "DriveBase" database.

See also Functional Description "Correcting the torque/force constant"

P-0-0448 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	%	Extr. val. ch.:	--	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

Product-specific parameters

AXS:	min./max.: s. Text / s. Text	Default value: 0,0
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3.3.104 P-0-0449, Speed-dependent torque/force coefficient

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter influences the effective torque/force constant, depending on the velocity of the motor. Based on the value of "P-0-0051, Torque/force constant", a reduction takes effect depending on the arithmetic average value of the absolute velocity value. The current value is displayed in "P-0-0450, Current torque/force constant".	

 The reduction only works correctly, when "P-0-0051, Torque/force constant" refers to the ambient temperature of 20 °C.

The parameter is motor-specific and for synchronous Rexroth motors it is made available on the manufacturer side:

- For MSK motors (encoder memory version 4.5 and above) loaded from the encoder memory
- For MS2N motors with motor data in the encoder memory, the value is loaded from the encoder memory
- For other synchronous Rexroth motors, it is made available via "ctrlX DRIVE Engineering" or the "DriveBase" database.

See also Functional Description "Correcting the torque/force constant"

P-0-0449 - Attributes	Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
	Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
	Unit:	Hz	Extr. val. ch.:	--	Decim. pl.:	5
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: 0,00000
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3.3.105 P-0-0450, Current torque/force constant

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The currently effective value of the torque/force constant is displayed in this parameter. The torque or the force at the motor can be calculated, by means of approximation, by multiplying "P-0-0450" and "P-0-0043, Torque-generating current, actual value".	
	For synchronous motors, the value of the torque/force constant depends on the	

- Value of the currently flowing motor current: Reduction of torque/force constant at currents greater $I_{nominal}$
- Temperature of motor winding and rotor: Reduction of torque/force constant at rising temperature

For asynchronous motors, the torque/force constant is reduced, when the motor is operated with field weakening.

P-0-0450 - Attributes	Function:	Par	Editable:	--	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_OV
	Unit:	Nm/A	Extr. val. ch.:	--	Decim. pl.:	2
	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.3.106 P-0-0451, Actual acceleration torque/force value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The acceleration torque is determined from the total inertia (determined via automatic control loop settings) and the value in "S-0-0164, Acceleration feedback value 1". It is displayed in "P-0-0451, Actual acceleration torque/force value".	
P-0-0451 - Attributes	Function: Par Memory: -- Unit: S-0-0086 Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
	AXS: min./max.: --- / ---	Default value: ---

3.3.107 P-0-0452, Actual process torque/force value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The current process torque is determined from the current total torque in "S-0-0084, Torque/force feedback value" and the determined "P-0-0451, Acceleration torque". It is displayed in "P-0-0452".	
P-0-0452 - Attributes	Function: Par Memory: -- Unit: S-0-0086 Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
	AXS: min./max.: --- / ---	Default value: ---

3.3.108 P-0-0453, Velocity controller integral-action component

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In parameter "P-0-0453", the integral proportion of the velocity controller is displayed	
P-0-0453 - Attributes	Function: Par Memory: -- Unit: S-0-0086 Cycl. tra.: AT	Editable: SUBD:OM Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
	AXS: min./max.: s. Text / s. Text	Default value: ---

3.3.109 P-0-0454, Velocity feedforward actual value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used to display the current velocity feedforward value and depends on "S-0-0044, Velocity data scaling type".	
	The velocity feedforward is calculated from the position command values in lagless operation modes in the position controller and added to the velocity command value depending on "P-0-0040 Velocity feedforward evaluation".	
P-0-0454 - Attributes	Function: Par Memory: -- Unit: S-0-0044 Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
	AXS: min./max.: --- / ---	Default value: ---

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3.3.110 P-0-0455, Acceleration feedforward actual value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter displays the current acceleration feedforward value. The acceleration feedforward is determined as follows:	
1. In lagless, position-controlled operation modes, the feedforward value is calculated from the position command values depending on " S-0-0348, Acceleration feedforward gain ". 2. For velocity control, the velocity command values depending on " P-0-1126 Velocity control loop: Acceleration feedforward " are applied to calculate the feedforward value. The parameter depends on " S-0-0086, Torque/force data scaling type ".		
P-0-0455 - Attributes	Function: Par Memory: -- Unit: S-0-0086 Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.3.111 P-0-0456, Position command value delay

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used to set the position command value delay and specifies the number of position clocks to be delayed. The position command value generator (P-0-0457) is the input value of the command value delay function. The output value is the position command value of controller (P-0-0434). The output value can be delayed by up to 64 position clocks.	
 For default setting "0", the position command value delay is not enabled.		
P-0-0456 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: -- Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: s. Text / 64 Default value: 0

3.3.112 P-0-0457, Position command value generator

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter displays the position command value without delay. Depending on the active operation mode, this position command value can be	
<ul style="list-style-type: none"> • the position command value generated, filtered and fine interpolated by the drive itself (e.g., in the case of interpolation modes). • the position command value cyclically set by a control unit, filtered and fine interpolated in the drive. 		
The position command value generator is the input value of the command value delay function. The output value is the position command value of		

controller ([P-0-0434](#)). The output value can be delayed by up to 64 position clocks, the number of clocks is set with the position command value delay ([P-0-0456](#)).



The internal position command value "[P-0-0457](#)" is generated in the position controller clock ([P-0-0556](#)).

See also Functional Description "Positioning block mode"

See also Functional Description "Drive-internal interpolation"

P-0-0457 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.3.113 P-0-0458, Delay of add. command values

Allocation **Hardware** --
Funct. package(s):
Device parameter:

Function The parameter delays "[S-0-0081](#), Additive torque/force command value" taking effect and thereby supports the external acceleration feedforward. The control cyclically transmits the acceleration feedforward value as an additive torque/force command value to the drive. The delay ensures that "[P-0-0070](#), Effective additive torque/force command value" becomes active at the same time as "[P-0-0434](#), Position command value of controller". The effective torque/force command value may be delayed by a maximum of 64 position clocks.

A value greater than zero activates the function.

The value "-1" also activates the function. In this case, the active delay is calculated internally according to the formula in the notice below (64 clocks at most).



The required number of delay cycles depends on [P-0-0456](#), Position command value delay.

$$\text{P-0-0458} = \text{P-0-0456} + 1$$

When the function is active, the delay by the anti-vibration filter, the average value filter and the fine interpolation are automatically taken into account in the command value path of the additive torque/force command value.

P-0-0458 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: -1 / 65	Default value: 0
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3.3.114 P-0-0465, Maximum value thermal controller load

Allocation **Hardware** --
Funct. package(s):
Device parameter:

Function This parameter detects the peak value of the amplifier load ([P-0-0141](#)). The user has to write a value to the parameter to reset the peak value.

Use The value "zero" has to be written to the parameter before commencement of a machining cycle in order to detect the maximum value of the load during

Product-specific parameters

this machining cycle. After completion of the machining cycle, the peak value of the load of this cycle can be read.

P-0-0465 - Attributes	Function: Par Memory: -- Unit: % Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: 0,0 / 110,0		Default value: ---

3.3.115 P-0-0466, Maximum value thermal motor load

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter detects the peak value of the thermal motor load (P-0-0465). The user has to write a value to the parameter to reset the peak value.	



The value "zero" has to be written to the parameter before commencement of a machining cycle in order to detect the maximum value of the load during this machining cycle. After completion of the machining cycle, the peak value of the load of this cycle can be read.

P-0-0466 - Attributes	Function: Par Memory: -- Unit: % Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: 0,0 / 110,0		Default value: ---

3.3.116 P-0-0467, Maximum value thermal load of braking resistor

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter detects the peak value of " P-0-0844 , Thermal load of braking resistor". The drive constantly writes to this parameter. The user has to write a value to the parameter to reset the peak value.	



The value "zero" has to be written to the parameter before commencement of a machining cycle in order to detect the maximum value of the load during this machining cycle. After completion of the machining cycle, the peak value of the load of this cycle can be read.

P-0-0467 - Attributes	Function: Par Memory: -- Unit: % Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: 0 / 110		Default value: ---

3.3.117 P-0-0468, Prewarning threshold of therm. motor load

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter defines the threshold of the thermal motor load at which the prewarning bit (S-0-0012 ; bit 2) and the prewarning "E2051 Motor overtemp. prewarning" are set.	

P-0-0468 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: 0,0 / 110,0		Default value: 95,0

3.3.118 P-0-0469, Prewarning threshold of therm. load of braking resistor

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter defines the threshold of the thermal braking resistor load at which the prewarning bit (S-0-0012; bit 1) and prewarning "E2820 Braking resistor overload prewarning" are set.	
P-0-0469 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
AXS:	min./max.: 0 / 110	Default value: 90

3.3.119 P-0-0472, Motor saturation current

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter displays the current up to which torque generation is realized proportionally to the cross current. At higher currents, torque generation is underproportionate due to the iron saturation in the motor. As of this current value, the value for the current torque constant is reduced.	
 For Rexroth motors with encoder data memory, the parameter is initialized from the encoder data memory.		
P-0-0472 - Attributes	Function: Par Memory: PARAM_SP Unit: A Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / 20000,000	Default value: 0,000

3.3.120 P-0-0480, Patch function 1, source pointer

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used to select a controller-internal memory location. This memory location can be read or written via patch function 1.	
 The patch function is reserved for development personnel for diagnosing internal signal states and/or internal data and cannot be used by the customer. For this reason, the values for this parameter (memory addresses) are only available to development personnel.		

See also Functional Description "Patch function"

P-0-0480 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: HEX Decim. pl.: 0 Set-depend.: --
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Product-specific parameters

AXS:	min./max.: --- / ---	Default value: s. Text
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3.3.121 P-0-0481, Patch function 1, attribute

Allocation	Hardware Funct. package(s): Device parameter: --															
Function	This parameter is used to configure the access and the output to the controller-internal memory address selected in " P-0-0480 , Patch function 1, source pointer".															
Structure	<p>See also Functional Description "Patch function"</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Bit</th> <th style="text-align: left;">Designation/function</th> <th style="text-align: left;">Comment</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">2/1/0</td> <td> Source data type 0: INT4 1: INT2 2: INT1 3: FLOAT8 4: FLOAT4 </td> <td></td> </tr> <tr> <td style="text-align: center;">6/5/4</td> <td> Source data output format 0: BIN 1: DEC w sign 2: DEZ o VZ 3: HEX 4: FLOAT 5: BOOL </td> <td></td> </tr> <tr> <td style="text-align: center;">11-7</td> <td>Reserved</td> <td></td> </tr> <tr> <td style="text-align: center;">15-12</td> <td> Address target system 0000: ctrlX DRIVE control section 0001: Channel 1 of Safe Motion 0010: Channel 2 of Safe Motion 0101*: Channel 1 and channel 2 of Safe Motion </td> <td>0000: Default: ctrlX DRIVE control section</td> </tr> </tbody> </table>	Bit	Designation/function	Comment	2/1/0	Source data type 0: INT4 1: INT2 2: INT1 3: FLOAT8 4: FLOAT4		6/5/4	Source data output format 0: BIN 1: DEC w sign 2: DEZ o VZ 3: HEX 4: FLOAT 5: BOOL		11-7	Reserved		15-12	Address target system 0000: ctrlX DRIVE control section 0001: Channel 1 of Safe Motion 0010: Channel 2 of Safe Motion 0101*: Channel 1 and channel 2 of Safe Motion	0000: Default: ctrlX DRIVE control section
Bit	Designation/function	Comment														
2/1/0	Source data type 0: INT4 1: INT2 2: INT1 3: FLOAT8 4: FLOAT4															
6/5/4	Source data output format 0: BIN 1: DEC w sign 2: DEZ o VZ 3: HEX 4: FLOAT 5: BOOL															
11-7	Reserved															
15-12	Address target system 0000: ctrlX DRIVE control section 0001: Channel 1 of Safe Motion 0010: Channel 2 of Safe Motion 0101*: Channel 1 and channel 2 of Safe Motion	0000: Default: ctrlX DRIVE control section														

* The coding must only be set if the master password ([P-0-4064](#) = 4) is set. This mode only supports write access. It does not support simultaneous read access to the address.

Tab. 3-52: *Relevant bits of P-0-0481*

 The patch function is reserved for development personnel for diagnosing internal signal states and/or internal data and cannot be used by the customer.

P-0-0481 - Attributes	Function: Par	Editable: ALWAYS	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: BIN
	Unit: --	Ext. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --

AXS:	min./max.: --- / ---	Default value: 0x30
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3.3.122 P-0-0482, Patch function 1, bit mask

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	With this parameter, the bit mask effective for output of the value of the controller-internal memory location selected by "P-0-0480, Patch function 1, source pointer" is selected. The effect of this parameter depends on "P-0-0481, Patch function 1, attribute". It is only active in specific configuration constellations.	



The patch function is reserved for development personnel for diagnosing firmware-internal signal states and/or data and cannot be used by the customer.

See also Functional Description "Patch function"

P-0-0482 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: 0xFFFFFFFF

3.3.123 P-0-0483, Patch function 1, exponent

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	With this parameter, an exponent effective for output of the value of the controller-internal memory location selected by "P-0-0480, Patch function 1, source pointer" is selected. The effect of this parameter depends on "P-0-0481, Patch function 1, attribute". It is only active in specific configuration constellations.	



The patch function is reserved for development personnel for diagnosis of internal signal states and/or data and cannot be used by the customer.

See also Functional Description "Patch function"

P-0-0483 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: -32 / 32 Default value: 0

3.3.124 P-0-0485, Patch function 1, display

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	With this parameter, the content of a controller-internal memory location can be read or written with this value. Further specifications or configurations are set in the other parameters relevant for the patch function.	



The patch function is reserved for development personnel for diagnosing firmware-internal signal states and/or data and cannot be used by the customer. Since unauthorized writing of this parameter may affect the drive function, this parameter is write-protected.

Product-specific parameters

	See also Functional Description "Patch function"			
P-0-0485 - Attributes	Function: Par	Editable: --	Data length: 4Byte	
	Memory: --	Validity ch.: --	Format: HEX	
	Unit: --	Extr. val. ch.: +	Decim. pl.: 0	
	Cycl. tra.: AT + MDT	Comb. check: --	Set-depend.: --	
	AXS:		min./max.: 0x0 / 0xFFFFFFFF	Default value: ---

3.3.125 P-0-0486, Patch function 2, source pointer

Allocation	Hardware Funct. package(s): Device parameter:	--												
Function	This parameter is used to select a controller-internal memory location. This memory location can be read or written via patch function 2.													
	 The patch function is reserved for development personnel for diagnosis of internal signal states and/or data and cannot be used by the customer. For this reason, the values for this parameter (memory addresses) are only available to development personnel.													
	See also Functional Description "Patch function"													
P-0-0486 - Attributes	<table border="1"> <tr> <td>Function: Par</td> <td>Editable: ALWAYS</td> <td>Data length: 4Byte</td> </tr> <tr> <td>Memory: PARAM_SP</td> <td>Validity ch.: SUBD:PM->OM</td> <td>Format: HEX</td> </tr> <tr> <td>Unit: --</td> <td>Extr. val. ch.: --</td> <td>Decim. pl.: 0</td> </tr> <tr> <td>Cycl. tra.: --</td> <td>Comb. check: --</td> <td>Set-depend.: --</td> </tr> </table>		Function: Par	Editable: ALWAYS	Data length: 4Byte	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: HEX	Unit: --	Extr. val. ch.: --	Decim. pl.: 0	Cycl. tra.: --	Comb. check: --	Set-depend.: --
Function: Par	Editable: ALWAYS	Data length: 4Byte												
Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: HEX												
Unit: --	Extr. val. ch.: --	Decim. pl.: 0												
Cycl. tra.: --	Comb. check: --	Set-depend.: --												
	AXS: min./max.: --- / ---													
	Default value: s. Text													

3.3.126 P-0-0487, Patch function 2, attribute

Allocation	Hardware Funct. package(s): Device parameter:	--									
Function	This parameter is used to configure the access and the output to the controller-internal memory address selected in " P-0-0486, Patch function 2, source pointer ".										
Structure	See also Functional Description "Patch function"										
	<table border="1"> <thead> <tr> <th>Bit</th> <th>Designation/function</th> <th>Comment</th> </tr> </thead> <tbody> <tr> <td>2/1/0</td> <td> Source data type 0: INT4 1: INT2 2: INT1 3: FLOAT8 4: FLOAT4 </td> <td></td> </tr> <tr> <td>6/5/4</td> <td> Source data output format 0: BIN 1: DEC w sign 2: DEZ o VZ 3: HEX 4: FLOAT 5: BOOL </td> <td></td> </tr> </tbody> </table>		Bit	Designation/function	Comment	2/1/0	Source data type 0: INT4 1: INT2 2: INT1 3: FLOAT8 4: FLOAT4		6/5/4	Source data output format 0: BIN 1: DEC w sign 2: DEZ o VZ 3: HEX 4: FLOAT 5: BOOL	
Bit	Designation/function	Comment									
2/1/0	Source data type 0: INT4 1: INT2 2: INT1 3: FLOAT8 4: FLOAT4										
6/5/4	Source data output format 0: BIN 1: DEC w sign 2: DEZ o VZ 3: HEX 4: FLOAT 5: BOOL										

Bit	Designation/function	Comment
11-7	Reserved	
15-12	Address target system 0000: ctrlX DRIVE control section 0001: Channel 1 of Safe Motion 0010: Channel 2 of Safe Motion 0101*: Channel 1 and channel 2 of Safe Motion	0000: Default: ctrlX DRIVE control section

* The coding must only be set if the master password ([P-0-4064](#) = 4) is set. This mode only supports write access. It does not support simultaneous read accesses.

Tab. 3-53: Relevant bits of P-0-0487

 The patch function is reserved for development personnel for diagnosing internal signal states and/or internal data and cannot be used by the customer.

P-0-0487 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: 0x30

3.3.127 P-0-0488, Patch function 2, bit mask

Allocation Hardware
Funct. package(s): --
Device parameter:

Function With this parameter, the bit mask effective for output of the value of the controller-internal memory location selected by "P-0-0486, Patch function 2, source pointer" is selected. The effect of this parameter depends on "P-0-0487, Patch function 2, attribute". It is only active in specific configuration constellations.

 The patch function is reserved for development personnel for diagnosis of internal signal states and/or data and cannot be used by the customer.

See also Functional Description Patch function

P-0-0488 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: 0xFFFFFFFF

3.3.128 P-0-0489, Patch function 2, exponent

Allocation Hardware
Funct. package(s): --
Device parameter:

Function With this parameter, an exponent effective for output of the value of the controller-internal memory location selected by "P-0-0486, Patch function 2, source pointer" is selected. The effect of this parameter depends on "P-0-0487, Patch function 2, attribute". It is only active in specific configuration constellations.

Product-specific parameters



The patch function is reserved for development personnel for diagnosing firmware-internal signal states and/or data and cannot be used by the customer.

See also Functional Description "Patch function"

P-0-0489 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: -32 / 32			
				Default value: 0	

3.3.129 P-0-0491, Patch function 2, display

Allocation Hardware
Funct. package(s):
Device parameter: --

Function With this parameter, the content of a controller-internal memory location can be read or written with this value. Further specifications or configurations are set in the other parameters relevant for the patch function.



The patch function is reserved for development personnel for diagnosing firmware-internal signal states and/or data and cannot be used by the customer. Since unauthorized writing of this parameter may affect the drive function, this parameter is write-protected.

See also Functional Description "Patch function"

P-0-0491 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: 0x0 / 0xFFFFFFFF			
				Default value: ---	

3.3.130 P-0-0492, Symbol-based patch function 1, data source

Allocation Hardware
Funct. package(s):
Device parameter: --

Function This parameter is used for selecting a variable of the symbol-based patch function. This variable can be read out via the "symbol-based patch function 1, display".

Observe the following aspects when entering data:

- The parameter can be written with the UTF-8 character set.
- Maximum size: 256 bytes
- A UTF-8 character can have 1 to 3 bytes.
- Depending on the UTF-8 characters used, the number of characters that can be entered is reduced.

The following data types are supported:

BOOL	1 byte
BYTE, USINT	1 byte without sign

SINT	1 byte with sign
WORD, UINT	2 bytes without sign
INT	2 bytes with sign
DWORD, UDINT	4 bytes without sign
DINT	4 bytes with sign
REAL	4 bytes

The following output formats can be evaluated:

2#	Binary display
10#	Decimal display
16#	Hexadecimal display

See also Functional Description "Patch function"

P-0-0492 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	1Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	ASCII
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: --- / ---				Default value: s. Text

3.3.131 P-0-0493, Symbol-based patch function 1, display

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

Currently, this parameter is only used internally by the development staff for diagnostic purposes.

See also Functional Description "Patch function"

P-0-0493 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: --- / ---				Default value: ---

3.3.132 P-0-0494, Symbol-based patch function 2, data source

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter is used for selecting a variable of the symbol-based patch function. This variable can be read out via the "symbol-based patch function 2, display".

Observe the following aspects when entering data:

- The parameter can be written with the UTF-8 character set.
- Maximum size: 256 bytes
- A UTF-8 character can have 1 to 3 bytes.
- Depending on the UTF-8 characters used, the number of characters that can be entered is reduced.

The following data types are supported:

Product-specific parameters

BOOL	1 byte
BYTE, USINT	1 byte without sign
SINT	1 byte with sign
WORD, UINT	2 bytes without sign
INT	2 bytes with sign
DWORD, UDINT	4 bytes without sign
DINT	4 bytes with sign
REAL	4 bytes

The following output formats can be evaluated:

2#	Binary display
10#	Decimal display
16#	Hexadecimal display

See also Functional Description "Patch function"

P-0-0494 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	1Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	ASCII
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: --- / ---				Default value: s. Text

3.3.133 P-0-0495, Symbol-based patch function 2, display

Allocation Hardware
Funct. package(s):
Device parameter: --

Function Currently, this parameter is only used internally by the development staff for diagnostic purposes.

See also Functional Description "Patch function"

P-0-0495 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: --- / ---				Default value: ---

3.3.134 P-0-0496, Symbol-based patch function 3, data source

Allocation Hardware
Funct. package(s):
Device parameter: --

Function This parameter is used for selecting a variable of the symbol-based patch function. This variable can be read out via the "symbol-based patch function 3, display".

Observe the following aspects when entering data:

- The parameter can be written with the UTF-8 character set.
- Maximum size: 256 bytes
- A UTF-8 character can have 1 to 3 bytes.

- Depending on the UTF-8 characters used, the number of characters that can be entered is reduced.

The following data types are supported:

BOOL	1 byte
BYTE, USINT	1 byte without sign
SINT	1 byte with sign
WORD, UINT	2 bytes without sign
INT	2 bytes with sign
DWORD, UDINT	4 bytes without sign
DINT	4 bytes with sign
REAL	4 bytes

The following output formats can be evaluated:

2#	Binary display
10#	Decimal display
16#	Hexadecimal display

See also Functional Description "Patch function"

P-0-0496 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	1Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	ASCII
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: s. Text
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3.3.135 P-0-0497, Symbol-based patch function 3, display

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Currently, this parameter is only used internally by the development staff for diagnostic purposes.	

See also Functional Description "Patch function"

P-0-0497 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.3.136 P-0-0498, Symbol-based patch function 4, data source

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used for selecting a variable of the symbol-based patch function. This variable can be read out via the "symbol-based patch function 4, display".	

Observe the following aspects when entering data:

- The parameter can be written with the UTF-8 character set.

Product-specific parameters

- Maximum size: 256 bytes
- A UTF-8 character can have 1 to 3 bytes.
- Depending on the UTF-8 characters used, the number of characters that can be entered is reduced.

The following data types are supported:

BOOL	1 byte
BYTE, USINT	1 byte without sign
SINT	1 byte with sign
WORD, UINT	2 bytes without sign
INT	2 bytes with sign
DWORD, UDINT	4 bytes without sign
DINT	4 bytes with sign
REAL	4 bytes

The following output formats can be evaluated:

2#	Binary display
10#	Decimal display
16#	Hexadecimal display

See also Functional Description "Patch function"

P-0-0498 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	1Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	ASCII
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: s. Text
------	----------------------	------------------------

3.4 P-0-0500 to P-0-0689 General functions

3.4.1 P-0-0500, Dynamic alias mapping, access options

Allocation Hardware
Funct. package(s):
Device parameter:

Function This parameter is required for internal use only.

P-0-0500 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
------	----------------------	--------------------

3.4.2 P-0-0504, C1100 Activate parameterization mode procedure command

Allocation Hardware
Funct. package(s):
Device parameter:

Function The command switches the axis to parameterization mode (PM). The command can be executed in configuration mode (CM) as well as in operating mode (OM). To achieve this, the cyclically running axis functions (encoder evaluation, motor temperature monitoring, analog signal

processing, etc.) are **not** stopped. Also the reference of the axis-related position encoders is **not** deleted.

See also Functional Description "Basic functions of master communication"

P-0-0504 - Attributes	Function: Cmd Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.4.3 P-0-0505, Lower motor temperature limit

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	If the motor temperature falls below the lower limit of the motor warning temperature, the drive sets bit 2 (motor overtemperature warning) in "S-0-0012, Class 2 diagnostics" and the warning E2021 is output. For Rexroth motors with encoder data memory, the value is set to -20°C and cannot be modified.	

P-0-0505 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0208 Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: Set-depend.: Grp. 5
	AXS:	min./max.: s. Text / s. Text	Default value: ---

3.4.4 P-0-0506, Amplitude for angle acquisition

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In the case of the "saturation method", this parameter defines the start value for the amplitude of the test signal for automatic commutation offset determination with current.	
Use	See also Functional Description "Commutation setting" The value for this parameter is saved. It can be changed for adjustment.	



The parameters "P-0-0506" and "P-0-0507, Test frequency for angle acquisition" are iteratively adjusted by the drive if it had not been possible to determine the commutation offset with the specified values. These new pairs of values are only saved if the initial commissioning mode has been activated in the parameter "P-0-0522" with bit 15 = 1.

If the value = 0 is specified in the parameter "P-0-0506", the drive calculates its own start values for "P-0-0506" and "P-0-0507".

P-0-0506 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: Grp. 5
	AXS:	min./max.: 0 / 1000	Default value: 0

3.4.5 P-0-0507, Test frequency for angle acquisition

Allocation	Hardware Funct. package(s): Device parameter:	--
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Product-specific parameters

Function In the case of the "saturation method", this parameter defines the starting frequency of the test signal for automatic commutation offset determination with current.

See also Functional Description "Commutation setting"

Use The value for this parameter is saved. It can be changed for adjustment.



The parameters "[P-0-0506](#), Amplitude for angle acquisition" and "[P-0-0507](#)" are iteratively adjusted by the drive if it had not been possible to determine the commutation offset with the specified values. These new pairs of values are only saved if the initial commissioning mode has been activated in the parameter "[P-0-0522](#)" with bit 15 = 1.

If the value = 0 is specified in the parameter "[P-0-0506](#)", the drive calculates its own start values for "[P-0-0506](#)" and "[P-0-0507](#)".

P-0-0507 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV
Unit:	Hz	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 5

AXS:	min./max.: 0 / 1000	Default value: 500
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3.4.6 P-0-0508, Commutation offset

Allocation Hardware
Funct. package(s): --
Device parameter:

Function The parameter contains the saved commutation offset. Depending on the encoder system, the value in parameter "[P-0-0508](#)" has different functions. If the value becomes active, it is applied to the parameter "[P-0-0521](#), Effective commutation offset". The time it becomes active also depends on the respective function in the encoder system.

- For motors with encoder memory, the value for the parameter "[P-0-0508](#)" is read from the encoder. The commutation offset displayed here immediately becomes effective after the drive has been switched to the operating mode.
- For motors with absolute encoders without encoder memory, or if the encoder memory has been deactivated, the parameter "[P-0-0508](#)" contains the commutation offset determined at initial commissioning. It is saved together with the drive parameters. It also becomes effective as commutation offset immediately after the drive has been switched to the operating mode.
- For motors with incremental encoder or when using digital Hall sensors, the parameter "[P-0-0508](#)" contains the commutation offset related to the reference mark of the encoder (the respective switch edge when homing at switches). In this case, the value is also stored together with the drive parameters. The value becomes effective if the respective function for applying the commutation offset (commutation fine adjustment) is active and the reference mark is passed accordingly.
- In the case of the measuring method for incremental encoders at linear motors, parameter "[P-0-0508](#)" contains the commutation offset related to the switch edge. Also in this case, the value is stored together with the drive parameters. The value becomes effective when the switch is activated.



"P-x-0508" can only be written in the parameter mode and can only be changed indirectly and for optimization in the initial commissioning mode using "P-0-0521, Effective commutation offset" if the drive is active.

The value for "P-x-0508" has to be re-determined whenever

- the measuring system of rotary motors is changed in its mechanical arrangement or
- the primary and secondary parts of kit motors are mechanically modified.



For asynchronous motors, this parameter does not have any function.

See also Functional Description "Commutation setting"

P-0-0508 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS:

min./max.: s. Text / 1024

Default value: 0

3.4.7 P-0-0509, Commutation offset coarse

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

When the motor is switched on, this parameter makes available a functional commutation offset value for synchronous motors*.



* The synchronous motors are equipped with a low-resolution, the pole pairs of the motor with an absolutely measuring encoder system (e.g., digital Hall sensors).



The low-resolution absolute encoder system is a supplement for relative encoders 1.

With this commutation offset value, the motor is immediately functional after drive enable. However, reduced power has to be expected.

The value must be determined on initial commissioning of the motor. Ideally, this must be done for a motor position which corresponds as precisely as possible to the position feedback value determined with low resolution (e.g., centrally in a 60° range with three digital Hall sensors). The value is stored in the controller. With "AF", it becomes immediately active in "P-0-0521, Effective commutation offset".



If the "optimum commutation offset with regard to reference point" is used, the effective commutation offset (P-0-0521), after the motor has been recommissioned, achieves the quality of the value stored when the drive was commissioned for the first time. This results in a reproducible drive behavior with regard to the torque/force development.

See also Functional Description "Commutation setting"

Product-specific parameters

P-0-0509 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: Grp. 4
AXS:		min./max.: s. Text / 1024	Default value: 0

3.4.8 P-0-0510, Rotor inertia

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Depending on "P-0-4014, Type of construction of motor", bit 9, the value of this parameter varies in its significance:	
<ul style="list-style-type: none"> • Rotor inertia (without load inertia) for rotary motors • Primary part mass (without load mass) for linear motors 		
 The correct value is written to this parameter as follows:		
<ul style="list-style-type: none"> • For Rexroth motors with encoder data memory: Automatic when controller is switched on. • In the case of Rexroth motors without encoder data memory: By loading the motor parameters with the "ctrlX DRIVE Engineering" commissioning software. • In the case of other motors: By manual input according to the manufacturer's specification. 		

See also Functional Description "Operating motors with ctrlX DRIVE"

Use Unit, decimal places

The drive firmware automatically adjusts the unit and decimal places to the type of construction of the motor (rotary or linear) entered in "P-0-4014, Type of construction of motor".

Unit for type of constr. of motor (P-0-4014)	
Rotary	Linear
kgm^2	kg

Tab. 3-54: Unit and decimal places of P-0-0510, depending on P-0-4014

This parameter is used with parameter "P-0-4010, Load inertia" for calculation of the velocity controller gain.

P-0-0510 - Attributes	Function: Par Memory: PARAM_SP Unit: kgm^2 Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 7 Set-depend.: Grp. 5
AXS:		min./max.: s. Text / s. Text	Default value: 0,0000000

3.4.9 P-0-0512, Temperature sensor

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The controller monitors the motor temperature by means of temperature sensors installed in the motor. The controller can directly evaluate standard	

temperature sensors, because the characteristics of the sensors are stored in the firmware.

See also Functional Description "Motor temperature monitoring"

Use



Writing the correct value to this parameter:

- For Rexroth motors with encoder data memory: automatically when the controller is switched on and during the transition "PM → OM".
- For Rexroth motors without encoder data memory: by loading the motor parameters with the IndraWorks D commissioning tool.
- For other motors: manual input according to manufacturer information.

The temperature sensor type evaluated by the controller is defined by the parameter value:

Parameter value	Function	Comment
0	No monitoring of the motor temperature	
1	SNM150-DK, by Thermik (PTC with switching performance, three-core circuitry)	
2	K227, by Siemens (NTC, analog characteristic)	
3	KTY84, by Siemens (PTC, analog characteristic)	
4	SNM130-DK, by Thermik (PTC with switching performance, triple sensor circuitry)	
5	Reserved	
6	Temperature sensor with switching performance (bimetal)	
7	Reserved for MS2N motors with KTY84 sensor	
8	Temperature sensor PT1000	
100	Unknown temperature sensor The characteristic has to be entered in the list parameter " P-0-0513 , Temperature sensor characteristic".	

Tab. 3-55: *Supported temperature sensors*

NOTICE

Thermal damage

In case of overload, the controller cannot protect motors without temperature sensor against thermal damage!

P-0-0512 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	Grp. 5

AXS:

min./max.: s. Text / s. Text

Default value: 1

Product-specific parameters

3.4.10 P-0-0513, Temperature sensor characteristic

- Allocation** **Hardware** --
Funct. package(s):
Device parameter:
- Function** If a temperature sensor is to be evaluated but its characteristic curve is not saved in the firmware, it must be entered here as a value table.
 See also Functional Description "Motor temperature monitoring"
- Use** The values must be strictly and monotonously ascending or descending, i.e. in the table the values assigned to an increasing temperature must either be always higher than all preceding values or always lower than all preceding values. In the table, the resistance values must not descend and ascend in different sections of the table!

Line no. of P-0-0513	Temperature in °Celsius [°C]	Resistance in Ohm [Ω]
0	-40	
1	-30	
2	-20	
3	-10	
4	0	
5	10	
6	20	
7	30	
8	40	
9	50	
10	60	
11	70	
12	80	
13	90	
14	100	
15	110	
16	120	
17	130	
18	140	
19	150	
20	160	
21	170	
22	180	
23	190	
24	200	
25	210	

Line no. of P-0-0513	Temperature in °Celsius [°C]	Resistance in Ohm [Ω]
26	220	
27	230	
28	240	
29	250	

Tab. 3-56: List for temperature sensor characteristic curve

P-0-0513 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	ohm	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 5

AXS: min./max.: s. Text / 500000000 Default value: s. Text

3.4.11 P-0-0514, Amplitude for angle acquisition, sine-wave method**Allocation**

Hardware --
Funct. package(s):
Device parameter:

Function

In the case of the "sine-wave method", this parameter defines the start value for the amplitude of the test signal for automatic commutation offset determination with current.

See also Functional Description "Commutation setting"

Use

This is a torque/force value, its unit is "%". The 100% reference value is the motor standstill torque according to "[S-0-0086](#), Torque/force data scaling type". The value for this parameter is saved. It can be changed for adjustment.



The parameters "[P-0-0514](#)" and "[P-0-0520](#), Test frequency for angle acquisition" are iteratively adjusted by the drive if it had not been possible to determine the commutation offset with the specified values. These new pairs of values are only saved if the initial commissioning mode has been activated in the parameter "[P-0-0522](#)" with bit 15 = 1.

If the value = 0 is specified in the parameter "[P-0-0514](#)", the drive calculates its own start values for "[P-0-0514](#)" and "[P-0-0520](#)".

P-0-0514 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV
Unit:	%	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 5

AXS: min./max.: 0 / 1000 Default value: 0

3.4.12 P-0-0515, Commutation offset 2**Allocation**

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter is only used if encoder 2 is the only commutation encoder (encoder 2 = motor control encoder; encoder 1 is not available), or if motor control was actively switched to encoder 2 ([P-0-0185](#)).

Product-specific parameters



If the encoder 2 has been parameterized as a redundant motor control encoder, so that motor control continues with the data of encoder 2 in case encoder 1 fails, the parameter **P-0-0515** does not take effect and does not need to be determined.

See also Functional Description "Commutation setting"

Use For incremental measuring systems, the commutation offset has to be determined again each time the drive is switched back on. After drive enable has been set, a procedure for determining the correct value for the effective commutation offset (**P-0-0521**) is automatically started. After the procedure has been successfully run, the motor is able to generate force. The saturation method or the sine-wave method can be selected as the commutation setting procedure.

When the incremental measuring system is subsequently homed, during spindle positioning or when the zero mark of the encoder is passed, a commutation offset fine adjustment is carried out. For this purpose, the value of "**P-0-0521**", that was converted to the reference mark, is compared to "**P-x-0515**" and corrected, if necessary. Afterwards the motor runs with the optimum commutation offset from "**P-x-0515**" determined during the initial commissioning. The commutation fine adjustment is activated if bit 10 has been set in "**P-0-0522**".



"**P-x-0515**" can only be written in the parameter mode and can only be changed indirectly and for optimization in the initial commissioning mode using "**P-0-0521**, Effective commutation offset" if the drive is active.

The value for "**P-x-0515**" has to be re-determined whenever

- the measuring system of rotary motors is changed in its mechanical arrangement or
- the primary and secondary parts of kit motors are mechanically modified.

For asynchronous motors, this parameter does not take effect.

P-0-0515 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / 1024	Default value: 0
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3.4.13 P-0-0516, Commutation speed smoothing time constant

Allocation Hardware --

Funct. package(s):
Device parameter:

Function The commutation speed can be smoothed by entering a time constant which exceeds the sampling time of the velocity controller. The commutation speed is used to improve the dynamic behavior in current control mode.

Use The commutation speed should only be smoothed if a position signal with poor resolution is present and mechanical resonance points are therefore excited. The dynamics of the current control is deteriorated by using a high filter time constant.

P-0-0516 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	us	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: s. Text / 8000 Default value: 0

3.4.14 P-0-0517, Commutation: Required harmonics component

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter serves as threshold to specify a minimum harmonic component of the current at commutation determination by the saturation method.	
Use	If the percentage harmonic component of the current referred to the fundamental wave during commutation determination is below the value entered in "P-0-0517", this leads to an incorrect results value for "P-0-0521, Effective commutation offset", which may lead to a positive feedback of the motor (F8078 Speed loop error). For this reason the command is aborted by the drive with command error "F8013" or "C1218 Automatic commutation: Current too low".	



In most cases, the default value of 4% must not be changed. Only in exceptional cases, this threshold value has to be corrected iteratively on commissioning:

- In case of error "F8013" or "C1218 Automatic commutation: Current too low" is returned and if similar values (+/- approx. 30) are determined for "P-0-0521" after multiple repetition of the commutation settings at different motor positions (drive remains in "Ab"), "P-0-0517" is reduced until the error message no longer occurs. In the end, the corrected commutation setting function has to be changed several times!
- In case of "error F8078 Speed loop error" although commutation determination has not reported any error, parameter "P-0-0517" has to be increased!

P-0-0517 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV
Unit:	%	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 5

AXS: min./max.: 1,0 / 10,0 Default value: 4,0

3.4.15 P-0-0519, Commutation status word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The current status of the commutation setting of the connected motor is diagnosed in the commutation status word. When motors with digital hall sensors are used, bit 12... 14 shows the signal state of the Hall sensor signals.	

See also Functional Description "Commutation setting"

Bit	Status message	
0	Commutation offset coarse 0: Communication offset not active 1: Application of "P-0-0509, Commutation offset coarse"	

Product-specific parameters

1	Reference-point-optimized commutation offset 0: Not active 1: active - Correction value was determined and added to "P-0-0521"	
2	Commutation offset determined 0: No determination carried out. Commutation offset unknown (bit 0 = 0) or value of "P-0-0509, Commutation offset coarse" as commutation offset active (bit 0 = 1) 1: Commutation offset determined either by - Command "C1200 Commutation offset setting command" or commutation offset determination when setting drive enable (in incremental measuring systems) or "Hall sensor or axis limit switch edge adjustment",	
11... 15	Reserved	

Tab. 3-57: P-0-0519, Commutation status word

 For motors with absolute encoder, where the commutation offset is saved in the encoder data memory, bits 0/1/2 are always "1".

P-0-0519 - Attributes	Function: Par	Editable: --	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: BIN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.4.16 P-0-0520, Test frequency for angle acquisition, sine-wave method

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In the case of the "sine-wave method", this parameter defines the starting frequency of the test signal for automatic commutation offset determination with current.	
	See also Functional Description "Commutation setting"	
Use	The value for this parameter is saved. It can be changed for adjustment.	
	 The parameters "P-0-0514, Amplitude for angle acquisition" and "P-0-0520" are iteratively adjusted by the drive if it had not been possible to determine the commutation offset with the specified values. These new pairs of values are only saved if the initial commissioning mode has been activated in the parameter "P-0-0522, Control word for commutation setting" with bit 15 = 1. If the value = 0 is specified in the parameter "P-0-0514", the drive calculates its own start values for "P-0-0514" and "P-0-0520".	

P-0-0520 - Attributes	Function: Par	Editable: ALWAYS	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: --	Format: DEC_OV
	Unit: Hz	Extr. val. ch.: +	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: Grp. 5
	AXS:	min./max.: 0 / 1000	Default value: 0

3.4.17 P-0-0521, Effective commutation offset

Allocation	Hardware Funct. package(s): Device parameter:
Function	With synchronous motors, the parameter "P-0-0521" displays the value of the commutation offset active for motor control.
Origin:	<ul style="list-style-type: none"> • Value applied from the encoder data memory via "P-0-0508, Commutation offset": <ul style="list-style-type: none"> – For Rexroth housing motors MSK and MS2N (supplied with motor-specific commutation offset). – For Rexroth kit motors or third-party motors with a motor encoder that can be evaluated in absolute form with encoder data memory (motor-specific commutation offset generated once during initial commissioning of the motor using an appropriate commutation method via command, value automatically saved in "P-0-0508" and in the encoder). • Value applied from "P-0-0508, Commutation offset": <ul style="list-style-type: none"> – For Rexroth kit motors or third-party motors with a motor encoder that can be evaluated in absolute form without motor encoder data memory (motor-specific commutation offset generated once during initial commissioning of the motor using an appropriate commutation method via command, value automatically saved in "P-0-0508"). – For Rexroth motors MCL with "analog Hall unit" option and a relative motor encoder (the motor type-specific value of "P-0-0508" is made available by the manufacturer and loaded to the drive using "ctrlX DRIVE Engineering" with the data set of the motor type). • Value applied from "P-0-0509, Commutation offset, coarse": <ul style="list-style-type: none"> – For Rexroth motors MCL with "digital Hall unit" option and a relative motor encoder (the motor-specific value of "P-0-0509" is made available by the manufacturer and loaded to the drive using "ctrlX DRIVE Engineering" with the data set of the motor type). – For Rexroth motors MLF with a relative motor encoder and switch-monitored axis end position (motor-specific value generated during initial commissioning of the motor using the measuring method and command with automatic saving in P-0-0509). • Value applied from "P-0-0515, Commutation offset 2" if encoder 2 used as the only motor control encoder that can be evaluated in absolute form (motor-specific commutation offset generated once during initial commissioning of the motor using an appropriate commutation method via command, value automatically saved in "P-0-0515"). • Value automatically generated by the configured commutation method for relative motor encoders when "AF" is set for the first time after switching from PM to OM.

If relative motor encoders are used, the value of "P-0-0521" can be improved by an automatic optimization method in motor operation:

- If value of P-0-0521 is automatically generated (after "AF" has been set), by using the "optimum commutation offset with regard to reference point", configured in P-0-0522, Control word for commutation setting.
- For Rexroth motors MLF with switch-monitored end position using commutation adjustment by passing the axis limit switch.

Product-specific parameters

- For Rexroth motors MCL with "digital Hall unit" option using commutation adjustment by passing a sector limit.
See also Functional Description "Commutation setting\Commutation setting of motors with digital Hall sensors".



Multiple bits of "[P-0-0519](#), Commutation status word" display the "optimization degree" of the commutation offset.

Use

In the initial commissioning mode (can be activated in "[P-0-0522](#), Control word for commutation setting"), the value of "[P-0-0521](#)" can be written and thus used for manually optimizing the motor-specific commutation offset value. If the initial commissioning mode has been activated, the optimized value is automatically applied to "[P-0-0508](#)" and, where applicable, saved in the encoder (not for Rexroth housing motors MSK and MS2N!).

Manual optimization can be carried out by determining the current motor torque or force. The value of "[P-0-0521](#)" can be adjusted as long as necessary until the force or the torque is maximized at constant current or the current is minimized at constant force/torque. The value of "[P-0-0521](#)" should not be changed excessively compared to the previously automatically determined value (max. +/- 150 increments) to prevent positive feedback and a potential runaway effect of the axis, if the commutation offset leads to a force or torque against the desired direction of motion.

See also Functional Description "Commutation setting"

P-0-0521 - Attributes

Function:	Par	Editable:	SUBD:OM	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: s. Text / 1024 Default value: ---

3.4.18 P-0-0522, Control word for commutation setting

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

Content of the control word for commutation setting:

- Setting the method with which the controller determines the commutation offset of a closed-loop-controlled synchronous motor, if required.
- Configuring options with regard to the execution of the determination procedure.
- Settings for the optimization method, if the commutation offset has to be automatically determined again each time the motor is switched back on.

See also Functional Description "Commutation setting"

Structure	Bit	Designation/function	Comment
	2/1/0	Method of commutation setting for synchronous motors with motor encoder 000: Locked 001: Currentless (without AF) - manual distance measurement with linear motors 010: With current (with AF) - automatically determined for all SY types of motor construction by saturation method 011: With current (with AF) - automatically determined for all SY types of motor construction by sine-wave method 100: With current (with AF) - automatically determined for all SY types of motor construction by orientation method	
	3	Method of commutation setting for rotary synchronous motors operated without encoder 0: With current (with AF) - rotor aligned with a fixed commutation angle preset (orientation) 1: With current (with AF) - rotor position automatically determined by saturation method	
	4	Search direction for sine-wave method 0: Increase of amplitude with priority 1: Increase of frequency with priority	
	5	Return to the start position when sine-wave and saturation methods are used 0: Automatic return 1: No return	
	6	Reserved	
	7	Setting the test signal for sine-wave method 0: Fixed duration 1: Fixed number of signal periods	
	8	Reserved	
	9	Storing the commutation offset 0: For kit motors and third-party motors, the commutation offset, which has been determined and, if necessary, subsequently optimized, is stored in the encoder memory if any is available. 1: Even if an encoder memory is available, the determined offset is not saved in the encoder, but in the drive. This can only be used for motors with mechanically adjusted encoders (defined commutation offset).	

Product-specific parameters

Bit	Designation/function	Comment
10	<p>Automatic optimization of the active commutation offset when passing the reference pulse of the encoder</p> <p>only useful for rotative synchronous motor with relative encoder and one reference mark per motor revolution; Automatic optimization of "P-0-0521, Effective commutation offset" by the value entered in "P-0-0508" by means of the command drive-controlled homing procedure if the reference point is passed.</p> <p>0: not active; no optimization of the value of "P-0-0521", the value of "P-0-0521" that is automatically generated by "AF" remains unchanged.</p> <p>1: Value of "P-0-0521" is optimized by adding a correction value when the reference mark of the encoder is passed.</p> <p>See also Functional Description "Recommissioning a synchronous motor"</p> <p>Prerequisites:</p> <ol style="list-style-type: none"> 1. Commutation offset that has been optimized during initial commissioning is stored by passing the reference mark of the encoder in "initial commissioning mode" (bit 10 and bit 15 = 1) 	
11	<p>Automatic optimization of the active commutation offset when the position data reference is established (drive-controlled homing):</p> <p>for synchronous motor with relative encoder and multiple reference marks or none per motor revolution or linear motor travel range: Automatic optimization of "P-0-0521, Effective commutation offset" by the value entered in "P-0-0508" by means of the command drive-controlled homing procedure if the reference point is passed.</p> <p>0: not active - no optimization, the value of "P-0-0521" that is automatically generated by "AF" remains unchanged.</p> <p>1: Value of "P-0-0521" is optimized by adding a correction value</p> <p>See also Functional Description "Recommissioning a synchronous motor"</p> <p>Prerequisite: Commutation offset that has been optimized during initial commissioning is saved by "C0600, Drive-controlled homing procedure command" in "initial commissioning mode" (bit 11 and bit 15 = "1")</p>	
12	<p>Configuration of the signal state of the axis limit switch, displaying the defined initial position of the axis (for commutation setting using "measuring method" for Rexroth linear motor with relative measuring system).</p> <p>0: +24V if the axis limit switch is activated</p> <p>1: 0V if the axis limit switch is activated</p>	

Bit	Designation/function	Comment
13	Zero point adjustment for commutation setting 0: Zero point adjustment is not carried out. 1: By executing the command " P-0-0524 , C1200 Commutation offset setting command" the zero point of the encoder position is offset by the commutation angle offset. This means that the encoder, at the position of the maximum current in phase U, provides the position 0 or multiples of an encoder revolution, if a multi-turn encoder is used. In addition, the value 0 is written to the commutation offset in the encoder and in parameter P-0-0508 . The command can only be executed in the parameter mode (PM). Rexroth motors require the master password for this purpose.	
14	Current signal state of the axis limit switch , displaying the defined initial position of the axis (commutation setting using "measuring method" for Rexroth linear motor with relative measuring system). 0: 0V 1: + 24V	
15	Initial commissioning mode 0: Inactive 1: Active	

Tab. 3-58: Relevant bits of P-0-0522, Control word for commutation setting

Use Bit 15 = "1" of "[P-0-0522](#)" is used to inform the controller that the initial commissioning of a synchronous motor is carried out. The "initial commissioning mode" allows the value of the effective commutation offset ([P-0-0521](#)) to be optimized and stored. Once bit 15 is "0" again, "[P-0-0521](#)" can neither be manually changed nor stored.

Optimizing and storing the commutation offset

For motors with an absolute measuring system:

The value of the effective commutation offset ([P-0-0521](#)) is directly applied to "[P-0-0508](#)". In the "initial commissioning mode", the manual changes to "[P-0-0521](#)" are also immediately saved in "[P-0-0508](#)" and, where applicable, stored in the encoder.

The optimized value immediately takes effect when the motor is switched back on.

For motors with a relative measuring system:

Depending on the motor and encoder design, the effective commutation offset ([P-0-0521](#)) is determined and optimized if the "initial commissioning mode" has been activated. Afterwards, it should be stored in "[P-0-0508](#)", as explained below. When the motor is recommissioned, the same quality of the commutation offset can hereby be automatically restored despite relative measuring system.

- If the reference mark is passed with the "initial commissioning mode" activated in the case of motors with one reference mark per motor revolution, the controller stores the value of "[P-0-0521](#)", converted to the mark, in "[P-0-0508](#), Commutation offset".
- If the drive passes the dedicated point for homing by executing "[S-0-0148](#), C0600 Drive-controlled homing procedure command" in the

Product-specific parameters

case of motors with multiple reference marks or none per motor revolution or linear motor travel range, and with the "initial commissioning mode" activated, the controller stores the value of "[P-0-0521](#)", converted to this dedicated point, in "[P-0-0508, Commutation offset](#)".

Determining the correction value

During recommissioning ("initial commissioning mode" inactive), the value stored in "[P-0-0508](#)" is compared to the value of the effective commutation offset ([P-0-0521](#)) that was converted to the same dedicated position:

- In the case of motors with one reference mark per motor revolution, as soon as the reference mark of the encoder has been passed.
- In the case of motors with multiple reference marks or none per motor revolution or linear motor travel range, as soon as the dedicated point for homing has been passed after "C0600 Drive-controlled homing procedure command" was started.

Optimizing the commutation offset value

If the result of the comparison is valid, the difference of the two values is added to the current value of "[P-0-0521](#)". In this way, the quality of the commutation offset now effective complies with the value stored during initial commissioning.

Sine-wave method and orientation method

The commutation methods which require unrestricted movement can only be used for freely moving axes. A possibly available holding brake has to be released during the commutation setting!

WARNING

Vertical axes without a counterweight moving down when holding brake is automatically released by activating sine-wave method or orientation method!

⇒ The commutation methods which require unrestricted movement can only be used for equilibrated axes!



If the "sine-wave method" with current was selected, bit 7 can be used to considerably reduce the time required for commutation setting if "fixed number of signal periods" is set and the values of "[P-0-0507, Test frequency for angle acquisition](#)" are > approx. 50.

Using this setting is only recommended for synchronous motors with relative measuring system in conjunction with the use of "optimum commutation offset with regard to reference point", because the quality of the determined commutation setting can be poor.

Measuring method with relative measuring system

If commutation setting is to be carried out using the measuring method for Rexroth linear motors with relative measuring system, the axis limit switch required for this purpose, that signals the defined initial position of the axis, is to be assigned to bit 14 via a digital input. Bit 12 is used to configure the signal state which is signaled to the controller if the axis limit switch is activated.

[P-0-0522](#) - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 5

AXS:	min./max.: --- / ---	Default value: 0x10
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3.4.19 P-0-0523, Commutation setting measured value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	If a linear motor is equipped with an absolute encoder or if the conditions for commutation settings by switches are met at linear motors with incremental measuring system, the commutation setting can be realized "in a de-energized state". If the commutation settings of synchronous linear motors are to be realized in a de-energized state (configurable in P-0-0522 , Control word for commutation setting) the defined clearance has to be entered here. See also Functional Description "Commutation setting" See also Functional Description "Rexroth kit motors"	
P-0-0523 - Attributes		
Function:	Par	Editable: SUBD:OM
Memory:	--	Validity ch.: --
Unit:	mm	Extr. val. ch.: +
Cycl. tra.:	--	Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.4.20 P-0-0524, C1200 Commutation offset setting command

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Via parameter " P-0-0524 ", the command can be activated for commutation offset setting. See also Functional Description "Commutation setting"	
Use	After starting the command, the value for commutation offset of the synchronous motor is automatically determined by the drive and written to " P-0-0521 , Effective commutation offset". If the initial commissioning mode has been activated (P-0-0522 , Control word for commutation setting) and in the case of an absolute motor encoder, it is also saved in " P-0-0508 , Commutation offset" and, where applicable, stored in the encoder. The correct value for commutation offset ensures proper assignment of the current flow in the motor to the permanent magnetic field to ensure maximum force effect of the current flow.	
 This command is only required for synchronous motors supplied without fixed mechanical assignment of rotor or moving motor components to the encoder system (e.g. synchronous kit motors).		
P-0-0524 - Attributes		
Function:	Cmd	Editable: ALWAYS
Memory:	--	Format: BIN
Unit:	--	Decim. pl.: 0
Cycl. tra.:	--	Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

3.4.21 P-0-0525, Brake control word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter provides the controller with information on the type of holding brake and the way it is controlled: <ul style="list-style-type: none">• Self-releasing or self-holding brake• Main drive brake or servo brake	

Product-specific parameters

- Enabling the "release holding brake" command



- For Rexroth motors with encoder data memory, bit 0 and bit 2 are automatically set if the motor is equipped with a holding brake. For motors without a holding brake, bits 0 and 2 are reset when the default values for the control loops are loaded.
- For motors without encoder data memory, bit 0 and bit 2, depending on whether a holding brake is available, have to be manually set to the appropriate value.
- For motors without integrated holding brake, an external holding brake can be controlled by the controller (set bit 2 to "1"). Set bit 0 according to type of holding brake.

See also Functional Description "Motor holding brake"

Structure

Bit	Designation/function	Comment
0	Type of holding brake 0: Self-holding, applied at 0 V 1: Electrically holding, applied at 24 V	
1	Functional principle 0: Servo brake, brake is activated after max. braking time 1: Main drive brake, brake is only activated if $n_{act} < 10$ rpm	
2	Holding brake available? 0: no 1: yes (possibly external holding brake, if no motor-internal brake available!)	
5	Reserved	
6	Activate time interval of holding brake check? 0: no 1: yes	
7	Reserved	
8	Wire break monitoring of holding brake 0: active - monitoring for wire break, if holding brake parameterized 1: deactivated - no monitoring for wire break.	
10/9	Test direction "C2100 Command Holding system check" 00: Test in both directions (default) 01: Test in positive direction 10: Test in negative direction	

Bit	Designation/function	Comment
12	Diagnostic message for time interval of holding brake check Only possible in conjunction with bit 6 0: Active 1: Diagnostic message suppressed (E3115/F3115)	
13	Torque limitation during brake check 0: Active (default) 1: Not active Note: The limitations by the thermal models (S-0-0092 , S-0-0082 , S-0-0083) remain active!	

Tab. 3-59: Relevant bits of P-0-0525

P-0-0525 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: 0x0

3.4.22 P-0-0526, Displacement during brake check

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The "brake check" command presets a torque with the holding brake applied. This torque input causes a change in position. The change in position in the individual phases of torque input is stored in the respective list elements.	

 The values of the parameter are written with 0 when the brake check starts.

Structure	Structure of the list parameter:
-----------	----------------------------------

List element	Function	Comment
0	Displacement during motor brake check with positive torque input	
1	Displacement during motor brake check with negative torque input	
2	Reserved	
3	Reserved	

Tab. 3-60: Displacement during brake check

For certain brake types, the displacement is an indicator for the wear of the brake.

P-0-0526 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	--	Decim. pl.:	--
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: ---

Product-specific parameters

3.4.23 P-0-0528, Flux controller proportional gain

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In this parameter, the flux controller gain for asynchronous motors is entered. See also Functional Description "Field-oriented current control"	
Use	At asynchronous motors, the rotor flux is the product of motor magnetizing inductance and magnetizing current. However, the rotor flux is only set with delay over the rotor time constant. The function of the flux controller is applying the rotor flux command value as quickly as possible by respective increase of the magnetizing current. The flux controller is realized as P-controller with command value feedforward. The controller output is divided by the current magnetizing inductance and defines the id command value for the current controller. As limit value for the id command value, twice the rated magnetizing current applies.	

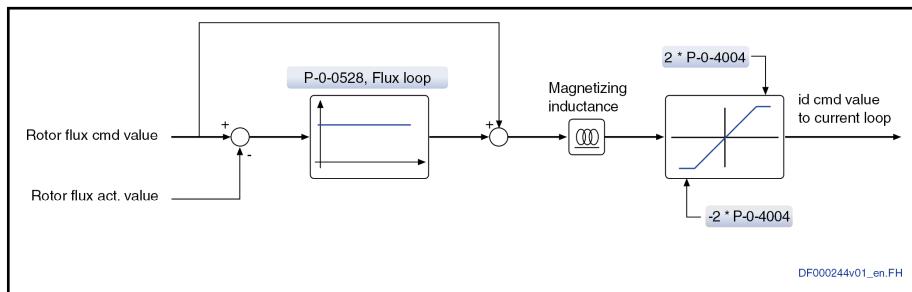


Fig. 3-18: Flux controller

For dynamic applications, the flux controller gain can be determined from the motor data according to the following estimation formula.

$$P-0-0528 = 0.4 * \frac{L_H}{L_{qs} + L_{qR}} = 0.4 * \frac{P-0-4041}{P-0-4039 + P-0-4040}$$

Fig. 3-19: Formula for Determination of Flux Loop Proportional Gain

For less dynamic applications or in case of fluctuating id command values "P-0-039", this value can be reduced. Generally, the flux controller is not required. For this purpose, the setting "P-0-0528 = 0" has to be selected.

P-0-0528 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: Grp. 4
	AXS:	min./max.: 0,00 / 100,00	Default value: 1,00

3.4.24 P-0-0529, Scaling of stall current limit

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The stall current limit describes the threshold for the torque-generating current of asynchronous motors. See also Functional Description "Field-oriented current control"	
Use	At higher currents, the torque at the shaft is reduced. In practice, this limit is only significant in the upper field weakening range if the magnetizing current is reduced to very low values. The defining elements of the stall current limit include the inductance of the T equivalent diagram (P-0-4039, P-0-4040,	

P-0-4041) and the current rotor flux defined by the magnetizing current id in stationary applications.

$$i_{q,\text{lim}} = \frac{1}{\sigma} * \frac{Psi_{rd}}{L_H} = \frac{P - 0 - 4041}{P - 0 - 4039 + P - 0 - 4040} * i_d$$

$i_{q,\text{lim}}$: Stall current limit for torque-generating current

σ : Dispersion coefficient of the asynchronous motor

Fig. 3-20: *Stall current limit of asynchronous machine*

With the value set in "P-0-0529", the stall current limit can be relatively adjusted. With the setting of "P-0-0529 = 100%", the above-defined limit value becomes effective and lower values respectively reduce the stall current limit. For Bosch Rexroth motors, the parameter value has been saved in the Drive-Base database. For third-party motors, the input has to be made via the motor type plate "P-0-4032". Command "P-0-4033, Calculate motor data" also calculates the value for "P-0-0529".

P-0-0529 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	%	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS:

min./max.: 10 / 150

Default value: 100

3.4.25 P-0-0530, Slip increase

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is only used with asynchronous motors. In asynchronous motors, the rotor resistance and therefore the rotor time constant change with temperature.	
Use	The rotor time constant is included in the calculation of the load-dependent slip value that is required for torque output. The rotor time constant that varies depending on the temperature is compensated by a temperature-dependent slip increase. The value of the slip increase (in relation to 100 K temperature difference) is motor-specific and is individually defined for each asynchronous motor type.	



The correct value is written to this parameter as follows:

- For Rexroth motors with encoder data memory:
Automatic when controller is switched on.
- In the case of Rexroth motors without encoder data memory:
By loading the motor parameters with the "ctrlX DRIVE Engineering" commissioning software.
- In the case of other motors:
By manual input according to the manufacturer's specification.

P-0-0530 - Attributes

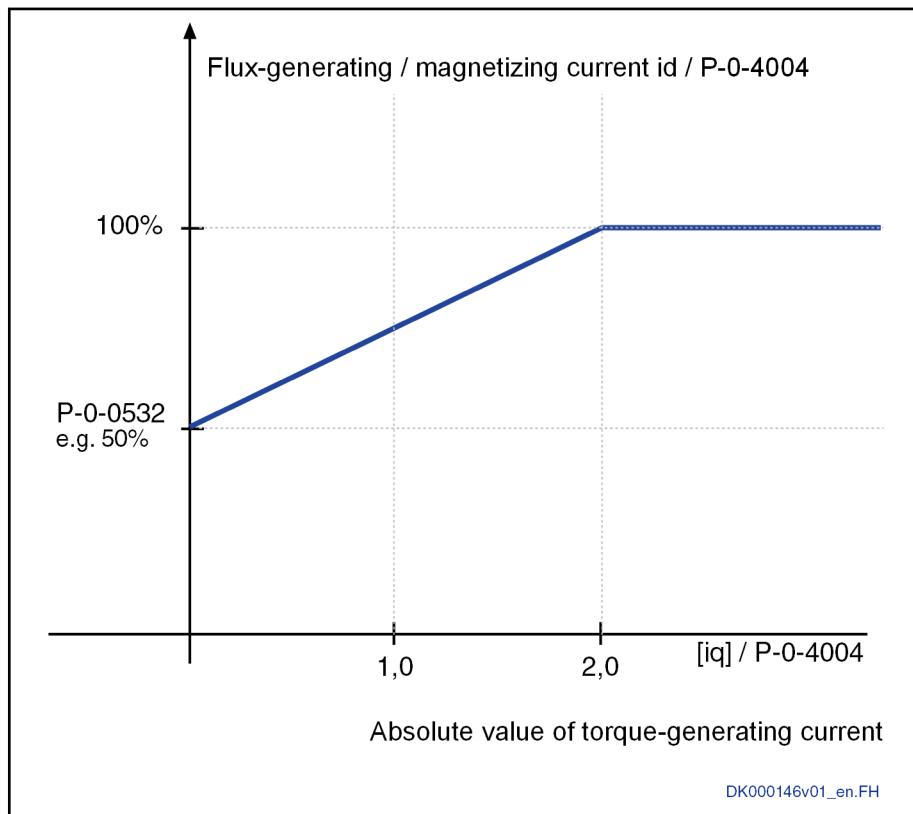
Function:	Par	Editable:	SUBD:CM+PM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	1/100K	Extr. val. ch.:	+	Decim. pl.:	2
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

Product-specific parameters

AXS:	min./max.: 1,00 / 2,00	Default value: s. Text
------	------------------------	------------------------

3.4.26 P-0-0532, Premagnetization factor

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter can be used to reduce the magnetizing current of an asynchronous motor and therefore the rotor flow. The factor refers to " P-0-4004 , Magnetizing current".	
Use	Field-oriented control (FOC): Load-dependent magnetizing current reduction In no-load mode, the magnetizing current " P-0-4004 " can be reduced to the percentage specified in " P-0-0532 ". Possible values range from 10% to 100%. If under load, the magnetizing current increases proportionally to the torque-generating current. If the torque-generating current reaches the rated value, the full magnetizing current (value of P-0-4004) is flowing, irrespective of the value of the premagnetization factor " P-0-0532 ". The motor reaches the maximum possible torque.	



DK000146v01_en.FH

id flux-generating current [[P-0-0039](#)]
iq torque-generating current [[P-0-0038](#)]

Fig. 3-21: Load-dependent operating principle of the premagnetization factor

U/f control

By means of the value of the premagnetization factor parameter "[P-0-0532](#)", the steepness of the U/f curve is set. The default value is 100%, i.e. the rated voltage is returned at rated speed or rated motor frequency. (The rated voltage is taken from the type plate or calculated from the motor data.) For correction of the characteristic curve, a different value between 10% and

200% can be entered as premagnetization factor. This way, the gradient of the characteristic curve is decreased or increased.

At rated frequency, the rated voltage × premagnetization factor is returned. At low speeds, speed-proportionally reduced voltages are returned. At higher speeds, respectively higher voltages apply until the voltage limit of the converter is reached. The function only works for the linear and square U/f curve. Not applicable for the user-defined characteristic curve.

Notes on application:

Spindle drives:

When the magnetizing current is reduced, the motor is heated to a lesser degree and the development of noise is reduced in no-load mode. It is therefore recommended to set "[P-0-0532](#)" to a value less than 100%:



Field-oriented control: 50% (load-dependent)

Servo drives:

For servo drives with asynchronous motors, a setting of 100% is recommended as lower values may lead to a delay in availability of the torque.



For U/f, setting the value to 100% irrespective of the application is recommended.



After "[P-0-0532](#)" has been set, it must be checked whether processing as well as acceleration and deceleration process achieve the desired result.

P-0-0532 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	%	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	Grp. 4

AXS:

min./max.: s. Text / s. Text

Default value: s. Text

3.4.27 P-0-0533, Voltage controller proportional gain

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter is used to enter the proportional gain of the voltage controller. The voltage controller serves to control the motor voltage in the field weakening range.

Product-specific parameters



Writing the correct value to this parameter:

- For Bosch Rexroth motors, the value is either stored in the motor encoder memory or loaded together with the control parameters via ctrlX DRIVE Engineering from the database. If the motor is not intended for field weakening, no value is stored.
- If field weakening is to be activated subsequently, the correct value has to be determined manually.

At third-party motors, the value is either determined during motor data identification or if the command for calculation of control parameters is executed. The value can be readjusted manually.

P-0-0533 - Attributes	Function: Par	Editable: ALWAYS	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_OV
	Unit: A/V	Extr. val. ch.: +	Decim. pl.: 3
	Cycl. tra.: --	Comb. check: --	Set-depend.: Grp. 4
AXS:	min./max.: s. Text / s. Text		Default value: 0,500

3.4.28 P-0-0534, Voltage controller integral action time

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used to enter the integral action time of the voltage controller. The voltage controller serves to control the motor voltage in the field weakening range.	



Writing the correct value to this parameter:

- For Rexroth motors, the value is either stored in the motor encoder memory or loaded together with the control parameters via ctrlX DRIVE Engineering from the database. If the motor is not intended for field weakening, no value is stored.
- If field weakening is to be activated subsequently, the correct value has to be determined manually.

At third-party motors, the value is either determined during motor data identification or if the command for calculation of control parameters is executed. The value can be readjusted manually.

See also Functional Description "Field-oriented current control"

P-0-0534 - Attributes	Function: Par	Editable: ALWAYS	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_OV
	Unit: ms	Extr. val. ch.: +	Decim. pl.: 1
	Cycl. tra.: --	Comb. check: --	Set-depend.: Grp. 4
AXS:	min./max.: s. Text / s. Text		Default value: 600,0

3.4.29 P-0-0535, Motor voltage at no load

Allocation	Hardware Funct. package(s): Device parameter:	--
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Function As a matter of principle, this parameter only takes effect in field weakening mode. It defines a voltage that is indicated in percent of the maximum converter output voltage.

See also Functional Description "Determining the parameter values of third-party motors"

Use Its function depends on the selected type of motor construction:

1) Asynchronous motor:

The parameter defines the voltage at no load of the motor in field weakening mode. This voltage is used to precontrol the command value of the rotor flux.

2) Synchronous motor:

The parameter defines the command value of the e.m.f. voltage under load in the field weakening range.



Writing the correct value to this parameter:

- For Bosch Rexroth motors, the value is either stored in the motor encoder memory or loaded together with the control parameters via ctrlX DRIVE Engineering from the database. If the motor is not intended for field weakening, no value is stored.
- If field weakening is to be activated subsequently, the correct value has to be determined manually. For asynchronous motors, 80% can be used as default value and 10% for synchronous motors.

At third-party motors, the value is either determined during motor data identification or if the command for calculation of control parameters is executed. The value can be readjusted manually as necessary.

P-0-0535 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	%	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS:

min./max.: 0,0 / 100,0

Default value: 80,0

3.4.30 P-0-0536, Maximum motor voltage

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter defines the command voltage of the voltage controller. This voltage is specified in percent of the maximum converter output voltage.

Product-specific parameters



Writing the correct value to this parameter:

- For Bosch Rexroth motors, the value is either stored in the motor encoder memory or loaded together with the control parameters via ctrlX DRIVE Engineering from the database. If the motor is not intended for field weakening, no value is stored.
- If field weakening is to be activated subsequently, the correct value has to be determined manually. As default value, 90% can be applied for all motors.

At third-party motors, the value is either determined during motor data identification or if the command for calculation of control parameters is executed. The value can be readjusted manually as necessary.

P-0-0536 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	%	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS:	min./max.: 50,0 / 100,0	Default value: 90,0
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3.4.31 P-0-0539, Brake status word

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter displays the current status of the holding brake.

See also Functional Description "Motor holding brake"

Structure

Bit	Designation/function	Comment
	Output voltage for holding brake 0: 0V 1: 24V	
1	Status of holding brake check 0: Not successful : Brake not released or insufficient holding torque or brake test required because the time elapsed since the previous test exceeds the value of "P-0-0550, Time interval holding system check". 1: Successful : Brake release and holding torque checked and without error.	
2	Test status "brake release" 0: Not checked or release check required/incorrect, because the time elapsed since the previous test exceeds the value of "P-0-0550, Time interval brake check". 1: Successful	
3	Test status "holding torque" 0: Holding torque too low or holding torque not checked or holding torque check required, because the time elapsed since the previous test exceeds the value of "P-0-0550, Time interval holding system check". 1: Holding torque is sufficient, further brake check not yet required.	

Bit	Designation/function	Comment
4	Test status "motor holding brake output overload" The overload protection of the motor holding brake connection is always active with connected motor holding brake. After control voltage has been switched on, the bit is initially set to "1". The status is updated when the holding brake (24 V) is activated. 0: The holding brake current is inaccurate. There is a short circuit or an overload. 1: The holding brake current is okay.	
5	Test status "wire break" While brake current monitoring is active, the bit is initially set to "1" after control voltage has been switched on. The status is updated when the holding brake (24 V) is activated. 0: The holding brake current is inaccurate. There is a wire break or the holding brake current is too low. 1: The holding brake current is okay, i.e. there is no wire break. The bit is "1" when brake current monitoring (P-0-0525 , Holding brake control word) has been deactivated.	
6	Reserved	
7	Nominal holding brake torque 0: The nominal holding brake torque (P-0-0540 , Torque of holding brake) was not achieved during the brake test intended to check the holding torque (C2100 Holding system check command). 1: The nominal holding brake torque (P-0-0540 , Torque of holding brake) was achieved during the brake test intended to check the holding torque (C2100 Holding system check command).	
8	Time interval status of the brake check 0: Remaining time of the brake check interval > 15 min 1: Remaining time of the brake check interval < 15 min Only activated in conjunction with monitoring of the brake check interval " P-0-0525 , Holding brake control word" bit 6.	

Tab. 3-61: Relevant bits of "[P-0-0539](#), Holding brake status word"**P-0-0539 - Attributes**

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.4.32 P-0-0540, Torque/force of brake

Allocation Hardware
 Funct. package(s): --
 Device parameter:

Product-specific parameters

Function In this parameter, the nominal holding brake torque is to be entered. This way, the brake is checked at activated motor holding brake monitoring if no deviating specifications are made in parameters "P-0-0545, Test torque for releasing holding system" and "P-0-0547, Nominal load of holding system".

For motors with holding brake and encoder data memory (Rexroth drives with encoder memory), the correct value is automatically written to "P-0-0540". For motors without encoder data memory, the value has to be entered manually.

P-0-0540 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	Nm	Extr. val. ch.:	--	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 5

AXS:	min./max.: s. Text / s. Text	Default value: s. Text
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3.4.33 P-0-0540.0.1, Brake rise time

Allocation Hardware
Funct. package(s): --
Device parameter:
Alias: [P-0-1676](#)

Function The power supply of the brake has to be between 19 and 30 volts. According to the length of the motor cable, the voltage drop on the cable has to be taken into account so that the minimum voltage is applied to the brake. After the brake has applied, the supply voltage of the brake may be reduced to the withstand voltage. After the rise time, the brake voltage is reduced from the applied supply voltage to the withstand voltage. In any case, this time has to be greater than the delay time of the brake.

The function is available if the activation code "0x04100001" has been set.

The "load factory settings" command sets the parameter to 500 ms.



Reducing the supply voltage to the withstand voltage after the rise time reduces the losses in the brake.

P-0-0540.0.1 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	ms	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 5

AXS:	min./max.: s. Text / s. Text	Default value: 500,0
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3.4.34 P-0-0540.0.2, Brake withstand voltage

Allocation Hardware
Funct. package(s): --
Device parameter:
Alias: [P-0-1677](#)

Function After the rise time, the brake voltage is reduced from the applied supply voltage to the withstand voltage of the brake.

The power supply of the brake has to be between 19 and 30 volts. According to the length of the motor cable, the voltage drop on the cable has to be taken into account so that the minimum voltage is applied to the brake. After the brake has applied, the supply voltage of the brake may be reduced to the withstand voltage.

The "load factory settings" command sets the parameter to 0 volt. This switches off the brake operated in the „Eco-Mode“. That is to say the voltage is not reduced. For Rexroth motors with encoder data memory, the withstand

voltage is set to 17 volts by "loading the controller default values" if the activation code "0x04100001" had been set.



Reducing the supply voltage to the withstand voltage after the rise time allows the losses in the brake to be reduced.

P-0-0540.0.2 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	V	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 5
AXS:	min./max.: s. Text / s. Text			Default value:	0,0

3.4.35 P-0-0541, C2100 Brake check command

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

With this command it is possible to check the holding brake.

For this purpose, drive enable is required. The holding brake is first released and the motor is controlled with the torque parameterized in "[P-0-0545](#), Test torque for releasing holding system". If the motor does not move, the error message "C2108 Error when releasing the holding system" is output. If the motor is moved by parameter "[P-0-0548](#), Holding system check position window", the brake can be properly released.



- The test torque of the holding system corresponds to the value in parameter "[P-0-0547](#), Nominal load of holding system" * "[P-0-0553](#), Test torque factor for brake check". This value should be at least 1.3 to ensure holding of the actual torque of the nominal load.

NOTICE

Drive-controlled axis movements during brake checks may cause property damage!

Before starting the command, move the axis to a noncritical position!

The holding torque of the brake is now checked. For this purpose, the brake is applied by the controller and the holding torque of the brake is generated by the motor. If the rotor does not move, the brake has the given holding torque. If the rotor moves (> [P-0-0548](#), Holding system check position window), the message "C2103 too low" is returned. The result of the brake check is displayed by 3 bits in "[P-0-0539](#), Holding brake status word".

See also Functional Description "Motor holding brake"

P-0-0541 - Attributes

Function:	Cmd	Editable:	SUBD:OM	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: --- / ---			Default value:	---

3.4.36 P-0-0542, C2000 Command Release brake

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

Using this parameter, it is possible to release the motor holding brake when drive enable has been switched off. At the start of the command, the holding

Product-specific parameters

brake is released; upon completion of the command, the brake is applied again.

When drive enable is set with the command being active, the holding brake remains released; when drive enable is switched off, the brake, however, is automatically applied.

 The command has to be enabled via bit 5 in "[P-0-0525, Holding brake control word](#)".

See also Functional Description "Motor holding brake"

P-0-0542 - Attributes

Function:	Cmd	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

3.4.37 P-0-0543, C3800 Command Apply brake

Allocation Hardware --
Funct. package(s):
Device parameter:

Function This parameter can be used to apply the holding brake.

At the start of the command, the holding brake is applied. Upon completion of the command, the brake is released again, if drive enable has been set. When drive enable is removed with the command being active, the holding brake remains applied, even if the command is cleared. If drive enable is set when the command has been set, the brake is nevertheless released.

See also Functional Description "Motor holding brake"

P-0-0543 - Attributes

Function:	Cmd	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

3.4.38 P-0-0545, Test torque/force for released brake

Allocation Hardware --
Funct. package(s):
Device parameter:

Function The first step of the command "C2100 Command Holding system check" checks the release of the holding system.

In this parameter you can set a test torque with which the drive is to move with the holding system released. If no movement is detected when "[P-0-0545](#)" takes effect, an error message is output and the status "error when releasing the holding system" is set in "[P-0-0539, Holding brake status word](#)". If "[P-0-0545, Test torque for releasing holding system](#)" has been set to "0", the check is run with the value in "[P-0-0540, Torque of holding brake](#)".

See also Functional Description "Motor holding brake"

P-0-0545 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0086	Extr. val. ch.:	+	Decim. pl.:	
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: s. Text / s. Text Default value: s. Text

3.4.39 P-0-0546, Starting torque/force for released brake

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The first step of the "C2100 Brake check command" checks the release of the motor holding brake. If the load due to weight is not sufficient for the motor to move, a torque is preset. The torque which results in motion is displayed in this parameter (the weight torque or weight force are not included in "P-0-0546"). The parameter is updated during every brake check.	
See also Functional Description "Motor holding brake"		
P-0-0546 - Attributes	Function: Par Memory: -- Unit: S-0-0086 Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	Data length: 2Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
	min./max.: --- / ---	Default value: ---

3.4.40 P-0-0547, Nominal load of holding system

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	To monitor the holding brake (C2100 Brake check command or automatically), the motor generates test torques or forces in order to check the releasing of the brake or its holding torque.	
See also Functional Description Motor holding brake		
Use	When the holding torque of the brake is checked, the motor may not move under the effect of the test torque or force. Any possibly existing static axis load (e.g., weight) is recognized and taken into account.	
	The specified test torque is calculated as follows: P-0-0547 , Nominal load of holding system * P-0-0553 , Test torque factor for brake check If " P-0-0547 " has been set to 0, the check is run with the value in " P-0-0540 , Torque of holding brake".	
<p> The weight load of vertical axes should not exceed 50% of the nominal holding force of the holding system.</p> <hr/> <p> Observe the pertinent regulations of the particular institution for statutory accident insurance and prevention with regard to testing and dimensioning of axis holding systems.</p>		
P-0-0547 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0086 Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
	AXS:	Data length: 2Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
	min./max.: s. Text / s. Text	Default value: s. Text

3.4.41 P-0-0548, Position window for brake check

Allocation	Hardware Funct. package(s): Device parameter:	--
------------	---	----

Product-specific parameters

Function	To check the holding system (releasing the holding system/holding torque) with the C2100 holding system check command, the motor generates test torques. To check rotor motion, the displacement is applied for testing. See also Functional Description "Motor holding brake"
Use	<p>By means of the parameter, axes with major backlash or high elasticity can be influenced as follows:</p> <ul style="list-style-type: none"> • maximum required motion at released holding system or • tolerated distortion (angle or distance) for clamped holding system <p>The value of the parameter refers to the encoder active in position control (S-0-0520).</p>



If "P-0-0548.0.0" has been set to 0, the check is run with the default value of 2 degrees.



When checking the release function of the holding brake, the displacement has to be passed at maximum velocity over "[P-0-0548.0.2](#), Maximum test duration holding system released".

The following is required: [P-0-0548.0.2](#) > P-0-0548.0.0 ÷ [P-0-0548.0.1](#)

When checking the holding torque of the brake, a motion of the rotor is only recognized if:

[P-0-0548.0.3](#) > P-0-0548.0.0 ÷ [P-0-0548.0.1](#)

P-0-0548 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	--	Decim. pl.:	--
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: s. Text / s. Text			Default value: s. Text

3.4.42 P-0-0548.0.1, Brake check velocity command value**Allocation**

Hardware	--
Funct. package(s):	--
Device parameter:	--
Alias:	P-0-1678

Function

To monitor the holding brake (C2100 Brake check command), the motor generates test torques or forces in order to check the releasing of the holding system or the holding torque of the holding system.

See also Functional Description "Motor holding brake"

Use

By means of the parameter, the maximum velocity during command "[P-0-0541](#), C2100 Holding system check command" is adjusted. This way, axes with a major backlash and/or high translation can move quicker over this range. The range to be passed during the brake test is defined with parameter "P-0-0548.0.0, Holding system check position window". The value of the parameter refers to the encoder active in position control ([S-0-0520](#)).



If "[P-0-0548.0.1](#)" is set to 0, the default speed of 10 rpm is checked.



When checking the release function of the holding brake, the deflection has to be passed at maximum velocity over "P-0-0548.0.2, Maximum test duration holding system released".

The following is required: P-0-0548.0.2 > P-0-0548.0.0 ÷ P-0-0548.0.1

When checking the holding torque of the brake, a motion of the rotor is only recognized if:

P-0-0548.0.3 > P-0-0548.0.0 ÷ P-0-0548.0.1

P-0-0548.0.1 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0044	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: s. Text

3.4.43 P-0-0548.0.2, Maximum check duration released brake

Allocation

Hardware --

Funct. package(s):

Device parameter:

Alias: P-0-1679

Function

To monitor the holding brake (C2100 Brake check command), the motor generates test torques in order to check the releasing of the holding system.

See also Functional Description "Motor holding brake"

Use

With this parameter, set the maximum test duration of the holding system in the released state. This time consists of "P-0-0548.0.1", and "P-0-0548.0.0" during the command "P-0-0541, C2100 Holding system check command". Usually, adjustments are only required for mechanical systems with major gear ratio and major backlash within the holding system.



If "P-0-0548.0.2" has been set to 0, the check is run with a time of 200ms.



When checking the release function of the holding brake, the deflection has to be passed at maximum velocity over "P-0-0548.0.2, Maximum test duration holding system released".

The following is required: P-0-0548.0.2 > P-0-0548.0.0 ÷ P-0-0548.0.1

P-0-0548.0.2 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	ms	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: s. Text

3.4.44 P-0-0548.x.3, Check duration brake applied

Allocation

Hardware --

Funct. package(s):

Device parameter:

Alias: P-0-1690, P-0-1691

Function

To monitor the holding brake (C2100 Brake check command or automatically, as defined in P-0-0525), the motor generates test torques in order to check the holding system.

See also Functional Description "Motor holding brake"

Product-specific parameters

Use This parameter influences the duration for applying the test torque. The check of the holding system in the locked state is only considered to have been passed, if the actual torque greater than or equal to 95% of the test torque had been applied for the time parameterized here.



When checking the release function of the holding brake, the deflection has to be passed at maximum velocity over "P-0-0548.0.2, Maximum test duration holding system released". This way P-0-0548.0.2 must always exceed "P-0-0548.0.0" divided by "P-0-0548.0.1, Holding system check velocity command value".

When checking the holding torque of the brake, a motion of the rotor is only recognized if: "P-0-0548.0.3, Test duration holding system locked", exceeds "P-0-0548.0.0" divided by "P-0-0548.0.1, Holding system check velocity command value".

P-0-0548.x.3 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	ms	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: s. Text
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3.4.45 P-0-0549, Oper. hours control section at last successful brake check

Allocation Hardware
Funct. package(s):
Device parameter:

Function This parameter displays the point of time of the operating hours counter of the control section at which the last successful holding system check was carried out.

The operating hours counter of the control section runs while control voltage is applied to the controller!

See also Functional Description "Motor holding brake"

P-0-0549 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	RETAIN_GERAET	Validity ch.:	--	Format:	DEC_OV
Unit:	s	Extr. val. ch.:	--	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.4.46 P-0-0550, Time interval brake check

Allocation Hardware
Funct. package(s):
Device parameter:

Function If the holding brake check time interval is activated in "P-0-0525", the value of "P-0-0550" is used for monitoring the time interval to the last successful, drive-side brake check:

- If the distance in time from the last successful brake check approaches 15 min from the value specified in "P-0-0550", the warning E3115 is returned.
- If the interval exceeds the value of "P-0-0550", the error message F3115 is generated.

See also Functional Description "Motor holding brake"

P-0-0550 - Attributes	Function: Par Memory: PARAM_SP Unit: s Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: s. Text

3.4.47 P-0-0551, Current load torque/force

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter displays the load torque of the axis at standstill.		
P-0-0551 - Attributes	Function: Par Memory: -- Unit: S-0-0086 Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---	

3.4.48 P-0-0553, Factor for brake check

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The holding torque of the brake is checked during the holding system check in relation to the nominal load of the holding system and this test torque factor. As compared with the nominal load, the check should be performed with a torque that is 30% higher. The specified test torque is calculated as follows: P-0-0547 , Nominal load of holding system × P-0-0553 , Test torque factor for brake check		
P-0-0553 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: s. Text	

3.4.49 P-0-0554, Current torque/force of the brake

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In this parameter, the torque maintained by the motor brake is entered when executing the "C2100 Brake check command" (maximum test torque) independent from successful monitoring.	
 This value should be applied as basis for improvement of the holding torque of the brake after a failed brake test and the resulting required resurfacing procedure.		

See also Functional Description "Brake"

P-0-0554 - Attributes	Function: Par Memory: -- Unit: S-0-0086 Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

Product-specific parameters

3.4.50 P-0-0555, Axis controller messages

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter contains the following status information (messages) regarding axis control in the form of individual status bits:	
	<ul style="list-style-type: none"> • Velocity messages • Limits that have been reached, i.e., information regarding an active limitation 	
	See also functional description "Limitations"	

See also Functional Description "Closed-loop axis control (closed-loop operation)"

Structure The individual bits have the following significances:

Bit	Designation/function	Comment
0	1: If n_feedback = n_command (S-0-0330)	
1	1: If n_feedback < nx (S-0-0332)	
2	1: If n_feedback = 0 (S-0-0331)	
3	1: If n_command > n_limit (S-0-0335)	
4	1: If T >= Tx (S-0-0333)	
5	1: If T >= Tlimit (S-0-0334)	
6	1: If T = T_cmd (S-0-0824)	
8	1: If velocity limitation is active	
9	1: If T (S-0-0084) > 90% of the currently possible maximum load (P-0-0444)	
10	Reserved	
11	1: If positive torque limitation is active	
12	1: If negative torque limitation is active	
14	1: If the actual position value is in the In position window (S-0-0336)	
15	1: If the actual position value is in the In position coarse window (S-0-0341)	

Tab. 3-62: Message bits of the velocity control loop



Bits 11 and 12 are set when the output variable of the velocity controller is limited by "[S-0-0082](#), Torque/force limit value positive" or "[S-0-0083](#), Torque/force limit value negative" or "[S-0-0092](#), Bipolar torque/force limit value".

P-0-0555 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---		Default value: ---	

3.4.51 P-0-0556, Axis controller configuration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	<p>The parameter is used for configuring functions specific to axis control.</p> <p>See also Functional Description "Closed-loop axis control (closed-loop operation)"</p> <p>See also Functional Description "ctrlX DRIVE clock rates"</p>	
Structure	The individual bits of the parameter have the following significances:	
Bit	Designation/function	Comment
0	Reserved	
1	Velocity control loop monitoring (F8078) 0: On (default configuration) 1: Off	
2	Reserved	
3	Execution mode C0700 Load defaults proced. command (motor-spec. controller values) command Prerequisite: "F2008 RL The motor type has changed" Reset "F2008" by <ul style="list-style-type: none"> Pressing <Esc> on the control panel or Executing "C0500 Reset class 1 diagnostics, error reset" 0: C0700 Load defaults procedure command is executed 1: C0700 Load defaults procedure command is not executed	
4	Torque/force limitation warning (E8260) If required, the display of the warning in the case of active torque/force limitation can be deactivated. 0: E8260 is displayed (active) 1: E8260 is not displayed (masked)	
5	Reserved	
6	Reserved	
7	Velocity controller reference model can be activated 0: No (default configuration) 1: Yes	
8	Position control loop 0: Close 1: Open	
9	Point at which "P-0-0059, Additive position command value, controller" takes effect 0: Has no effect on feedforward 1: Has an effect on feedforward	

Product-specific parameters

Bit	Designation/function	Comment
10	Range of values for unipolar torque limitation (S-0-0082, Torque/force limit value positive and S-0-0083, Torque/force limit value negative) 0: Standard value range (default): "S-0-0082" can only have positive values, "S-0-0083" can only have negative values (negative sign required). 1: Extended value range: The value of "S-0-0082" has to be greater than "S-0-0083" (with sign). Both values can be entered with the same sign, i.e., with positive or with negative sign!	
11	Reserved	
12	Activation of automatic determination of counterbalance of load due to weight 0: No automatic determination. The value parameterized in "S-0-0163, Weight counterbalance" is used when drive enable is switched on. 1: Automatic determination of load due to weight. When drive enable is switched off, the current holding torque is copied to parameter "S-0-0163, Weight counterbalance". This value is used when drive enable is switched on the next time.	
13	Reserved	
14	Range of action of torque/force limitations 0: Unipolar limitation of the working load (velocity controller output), bipolar limitation of the total load from machining and acceleration feedforward control 1: Unipolar and bipolar limitation of the total load from machining and acceleration feedforward control <ul style="list-style-type: none"> • Unipolar: "S-0-0082, Torque/force limit value positive" and "S-0-0083, Torque/force limit value negative" • Bipolar: "S-0-0092, Bipolar torque/force limit value" and "P-0-0109, Torque/force peak limit" 	
15	Switching to position control in the case of hybrid position control 0: Encoder 2 provides velocity feedback value (default) 1: Encoder 1 provides velocity feedback value	
16	Power limitation 0: DC bus power 1: Shaft output	
17 ..31	Reserved	

Tab. 3-63: Relevant bits of P-0-0556

Use Observe the following aspects for parameterization:

- **Bit 9: Point at which additive position command value, controller takes effect:** In the majority of cases, feedforward values have a positive effect on the control dynamics and reaction time of a drive. Feedforward values are generated from command value characteristics:

- Velocity feedforward from the position command value characteristic
- Acceleration feedforward from the velocity command value characteristic

This bit is used to define whether "[P-0-0059](#), Additive position command value, controller" is included in the generation of the feedforward values or whether it is afterwards added to the position command value generated by command value adjustment. "[P-0-0059](#)" can only be used in the following position-controlled operation modes:

- Cycl. Position control
- Drive-controlled positioning
- Drive-internal interpolation
- Positioning block mode

• Bit 10: Value range for unipolar torque limitation:

The "extended range of values" allows using the same signs for "[S-0-0082](#)" and "[S-0-0083](#)". In this way, symmetric torque limitation can be implemented with respect to the basic load, for example, for axes with basic load (vertical axes without counterbalancing).

NOTICE

Property damage caused by positive feedback and impeded axis deceleration if "[S-0-0082](#)" and "[S-0-0083](#)" are incorrectly set!

The "extended value range" should only be used in appropriate applications. There is increased risk of positive feedback in the speed control loop, if, e.g., the negative sign of "[S-0-0083](#)" is omitted by mistake!

P-0-0556 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: 0x2001
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3.4.52 P-0-0558, Drive Halt configuration

Allocation **Hardware** --
Funct. package(s):
Device parameter:

Function This parameter is used as control word for the "Drive Halt" function.

See also Functional Description "Drive Halt"

Structure The parameter has the following structure:

Product-specific parameters

Bit	Designation/function	Comment
0	"Drive Halt" function type 0: "Quick stop" switches over to own operation mode 1: Operational stop decelerates in the active operation mode with Vcmd = 0.	
2	"Quick stop" control type 0: Velocity-controlled 1: Position control	
4	P-0-0690, Additive velocity command value, process controller in "Drive Halt" 0: Inactive 1: Active	

Tab. 3-64: "Drive Halt" configuration

P-0-0558 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--

AXS: min./max.: --- / --- Default value: 0x0

3.4.53 P-0-0559, Position data scaling incremental

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Number of increments per revolution in the case of incremental scaling	
	 Incremental scaling is only possible with encoder 1.	
Use	With preferred scaling, the parameter cannot be changed and displays the encoder resolution (S-0-0611.1.3) With parameter scaling, the position resolution may be reduced. For this purpose, the position resolution is set to the desired resolution in incremental form (P-0-0559). The relation of encoder resolution to position resolution has to be a value in 2^n .	

P-0-0559 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	incr	Extr. val. ch.:	--	Decim. pl.:	0

Cycl. tra.: Comb. check: -- Set-depend.: --

AXS: min./max.: --- / --- Default value: 1048576

3.4.54 P-0-0560, Configuration of actuator

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used to configure the actuator.	
	 A distinction is made between simple actuators (0, 1) and complex actuators (4, 5).	
Structure	Actuators are selected via the parameter value:	

Value	Function	Comment
0	E motor (rotary)	
1	E motor (linear)	

P-0-0560 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--

AXS: min./max.: --- / --- Default value: 0

3.4.55 P-0-0561, Effective velocity controller command value**Allocation**

Hardware --
 Funct. package(s):
 Device parameter:

Function

With this parameter, the effective velocity command value of the velocity controller can be displayed. The command value is motor-related with fixed scaling (Sercos default).

See also Functional Description "Velocity controller"

See also parameter description "[P-0-0560, Configuration of actuator](#)"

P-0-0561 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	s. text	Extr. val. ch.:	--	Decim. pl.:	--
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

3.4.56 P-0-0563, Velocity command value input for adjustment**Allocation**

Hardware --
 Funct. package(s):
 Device parameter:

Function

The parameter displays the velocity command value that is transferred to the velocity controller for command value adjustment.

See also Functional Description "Velocity controller"

P-0-0563 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0044	Extr. val. ch.:	--	Decim. pl.:	--
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

3.4.57 P-0-0565, C3600 Command Motor data identification**Allocation**

Hardware --
 Funct. package(s):
 Device parameter:

Function

Command C3600 provides several options of data identification and/or plausibility test of the connected motor.

The following options can be selected via "[P-0-0601, Configuration motor data identification](#)":

- Motor data identification with the motor in standstill or motor set into motion
- Determination of the magnetization characteristic of asynchronous motors

Product-specific parameters



The most accurate motor data identification result can be achieved when "P-0-0001, Switching frequency of the power output stage" is set to the lowest possible value when "C3600" is started.

See also Functional Description "Autom. setting of motor control"

P-0-0565 - Attributes

Function:	Cmd	Editable:	SUBD:OM	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:			min./max.: --- / ---	Default value: ---	

3.4.58 P-0-0566, C4600 Calculate motor control parameters command**Allocation**

Hardware --
Funct. package(s):
Device parameter:

Function

When executing this command, the required motor control parameters are calculated from the motor parameters.

See also Functional Description "Automatic setting of motor control"

P-0-0566 - Attributes

Function:	Cmd	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:			min./max.: --- / ---	Default value: ---	

3.4.59 P-0-0567, Motor data determination, list of invalid parameters**Allocation**

Hardware --
Funct. package(s):
Device parameter:

Function

In motor identification mode (motor control parameters and motor data), the plausibility of the parameters to be written is checked according to validity criteria. If an error occurs while this is done, the faulty parameters are entered in this list.

P-0-0567 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	--	Validity ch.:	--	Format:	IDN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:			min./max.: --- / ---	Default value: ---	

3.4.60 P-0-0568, Voltage boost**Allocation**

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter can be used to raise the voltage at the base point of the V/Hz (U/f) characteristic (in case of standstill or very low velocities of an asynchronous motor). The voltage required at the base point is determined on the basis of the motor data and provided by the controller.



Due to long motor lines, for example, starting problems can sometimes occur for motors. In this case, this parameter can be used to improve the starting behavior by a value greater than 0 V.



If the current at standstill is too high, it can be reduced by negative values in "P-0-0568".

P-0-0568 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	V	Extr. val. ch.:	+	Decim. pl.:	2
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS:	min./max.: -50,00 / 50,00	Default value: 0,00
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3.4.61 P-0-0569, Maximum stator frequency slope

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter contains the maximum frequency command value slope of the motor voltage	
Use	V/Hz (U/f) operation	
When asynchronous motors without encoder are operated in voltage-controlled mode (V/Hz [U/f]), "P-0-0569" is used to specify the maximum frequency command value slope. The value is automatically determined via the commands for calculating the motor parameters of third-party motors (C3200 and C3600). If the stall protection controller triggers during run-up, the value of P-0-0569 might be too high and should be reduced!		
Motor data identification, with motion (C3600)		
When motor data identification with motion is selected (P-0-0601), the motor shaft is accelerated to half the nominal speed within one second. If the motor or load inertia is high, this may exceed the acceleration capacity of the motor or drive. In such a case, the acceleration command value can be reduced to a useful value via "P-0-0569".		

$$\frac{\Delta f_{\text{Stator}}}{\Delta t} = \frac{NPP \times T_{dyn}}{2 \times \pi \times J_{\text{Axis_MW}}} = \frac{(P-0-0018) \times (P-0-0051) \times (S-0-0111)}{2 \times \pi \times [(P-0-0510) + (P-0-4010)]} [\text{Hz/s}]$$

f_{Stator}	Stator frequency
T_{dyn}	Acceleration torque of the motor
NPP	Number of pole pairs of the motor
J_{Axis_MW}	Effective inertia of the axis
P-0-0018	Number of pole pairs/pole pair distance
S-0-0111	Motor current at standstill
P-0-0510	Rotor inertia
P-0-4010	Load inertia
P-0-0051	Torque/force constant

Fig. 3-22: Calculating a useful value for P-0-0569, Maximum stator frequency slope

P-0-0569 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	Hz/s	Extr. val. ch.:	+	Decim. pl.:	2
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS:	min./max.: 0,01 / 3000,00	Default value: 200,00
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3.4.62 P-0-0570, Stall protection controller proportional gain

Allocation	Hardware Funct. package(s): Device parameter:	--
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Product-specific parameters

	Function	This parameter specifies the proportional gain of the stall protection controller.
		The stall protection controller is controlled via "P-0-0045 Control word of current controller".
P-0-0570 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: -- Format: DEC_OV Decim. pl.: 2 Set-depend.: Grp. 4
	AXS:	min./max.: 0,00 / 500,00 Default value: s. Text

3.4.63 P-0-0571, Stall protection controller integral action time

	Allocation	Hardware Funct. package(s): Device parameter:
	Function	This parameter can be used to set the integral action time of the stall protection controller.
		The stall protection controller is controlled via "P-0-0045 Control word of current controller".
P-0-0571 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: -- Format: DEC_OV Decim. pl.: 1 Set-depend.: Grp. 4
	AXS:	min./max.: 0,0 / 6500,0 Default value: s. Text

3.4.64 P-0-0572, Slip compensation factor

	Allocation	Hardware Funct. package(s): Device parameter:
	Function	This parameter can be used to adjust the feedforward of slip compensation. If 0.00% is set, feedforward is completely deactivated.
P-0-0572 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: -- Format: DEC_OV Decim. pl.: 2 Set-depend.: Grp. 4
	AXS:	min./max.: 0,00 / 320,00 Default value: s. Text

3.4.65 P-0-0573, IxR boost factor

	Allocation	Hardware Funct. package(s): Device parameter:
	Function	This parameter can be used to adjust the feedforward of the IxR-Boost. If 0.00% is set, feedforward is completely deactivated.
P-0-0573 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: -- Format: DEC_OV Decim. pl.: 2 Set-depend.: Grp. 4
	AXS:	min./max.: 0,00 / 320,00 Default value: s. Text

3.4.66 P-0-0574, Oscillation damping factor

	Allocation	Hardware Funct. package(s): Device parameter:
	Function	This parameter can be used to adjust the feedforward of oscillation damping. If 0.00% is set, feedforward is completely deactivated.

P-0-0574 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 2 Set-depend.: Grp. 4
AXS:	min./max.: -320,00 / 320,00		Default value: s. Text

3.4.67 P-0-0575, Search mode: Search current factor

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	Via " P-0-0045 , Control word of current controller", the search mode function can be selected. During the search, a search current is applied at the still rotating machine.		
	Search current = Magnetizing current × P-0-0575 ÷ 100%		
P-0-0575 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: Grp. 5
AXS:	min./max.: 1,00 / 320,00		Default value: s. Text

3.4.68 P-0-0576, Search mode: Finding point slip factor

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The search mode function is selected via " P-0-0045 , Control word of current controller". As soon as the machine has been found, the rated slip is added to the speed at the finding point. 100% correspond to the rated slip of the machine.		
	For clockwise rotating field: $V = V_{\text{finding point}} + (V_{\text{slip}} \times \frac{\text{P-0-0576}}{100\%})$		
	For anticlockwise rotating field: $V = V_{\text{finding point}} - (V_{\text{slip}} \times \frac{\text{P-0-0576}}{100\%})$		
P-0-0576 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 2 Set-depend.: Grp. 5
AXS:	min./max.: -320,00 / 320,00		Default value: s. Text

3.4.69 P-0-0577, Square characteristic curve: Lowering factor

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The square characteristic curve is selected via parameter " P-0-0045 , Control word of current controller". The lowering factor in the basic range of setting is readjusted with this parameter.		
	The value of 100% corresponds to the original square curve. This lowering factor is reduced as the percentage value decreases down to the setting of 0%, which then corresponds to the linear characteristic curve.		
P-0-0577 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: Grp. 4
AXS:	min./max.: 0,00 / 100,00		Default value: s. Text

Product-specific parameters

3.4.70 P-0-0578, Current for deceleration, absolute value

Allocation	Hardware Funct. package(s): Device parameter:	--																														
Function	In this parameter, the current for deceleration is entered with which the asynchronous motor in V/Hz (U/f) operation is decelerated down to standstill. The value is automatically set to the rated current of the motor when the motor parameters are determined via "P-0-0565, C3600 Command Motor data identification".																															
Use	The current for deceleration (P-0-0578) is only effective in V/Hz (U/f) or SVC operation of asynchronous motors in the case of motor deceleration.																															
V/Hz (U/f) operation																																
In V/Hz (U/f) operation, the current for deceleration can be deactivated by entering zero in "P-0-0579, Current for deceleration, time period". This means that the motor is only decelerated by V/Hz (U/f) operation. However, deceleration is generally improved by activating "P-0-0578" by "P-0-0579" unequal to zero! "P-0-0578" can be modified by entering the respective values. The minimum value is "P-0-4004, Magnetizing current".																																
P-0-0578 - Attributes																																
<table border="1"> <tr> <td>Function:</td> <td>Par</td> <td>Editable:</td> <td>SUBD:CM+PM</td> <td>Data length:</td> <td>4Byte</td> </tr> <tr> <td>Memory:</td> <td>PARAM_SP</td> <td>Validity ch.:</td> <td>--</td> <td>Format:</td> <td>DEC_MV</td> </tr> <tr> <td>Unit:</td> <td>A</td> <td>Extr. val. ch.:</td> <td>--</td> <td>Decim. pl.:</td> <td>3</td> </tr> <tr> <td>Cycl. tra.:</td> <td>--</td> <td>Comb. check:</td> <td>--</td> <td>Set-depend.:</td> <td>Grp. 4</td> </tr> <tr> <td colspan="3">AXS:</td><td>min./max.: 0,000 / s. Text</td><td colspan="2">Default value: 0,000</td></tr> </table>			Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte	Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_MV	Unit:	A	Extr. val. ch.:	--	Decim. pl.:	3	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4	AXS:			min./max.: 0,000 / s. Text	Default value: 0,000	
Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte																											
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_MV																											
Unit:	A	Extr. val. ch.:	--	Decim. pl.:	3																											
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4																											
AXS:			min./max.: 0,000 / s. Text	Default value: 0,000																												

3.4.71 P-0-0579, Current for deceleration, time period

Allocation	Hardware Funct. package(s): Device parameter:	--																														
Function	In this parameter, the time is entered for which the current for deceleration (P-0-0578) is generated in the asynchronous motor in V/Hz (U/f) or SVC operation.																															
Use	In V/Hz (U/f) operation, the current for deceleration is started if the value of the (calculated) actual velocity value falls below the value of "S-0-0124, Standstill window" with velocity command value zero. If the velocity command value rises above the standstill window again before "P-0-0579" has elapsed, the motor accelerates to the specified command value in V/Hz (U/f) control. If the command value remains at zero, the current flowing in the motor is set by the value of "P-0-0568, Voltage boost" after "P-0-0579" has elapsed. This current should not exceed the magnetizing current of the motor. The adjustable duration of the current for deceleration enables the deceleration process in V/Hz [U/f] operation to be improved, since the standstill detection only has a low level of accuracy in sensorless motors. The value of "P-0-0579" has to be adjusted to the deceleration behavior of the axis!																															
 The default value of "P-0-0579" is 0.5 s. Inputting zero deactivates D.C. braking.																																
P-0-0579 - Attributes																																
<table border="1"> <tr> <td>Function:</td> <td>Par</td> <td>Editable:</td> <td>ALWAYS</td> <td>Data length:</td> <td>2Byte</td> </tr> <tr> <td>Memory:</td> <td>PARAM_SP</td> <td>Validity ch.:</td> <td>--</td> <td>Format:</td> <td>DEC_OV</td> </tr> <tr> <td>Unit:</td> <td>ms</td> <td>Extr. val. ch.:</td> <td>+</td> <td>Decim. pl.:</td> <td>0</td> </tr> <tr> <td>Cycl. tra.:</td> <td>--</td> <td>Comb. check:</td> <td>--</td> <td>Set-depend.:</td> <td>Grp. 4</td> </tr> <tr> <td colspan="3">AXS:</td><td>min./max.: s. Text / 60000</td><td colspan="2">Default value: 500</td></tr> </table>			Function:	Par	Editable:	ALWAYS	Data length:	2Byte	Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV	Unit:	ms	Extr. val. ch.:	+	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4	AXS:			min./max.: s. Text / 60000	Default value: 500	
Function:	Par	Editable:	ALWAYS	Data length:	2Byte																											
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV																											
Unit:	ms	Extr. val. ch.:	+	Decim. pl.:	0																											
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4																											
AXS:			min./max.: s. Text / 60000	Default value: 500																												

3.4.72 P-0-0580, Motor frequency

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This is a display parameter for motor control in all operation modes. It has one decimal place and displays the motor frequency with sign.	
P-0-0580 - Attributes	Function: Par Memory: -- Unit: Hz Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---

3.4.73 P-0-0581, C3700 Command encoder validation check/motion display

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This command starts the <ul style="list-style-type: none"> • encoder validation check or • short-time motion of the motor by manually "jogging" in the direction of motion of the check and optimization commands C3600 and C3700, depending on the setting in P-0-0582, Commissioning commands C3600 and C3700 configuration. 	
P-0-0581 - Attributes	Function: Cmd Memory: -- Unit: -- Cycl. tra.: --	Editable: SUBD:OM Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --

 **CAUTION**

Property damage caused by lack of mobility at the start of the command C3700!

The axis performs an independent movement after the command was started. With rotary motors, the motor shaft might move by several revolutions. Ensure mobility before starting the command!

See also Functional Description Automatic setting of motor control and Commutation setting

P-0-0581 - Attributes	Function: Cmd Memory: -- Unit: -- Cycl. tra.: --	Editable: SUBD:OM Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---

3.4.74 P-0-0582, Commissioning commands C3600 and C3700 configuration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	For the purpose of running checks and optimizing parameters, the motor is set in motion via commands in a drive-controlled way during commissioning: <ul style="list-style-type: none"> • Command C3600 (P-0-0565) to identify the motor data of third-party motors • Command C3700 (P-0-0581) to check the encoder validation 	
	Using the command C3700, it is possible on the motor side to observe the direction of motion, that is triggered by these commands, by manually "jogging". This can be configured in the parameter P-0-0582 . It is possible to invert the motor's direction of motion so that the check and optimization commands will be carried out in the desired rotational direction.	

Product-specific parameters

Structure	Bit	Designation/function	Comment
	0	Operating principle of C3700 0: Direction of motion visible on motor side by "jogging" (manually) 1: Checking the number of encoder lines / number of pole pairs or pole pair distance, and checking the rotational directions of motor encoder and motor for compliance (automated)	
	1	Direction of motion of motor during the check and optimization commands C3600, C3700 0: Not inverted 1: Inverted	

Tab. 3-65: Bit assignment P-0-0582

Use Bit 0 = "0": The direction of motion of the check and optimization commands (C3600, C3700) can be preliminarily visualized on the motor side if the command C3700 is activated for a short time in ctrlX DRIVE by manually "jogging" via "[P-0-0581](#)".

Bit 0 = "1": The validation check of

- number of encoder lines / number of pole pairs or pole pair distance and
- rotational direction of motor encoder and motor

runs automatically if C3700 is activated via "[P-0-0581](#)" (motor encoder required, otherwise error message).

Bit 1: It is possible to invert the motor's direction of motion triggered by C3600 and C3700 so that it will be carried out in the desired rotational direction. Via Bit 0 = "0", the motor motion can be activated for a short time with C3700 by manually "jogging", and the preset direction of motion can be observed on the motor side.

P-0-0582 - Attributes	Function: Par	Editable: ALWAYS	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: BIN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: MDT	Comb. check: --	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: ---

3.4.75 P-0-0591, SVC: Configuration

Allocation	Hardware	--
	Funct. package(s):	
	Device parameter:	
Function	The parameter is used to configure SVC control for motors without encoder.	
P-0-0591 - Attributes	Function: Par	Editable: ALWAYS
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM
	Unit: --	Extr. val. ch.: --
	Cycl. tra.: --	Comb. check: --
AXS:		Default value: 0x0

3.4.76 P-0-0592.0.9, SVC: Flux stabilization damping factor

Allocation	Hardware	--
	Funct. package(s):	
	Device parameter:	
	Alias:	P-0-1692
Function	For SVC control for motors without encoder, the value for model stabilization can be parameterized here.	

P-0-0592.0.9 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: Grp. 5
AXS:	min./max.: 0,00 / 655,35		Default value: 0,50

3.4.77 P-0-0592.0.12, SVC: Controller output limitation flux stabilization

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1693	--
Function	The value is required for SVC control for motors without encoder. The limit value of model stabilization is provided.	
P-0-0592.0.12 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: 0,00 / 625,35	Default value: 10,00

3.4.78 P-0-0592.0.20, SVC: Current controller P-gain adjustment factor

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1694	--
Function	For SVC control for motors, the controller parameters can be adjusted with this factor. This way, the value in parameter " S-0-0106 " does not need to be changed and remains valid for other controls.	
P-0-0592.0.20 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: 0,00 / 625,35	Default value: 1,00

3.4.79 P-0-0592.0.21, SVC: Current controller integral action time adjustment factor

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1695	--
Function	For SVC control for motors, the controller parameters can be adjusted with this factor. This way, the value in parameter " S-0-0107 " does not need to be changed and remains valid for other controls.	
P-0-0592.0.21 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: 0,00 / 625,35	Default value: 1,00

3.4.80 P-0-0592.0.30, SVC: Velocity feedback value filter time constant

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1696	--
Function	With this value, the actual velocity determined by the model for SVC control for motors without encoder is filtered.	

Product-specific parameters

P-0-0592.0.30 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: Grp. 5
AXS:	min./max.: 0,00 / 625,25		Default value: 4,00

3.4.81 P-0-0592.0.32, SVC: Motor resistance adjustment factor

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1697	--
Function	For SVC control for motors, the motor parameters can be adjusted with this factor. This way, the value in parameter "P-0-4048" does not need to be changed. The motor parameters are required for the control procedure stored in the model and can be readjusted in case of inaccurate or incorrect determination for the procedure.	
P-0-0592.0.32 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: 0,00 / 625,35	Default value: 1,00

3.4.82 P-0-0592.0.33, SVC: Motor inductance adjustment factor

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1698	--
Function	For SVC control for motors, the motor parameters can be adjusted with this factor. This way, the values in parameters "P-0-4016" and "P-0-4017" do not need to be changed. The motor parameters are required for the control procedure stored in the model and can be readjusted in case of inaccurate or incorrect determination for the procedure.	
P-0-0592.0.33 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: 0,00 / 625,35	Default value: 1,00

3.4.83 P-0-0592.0.34, SVC: EMF adjustment factor

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1699	--
Function	For SVC control for motors, the motor parameters can be adjusted with this factor. This way, the value in parameter "P-0-0051" does not need to be changed. The motor parameters are required for the control procedure stored in the model and can be readjusted.	
P-0-0592.0.34 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: 0,00 / 625,35	Default value: 1,00

3.4.84 P-0-0592.0.43, SVC: Low velocity range, switching vel. adjustment factor

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1700
Function	For SVC control for motors without encoder, there is a lower velocity limit below which the currents are only subject to feedforward. The threshold is determined automatically, however, can be readjusted in this parameter.	
P-0-0592.0.43 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
		Data length: 2Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: Grp. 5
	AXS:	min./max.: 0,00 / 625,35 Default value: 1,00

3.4.85 P-0-0592.0.44, SVC: Load-dependent standstill current increase, gain

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1701
Function	For SVC control for motors without encoder, there is a lower velocity limit below which the currents are only subject to feedforward. The increase in motor current at standstill serves for increased control of the current under load. The gain of the function can be set here.	
P-0-0592.0.44 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
		Data length: 2Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: Grp. 5
	AXS:	min./max.: 0,00 / 625,35 Default value: 0,00

3.4.86 P-0-0592.0.52, SVC: Velocity controller P-gain adjustment factor

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1702
Function	For SVC control for motors, the controller parameters can be adjusted with this factor. This way, the value in parameter "S-0-0100" does not need to be changed and remains valid for other controls.	
P-0-0592.0.52 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
		Data length: 2Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: Grp. 5
	AXS:	min./max.: 0,00 / 625,35 Default value: 0,12

3.4.87 P-0-0592.0.53, SVC: Velocity controller integral action time adjustment factor

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1703
Function	For SVC control for motors, the controller parameters can be adjusted with this factor. This way, the value in parameter "S-0-0101" does not need to be changed and remains valid for other controls.	

Product-specific parameters

P-0-0592.0.53 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: Grp. 5
AXS:	min./max.: 0,00 / 625,35		Default value: 8,10

3.4.88 P-0-0592.0.54, SVC: Current at standstill

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1704	--
Function	For SVC control for motors without encoder, there is a lower velocity limit below which the currents are only subject to feedforward. With this value, the no-load current is defined for this operating range.	
P-0-0592.0.54 - Attributes	Function: Par Memory: PARAM_SP Unit: A Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
AXS:	min./max.: 0,000 / 20000,000	

3.4.89 P-0-0592.0.55, SVC: Low velocity range, maximum frequency slope

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1705	--
Function	For SVC control for motors without encoder, there is a lower velocity limit below which the currents are only subject to feedforward. The value specifies the frequency ramp for motor frequency adjustment if the velocity command value in this range changes.	
P-0-0592.0.55 - Attributes	Function: Par Memory: PARAM_SP Unit: Hz/s Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: 0,00 / 42949672,95	

3.4.90 P-0-0592.0.56, SVC: Heavy starting, gain

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1706	--
Function	For SVC control for motors without encoder, there is a lower velocity limit below which the currents are only subject to feedforward. To ensure improved startup in this operating range at higher loads, the heavy starting function can be used. The gain is parameterized here.	
P-0-0592.0.56 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: 0,00 / 42949672,95	

3.4.91 P-0-0593.0.1, SVC: Motor flux alpha

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1707	--
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	Function	For SVC control for motors without encoder, the flux component "alpha" of the motor model is indicated in this parameter.			
P-0-0593.0.1 - Attributes	Function: Par	Editable: --	Data length: 2Byte	Format: DEC_MV	
	Memory: --	Validity ch.: --	Decim. pl.: 4		
	Unit: Vs	Extr. val. ch.: --	Set-depend.: --		
	Cycl. tra.: --	Comb. check: --			
	AXS:	min./max.: --- / ---	Default value: ---		

3.4.92 P-0-0593.0.2, SVC: Motor flux beta

	Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1708	--		
	Function	For SVC control for motors without encoder, the flux component "beta" of the motor model is indicated in this parameter.			
P-0-0593.0.2 - Attributes	Function: Par	Editable: --	Data length: 2Byte	Format: DEC_MV	
	Memory: --	Validity ch.: --	Decim. pl.: 4		
	Unit: Vs	Extr. val. ch.: --	Set-depend.: --		
	Cycl. tra.: --	Comb. check: --			
	AXS:	min./max.: --- / ---	Default value: ---		

3.4.93 P-0-0593.0.3, SVC: Motor flux, absolute value

	Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1709	--		
	Function	For SVC control for motors without encoder, the motor flux is indicated as value in this parameter.			
P-0-0593.0.3 - Attributes	Function: Par	Editable: --	Data length: 2Byte	Format: DEC_MV	
	Memory: --	Validity ch.: --	Decim. pl.: 4		
	Unit: Vs	Extr. val. ch.: --	Set-depend.: --		
	Cycl. tra.: --	Comb. check: --			
	AXS:	min./max.: --- / ---	Default value: ---		

3.4.94 P-0-0593.0.4, SVC: Internal torque / force

	Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1710	--		
	Function	For SVC control for motors without encoder, the torque or motor force calculated by means of one model is indicated in this parameter.			
P-0-0593.0.4 - Attributes	Function: Par	Editable: --	Data length: 4Byte	Format: DEC_MV	
	Memory: --	Validity ch.: --	Decim. pl.: 3		
	Unit: Nm	Extr. val. ch.: --	Set-depend.: --		
	Cycl. tra.: --	Comb. check: --			
	AXS:	min./max.: --- / ---	Default value: ---		

3.4.95 P-0-0593.0.5, SVC: Angle

	Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1711	--		
	Function	For SVC control for motors without encoder, the current commutation angle is indicated in this parameter.			

Product-specific parameters

P-0-0593.0.5 - Attributes	Function: Par Memory: -- Unit: degrees Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.4.96 P-0-0593.0.6, SVC: Motor frequency

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1712	
Function	For SVC control for motors without encoder, the current electrical stator frequency is indicated in this parameter.		
P-0-0593.0.6 - Attributes	Function: Par Memory: -- Unit: Hz Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---	

3.4.97 P-0-0593.0.45, SVC: Low velocity range, angular difference

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1713	
Function	For SVC control for motors without encoder, the angle difference between commutation angle and flux angle is indicated in this parameter.		
P-0-0593.0.45 - Attributes	Function: Par Memory: -- Unit: degrees Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---	

3.4.98 P-0-0594, Motor temperature sensor 2

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In the case of controllers with two temperature sensor connections, the sensor may be used as an additional winding sensor (motors with an analog and a digital sensor).	
	Parameter value	Function
	0	No sensor connected; function disabled
	1	SNM150-DK, by Thermik (PTC with switching performance, three-core circuitry) used as redundant winding sensor
	8	Sensor type 8; PT1000 used as coolant sensor

Tab. 3-66: Temperature sensors supported for sensor 2

P-0-0594 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: +	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
------------------------------	---	--	--

AXS:	min./max.: --- / ---	Default value: s. Text
------	----------------------	------------------------

3.4.99 P-0-0595, Minimum coolant temperature

Allocation Function	Hardware Funct. package(s): Device parameter: This value takes effect if a temperature sensor 2 was configured as a coolant sensor. If the coolant temperature falls below this lower limit, the warning E2052 is output. See also Functional Description "Motor temperature monitoring"	--	
P-0-0595 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0208 Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: s. Text

3.4.100 P-0-0596, Maximum coolant temperature

Allocation Function	Hardware Funct. package(s): Device parameter: This value takes effect if a temperature sensor 2 was configured as a coolant sensor. If the coolant temperature exceeds this upper limit, the warning E2052 is output. See also Functional Description "Motor temperature monitoring"	--	
P-0-0596 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0208 Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: s. Text

3.4.101 P-0-0597, Motor temperature 2

Allocation Function	Hardware Funct. package(s): Device parameter: This parameter displays the measured value of the second motor temperature sensor. Depending on the configuration, this is the winding temperature or the coolant temperature. See also Functional Description "Motor temperature monitoring"	--	
P-0-0597 - Attributes	Function: Par Memory: -- Unit: S-0-0208 Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.4.102 P-0-0598, Maximum ambient temperature of the motor

Allocation Function	Hardware Funct. package(s): Device parameter: Parameter for entering the maximum ambient temperature of the motor. This value is used in the thermal model to protect the motor from overheating. The value determines the thermal load.	--
-------------------------------	--	----

Product-specific parameters

P-0-0598 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0208 Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: Set-depend.: Grp. 4
AXS:	min./max.: s. Text / s. Text		Default value: s. Text

3.4.103 P-0-0600, Rated slip frequency

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Parameter for slip compensation if an asynchronous motor without encoder is subject to load. Enter the slip frequency at rated power in this parameter to ensure that the slip of the motor can be compensated if the motor is under load.	
 P-0-0600 = $f_{\text{nominal}} = \frac{n_{\text{nominal}}}{P_18} \cdot f_{\text{nominal}}$		
	P18: number of pole pairs (P-0-0018)	
	f_{nominal}: rated frequency acc. to motor type plate	
	n_{nominal}: rated speed acc. to motor type plate	
	<i>Fig. 3-23: Calculating P-0-0600, FXC: Rated slip frequency</i>	
	 The slip compensation acts in proportion with the value entered in "P-0-0600". If zero is entered as minimum value, it is not effective.	

P-0-0600 - Attributes	Function: Par Memory: PARAM_SP Unit: Hz Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: Grp. 4
AXS:	min./max.: 0,00 / 100,00		Default value: 0,10

3.4.104 P-0-0601, Configuration motor data identification

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The parameter configures the method for determining the motor parameters and motor control parameters of third-party motors when "P-0-0565, C3600 Command Motor data identification" is executed. See also Functional Description "Sensorless motor operation, SVC" See also Functional Description "Determining the parameter values of third-party motors"		
Structure			
 Tab. 3-67: Configuring command C3600			
P-0-0601 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: +	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: 0x0

3.4.105 P-0-0610, Control word of current rms value generator

Allocation	Hardware Funct. package(s): Device parameter:	--						
Function	"Bit 0" of "P-0-0610" is used to set the cyclic calculation of the total current rms value. The result is displayed in parameter "P-0-0611".							
<table border="1"> <thead> <tr> <th>Bit</th><th>Designation/function</th><th>Comment</th></tr> </thead> <tbody> <tr> <td>0</td><td>Cyclic calculation of the total current RMS value 0: Not active 1: Active</td><td></td></tr> </tbody> </table>		Bit	Designation/function	Comment	0	Cyclic calculation of the total current RMS value 0: Not active 1: Active		
Bit	Designation/function	Comment						
0	Cyclic calculation of the total current RMS value 0: Not active 1: Active							

Tab. 3-68: P-0-0610, Control word of current rms value generator

P-0-0610 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.4.106 P-0-0611, Current rms value

Allocation	Hardware Funct. package(s): Device parameter:	--								
Function	If bit 0 of parameter "P-0-0610" has been set, the rms value of the total current is calculated cyclically and transmitted to "P-0-0611" for display. Otherwise, the display shows the last value that was output.									
<table border="1"> <tr> <td>P-0-0611 - Attributes</td> <td>Function: Par Memory: -- Unit: A Cycl. tra.: AT</td> <td>Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --</td> <td>Data length: 4Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: --</td> </tr> <tr> <td></td><td>AXS:</td><td>min./max.: --- / ---</td><td>Default value: ---</td></tr> </table>		P-0-0611 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: --		AXS:	min./max.: --- / ---	Default value: ---	
P-0-0611 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: --							
	AXS:	min./max.: --- / ---	Default value: ---							

3.4.107 P-0-0612, DC bus voltage, motor phase short-circuit

Allocation	Hardware Funct. package(s): Device parameter:	--								
Function	To protect the DC bus against overvoltage, a motor phase short-circuit can be initiated. The parameter "P-0-0612" specifies the DC bus voltage at which the axis controller is brought to the motor phase short-circuit or at which the inverter is locked (depending on the current EMF of the motor), in order to prevent energy supply to the DC bus.									
<table border="1"> <tr> <td>P-0-0612 - Attributes</td> <td>Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --</td> <td>Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --</td> <td>Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --</td> </tr> <tr> <td></td><td>AXS:</td><td>min./max.: s. Text / s. Text</td><td>Default value: s. Text</td></tr> </table>		P-0-0612 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --		AXS:	min./max.: s. Text / s. Text	Default value: s. Text	
P-0-0612 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --							
	AXS:	min./max.: s. Text / s. Text	Default value: s. Text							

3.4.108 P-0-0613, DC bus voltage range for power reduction

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter "P-0-0613" specifies the control range for power reduction. In the voltage range P-0-0613, the "S-0-0562, Power limit value: Supply in DC bus" is reduced in a linear way to zero from the value that was set.	

Product-specific parameters

This applies to a DC bus voltage greater than [P-0-0612](#) - [P-0-0613](#) and smaller than "[P-0-0612](#)":

- The reduction of the "Power limit value: Supply in DC bus" attempts to reduce the regenerative power and thereby avoid further increase in DC bus voltage.
- For a DC bus voltage smaller than [P-0-0612](#) - [P-0-0613](#), the parameter "[S-0-0562](#)" that was set takes effect.
- For a DC bus voltage greater than "[P-0-0612](#)", the motor phase short-circuit is initiated or the inverter is locked.

P-0-0613 - Attributes	Function: Par	Editable: SUBD:CM+PM	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_MV
	Unit: V	Extr. val. ch.: --	Decim. pl.: 1
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: s. Text

3.4.109 P-0-0614, V/Hz (U/f): User-defined characteristics, frequencies

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The user-defined characteristic consists of 4 pairs of values for frequency and voltage. These pairs of values are defined in the following 2 list parameters:	
<ul style="list-style-type: none"> P-0-0614, User-defined V/Hz (U/f) characteristic, frequencies P-0-0615, User-defined V/Hz (U/f) characteristic, voltages 		

The values in "[P-0-0614](#)" (frequencies) have to be monotonously increasing.



The combination of "[P-0-0045](#)" bit 10 = 0 and bit 11 = 1 activates the user-defined characteristic.



If no voltage is specified in the characteristic for the frequency = 0, the voltage 0 is output at frequency = 0. This may cause the message F8064 Interruption of motor phase. The same applies if the voltage specified for the frequency = 0 is too low.

The message F8064 is output if no current or a current that is too low (< 10 % [P-0-4004](#), Nominal magnetizing current) is detected in the motor line.

As a remedy, the voltage value for the frequency = 0 has to be parameterized accordingly, e.g. [P-0-4004](#) * P-4048/2. If phase current monitoring is not required, it can be switched off with bit 4 = 0 in the parameter "[P-0-0045](#), Motor operation configuration". In this case, however, the controller can no longer monitor the correct motor connection.

P-0-0614 - Attributes	Function: Par	Editable: SUBD:CM+PM	Data length: 2Byte var.
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_OV
	Unit: Hz	Extr. val. ch.: +	Decim. pl.: 1
	Cycl. tra.: --	Comb. check: --	Set-depend.: Grp. 4
AXS:	min./max.: s. Text / 599,9		Default value: s. Text

3.4.110 P-0-0615, V/Hz (U/f): User-defined characteristics, voltages

Allocation	Hardware Funct. package(s): Device parameter:	--
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Function The user-defined characteristic consists of 4 pairs of values for frequency and voltage. These pairs of values are defined in the following 2 list parameters:

- [P-0-0614](#), User-defined V/Hz (U/f) characteristic, frequencies
- [P-0-0615](#), user defined U/f curve voltages



The combination of "[P-0-0045](#)" bit 10 = 0 and bit 11 = 1 activates the user-defined characteristic.



If no voltage is specified in the characteristic for the frequency = 0, the voltage 0 is output at frequency = 0. This may cause the message F8064 Interruption of motor phase. The same applies if the voltage specified for the frequency = 0 is too low.

The message F8064 is output if no current or a current that is too low (< 10 % [P-0-4004](#), Nominal magnetizing current) is detected in the motor line.

As a remedy, the voltage value for the frequency = 0 has to be parameterized accordingly, e.g. [P-0-4004](#) * P-4048/2. If phase current monitoring is not required, it can be switched off with bit 4 = 0 in the parameter "[P-0-0045](#), Motor operation configuration". In this case, however, the controller can no longer monitor the correct motor connection.

P-0-0615 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte var. Format: DEC_OV Decim. pl.: 1 Set-depend.: Grp. 4
	AXS:	min./max.: s. Text / 540,0	Default value: s. Text

3.4.111 P-0-0616, Phase current w, actual value

Allocation Hardware
Funct. package(s):
Device parameter: --

Function This parameter displays the actual current value measured in the current controller clock (TA, current) in motor phase W.

See also Functional Description "ctrlX DRIVE clock rates"

P-0-0616 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.4.112 P-0-0640, Cooling type

Allocation Hardware
Funct. package(s):
Device parameter: --

Function The motors of the MSK series can be operated with different cooling types. Depending on the particular housing design, cooling can be implemented as follows:

- Standard cooling (natural convection, non-ventilated)
- Surface ventilation
- Liquid cooling
- Cooling with additional heat supply or heat discharge

See also Functional Description "Operating motors with ctrlX DRIVE"

Product-specific parameters

See also Functional Description "Current and torque/force limitation"

Use Depending on the implemented cooling type, the motor can carry different continuous currents. The characteristic continuous current of the above motors, however, is the one the motor can continuously carry with its standard cooling type (natural convection). For the respective motor type it is stored in the encoder memory. Together with other motor parameters, it is loaded to the controller when the drive is switched on ([S-0-0111](#), Motor current at standstill).

The parameter [P-0-0640](#) has to be set to the implemented cooling type. As a result:

- the reference value for percentage-based torque scaling is adjusted:
 $100\% = \text{S-0-0111} \times \text{P-0-0051} \times \text{factor from P-0-0640}$
- the 100% reference of the motor work load is adjusted to the implemented cooling type,
- the thermal time constant of the motor effective in the motor temperature model is adjusted to the implemented cooling type using the value of "[P-0-4035](#), Thermal time constant of motor" (refers to standard cooling).
- the allowed continuous current, to which the firmware-internal motor temperature model limits, is also adjusted to the implemented cooling type ([S-0-0111](#), Motor current at standstill * cooling type factor).

Implemented motor cooling	P-0-0640 , Cooling type	Cooling type factor
Nat. convection, non-ventilated	0 (default)	1.0
Surface ventilation	1	1.5
Liquid cooling	2	1.9
Nat. convection, non-ventilated, improved cooling (heat discharge at motor flange)	3	1.2
Nat. convection, non-ventilated, thermal effect via motor flange (e.g. gear mounting)	4	0.85

Tab. 3-69: Cooling type factor depending on the value of [P-0-0640](#)

 The default value for "[P-0-0640](#)" is "0", thus it is set to the standard cooling type of the motor. For motors other than MSK, this parameter is irrelevant and only the value "0" is allowed and possible!

P-0-0640 - Attributes	Function: Par	Editable:	SUBD:CM+PM	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.:	SUBD:PM->OM	Format: DEC_OV
	Unit: --	Extr. val. ch.:	+	Decim. pl.: 0
	Cycl. tra.: --	Comb. check:	--	Set-depend.: Grp. 5
AXS:	min./max.: s. Text / 4			Default value: 0

3.4.113 [P-0-0641](#), Interpolation cmd value average value filter time constant

Allocation Hardware
Funct. package(s):
Device parameter: --

Function The parameter "[P-0-0641](#)" takes effect on the filtering of the position command values with a moving average filter. As an alternative to the

calculation of the filter order from acceleration and jerk, the filter order can also be determined by entering a filter time.

With the average filter, the position command value profile can be smoothed after command value generation, and the acceleration and jerk can be reduced. This can be required for some mechanical systems to avoid excitation of machine resonances by the command value characteristic.

See also Functional Description Drive-controlled positioning

See also Functional Description Positioning block mode See also Functional Description Drive-internal interpolation

Use The parameter [P-0-0641](#) is used for the interpolation modes "drive-internal interpolation", "drive-controlled positioning" and "positioning block mode" to smooth the command value profile.

The following points must be considered:

- By entering the filter time (value $\geq T_{Ncyc}$), the calculation of the filter order from acceleration and jerk is switched off.
- The filter time preset in the parameter is applied during the initialization of the operation mode or when a new position is set.
- The effective filter order M is always displayed in "P-0-0042, Current position command average value filter order" ($P-0-0042 = P-0-0641 / T_{Ncyc}$)
- The NC cycle time T_{Ncyc} is derived from the parameter [S-0-0001](#).

 The constant filter order function is switched off by default ($P-0-0641 = 0$), the filter order is therewith calculated from acceleration and jerk.

P-0-0641 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	us	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	Grp. 1

AXS:

min./max.: s. Text / s. Text

Default value: 0

3.4.114 P-0-0642, Anti-vibration filter frequency

Allocation

Hardware
Funct. package(s):
Device parameter: --

Function

Parameter for entering the frequency of the anti-vibration filter. The anti-vibration filter is deactivated with a value of "0".



From the frequency and damping ([P-0-0643](#)), the internal factors (A1, A2) and the delay clocks (n) for the anti-vibration filter are calculated. The filter can contain up to 125 position values.

P-0-0642 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	Hz	Extr. val. ch.:	+	Decim. pl.:	2
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: s. Text / 500,00

Default value: 0,00

3.4.115 P-0-0643, Anti-vibration filter damping

Allocation

Hardware
Funct. package(s):
Device parameter: --

Product-specific parameters

Function Parameter for entering the damping of the anti-vibration filter.

 From the frequency ([P-0-0642](#)) and damping, the internal factors (A1, A2) and the delay clocks (n) for the anti-vibration filter are calculated.

The filter can contain up to 125 position values.

P-0-0643 - Attributes	Function:	Par	Editable:	ALWAYS	Data length:	2Byte
	Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
	Unit:	--	Extr. val. ch.:	+	Decim. pl.:	3
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: s. Text / 0,999			Default value: 0,010	

3.4.116 P-0-0644, Anti-vibration filter delay clocks

Allocation Hardware
Funct. package(s):
Device parameter: --

Function Display parameter of the active anti-vibration filter delay clocks.

 From the frequency ([P-0-0642](#)) and damping ([P-0-0643](#)), the internal factors (A1, A2) and the delay clocks (n) for the anti-vibration filter are calculated.

The filter can contain up to 125 position values.

P-0-0644 - Attributes	Function:	Par	Editable:	--	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_OV
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---			Default value: ---	

3.4.117 P-0-0660, C6300 Generate type plate command

Allocation Hardware
Funct. package(s):
Device parameter: --

Function In the device, pre-defined parameterizations can be stored in the form of a "type plate". This parameter can be used to execute a command for creating a type plate.

See also Functional Description "Type plate"

Use These variants of type plate data can be generated in the device:

- Configurable factory default values, buffered in the control section, displayed in "[P-0-0660.0.1](#)".
- Application data with encoder memory version 7, buffered in the encoder memory, displayed in "[P-0-3075](#)".
- Motor characteristics with encoder memory version 7, buffered in the encoder memory, displayed in "[P-0-3071](#)", "[P-0-3072](#)", "[P-0-3073](#)", "[P-0-3074](#)".
- Motor characteristics with encoder memory version 4, buffered in the encoder memory, representatively displayed in "[P-0-3000](#)".

All type plates are not possible in all devices. Which type plates are possible in a device can be read from parameter "[P-0-0660.0.2](#)".

P-0-0660 - Attributes	Function: Cmd Memory: -- Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.4.118 P-0-0660.0.1, Configurable factory default values

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-2660	--	
Function	In this parameter, the configurable factory settings are stored. The parameter content can only be changed by the service personnel.		
P-0-0660.0.1 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: s. Text	

3.4.119 P-0-0660.0.2, Generate type plate, IDN list of type plates

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-2730	--									
Function	In the drive, pre-defined parameterizations can be stored in the form of a "type plate". All type plates are not possible in all devices. Which type plates are possible in a device can be read here.										
See also Functional Description "Type plate"											
Structure	The parameter contains the IDNs of the type plates possible in the device.										
<table border="1"> <thead> <tr> <th>Designation/function</th><th>Comment</th></tr> </thead> <tbody> <tr> <td>P-0-660.0.1</td><td>"Configurable factory default values" type plate is possible.</td></tr> <tr> <td>P-0-3000</td><td>"Motor characteristics with encoder memory version 4" type plate is possible.</td></tr> <tr> <td>P-0-3071/ P-0-3072/ P-0-3073/P-0-3074</td><td>"Motor characteristics with encoder memory version 7" type plate is possible.</td></tr> <tr> <td>P-0-3075</td><td>"Application data with encoder memory version 7" type plate is possible.</td></tr> </tbody> </table>		Designation/function	Comment	P-0-660.0.1	"Configurable factory default values" type plate is possible.	P-0-3000	"Motor characteristics with encoder memory version 4" type plate is possible.	P-0-3071/ P-0-3072/ P-0-3073/P-0-3074	"Motor characteristics with encoder memory version 7" type plate is possible.	P-0-3075	"Application data with encoder memory version 7" type plate is possible.
Designation/function	Comment										
P-0-660.0.1	"Configurable factory default values" type plate is possible.										
P-0-3000	"Motor characteristics with encoder memory version 4" type plate is possible.										
P-0-3071/ P-0-3072/ P-0-3073/P-0-3074	"Motor characteristics with encoder memory version 7" type plate is possible.										
P-0-3075	"Application data with encoder memory version 7" type plate is possible.										

Tab. 3-70: P-0-0660.0.2, Generate type plate, IDN list of type plates

P-0-0660.0.2 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: IDN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.4.120 P-0-0660.0.3, Generate type plate, configuration list

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-2738	--
Function	In the drive, pre-defined parameterizations can be generated in the form of a "type plate". This parameter defines the contents of the type plates to be generated.	

Product-specific parameters

Structure	See also Functional Description "Type plate"																		
	The parameter has the following structure:																		
<table border="1"> <thead> <tr> <th>Element</th><th>Designation/function</th><th>Comment</th><th></th></tr> </thead> <tbody> <tr> <td>1</td><td>IDN of the type plate X to be defined.</td><td></td><td></td></tr> <tr> <td>2</td><td>IDN of a parameter to be stored in type plate X.</td><td></td><td></td></tr> <tr> <td>...</td><td>IDNs of other parameters to be stored in type plate X.</td><td></td><td></td></tr> </tbody> </table>				Element	Designation/function	Comment		1	IDN of the type plate X to be defined.			2	IDN of a parameter to be stored in type plate X.			...	IDNs of other parameters to be stored in type plate X.		
Element	Designation/function	Comment																	
1	IDN of the type plate X to be defined.																		
2	IDN of a parameter to be stored in type plate X.																		
...	IDNs of other parameters to be stored in type plate X.																		
<i>Tab. 3-71: P-0-0660.0.3, Generate type plate, configuration list</i>																			
P-0-0660.0.3 - Attributes	Function: Par	Editable: SUBD:CM+PM	Data length: 4Byte var.																
	Memory: --	Validity ch.: --	Format: IDN																
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0																
	Cycl. tra.: --	Comb. check: --	Set-depend.: --																
	AXS:	min./max.: --- / ---	Default value: ---																

3.4.121 P-0-0660.0.128, Compact parameters diagnostics

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-2411	--	
Function			
	 The functional principle of the parameter is documented only internally. Changes or evaluations are reserved to customer support.		
P-0-0660.0.128 - Attributes	Function: Par	Editable: ALWAYS	Data length: 1Byte var.
	Memory: --	Validity ch.: --	Format: ASCII
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.4.122 P-0-0660.0.129, Instance parameters diagnostics

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-2412	--	
Function			
	 The functional principle of the parameter is documented only internally. Changes or evaluations are reserved to customer support.		
P-0-0660.0.129 - Attributes	Function: Par	Editable: --	Data length: 1Byte var.
	Memory: --	Validity ch.: --	Format: ASCII
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.5 P-0-0690 to P-0-0799 Synchronization mode**3.5.1 P-0-0690, Additive velocity command value, process controller**

Allocation	Hardware Funct. package(s): Device parameter:	--
-------------------	---	----

Function Input parameter "P-0-0690" takes effect in position- and velocity controlled modes as additive command value in the velocity controller. It is available in addition to "S-0-0037, Additive velocity command value" as additional additive velocity command value and takes effect in the velocity controller immediately. "P-0-0690" can also be activated for Drive Halt via "P-0-0558, Drive Halt configuration" bit 4.



"P-0-0690" can thus preferably be used for process controllers.



The actually effective velocity command value (addition of all components generating the velocity command value) at the input of the velocity controller is displayed in "P-0-0048 Effective velocity command value".

See also Functional Description "Velocity controller"

P-0-0690 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0044	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value:	---
------	------------------------------	----------------	-----

3.6 P-0-0800 to P-0-0899 Power supply

3.6.1 P-0-0806, Mains voltage actual value

Allocation Hardware
Funct. package(s):
Device parameter: --

Function "S-0-1702.0.1" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).

P-0-0806 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	V	Extr. val. ch.:	--	Decim. pl.:	1
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value:	---
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3.6.2 P-0-0816, Amplifier temperature 2

Allocation Hardware
Funct. package(s):
Device parameter: --

Function Specifies the current temperature of the second temperature sensor on the power section (e.g. mains connection). If the device is not equipped with a second temperature sensor, the value "0" is always displayed in "P-0-0816".

P-0-0816 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0208	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value:	---
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3.6.3 P-0-0817, Amplifier temperature 3

Allocation Hardware
Funct. package(s):
Device parameter: --

Product-specific parameters

	Function	Specifies the current temperature of the third temperature sensor on the power section (e.g. circuit board). If the device is not equipped with a third temperature sensor, the value "0" is always displayed in " P-0-0817 ".	
The related warning threshold is E2050 Device overtemp. prewarning.			
P-0-0817 - Attributes	Function: Par Memory: -- Unit: S-0-0208 Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.6.4 P-0-0819, Energy counter

	Allocation	Hardware Funct. package(s): Device parameter:	
	Function	The parameter displays the energy supplied to the drive. Energy is calculated as the sum of active power over operating time.	
P-0-0819 - Attributes	Function: Par Memory: -- Unit: kWh Cycl. tra.: AT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 2 Set-depend.: --
	AXS:	min./max.: -20000000,00 / 20000000,00	Default value: ---

3.6.5 P-0-0833, Braking resistor threshold

	Allocation	Hardware Funct. package(s): Device parameter:	
	Function	The braking resistor is only switched on via the firmware if this is required by the deceleration of the motor. This means that it is switched on whenever the DC bus voltage is higher than the voltage threshold " P-0-0833, Braking resistor threshold ". The switch-on threshold of the braking resistor can be set by the user in parameter " P-0-0834 "; however, the actual switch-on threshold (P-0-0833) may differ from this value. Reasons: <ul style="list-style-type: none">• The mains voltage is greater than the value in "P-0-0834"• In case of load-dependent adjustment of the switch-on threshold for balancing of multiple braking resistors in the DC bus• The power command value defines the switch-on threshold when braking resistor/heating element is used for generating process heat. See also Functional Description "Information on the braking resistor"	
P-0-0833 - Attributes			
	Function: Par Memory: -- Unit: V Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.6.6 P-0-0834, Braking resistor switch-on threshold, user value

	Allocation	Hardware Funct. package(s): Device parameter:
	Function	The parameter specifies the switch-on threshold of the braking resistor. This is necessary if, for example, motors with reduced electric strength are

operated at the converter or inverter. Apart from the braking resistor switch-on threshold, the mains voltage of the supply unit or the supplying converter has to be reduced, if necessary.

Example:

If a motor can be loaded up to a maximum of 650 V in the DC bus, the inverter has to be switched off at a voltage greater than 650V in the DC bus ([P-0-0853](#), Max. DC bus voltage motor = 650 V). The motor thereby goes torque-free. For regenerative motor operation, the braking resistor of the supplying converter has to be switched on clearly before 650 V are reached (e.g., 610V).

 The actual switch-on threshold of the braking resistor always exceeds the current mains peak.

P-0-0834 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	V	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: 820

3.6.7 P-0-0844, Thermal load of braking resistor

Allocation Hardware
Funct. package(s): --
Device parameter:

Function This parameter displays the percentage-based thermal energy currently stored in the braking resistor in relation to its maximum allowed energy content.

If the load rises to a value exceeding the prewarning threshold, prewarning E2820 Braking resistor overload prewarning is displayed. Once a load of 110% is reached, the device generates error "F2820" and reacts with the error reaction set for F2 errors. The braking resistor function remains active during the deceleration phase.



The prewarning threshold is defined by parameter "[P-0-0469](#), Prewarning threshold of therm. load of braking resistor".

To allow a quick check of the thermal load of the braking resistor during a machining cycle, a value can be written to the display value that is greater than the current load prior to the machining cycle. If the value after the machining cycle is lower than the set value and the value defined in "[P-0-0467](#), Maximum value thermal load of braking resistor" is lower than 100%, the machining cycle is not limited by the braking resistor.

P-0-0844 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	%	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

3.6.8 P-0-0849, Braking resistor power

Allocation Hardware
Funct. package(s): --
Device parameter:

Function "[S-0-01702.0.141](#)" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).

Product-specific parameters

P-0-0849 - Attributes	Function: Par Memory: -- Unit: W Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.6.9 P-0-0851, Short-time energy counter

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Similar to " P-0-0819 , Energy counter", this parameter serves to display the energy consumed by the drive. Resolution is 1 Ws. This allows evaluation of the energy consumption of individual machining cycles which can take from a few seconds to as long as several hours. The parameter is not stored and is zero after the drive has been switched on.	
P-0-0851 - Attributes	Function: Par Memory: -- Unit: Ws Cycl. tra.: AT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: s. Text / s. Text

3.6.10 P-0-0853, Max. DC bus voltage, motor

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	If a motor is not suitable for the maximum DC bus voltage defined by the device, the maximum allowed DC bus voltage for the motor (output voltage of the converter) has to be entered in this parameter. This parameter defines the threshold for switching off the power output stage. The reduction becomes effective if the voltage entered here is lower than the values defined by the device. The switch-on voltage of the braking resistor must be configured in parameter "P-0-0834" at a clearly lower value than " P-0-0853 ".		
 For Bosch Rexroth motors with encoder data memory (MS2N: 900V; MSK: 950V; MSM: 420V), the parameter is automatically set.			
 The switch-on voltage of the braking resistor is compared to the mains voltage to ensure that it always exceeds the mains peak.			
See also Functional Description "Power supply"			
P-0-0853 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: Grp. 5
	AXS:	min./max.: 420,0 / 1500,0	Default value: 900,0

3.6.11 P-0-0858, Data of external braking resistor

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The type data of an externally connected braking resistor are set for the converter and supply unit in this list parameter. Suitable braking resistors are assigned to the respective devices in the following documentation:	

ctrlX DRIVE, Drive Systems Project Planning Manual

See also Functional Description "Power supply"

The list parameter has the following structure:

List element no.	Name	Unit	Decimal places	Length in bytes
0	Nominal braking resistor	ohm	4	4
1	Braking resistor continuous power	W	4	4
2	Max. regenerative power to be absorbed	kWs	4	4

Tab. 3-72: Data of external braking resistor

Use Observe the following aspects for parameterizing "[P-0-0858](#):

- To control an external braking resistor, this has to be configured in parameter "[P-0-0860](#), Converter configuration".
- If the braking resistor control has been activated in "[P-0-0860](#), Converter configuration", the braking resistor data have to be correct. They are compared to the limit values that depend on the device.

P-0-0858 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	4
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: s. Text
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3.6.12 P-0-0859, Data of internal braking resistor

Allocation Hardware
Funct. package(s): --
Device parameter:

Function In this list parameter, the type data of the device-internal braking resistor are displayed for the converter and the supply unit. It is persistently stored in the power section.

Element no.	Name	Unit	Decimal places	Length in bytes
0	Nominal braking resistor	ohm	4	4
1	Braking resistor continuous power	W	4	4
2	Max. regenerative power to be absorbed	kWs	4	4

Tab. 3-73: Data of internal braking resistors

P-0-0859 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	COMPONENT_SP	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	4
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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Product-specific parameters

3.6.13 P-0-0860, Converter configuration

Allocation	Hardware -- Funct. package(s): Device parameter:
Function	Basic settings for the power section of converters and supply units are made in this parameter. See also Functional Description "Power supply"
Structure	The bits of the parameter have the following significance:

Bit	Designation/function	Comment
0	Power supply source of the converter 0: Mains voltage (default) 1: DC bus (converter in inverter mode)	can only be configured for XCS and XCD always "1" for XMS, XMD XMQ
1	Reserved	
2	Reserved	
3	Mains connection 0: Three-phase operation 1: Single-phase/two-phase operation	only for XVE, XCS and XCD
4	Mains choke check 0: Deactivated 1: Activated	for XVR only
7-5	Reserved	
8	Braking resistor (internal/external) 0: Internal braking resistor has been activated 1: External braking resistor has been activated, internal braking resistor deactivated	only for XVR, XVE, XCS and XCD
9	Braking resistor switch-on threshold adjusted depending on load 0: Active, threshold is increased, proportionally to the thermal load, up to 30V above the reference value 1: Inactive	only for XVR, XVE, XCS and XCD
11/10	Selecting the braking resistor switch-on threshold (reference values) 00: Reserved 01: Reserved 10: Braking resistor deactivated 11: Reserved	only for XVR, XVE, XCS and XCD
12	Dyn. limitation of regenerative power, depending on DC bus voltage (HCS) 0: The regenerative motor power is limited to the peak power of the braking resistor. 1: The peak power of the braking resistor is not limited.	

Bit	Designation/function	Comment
13	Reserved	
14	Converter at energy buffer (DC bus) 0: Energy buffer not available 1: Energy buffer available	Not available yet
15	Reserved	
17/16	Local and internal control of the supply unit/supply section in the converter 00: (Default setting for XCS) external control via field bus: Control via Sercos control/status word. If the OFF bit of the parameter " S-0-1720.0.150 " is assigned to a dig. input, the power can be switched off locally. Off input = 0 generates E2834 (emergency stop). 01: Control via dig. inputs PLC or user controls power supply via ON/OFF switch. ON/OFF " S-0-1720.0.150 " have to be assigned to dig. inputs of the device. 10: Internal control word specification: The supply unit generates automatic run-up to LB status. The DC bus is automatically charged by the XCS converter as soon as the mains voltage has been connected. Control via " S-0-1720.0.150 , Power supply ON/OFF" is generated automatically. Bit 0 "OFF" is internally set to 1. If this bit is assigned to a dig. input, the supply unit can be switched off despite internal specification. In this process, warning E2834 is generated. Deactivation of the power is only possible due to supply error and with configuration of OFF to a digital input. External control via " S-0-1720.0.1 " not possible. Status " S-0-1720.0.2 " is generated. Off input = 0 generates E2834 (emergency stop). 11: like 10, but the DC bus is automatically discharged when the mains voltage is switched off.	
18	DC bus discharge when supply voltage fails 0: Not active 1: Active: If the functional package "internal DC bus short circuit" is activated, the DC bus short circuit is activated if the supply voltage (24V) fails.	Attention: The bb relay must be wired in the control circuit of the main contactor.

Product-specific parameters

Bit	Designation/function	Comment
19	Bleeder power control: 0: The braking resistor is only activated if the DC bus voltage is higher than the switch-on threshold. 1: The braking resistor is additionally switched on to implement the power command value in the braking resistor (heating). Notice: The energy is supplied from the mains	only for XCS, XCD and XVE
20	Automatic DC bus short circuit (ZKS) after master communication errors: (only possible if a braking resistor is available) 0: In the case of master communication errors, the power supply is switched off with a delay. The delay is set in the parameter "S-0-1720.0.3, Power off delay". 1: The DC bus is automatically discharged after power off.	only if a braking resistor is available

Tab. 3-74: Relevant bits of P-0-0860

Use Observe the following aspects for parameterization:

- Bit 0: Power supply**

This bit defines whether the converter is supplied with power via the mains connection (converter operation, default) or via the DC bus (inverter operation).

 In a converter, the power supply and inverter are combined in one device. Bit 0 is always 1 for an inverter; all the other bits are irrelevant to the inverter.

 The current braking resistor switch-on threshold is displayed in "P-0-0833".

P-0-0860 - Attributes	Function: Par	Editable: SUBD:CM	Data length: 4Byte
	Memory: PARAM_SP	Validity ch.: SUBD:CM->PM	Format: BIN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: +	Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: s. Text

3.7 P-0-0900 to P-0-0999 Encoder emulation

3.8 P-0-1000 to P-0-1099 Encoder evaluation

3.8.1 P-0-1031, Content of encoder memory optional slot 1

Allocation Hardware
Funct. package(s): --
Device parameter:

Function This parameter is used to transfer the encoder data from the encoder memory at optional slot 0 to the control unit parameter memory. The content of the parameter can only be interpreted by Bosch Rexroth service technicians.

P-0-1031 - Attributes	Function: Par	Editable: SUBD:CM	Data length: 1Byte var.
	Memory: PARAM_SP	Validity ch.: --	Format: HEX
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --

AXS:	min./max.: --- / ---	Default value: s. Text
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3.8.2 P-0-1031.0.1, Change identifier of motor type plate

Allocation	Hardware Funct. package(s): Device parameter:																												
Function	The serial number of the connected motor encoder is read out when the control voltage is switched on and when the drive is switched from CM to PM. If the serial number differs from the number in the parameter "change identifier of motor type plate", the encoder memory is read out and searched for motor data. If motor data are available, they are loaded to the controller and saved. The serial number of the encoder is stored in the parameter " P-0-1031.0.1 " if the encoder memory has been successfully read out via slot 1 (digital interface). The data that were read out are saved in the parameter " P-0-1031 , Content of encoder memory optional slot 1".																												
P-0-1031.0.1 - Attributes	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Function:</td> <td>Par</td> <td style="width: 20%;">Editable:</td> <td>SUBD:CM</td> <td style="width: 20%;">Data length:</td> <td>1Byte var.</td> </tr> <tr> <td>Memory:</td> <td>PARAM_SP</td> <td>Validity ch.:</td> <td>--</td> <td>Format:</td> <td>ASCII</td> </tr> <tr> <td>Unit:</td> <td>--</td> <td>Extr. val. ch.:</td> <td>--</td> <td>Decim. pl.:</td> <td>0</td> </tr> <tr> <td>Cycl. tra.:</td> <td>--</td> <td>Comb. check:</td> <td>--</td> <td>Set-depend.:</td> <td>--</td> </tr> </table>					Function:	Par	Editable:	SUBD:CM	Data length:	1Byte var.	Memory:	PARAM_SP	Validity ch.:	--	Format:	ASCII	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
Function:	Par	Editable:	SUBD:CM	Data length:	1Byte var.																								
Memory:	PARAM_SP	Validity ch.:	--	Format:	ASCII																								
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																								
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																								
	AXS: min./max.: --- / --- Default value: s. Text																												

3.8.3 P-0-1032, Content of encoder memory optional slot 2

Allocation	Hardware Funct. package(s): Device parameter:																												
Function	This parameters displays the content read of the encoder data memory at optional slot 1.																												
P-0-1032 - Attributes	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Function:</td> <td>Par</td> <td style="width: 20%;">Editable:</td> <td>SUBD:CM</td> <td style="width: 20%;">Data length:</td> <td>1Byte var.</td> </tr> <tr> <td>Memory:</td> <td>PARAM_SP</td> <td>Validity ch.:</td> <td>--</td> <td>Format:</td> <td>HEX</td> </tr> <tr> <td>Unit:</td> <td>--</td> <td>Extr. val. ch.:</td> <td>--</td> <td>Decim. pl.:</td> <td>0</td> </tr> <tr> <td>Cycl. tra.:</td> <td>--</td> <td>Comb. check:</td> <td>--</td> <td>Set-depend.:</td> <td>--</td> </tr> </table>					Function:	Par	Editable:	SUBD:CM	Data length:	1Byte var.	Memory:	PARAM_SP	Validity ch.:	--	Format:	HEX	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
Function:	Par	Editable:	SUBD:CM	Data length:	1Byte var.																								
Memory:	PARAM_SP	Validity ch.:	--	Format:	HEX																								
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																								
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																								
	AXS: min./max.: --- / --- Default value: s. Text																												

3.8.4 P-0-1032.0.1, Change identifier of motor type plate

Allocation	Hardware Funct. package(s): Device parameter:																												
Function	The serial number of the connected motor encoder is read out when the control voltage is switched on and when the drive is switched from CM to PM. If the serial number differs from the number in the parameter "change identifier of motor type plate", the encoder memory is read out and searched for motor data. If motor data are available, they are loaded to the controller and saved. The serial number of the encoder is stored in the parameter " P-0-1032.0.1 " if the encoder memory has been successfully read out via slot 2 (multi-encoder interface). The data that were read out are saved in the parameter " P-0-1032 , Content of encoder memory optional slot 2".																												
P-0-1032.0.1 - Attributes	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Function:</td> <td>Par</td> <td style="width: 20%;">Editable:</td> <td>SUBD:CM</td> <td style="width: 20%;">Data length:</td> <td>1Byte var.</td> </tr> <tr> <td>Memory:</td> <td>PARAM_SP</td> <td>Validity ch.:</td> <td>--</td> <td>Format:</td> <td>ASCII</td> </tr> <tr> <td>Unit:</td> <td>--</td> <td>Extr. val. ch.:</td> <td>--</td> <td>Decim. pl.:</td> <td>0</td> </tr> <tr> <td>Cycl. tra.:</td> <td>--</td> <td>Comb. check:</td> <td>--</td> <td>Set-depend.:</td> <td>--</td> </tr> </table>					Function:	Par	Editable:	SUBD:CM	Data length:	1Byte var.	Memory:	PARAM_SP	Validity ch.:	--	Format:	ASCII	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
Function:	Par	Editable:	SUBD:CM	Data length:	1Byte var.																								
Memory:	PARAM_SP	Validity ch.:	--	Format:	ASCII																								
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																								
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																								
	AXS: min./max.: --- / --- Default value: s. Text																												

Product-specific parameters

AXS:	min./max.: --- / ---	Default value: s. Text
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3.8.5 P-0-1044.x.0, Master comm. engineering over IP: Status IP communication

- Allocation** **Hardware** --
Funct. package(s):
Device parameter:
Alias: [P-0-1782](#)
- Function** Via parameter "P-0-1044.x.1", the status information of the current state of IP communication with engineering over IP can be read at the master communication interface of the device.
- Structure** The individual bits of the parameter have the following significances:

Bit	Designation/function	Comment
7-0	Reserved	
9/8	Setting of device gateway information: 00: No gateway information set 01: Active gateway information manually set 10: Active gateway information automatically generated	
11/10	Status of device gateway information: 00: Gateway information not used 01: Gateway address which was read is active 10: Gateway address which was read has not been activated up to now	
12	Status of device network mask: 0: Network mask which was read is active 1: Network mask which was read has not been activated up to now	
15-13	Reserved	
17/16	Setting of device IP address 00: No IP address set 01: Active IP address manually set 10: Active IP address automatically set	
19/18	Status of IP address 00: No IP address available for activation 01: IP address which was read is active 10: IP address which was read has not been activated up to now	
21/20	Reserved	
22	Validity of device IP settings 0: IP settings valid 1: Invalid IP settings (address and gateway in different networks)	

Bit	Designation/function	Comment
23	Status of IP communication: 0: IP communication possible 1: No IP communication possible (resources missing)	
30-24	Reserved	
31	Status command C61: 0: Command C61 is not active 1: Command C61 is active	

Tab. 3-75: P-0-1044.x.0, Status IP communication

Use

The structure index is used to define the communication interface.

Structure index interface assignment:

Structure index	Significance
0	Engineering via master communication

P-0-1044.x.0 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:			min./max.: --- / ---	Default value: ---	

3.9 P-0-1100 to P-0-1269 Velocity control

3.9.1 P-0-1119, Velocity mix factor encoder 1 & encoder 2

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The "velocity mix factor" parameter determines the relation of the velocity feedback values of encoder 1 and encoder 2. See also Functional Description "Notes on commissioning"	
Use	The input is in percent; the following definition applies: 0%: Speed controller exclusively works with the velocity of encoder 1. 100%: Speed controller only works with the velocity of encoder 2 (optional encoder). If no optional encoder is available, the parameter is set to 0%.	



If encoder 2 (optional encoder) is used as the only control encoder, the value has to be set to 100%.

P-0-1119 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	%	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 2
AXS:			min./max.: s. Text / 100,0	Default value: 0,0	

Product-specific parameters

3.9.2 P-0-1120, Velocity control loop filter: Filter type

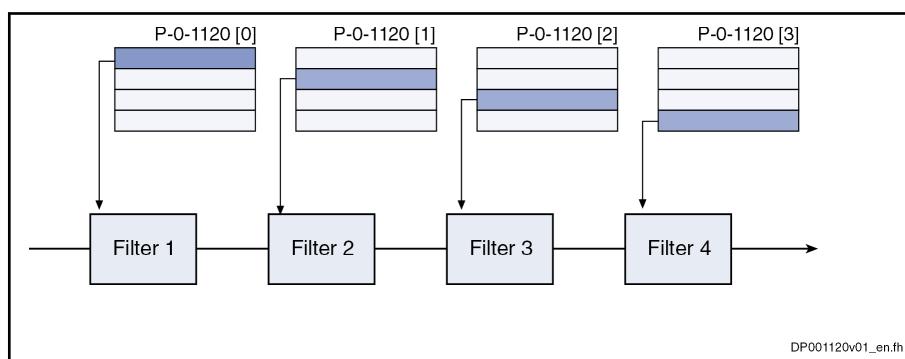
Allocation	Hardware Funct. package(s): Device parameter:	--
Function	 As a standard, 3 filters are supported. 8 filters are available with the premium package.	
Use	<p>This parameter allows up to 8 different filters (2nd order) to be activated and selected.</p> <p>See also Functional Description "Velocity controller"</p>  <div style="text-align: right; font-size: small;">DP001120v01_en.fh</div>	

Fig. 3-24: Parameterizable filter cascade

The following filter types can be selected:

- 0: Filter is off
- 1: Low-pass filter activated
→ [P-0-1121](#), Velocity control loop filter: Limit frequency of low pass
- 2: Band-stop filter activated
→ [P-0-1122](#), Velocity control loop filter: Bandwidth
→ [P-0-1123](#), Velocity control loop filter: Center frequency
- 3: 2nd order filter activated
→ [P-0-1140](#), Velocity control loop filter: Numerator natural frequency
→ [P-0-1141](#), Velocity control loop filter: Denominator natural frequency
→ [P-0-1142](#), Velocity control loop filter: Numerator damping
→ [P-0-1143](#), Velocity control loop filter: Denominator damping
- 4: Notch filter with reduction activated
→ [P-0-1122](#), Velocity control loop filter: Bandwidth
→ [P-0-1123](#), Velocity control loop filter: Center frequency
→ [P-0-1124](#), Velocity control loop filter: Notch depth
→ [P-0-1125](#), Velocity control loop filter: Reduction

 All of the above filter parameters "P-0-1120, P-0-1121, P-0-1122, P-0-1123, P-0-1124, P-0-1125, P-0-1140, P-0-1141, P-0-1142 and P-0-1143" are list parameters each comprising 8 elements (element 1 for filter 1, element 2 for filter 2, ...).

The content of "P-0-1120, Velocity control loop filter: Filter type" consists of 8 elements:

- [P-0-1120\[0\]](#) → filter type for filter 1

- **P-0-1120[1]** → filter type for filter 2
- **P-0-1120[n]** → filter type for filter n
- **P-0-1120[7]** → filter type for filter 8

P-0-1120 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 2

AXS: min./max.: s. Text / 4 Default value: s. Text

3.9.3 P-0-1121, Velocity control loop filter: Limit frequency of low pass

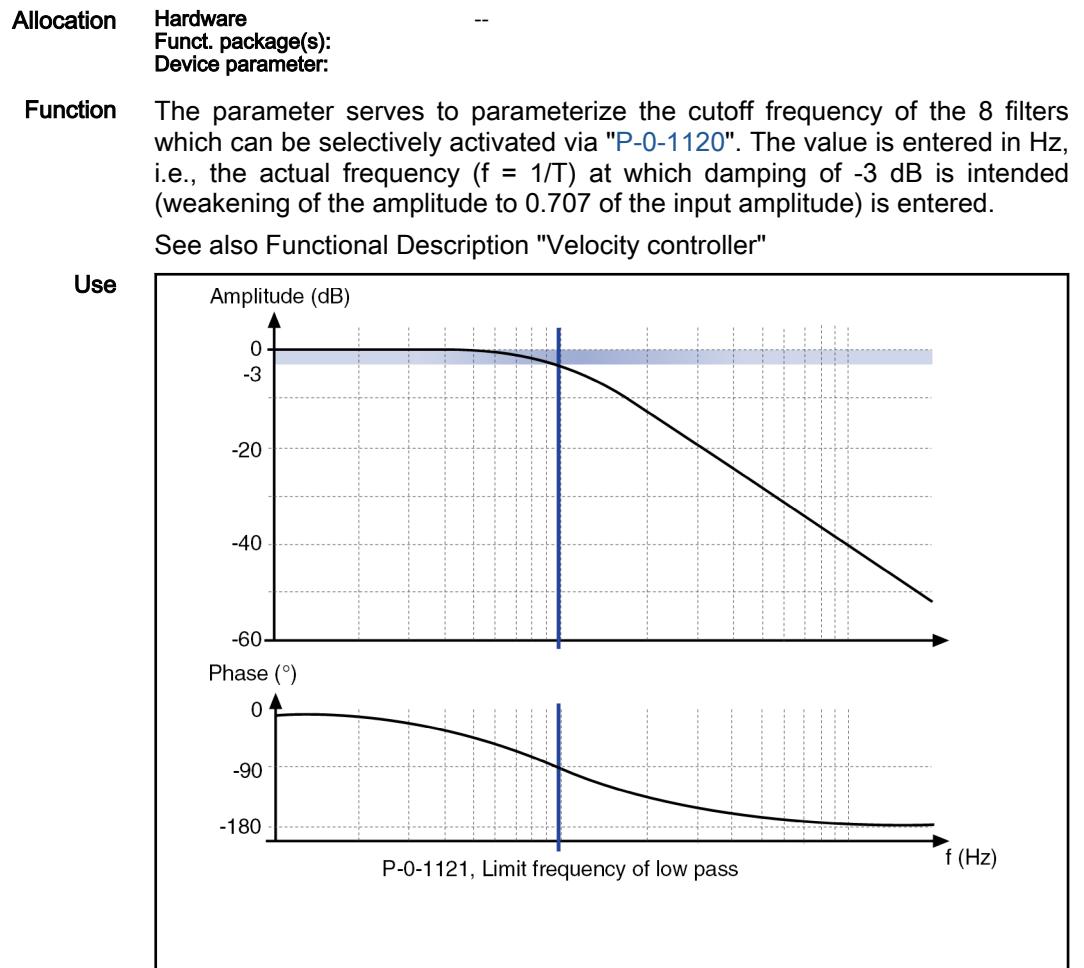


Fig. 3-25: Frequency response of 2nd order low-pass filter

The content of "P-0-1121" consists of 8 elements:

- **P-0-1121[0]** → limit frequency for low-pass filter 1
- **P-0-1121[1]** → limit frequency for low-pass filter 2
- **P-0-1121[n]** → limit frequency for low-pass filter n
- **P-0-1121[7]** → limit frequency for low-pass filter 8



However, a list element in "P-0-1121" is only relevant if the corresponding list element has been set to "1" (filter type = low-pass filter) in "P-0-1120".

Product-specific parameters

P-0-1121 - Attributes	Function: Par Memory: PARAM_SP Unit: Hz Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte var. Format: DEC_OV Decim. pl.: 1 Set-depend.: Grp. 2
------------------------------	---	---	---

AXS:	min./max.: 4,0 / 3800,0	Default value: s. Text
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3.9.4 P-0-1122, Velocity control loop filter: Bandwidth

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter serves to parameterize the bandwidth. It takes effect for the 8 band-stop filters which can be selectively activated via P-0-1120 [n] = 2. In addition, it takes effect for the 8 notch filters with reduction which can be selectively activated via P-0-1120 [n] = 4. The value is entered in Hz, i.e., the actual frequency ($f = 1/T$) is entered.	

See also Functional Description "Velocity controller"

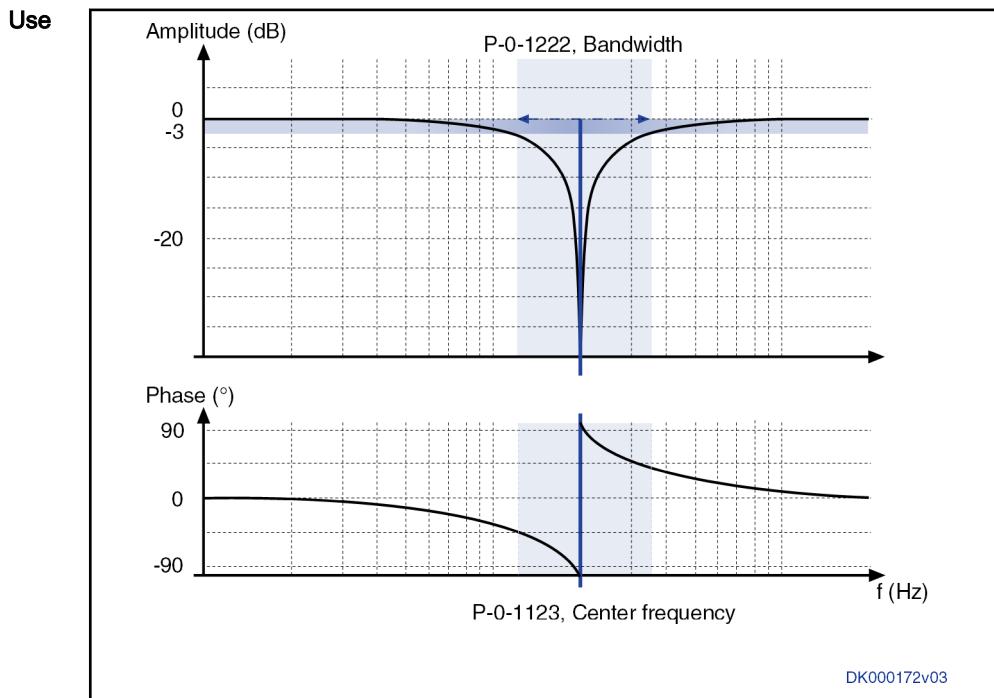


Fig. 3-26: Frequency response of band-stop filter

The content of "P-0-1122" consists of 8 elements:

- **P-0-1122[0]** → bandwidth for filter 1
- **P-0-1122[1]** → bandwidth for filter 2
- **P-0-1122[n]** → bandwidth for filter n
- **P-0-1122[7]** → bandwidth for filter 8



However, a list element in "P-0-1122" is only relevant if the corresponding list element has been set to "2" (filter type = band-stop filter) or "4" (filter type = notch filter with reduction) in "P-0-1120".

P-0-1122 - Attributes	Function: Par Memory: PARAM_SP Unit: Hz Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte var. Format: DEC_OV Decim. pl.: 1 Set-depend.: Grp. 2
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AXS:	min./max.: 10,0 / 1000,0	Default value: s. Text
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3.9.5 P-0-1123, Velocity control loop filter: Center frequency

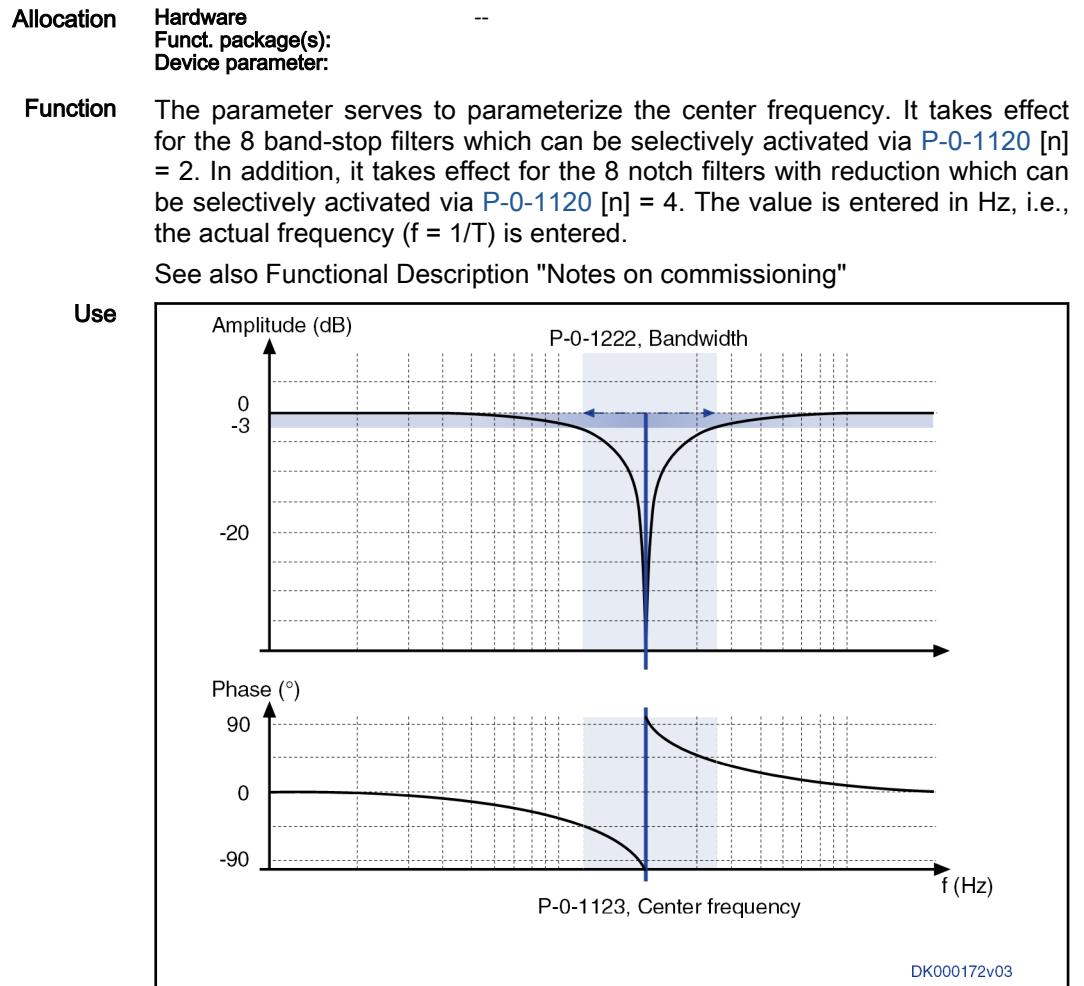


Fig. 3-27: Amplitude characteristic of a band-stop filter depending on the bandwidth (qualitative)

The content of "[P-0-1123](#), Velocity control loop filter: Center frequency" consists of 8 elements:

- [P-0-1123\[0\]](#) → center frequency for filter 1
- [P-0-1123\[1\]](#) → center frequency for filter 2
- [P-0-1123\[n\]](#) → center frequency for filter n
- [P-0-1123\[7\]](#) → center frequency for filter 8



However, a list element in "[P-0-1123](#)" is only relevant if the corresponding list element has been set to "2" (filter type = band-stop filter) or "4" (filter type = notch filter with reduction) in "[P-0-1120](#)".

P-0-1123 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	Hz	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 2

AXS:	min./max.: 4,0 / 3800,0	Default value: s. Text
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Product-specific parameters

3.9.6 P-0-1124, Velocity control loop filter: Notch depth

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter serves to parameterize the notch depth. It takes effect for the 8 notch filters with reduction which can be selectively activated via P-0-1120 [n] = 4. The value is entered in decibel (dB). The notch depth corresponds to the damping for the parameterized center frequency. It is not possible to enter negative values. The positive value entered in dB is used for damping.	
Use	The content of "P-0-1124, Velocity control loop filter: Notch depth" consists of 8 elements. <ul style="list-style-type: none"> • P-0-1124[0] → notch depth for filter 1 • P-0-1124[1] → notch depth for filter 2 • P-0-1124[n] → notch depth for filter n • P-0-1124[7] → notch depth for filter 8 	



However, a list element in "P-0-1124" is only relevant if the corresponding list element has been set to "4" (filter type = notch filter with reduction) in "P-0-1120".

P-0-1124 - Attributes	Function: Par	Editable: ALWAYS	Data length: 2Byte var.
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_OV
	Unit: dB	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: Grp. 2

AXS:

min./max.: --- / ---

Default value: s. Text

3.9.7 P-0-1125, Velocity control loop filter: Reduction

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter serves to parameterize the reduction. It takes effect for the 8 notch filters with reduction which can be selectively activated via P-0-1120 [n] = 4. The value is entered in decibel (dB). The reduction corresponds to the damping to which asymptotic approximation is performed for frequencies above the center frequency. For reductions smaller than the parameterized notch depth, it corresponds to the minimum damping for frequencies above the center frequency. It is not possible to enter negative values. The reduction corresponds to the positive value entered in dB.	
Use	The content of "P-0-1125, Velocity control loop filter: Reduction" consists of 8 elements. <ul style="list-style-type: none"> • P-0-1125[0] → reduction for filter 1 • P-0-1125[1] → reduction for filter 2 • P-0-1125[n] → reduction for filter n • P-0-1125[7] → reduction for filter 8 	



However, a list element in "P-0-1125" is only relevant if the corresponding list element has been set to "4" (filter type = notch filter with reduction) in "P-0-1120".

P-0-1125 - Attributes	Function: Par	Editable: ALWAYS	Data length: 2Byte var.
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_OV
	Unit: dB	Extr. val. ch.: --	Decim. pl.: 0

Cycl. tra.: --

Comb. check: --

AXS: min./max.: --- / --- **Default value:** s. Text

3.9.8 P-0-1126, Velocity control loop: Acceleration feedforward

Allocation	Hardware Funct. package(s): Device parameter:
Function	This parameter is used for activating and setting a variable acceleration feedforward in the "velocity control" mode. See also Functional Description "Velocity controller"
Use	Operating principle The differentiated velocity command value (acceleration command value) is multiplied by the value of parameter " P-0-1126 " in order to add (feedforward) a corresponding additive torque command value. The feedforward value (additive torque/force command value) can be smoothed by a subsequent low-pass filter (" P-0-0180 ").

 This kind of feedforward can, for example, be used to minimize the command value deviation in the acceleration phase.

Input values

 By entering a value greater than "0" into "[P-0-1126](#)", acceleration feedforward is activated ($P-0-1126 = 0 \rightarrow$ deactivated).

For optimum parameterization of the acceleration feedforward control, the following values have to be entered in "[P-0-1126](#)":

- Total mass (motor + load) in kg (linear motor), and the
 - Total mass inertia (motor + load), in relation to the motor output shaft, in gm² (rotary motor)

 Depending on the respective mechanical system, the input value of "P-0-1126" has to be adjusted on site.

Unit, decimal places

The drive firmware automatically adjusts the unit and decimal places to the type of construction of the motor (rotary or linear) entered in "P-0-4014, Type of construction of motor".

- rotary motor: $\text{mN}\cdot\text{m} / \text{rad/s}^2 \rightarrow \text{g}\cdot\text{m}^2$
 - Linear motor: $\text{mN} / \text{mm/s}^2 \rightarrow \text{kg}$

P-0-1126 - Attributes	Function: Par	Editable: ALWAYS	Data length: 4Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_OV
	Unit: mNm/(rad/s ²)	Extr. val. ch.: +	Decim. pl.: 4
	Cycl. tra.: --	Comb. check: --	Set-depend.: Grp. 2

AXS: min./max.: s. Text / s. Text **Default value:** 0,0000

3.9.9 P-0-1127, Velocity control loop: Reference model frequency

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	<p>The parameter defines the frequency of the reference model (PT2 filter)</p> <ul style="list-style-type: none"> The input value of the velocity controller I-term is filtered with the reference model 	

Product-specific parameters

- The effective velocity command value ([P-0-0048](#)) is smoothed by the filter and displayed in the velocity command value reference model ([P-0-0430](#)).
- The coefficients of the reference model are defined by frequency and damping ([P-0-1128](#)).

P-0-1127 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	Hz	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: 0,0 / s. Text	Default value: 0,0
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3.9.10 P-0-1128, Velocity control loop: Reference model attenuation

Allocation **Hardware** --
Funct. package(s):
Device parameter:

- Function** The parameter defines the damping of the reference model (PT2 filter).
- The input value of the velocity controller I-term is filtered with the reference model.
 - The effective velocity command value ([P-0-0048](#)) is smoothed by the filter and displayed in the velocity command value reference model ([P-0-0430](#)).
 - The coefficients of the reference model are defined by frequency ([P-0-1127](#)) and damping.

P-0-1128 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	4

AXS:	min./max.: 0,1000 / 10,0000	Default value: 0,7070
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3.9.11 P-0-1129, Cogging torque/force compensation value

Allocation **Hardware** --
Funct. package(s):
Device parameter:

- Function** This parameter is the active compensation value of cogging torque compensation. It is added to the velocity controller output as an additive torque/force value and is not limited by [S-0-0082/S-0-0083](#).



This parameter is only available upon enabling (enabled package: cogging torque compensation).

See also Functional Description "Compensation functions / corrections"

Use Internal cogging torque compensation:

With the function activated, the value is generated from a table by the drive.

External cogging torque compensation:

The value is transmitted to the drive by a control.



It does not make sense to write the parameter externally if the internal cogging torque compensation is active.

P-0-1129 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0086	Extr. val. ch.:	+	Decim. pl.:	--

Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--
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AXS:	min./max.: s. Text / s. Text	Default value: ---
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3.9.12 P-0-1130, Cogging torque/force compensation val. table, pos. Direction

Allocation **Hardware** --
Funct. package(s):
Device parameter:

Function In this list parameter, 1024 position-dependent cogging torque/force correction values for positive (non-negated) direction of motion are stored. With active cogging torque/force compensation, the correction values are added to the torque/force command value depending on the motor position, when the motor moves in positive direction.



This parameter is only available upon enabling (enabled package: cogging torque compensation).

See also Functional Description of firmware "Compensation functions / corrections"

P-0-1130 - Attributes	Function: Par	Editable: ALWAYS	Data length: 2Byte var.
	Memory: PARAM_SP	Validity ch.: --	Format: DEC_MV
	Unit: S-0-0086	Extr. val. ch.: +	Decim. pl.:
	Cycl. tra.: --	Comb. check: --	Set-depend.: --

AXS:	min./max.: s. Text / s. Text	Default value: s. Text
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3.9.13 P-0-1131, Cogging torque/force compensation control word

Allocation **Hardware** --
Funct. package(s):
Device parameter:

Function This parameter is used to activate cogging torque or cogging force compensation and to set the method for determining the compensation table.



This parameter is only available upon enabling (enabled package: cogging torque compensation).

See also Functional Description "Compensation functions / corrections"

Structure The individual bits of the parameter have the following significances:

Bit	Designation/function	Comment
0	Cogging torque or cogging force compensation 0: Inactive 1: Active	
1	Range of action of cogging torque or cogging force compensation 0: Unlimited range of action The cogging torque compensation table extends to one motor revolution (rotary motor) or one pole pair distance (linear motor). 1: Limited range of action The cogging torque compensation table extends to the range within the position limit values "P-0-1145" and "P-0-1146".	Only editable in parameter mode (PM).
7...2	Reserved	

Product-specific parameters

Bit	Designation/function	Comment
12... 9	Reserved	
13	Generating the motion profile 0: NC-controlled 1: Drive-controlled (default)	
14	Establishing the position reference between encoder 1 and motor 0: Automatically, default In the case of absolute encoders (single- or multi-turn encoders) and relative encoders with one reference mark/motor revolution or distance-coded reference marks. 1: By homing In the case of relative encoders without reference mark or with multiple reference marks/motor revolution.	
15/8	Settings for determining the cogging torque compensation tables 00: Determine new tables in the case of axis motion: The tables refer to motor and connected axis mechanics. Unlimited range of action: The offset is determined, filtered out and displayed in the parameters (P-0-1147 , P-0-1148). Limited range of action: The offset is applied from the parameters "P-0-1147" and "P-0-1148" and filtered out. 01: Determine new tables in the case of axis motion: Unlimited range of action: Additionally, eliminate influence of unbalanced inertia by calculation, then save the tables. Limited range of action (no additional function): 10: Correct existing tables without axis motion Unlimited range of action: no function Limited range of action: Correct table values by the offsets from parameters "P-0-1147" and "P-0-1148" 11: Correct existing tables without axis motion: Unlimited range of action: Determine influence of unbalanced inertia by calculation and eliminate it from the tables. Limited range of action: Correct table values by the offsets from parameters "P-0-1147" and "P-0-1148".	

Tab. 3-76: Relevant bits of P-0-1131, Control word of cogging torque compensation

P-0-1131 - Attributes	Function: Par	Editable: ALWAYS	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: --	Format: BIN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: AT + MDT	Comb. check: +	Set-depend.: --
AXS:	min./max.: --- / ---		Default value: 0x2000

3.9.14 P-0-1132, Cogging torque/force compensation val. table, neg. Direction

Allocation Hardware
 Funct. package(s): --
 Device parameter:

Function In this list parameter, 1024 position-dependent cogging torque/force correction values for negative (non-negated) direction of motion are stored. With active cogging torque/force compensation, the correction values are added to the torque/force command value depending on the motor position, when the motor moves in negative direction.



This parameter is only available upon enabling (enabled package: cogging torque compensation).

See also Functional Description of firmware "Compensation functions / corrections"

P-0-1132 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte var.
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0086	Extr. val. ch.:	+	Decim. pl.:	
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: s. Text / s. Text			Default value:	s. Text

3.9.15 P-0-1133, Cogging torque/force compensation status word

Allocation Hardware
Funct. package(s): --
Device parameter:

Function This parameter displays:

- The velocity-dependent effectiveness of cogging torque compensation
- The state of measured value recording during the determination of the compensation tables



This parameter is only available upon enabling (enabled package: cogging torque compensation).

See also Functional Description "Compensation functions / corrections"

Structure The individual bits of the parameter have the following significances:

Bit	Designation/function	Comment
1/0	Status of effectiveness of cogging torque/force compensation 00: Cogging torque compensation not active! 01: Effective, because S-0-0040 < P-0-1134 10: Effective in attenuated form, because P-0-1134 < S-0-0040 < P-0-1135 11: Without effect, because S-0-0040 > P-0-1135	
7... 2	Reserved!	
8	Required no. of measured val. per pos. raster reached 0: yes 1: no	
9	Drive in range of measured value recording 0: no 1: yes	

Product-specific parameters

Bit	Designation/function	Comment
10	Position reference encoder 1 - motor exists 0: no 1: yes	
15... 11	Reserved!	

Tab. 3-77: Relevant bits of P-0-1133, Cogging torque/force compensation status word

P-0-1133 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.9.16 P-0-1134, Velocity threshold, attenuation of cogging torque/force comp

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In this parameter, enter the velocity threshold above which the cogging torque/force compensation values stored in "P-0-1131" or "P-0-1133" are used in attenuated form for motor control. At velocities below this velocity threshold, the compensation values are fully effective.	



This parameter is only available upon enabling (enabled package: cogging torque compensation).

See also Functional Description "Compensation functions / corrections"

P-0-1134 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0044 Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: 0

3.9.17 P-0-1135, Velocity threshold, switching off cogging torque/force comp.

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In this parameter, enter the velocity threshold above which the cogging torque/force compensation values stored in "P-0-1130" or "P-0-1132" are no longer used for motor control. At velocities below this velocity threshold and above the threshold of "P-0-1134", the compensation values take effect proportionately, depending on the velocity! (100% for "P-0-1134", 0% for "P-0-1135")	



This parameter is only available upon enabling (enabled package: cogging torque compensation).

See also Functional Description "Compensation functions / corrections"

P-0-1135 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0044 Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 0

3.9.18 P-0-1136, Cogging torque/force comp.: Lead time

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	With active cogging torque compensation, the dead time and dynamics of the current controller, given high cogging torque frequency, can have a negative effect on the compensation result. This parameter is used to compensate the dead time and dynamics of the current controller.	



This parameter is only available upon enabling (enabled package: cogging torque compensation).

See also Functional Description "Compensation functions / corrections"

P-0-1136 - Attributes	Function: Par Memory: PARAM_SP Unit: us Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 125

3.9.19 P-0-1137, Cogging torque/force comp.: Ramp acceleration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	If the cogging torque compensation is determined in drive-controlled form, this parameter specifies the acceleration of the ramp profile for the drive.	



This parameter is only available upon enabling (enabled package: cogging torque compensation).

See also Functional Description "Compensation functions / corrections"

P-0-1137 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0160 Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 1000000

3.9.20 P-0-1138, C4800 Cmd Determine cogging torque/force compensation table

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The command C4800 for determining the cogging torques is started using this parameter.	

Product-specific parameters



This parameter is only available upon enabling (enabled package: cogging torque compensation).

See also Functional Description "Compensation functions / corrections"

Use With regard to a motor position pattern with 1024 positions, cogging torque compensation values are determined and stored in table form in the list parameters "[P-0-1130](#)" or "[P-0-1132](#)". The command is signaled to have been completed, when 40 measured values per position pattern section are available for the possible directions of motion of the axis.

See also cogging torque/force compensation control word ([P-0-1131](#); bit 13)

P-0-1138 - Attributes

Function:	Cmd	Editable:	SUBD:OM	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: 0x0 / 0x3	Default value: ---
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3.9.21 P-0-1139, Cogging torque/force comp.: Adaption factor

Allocation Hardware
Funct. package(s): --
Device parameter:

Function This parameter has a multiplicative effect on all values of the cogging torque compensation tables. The effect of cogging torque compensation can thereby be intensified or attenuated:

- Permanently over a constant value that is unequal 100%.
- Depending on the status variables of the machining process, by master-side writing of "[P-0-1139](#)" with values unequal 100% (e.g., by including this parameter in the master data telegram [MDT]).



This parameter is only available upon enabling (enabled package: cogging torque compensation).

$$T_{\text{Cog_Corr}} = P-0-1139 * T_{\text{Cog_Tab}}$$

T_Cog_Tab Table value of cogging torque corr. table, position-dependent

T_Cog_Corr Effective cogging torque compensation value, position-dependent

Fig. 3-28: P-0-1139: Cogging torque compensation adaption factor



For each direction of motion, there is a cogging torque compensation table with 1024 values. The compensation values are position-dependent.

See also Functional Description "Compensation functions / corrections"

P-0-1139 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV
Unit:	%	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / 500,0	Default value: 100,0
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3.9.22 P-0-1140, Velocity control loop filter: Numerator natural frequency

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter serves to parameterize the numerator natural frequency of the eight 2nd order filters which can be selectively activated via P-0-1120 [n] = 3. The input value is scaled in Hz, i.e., the actual frequency ($f = 1/T$) is entered.	
Use	<p>The content of "P-0-1140" consists of 8 elements:</p> <ul style="list-style-type: none"> • P-0-1140[0] → Numerator natural frequency for filter 2nd order 1 • P-0-1140[1] → Numerator natural frequency for filter 2nd order 2 • P-0-1140[2] → Numerator natural frequency for filter 2nd order 3 • P-0-1140[3] → Numerator natural frequency for filter 2nd order 4 etc. 	

 However, a list element in "P-0-1140" is only relevant if the corresponding list element in "P-0-1120" has been set to "3" (filter type = filter 2nd order).

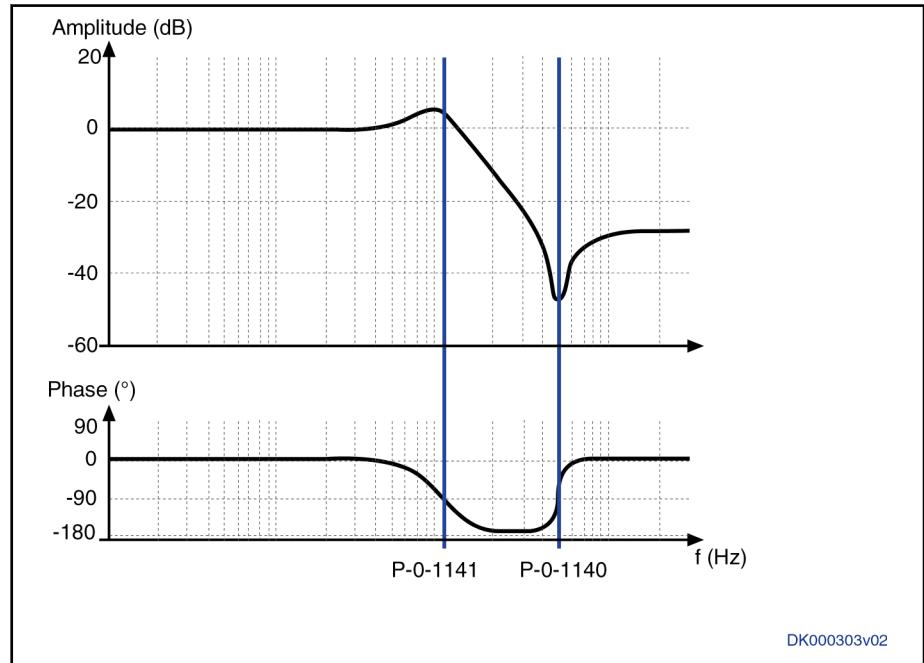


Fig. 3-29: Frequency response of 2nd order filter

P-0-1140 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	Hz	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 2

AXS: min./max.: s. Text / 4000,0 Default value: s. Text

3.9.23 P-0-1141, Velocity control loop filter: Denominator natural frequency

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter serves to parameterize the denominator natural frequency of the eight 2nd order filters which can be selectively activated via P-0-1120 [n]	

Product-specific parameters

= 3. The input value is scaled in Hz, i.e., the actual frequency ($f = 1/T$) is entered.

Use The content of "P-0-1141" consists of 8 elements:

- **P-0-1141[0]** → Denominator natural frequency for filter 2nd order 1
- **P-0-1141[1]** → Denominator natural frequency for filter 2nd order 2
- **P-0-1141[2]** → Denominator natural frequency for filter 2nd order 3
- **P-0-1141[3]** → Denominator natural frequency for filter 2nd order 4
- etc.

 However, a list element in "P-0-1141" is only relevant if the corresponding list element in "P-0-1120" has been set to "3" (filter type = filter 2nd order).

P-0-1141 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	Hz	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 2

AXS:	min./max.: s. Text / 4000,0	Default value: s. Text
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3.9.24 P-0-1142, Velocity control loop filter: Numerator damping

Allocation Hardware
Funct. package(s):
Device parameter: --

Function The parameter serves to parameterize the numerator damping of the eight 2nd order filters which can be selectively activated via **P-0-1120** [n] = 3. The input value is not scaled.

Use The content of "P-0-1142" consists of 8 elements:

- **P-0-1142[0]** → Numerator for filter 2nd order 1
- **P-0-1142[1]** → Numerator for filter 2nd order 2
- **P-0-1142[2]** → Numerator for filter 2nd order 3
- **P-0-1142[3]** → Numerator for filter 2nd order 4
- etc.

 However, a list element in "P-0-1142" is only relevant if the corresponding list element in "P-0-1120" has been set to "3" (filter type = filter 2nd order).

P-0-1142 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	4
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 2

AXS:	min./max.: s. Text / 10,0000	Default value: s. Text
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3.9.25 P-0-1143, Velocity control loop filter: Denominator damping

Allocation Hardware
Funct. package(s):
Device parameter: --

Function The parameter serves to parameterize the denominator damping of the eight 2nd order filters which can be selectively activated via **P-0-1120** [n] = 3. The input value is not scaled.

Use The content of "P-0-1143" consists of 8 elements:

- **P-0-1143[0]** → Denominator damping for filter 2nd order 1
- **P-0-1143[1]** → Denominator damping for filter 2nd order 2
- **P-0-1143[2]** → Denominator damping for filter 2nd order 3
- **P-0-1143[3]** → Denominator damping for filter 2nd order 4 etc.



However, a list element in "P-0-1143" is only relevant if the corresponding list element in "P-0-1120" has been set to "3" (filter type = filter 2nd order).

P-0-1143 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	4
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 2

AXS: min./max.: 0,0000 / 10,0000 **Default value:** s. Text

3.9.26 P-0-1145, Cogging torque/force comp.: Lower position limit

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Defines the lower position limit for cogging torque compensation if an absolute travel range was defined using bit 1 of the parameter "P-0-1131, Cogging torque/force compensation control word".	



This parameter is only available upon enabling (enabled package: cogging torque compensation).

See also Functional Description "Compensation functions / corrections"

Use	The lower and upper position limit (P-0-1145 and P-0-1146) define the travel range for recording the cogging torque compensation table. The position range for which the cogging torque compensation values are stored is smaller by the acceleration range and the deceleration range. A distance for reaching the target velocity is required for acceleration and for deceleration. Therefore, the cogging torque compensation table cannot be recorded over the entire travel range.
------------	--

P-0-1145 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	+	Decim. pl.:	
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: s. Text / s. Text **Default value:** 0

3.9.27 P-0-1146, Cogging torque/force comp.: Upper position limit

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Defines the upper position limit for cogging torque compensation if an absolute travel range was defined using bit 1 of the parameter "P-0-1131, Cogging torque/force compensation control word".	



This parameter is only available upon enabling (enabled package: cogging torque compensation).

See also Functional Description "Compensation functions / corrections"

Product-specific parameters

Use The lower and upper position limit ([P-0-1145](#) and [P-0-1146](#)) define the travel range for recording the cogging torque compensation table. The position range for which the cogging torque compensation values are stored is smaller by the acceleration range and the deceleration range. A distance for reaching the target velocity is required for acceleration and for deceleration. Therefore, the cogging torque compensation table cannot be recorded over the entire travel range.

P-0-1146 - Attributes	Function: Par	Editable: ALWAYS	Data length: 4Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_MV
	Unit: S-0-0076	Extr. val. ch.: +	Decim. pl.: --
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 0

3.9.28 P-0-1147, Cogging torque/force comp.: Offset positive

Allocation Hardware
Funct. package(s):
Device parameter: --

Function Defines the offset for the cogging torque compensation table in positive direction if an absolute travel range is defined using bit 1 of the parameter "[P-0-1131](#), Cogging torque/force compensation control word".



This parameter is only available upon enabling (enabled package: cogging torque compensation).

See also Functional Description "Compensation functions"

Use If the cogging torque compensation table is recorded over an absolute travel range, it is impossible to determine the offset automatically since the travel range can be unequal to a mechanical rotation or pole pair distance. To compensate possible offsets (permanent torques or forces), corrective measures can be taken by inputting a value.

P-0-1147 - Attributes	Function: Par	Editable: ALWAYS	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_MV
	Unit: S-0-0086	Extr. val. ch.: +	Decim. pl.: --
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 0

3.9.29 P-0-1148, Cogging torque/force comp.: Offset negative

Allocation Hardware
Funct. package(s):
Device parameter: --

Function Defines the offset for the cogging torque compensation table in negative direction if an absolute travel range is defined using bit 1 of the parameter "[P-0-1131](#), Cogging torque/force compensation control word".



This parameter is only available upon enabling (enabled package: cogging torque compensation).

See also Functional Description "Cogging torque compensation"

Use If the cogging torque compensation table is recorded over an absolute travel range, it is impossible to determine the offset automatically since the travel range can be unequal to a mechanical rotation or pole pair distance. To compensate possible offsets (permanent torques or forces), corrective measures can be taken by inputting a value.

P-0-1148 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0086 Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 0

3.9.30 P-0-1149, Cogging torque/force comp.: Ramp velocity

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	If the cogging torque compensation is determined in drive-controlled form, this parameter specifies the velocity of the ramp profile for the drive.		
	 This parameter is only available upon enabling (enabled package: cogging torque compensation).		
Use	If the cogging torque compensation is determined in drive-controlled form, the ramp profile is defined using the ramp acceleration (P-0-1137) and the ramp velocity.		
P-0-1149 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0044 Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: 1000000	

3.9.31 P-0-1150, Command value generator output

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter displays the output value of the command value generator. The output value is displayed with format and unit, identical to the assigned parameter.		
P-0-1150 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 4 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---	

3.9.32 P-0-1151, Command value generator, list of possible target parameters

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This list parameter contains the IDNs of the parameters that can be entered in "P-0-1152, Command value generator, target parameter assignment". The assigned parameter has to be available in accordance with the currently enabled hardware and firmware functions.	
	For an axis controller, the command value generator can have an effect on the following parameters:	
	<ul style="list-style-type: none"> • S-0-0037, Additive velocity command value • S-0-0081, Additive torque/force command value 	

Product-specific parameters

- [P-0-0039](#), Flux-generating current, command value (only for synchronous motors without field weakening, since otherwise the value is overwritten by motor control)
- [P-0-0059](#), Additive position command value, controller
- [P-0-0063](#), Torque-generating voltage, actual value (only in the "direct voltage input" operation mode)
- [P-0-0064](#), Flux-generating voltage, actual value (only in the "direct voltage input" operation mode)

Function For a supply unit (XVE, XVR or XMV), the command value generator can have an effect on the following parameters:

- S-0-1706.0.6, DC bus voltage command value
- [S-0-1706.0.11](#), Active-current generating component, command value
- [S-0-1706.0.12](#), Reactive-current generating component, command value
- [S-0-1716.0.160](#), Island grid voltage command value
- [S-0-1716.0.161](#), Island grid frequency command value
- [S-0-1741.0.160](#), DC voltage command value
- [S-0-1741.0.161](#), DC current command value

P-0-1151 - Attributes	Function: Par	Editable: --	Data length: 4Byte var.
	Memory: --	Validity ch.: --	Format: IDN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: ---

3.9.33 P-0-1152, Command value generator, target parameter assignment

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	In this parameter, enter the IDN of the parameter to which the result of the command value generator is to be written.		
Use	For the following parameters, the display (unit and scaling) is set to the one of the target parameter when the target parameter is selected. When the target parameter is changed, the values of the parameters are set to zero so that it is necessary to enter the desired values again.		
	<ul style="list-style-type: none"> • P-0-1150, Command value generator output • P-0-1154, Command value generator, offset • P-0-1155, Command value generator, amplitude 		
P-0-1152 - Attributes	Function: Par	Editable: ALWAYS	Data length: 4Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: IDN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:		min./max.: --- / ---	
		Default value: s. Text	

3.9.34 P-0-1153, Command value generator, control word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter is used for configuring the integrated command value generator.	
	See also Functional Description "Drive-internal command value generator"	

Structure	Bit	Designation/function	Comment
	3-0	Signal selection (selection of signal shape of command value generator) 0001: Noise signal 0010: Sine signal 0011: Square-wave signal 0100: Modified sine signal 0101: Reserved 0110: Sine sweep	
	4	Enable 0: Locked: The command value generator is stopped and command value zero is output. 1: Enable: The command value generator is enabled and the command value is output to the target parameter.	
	5	Periodic signal 0: Non-recurring sequence 1: Periodic signal generation Note: For the noise signal, the periodic time is firmly set to 4095 cycles!	
	6	Disabling delayed For the generation of average value-free signals the disabling of signal generation can be delayed until a complete signal period has been output. 0: Immediate disabling 1: Disabling delayed until period has been completed	
	7	Amplitude of noise generator The noise signal can be generated with a constant amplitude (square wave pulses with different periodic times) or with a continuous amplitude. 0: Amplitude as square wave signal 1: Amplitude as factor	
	8	Resetting the enable signal The enable signal of the command value generator can be automatically reset after a drive error 0: The enable signal is maintained, i.e. the command value becomes effective after a drive error had been cleared and the drive was enabled. 1: Command value generator needs to be re-enabled after a drive error was cleared.	

Product-specific parameters

Bit	Designation/function	Comment
9	Switching of sine or cosine signal If "sine signal" is selected in the signal selection and the output of the command value generator was not assigned to a target parameter (P-0-1152 = S-0-0000), the signal shape can be switched. 0: Sine signal 1: Cosine signal	
15-10	Reserved	

Tab. 3-78: *P-0-1153, Command value generator, control word*

 Only bit 4 in can be configured in the signal control word in "[P-0-1153](#)".

P-0-1153 - Attributes	Function: Par	Editable: ALWAYS	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: HEX
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: AT + MDT	Comb. check: +	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: s. Text

3.9.35 P-0-1154, Command value generator, offset

Allocation	Hardware	--	
	Funct. package(s):		
	Device parameter:		
Function	This parameter is used for setting the offset for the selected signal (sine, square-wave, noise).		
	The display, i.e. unit and scaling of the parameter, is set according to the assigned parameter. If the parameter " P-0-1152, Command value generator, target parameter assignment " is changed, the value of the parameter is deleted.		
P-0-1154 - Attributes	Function: Par	Editable: ALWAYS	Data length: 4Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_MV
	Unit: --	Extr. val. ch.: +	Decim. pl.: 4
	Cycl. tra.: AT + MDT	Comb. check: --	Set-depend.: --
AXS:		min./max.: s. Text / s. Text	
		Default value: s. Text	

3.9.36 P-0-1155, Command value generator, amplitude

Allocation	Hardware	--	
	Funct. package(s):		
	Device parameter:		
Function	This parameter is used for setting the amplitude. The value range of the selected signal shape (sine, square-wave, noise) is between the plus/minus amplitude.		
	The display, i.e. unit and scaling of the parameter, is set according to the assigned parameter. If " P-0-1152, Command value generator, target parameter assignment " is changed, the value of the parameter is deleted.		
P-0-1155 - Attributes	Function: Par	Editable: ALWAYS	Data length: 4Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_MV
	Unit: --	Extr. val. ch.: +	Decim. pl.: 4
	Cycl. tra.: AT + MDT	Comb. check: --	Set-depend.: --
AXS:		min./max.: s. Text / s. Text	
		Default value: 10,0000	

3.9.37 P-0-1156, Command value generator, duration 1

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used for setting the square-wave signal. For the duration "P-0-1156", the "P-0-1150, Command value generator output" is set to the positive amplitude of "P-0-1155, Command value generator, amplitude", plus "P-0-1154, Command value generator, offset". When the duration 1 is over, the output of the command value generator is set to the negative amplitude, "P-0-1155, Command value generator, amplitude", plus "P-0-1154, Command value generator, offset". The duration 2 begins at this point in time. When the duration 2 is over until the end of the period, the output of the command value generator is set to "P-0-1154, Command value generator, offset".	
P-0-1156 - Attributes	Function: Par Memory: PARAM_SP Unit: s Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
	AXS: min./max.: s. Text / s. Text	Data length: 4Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: -- Default value: s. Text

3.9.38 P-0-1157, Command value generator, duration 2

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used for setting the square-wave signal. The duration 2 begins when the duration 1 is over. For this duration "P-0-1157", the "P-0-1150, Command value generator output" is set to the negative amplitude of "P-0-1155, Command value generator, amplitude" plus "P-0-1154, Command value generator, offset". When the duration 2 is over, the output signal is set to "P-0-1154, Command value generator, offset" until the periodic time has been reached.	
P-0-1157 - Attributes	Function: Par Memory: PARAM_SP Unit: s Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
	AXS: min./max.: s. Text / s. Text	Data length: 4Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: -- Default value: s. Text

3.9.39 P-0-1158, Command value generator, periodic time

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used for setting the square-wave signal and the sine signal for the command value generator. When the periodic time is over, the signal output is repeated. In the sine sweep mode of the command value generator, the duration of the sweep is set with this parameter. The entered duration in seconds refers to the entire sweep, that is to say the upward and downward sweep.	
P-0-1158 - Attributes	Function: Par Memory: PARAM_SP Unit: s Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
	AXS: min./max.: s. Text / s. Text	Data length: 4Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: -- Default value: 10,000

Product-specific parameters

3.9.40 P-0-1159, Command value generator, sine sweep start frequency

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter specifies the frequency at which the sine sweep generator starts sweeping.	
 On the firmware side, any change in this parameter is only taken into account after the enabling bit has been set in "P-0-1153, Command value generator, control word".		

See also Functional Description "Drive-internal command value generator"

P-0-1159 - Attributes	Function: Par	Editable: ALWAYS	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: DEC_OV
	Unit: Hz	Extr. val. ch.: --	Decim. pl.: 1
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:		min./max.: s. Text / 2000,0	Default value: ---

3.9.41 P-0-1160, Command value generator, sine sweep end frequency

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter specifies the frequency to which the frequency value is to be swept with the sine sweep generator.	
 On the firmware side, any change in this parameter is only taken into account after the enabling bit has been set in "P-0-1153, Command value generator, control word".		

See also Functional Description "Drive-internal command value generator"

P-0-1160 - Attributes	Function: Par	Editable: ALWAYS	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: DEC_OV
	Unit: Hz	Extr. val. ch.: --	Decim. pl.: 1
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:		min./max.: s. Text / 2000,0	Default value: ---

3.9.42 P-0-1200, Control word 1 velocity control

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In the velocity control mode, parameter "P-0-1200" is used to control or configure the following functions:	
<ul style="list-style-type: none"> • Velocity command value specification 		

Structure	Bit	Designation/function	Comment
	4-0	Activation of command value P-0-1206 00000: Command value "S-0-0036" active	
	9-5	Reserved	
	10	Inverting the Velocity Command Value 0: Not active 1: Active	

Tab. 3-79: P-0-1200, Control word 1 velocity control

P-0-1200 - Attributes	Function:	Par	Editable:	ALWAYS	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	BIN
	Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
	Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / 0xFFFF	Default value: ---
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3.9.43 P-0-1201, Acceleration ramp 1

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The acceleration parameterized in "P-0-1201" takes effect in the "velocity control" mode if the target command value specification (bit 0 = 0) is set as mode in "P-0-1220, Velocity control mode configuration". With the acceleration entered in "P-0-1201", the acceleration takes place from the last effective velocity command value to the currently effective "S-0-0036, Velocity command value", as long as the velocity amount at the ramp output is smaller than the value entered in "P-0-1202, Final speed ramp 1".	
 This parameter is limited by "S-0-0138, Bipolar acceleration limit value". In case of parameterization with "0" and with values greater than S-0-0138, the value set in S-0-0138 will take effect.		

See also Functional Description "Velocity control"

P-0-1201 - Attributes	Function:	Par	Editable:	ALWAYS	Data length:	4Byte
	Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
	Unit:	S-0-0160	Extr. val. ch.:	--	Decim. pl.:	
	Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	Grp. 1

AXS:	min./max.: s. Text / s. Text	Default value: 0
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3.9.44 P-0-1202, Final speed ramp 1

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The input parameter "P-0-1202" takes effect in the "velocity control" mode if the target command value specification (bit 0 = 0) is set as mode in "P-0-1220, Velocity control mode configuration". If the velocity set in "P-0-1202" is exceeded (acceleration) or fallen below (deceleration), the pitch of the drive-internal speed command value ramp is changed as follows:	
<ul style="list-style-type: none"> in case of acceleration from the value specified in "P-0-1201, Acceleration ramp 1" to the value specified in "P-0-1203, Acceleration ramp 2". 		

Product-specific parameters

- in case of deceleration from the value specified in "P-0-1213, Deceleration ramp 2" to the value specified in "P-0-1211, Deceleration ramp 1".

See also Functional Description "Velocity control"

P-0-1202 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0044	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	Grp. 1
AXS:		min./max.: s. Text / s. Text			
Default value: 0					

3.9.45 P-0-1203, Acceleration ramp 2**Allocation**

Hardware
Funct. package(s):
Device parameter:

Function

The acceleration parameterized in "P-0-1203" takes effect in the "velocity control" mode if the target command value specification (bit 0 = 0) is set as mode in "P-0-1220, Velocity control mode configuration".

With the acceleration entered in "P-0-1203", the acceleration takes place from the last effective velocity command value to the currently effective "S-0-0036, Velocity command value", as soon as the velocity amount at the ramp output is greater than the value entered in "P-0-1202, Final speed ramp 1".



This parameter is limited by "S-0-0138, Bipolar acceleration limit value". In case of parameterization with "0" and with values greater than "S-0-0138", the value set in "S-0-0138" will take effect instead.

See also Functional Description "Velocity control"

P-0-1203 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0160	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	Grp. 1
AXS:		min./max.: s. Text / s. Text			
Default value: 0					

3.9.46 P-0-1210, Status word of velocity control mode**Allocation**

Hardware
Funct. package(s):
Device parameter:

Function

Parameter "P-0-1210" provides information on the current state of the ramp-function generator and the current command value for the velocity control mode.



Parameter "P-0-1210" can be configured in the cyclic actual value channel (e.g., AT with Sercos) in "S-0-0144, Signal status word" and assigned to the digital outputs.

See also Functional Description "Velocity controller"

Structure	Bit	Designation/function	Comment
	0	Command value attained The output of the ramp generator and the jerk filter corresponds exactly to the applied velocity command value	
	2	Acceleration active The ramp-function generator is in the acceleration state.	
	3	Deceleration active The ramp-function generator is in the deceleration state.	
	6	Sensorless control limits ramp The maximum possible acceleration ramp with sensorless motor control operation is less than the specified ramp of the ramp generator.	Only relevant in case of sensorless motor control operation at low velocities

Tab. 3-80: P-0-1210 Status word of velocity control mode

 All status displays of "P-0-1210" are only active in "velocity control" mode.

P-0-1210 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---			
Default value: ---					

3.9.47 P-0-1211, Deceleration ramp 1**Allocation**

Hardware --
Funct. package(s):
Device parameter:

Function

The deceleration parameterized in "P-0-1211" takes effect in the "velocity control" mode if the target command value specification (bit 0 = 0) is set as mode in "P-0-1220, Velocity control mode configuration".

With the deceleration entered in "P-0-1211", the deceleration takes place from the last effective velocity command value to the currently effective "S-0-0036, Velocity command value", as soon as the velocity amount at the ramp output is smaller than the value in parameter "P-0-1202, Final speed ramp 1".



This parameter is limited by "S-0-0138, Bipolar acceleration limit value". In case of parameterization with "0" and with values greater than S-0-0138, the value set in S-0-0138 will take effect.

See also Functional Description "Velocity control"

P-0-1211 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0160	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	Grp. 1
AXS:		min./max.: s. Text / s. Text			
Default value: 0					

Product-specific parameters

3.9.48 P-0-1213, Deceleration ramp 2

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	<p>The deceleration parameterized in "P-0-1213" takes effect in the "velocity control" mode if the target command value specification (bit 0 = 0) is set as mode in "P-0-1220, Velocity control mode configuration".</p> <p>With the deceleration entered in "P-0-1213", the deceleration takes place from the last effective velocity command value to the currently effective "S-0-0036, Velocity command value", as long as the velocity amount at the ramp output is greater than the value in parameter "P-0-1202, Final speed ramp 1".</p>	
 This parameter is limited by "S-0-0138, Bipolar acceleration limit value". In case of parameterization with "0" and with values greater than S-0-0138, the value set in S-0-0138 will take effect.		

See also Functional Description "Velocity control"

P-0-1213 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0160 Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: Grp. 1
	AXS:	min./max.: s. Text / s. Text	Default value: 0

3.9.49 P-0-1220, Velocity control configuration

Allocation	Hardware Funct. package(s): Device parameter:	--					
Function Structure	The parameter defines the operating mode for velocity mode.						
<table border="1"> <thead> <tr> <th>Bit</th> <th>Designation/function</th> <th>Comment</th> </tr> </thead> <tbody> <tr> <td>1/0</td> <td> 00: Mode: cyclic command value input Cyclic velocity command value with limitation and mean value filter, mode stop not admissible for "Drive Halt" 01: Mode: target command value input (default) Velocity command value with limitation, ramp and PT1 filter, mode stop admissible for "Drive Halt" </td> <td></td> </tr> </tbody> </table>		Bit	Designation/function	Comment	1/0	00: Mode: cyclic command value input Cyclic velocity command value with limitation and mean value filter, mode stop not admissible for "Drive Halt" 01: Mode: target command value input (default) Velocity command value with limitation, ramp and PT1 filter, mode stop admissible for "Drive Halt"	
Bit	Designation/function	Comment					
1/0	00: Mode: cyclic command value input Cyclic velocity command value with limitation and mean value filter, mode stop not admissible for "Drive Halt" 01: Mode: target command value input (default) Velocity command value with limitation, ramp and PT1 filter, mode stop admissible for "Drive Halt"						

Tab. 3-81: Velocity control configuration

P-0-1220 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: s. Text / 0x1	Default value: 0x1

3.9.50 P-0-1222, Velocity command filter

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used to transfer the velocity command values in the "Velocity control" mode. The parameter will take different effects, depending on the mode selected in "P-0-1220, Velocity control mode configuration", bit 0.	

In the target command value specification mode (bit 0 = 0), the entry is interpreted as time constant of a PT1 filter. "[S-0-0036](#), Velocity command value" is interpolated using the acceleration ramps ("[P-0-1201](#)", "[P-0-1202](#)", "[P-0-1203](#)", "[P-0-1211](#)", "[P-0-1213](#)") and subsequently transferred with the PT1 filter.

If the cyclic command value specification mode (bit 0 = 1) is selected, "[S-0-0036](#), Velocity command value" is directly applied to the filter input of a mean value filter. From the time set in this parameter, the order of the mean value filter is directly calculated. This is done so that in case of a step response at the filter input, the filter output rises linearly and reaches its end value at the filter output after the set time.

Filter order = [P-0-1222](#) / [S-0-0001](#), NC cycle time (TNcyc)

The order of the mean value filter is limited to 64.

See also Functional Description "Velocity control"

P-0-1222 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	ms	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 1

AXS: min./max.: s. Text / 10000 Default value: 0

3.9.51 P-0-1260, PLC: IDN list of direct variable parameters

Allocation Hardware
Funct. package(s):
Device parameter:

Function The functional principle of the parameter is documented only internally.
Changes or evaluations are reserved to customer support.

P-0-1260 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	--	Validity ch.:	--	Format:	IDN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

3.10 P-0-1270 to P-0-1499 Drive-integrated PLC

3.10.1 P-0-1270, PLC Global Register A0

Allocation Hardware
Funct. package(s):
Device parameter:

Function Access via "parameters for general purpose" (global registers) can be used for data exchange between the PLC (Technology Function) and a higher-level control unit or an external device.



The global registers (G0... G31 or A0... A79) do not have any direct influence on the drive, but only take effect in conjunction with the PLC.

Use Observe the following points when using the parameter:

- The display format for this parameter can be individually adjusted with "[P-0-1386](#), PLC display format Global Register".
- The content of this parameter is lost in the event of control voltage failure.
- In addition to "[P-0-1270](#)", other available global registers are the following:

Product-specific parameters

- G0... G15: [P-0-1370 - P-0-1385](#)
- G16... G31: [P-0-1316 - P-0-1331](#)
- A1... A31: [P-0-1271 - P-0-1301](#)
- A32... A71: [P-0-1390 - P-0-1429](#)
- A72... A79: [P-0-1440 - P-0-1447](#)

See also "PLC parameters for general purpose (global PLC registers)"

P-0-1270 - Attributes	Function:	Par	Editable:	ALWAYS	Data length:	4Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_MV
	Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
	Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: s. Text / s. Text			Default value: ---	

3.10.2 P-0-1271, PLC Global Register A1

Allocation	Hardware Funct. package(s): Device parameter:	--				
Function	See also " P-0-1270 , PLC Global Register A0"					
	See also "PLC parameters for general purpose (global PLC registers)"					
P-0-1271 - Attributes	Function:	Par	Editable:	ALWAYS	Data length:	4Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_MV
	Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
	Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: s. Text / s. Text			Default value: ---	

3.10.3 P-0-1272, PLC Global Register A2

Allocation	Hardware Funct. package(s): Device parameter:	--				
Function	See also " P-0-1270 , PLC Global Register A0"					
	See also "PLC parameters for general purpose (global PLC registers)"					
P-0-1272 - Attributes	Function:	Par	Editable:	ALWAYS	Data length:	4Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_MV
	Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
	Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: s. Text / s. Text			Default value: ---	

3.10.4 P-0-1273, PLC Global Register A3

Allocation	Hardware Funct. package(s): Device parameter:	--				
Function	See also " P-0-1270 , PLC Global Register A0"					
	See also "PLC parameters for general purpose (global PLC registers)"					
P-0-1273 - Attributes	Function:	Par	Editable:	ALWAYS	Data length:	4Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_MV
	Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
	Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: s. Text / s. Text			Default value: ---	

3.10.5 P-0-1274, PLC Global Register A4

Allocation	Hardware Funct. package(s): Device parameter:	--
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	Function	See also " P-0-1270, PLC Global Register A0 "			
		See also " PLC parameters for general purpose (global PLC registers) "			
P-0-1274 - Attributes	Function:	Par	Editable:	ALWAYS	Data length: 4Byte
	Memory:	--	Validity ch.:	--	Format: DEC_MV
	Unit:	--	Extr. val. ch.:	+	Decim. pl.: 0
	Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.: --
	AXS:	min./max.: s. Text / s. Text		Default value: ---	

3.10.6 P-0-1275, PLC Global Register A5

	Allocation	Hardware Funct. package(s): Device parameter:	--		
	Function	See also " P-0-1270, PLC Global Register A0 "			
		See also " PLC parameters for general purpose (global PLC registers) "			
P-0-1275 - Attributes	Function:	Par	Editable:	ALWAYS	Data length: 4Byte
	Memory:	--	Validity ch.:	--	Format: DEC_MV
	Unit:	--	Extr. val. ch.:	+	Decim. pl.: 0
	Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.: --
	AXS:	min./max.: s. Text / s. Text		Default value: ---	

3.10.7 P-0-1276, PLC Global Register A6

	Allocation	Hardware Funct. package(s): Device parameter:	--		
	Function	See also " P-0-1270, PLC Global Register A0 "			
		See also " PLC parameters for general purpose (global PLC registers) "			
P-0-1276 - Attributes	Function:	Par	Editable:	ALWAYS	Data length: 4Byte
	Memory:	--	Validity ch.:	--	Format: DEC_MV
	Unit:	--	Extr. val. ch.:	+	Decim. pl.: 0
	Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.: --
	AXS:	min./max.: s. Text / s. Text		Default value: ---	

3.10.8 P-0-1277, PLC Global Register A7

	Allocation	Hardware Funct. package(s): Device parameter:	--		
	Function	See also " P-0-1270, PLC Global Register A0 "			
		See also " PLC parameters for general purpose (global PLC registers) "			
P-0-1277 - Attributes	Function:	Par	Editable:	ALWAYS	Data length: 4Byte
	Memory:	--	Validity ch.:	--	Format: DEC_MV
	Unit:	--	Extr. val. ch.:	+	Decim. pl.: 0
	Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.: --
	AXS:	min./max.: s. Text / s. Text		Default value: ---	

3.10.9 P-0-1278, PLC Global Register A8

	Allocation	Hardware Funct. package(s): Device parameter:	--		
	Function	See also " P-0-1270, PLC Global Register A0 "			
		See also " PLC parameters for general purpose (global PLC registers) "			

Product-specific parameters

P-0-1278 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: ---

3.10.10 P-0-1279, PLC Global Register A9

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270, PLC Global Register A0 " See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1279 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.10.11 P-0-1280, PLC Global Register A10

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270, PLC Global Register A0 " See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1280 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.10.12 P-0-1281, PLC Global Register A11

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270, PLC Global Register A0 " See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1281 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.10.13 P-0-1282, PLC Global Register A12

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270, PLC Global Register A0 " See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1282 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.10.14 P-0-1283, PLC Global Register A13

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1283 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: s. Text / s. Text	Default value: ---

3.10.15 P-0-1284, PLC Global Register A14

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1284 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: s. Text / s. Text	Default value: ---

3.10.16 P-0-1285, PLC Global Register A15

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1285 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: s. Text / s. Text	Default value: ---

3.10.17 P-0-1286, PLC Global Register A16

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1286 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: s. Text / s. Text	Default value: ---

3.10.18 P-0-1287, PLC Global Register A17

Allocation	Hardware Funct. package(s): Device parameter:	--
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Product-specific parameters

	Function	See also " P-0-1270 , PLC Global Register A0"			
		See also " PLC parameters for general purpose (global PLC registers) "			
P-0-1287 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --		
	AXS:	min./max.: s. Text / s. Text	Default value: ---		

3.10.19 P-0-1288, PLC Global Register A18

	Allocation	Hardware Funct. package(s): Device parameter:	--		
	Function	See also " P-0-1270 , PLC Global Register A0"			
		See also " PLC parameters for general purpose (global PLC registers) "			
P-0-1288 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --		
	AXS:	min./max.: s. Text / s. Text	Default value: ---		

3.10.20 P-0-1289, PLC Global Register A19

	Allocation	Hardware Funct. package(s): Device parameter:	--		
	Function	See also " P-0-1270 , PLC Global Register A0"			
		See also " PLC parameters for general purpose (global PLC registers) "			
P-0-1289 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --		
	AXS:	min./max.: s. Text / s. Text	Default value: ---		

3.10.21 P-0-1290, PLC Global Register A20

	Allocation	Hardware Funct. package(s): Device parameter:	--		
	Function	See also " P-0-1270 , PLC Global Register A0"			
		See also " PLC parameters for general purpose (global PLC registers) "			
P-0-1290 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --		
	AXS:	min./max.: s. Text / s. Text	Default value: ---		

3.10.22 P-0-1291, PLC Global Register A21

	Allocation	Hardware Funct. package(s): Device parameter:	--		
	Function	See also " P-0-1270 , PLC Global Register A0"			
		See also " PLC parameters for general purpose (global PLC registers) "			

P-0-1291 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: ---

3.10.23 P-0-1292, PLC Global Register A22

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1292 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.10.24 P-0-1293, PLC Global Register A23

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1293 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.10.25 P-0-1294, PLC Global Register A24

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1294 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.10.26 P-0-1295, PLC Global Register A25

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1295 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

Product-specific parameters

3.10.27 P-0-1296, PLC Global Register A26

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270, PLC Global Register A0 " See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1296 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.10.28 P-0-1297, PLC Global Register A27

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270, PLC Global Register A0 " See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1297 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.10.29 P-0-1298, PLC Global Register A28

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270, PLC Global Register A0 " See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1298 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.10.30 P-0-1299, PLC Global Register A29

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270, PLC Global Register A0 " See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1299 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.10.31 P-0-1300, PLC Global Register A30

Allocation	Hardware Funct. package(s): Device parameter:	--
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	Function	See also " P-0-1270 , PLC Global Register A0"			
		See also " PLC parameters for general purpose (global PLC registers) "			
P-0-1300 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --		
	AXS:	min./max.: s. Text / s. Text	Default value: ---		

3.10.32 P-0-1301, PLC Global Register A31

	Allocation	Hardware Funct. package(s): Device parameter:	--		
	Function	See also " P-0-1270 , PLC Global Register A0"			
		See also " PLC parameters for general purpose (global PLC registers) "			
P-0-1301 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --		
	AXS:	min./max.: s. Text / s. Text	Default value: ---		

3.10.33 P-0-1311, PLC Global Register GL1

	Allocation	Hardware Funct. package(s): Device parameter:	--		
	Function	This parameter is a list register with 1024 elements (4 bytes each) and is used for data exchange between the ctrlX DRIVE Technology Function and a higher-level control unit or an external device.			
		The display format for this parameter can be individually adjusted with the parameter "P-0-1386, PLC display format Global Register".			
		When default values are being loaded, the parameter is cleared (actual length = 0).			
		 Note:	The data length of " P-0-1311 " is set to 4 bytes and cannot be modified. The content of " P-0-1311 " is buffered in the event of control voltage failure.		
		See also " PLC parameters for general purpose (global PLC registers) "			
P-0-1311 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte var. Format: DEC_MV Decim. pl.: 0 Set-depend.: --		
	AXS:	min./max.: s. Text / s. Text	Default value: s. Text		

3.10.34 P-0-1312, PLC Global Register GL2

	Allocation	Hardware Funct. package(s): Device parameter:	--		
	Function	This parameter is a list register with 1024 elements (4 bytes each) and is used for data exchange between the ctrlX DRIVE Technology Function and a higher-level control unit or an external device.			
		The display format for this parameter can be individually adjusted with the parameter "P-0-1386, PLC display format Global Register".			

Product-specific parameters

When default values are being loaded, the parameter is cleared (actual length=0).



The data length of "P-0-1312" is set to 4 bytes and cannot be modified. The content of "P-0-1312" is buffered in the event of control voltage failure.

See also "[PLC parameters for general purpose \(global PLC registers\)](#)"

P-0-1312 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: s. Text
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3.10.35 P-0-1316, PLC Global Register G16

Allocation Hardware
Funct. package(s):
Device parameter:

Function See also "[P-0-1370, Global Register G0](#)"

See also "[PLC parameters for general purpose \(global PLC registers\)](#)"

P-0-1316 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: 0
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3.10.36 P-0-1317, PLC Global Register G17

Allocation Hardware
Funct. package(s):
Device parameter:

Function See also "[P-0-1370, Global Register G0](#)"

See also "[PLC parameters for general purpose \(global PLC registers\)](#)"

P-0-1317 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: 0
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3.10.37 P-0-1318, PLC Global Register G18

Allocation Hardware
Funct. package(s):
Device parameter:

Function See also "[P-0-1370, Global Register G0](#)"

See also "[PLC parameters for general purpose \(global PLC registers\)](#)"

P-0-1318 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: 0
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3.10.38 P-0-1319, PLC Global Register G19

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1370, Global Register G0 " See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1319 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
	AXS:	min./max.: s. Text / s. Text Default value: 0

3.10.39 P-0-1320, PLC Global Register G20

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1370, Global Register G0 " See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1320 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
	AXS:	min./max.: s. Text / s. Text Default value: 0

3.10.40 P-0-1321, PLC Global Register G21

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1370, Global Register G0 " See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1321 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
	AXS:	min./max.: s. Text / s. Text Default value: 0

3.10.41 P-0-1322, PLC Global Register G22

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1370, Global Register G0 " See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1322 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
	AXS:	min./max.: s. Text / s. Text Default value: 0

3.10.42 P-0-1323, PLC Global Register G23

Allocation	Hardware Funct. package(s): Device parameter:	--
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Product-specific parameters

	Function	See also " P-0-1370 , Global Register G0"				
		See also " PLC parameters for general purpose (global PLC registers) "				
P-0-1323 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --			
	AXS:	min./max.: s. Text / s. Text	Default value: 0			

3.10.43 P-0-1324, PLC Global Register G24

	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	See also " P-0-1370 , Global Register G0"				
		See also " PLC parameters for general purpose (global PLC registers) "				
P-0-1324 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --			
	AXS:	min./max.: s. Text / s. Text	Default value: 0			

3.10.44 P-0-1325, PLC Global Register G25

	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	See also " P-0-1370 , Global Register G0"				
		See also " PLC parameters for general purpose (global PLC registers) "				
P-0-1325 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --			
	AXS:	min./max.: s. Text / s. Text	Default value: 0			

3.10.45 P-0-1326, PLC Global Register G26

	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	See also " P-0-1370 , Global Register G0"				
		See also " PLC parameters for general purpose (global PLC registers) "				
P-0-1326 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --			
	AXS:	min./max.: s. Text / s. Text	Default value: 0			

3.10.46 P-0-1327, PLC Global Register G27

	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	See also " P-0-1370 , Global Register G0"				
		See also " PLC parameters for general purpose (global PLC registers) "				

P-0-1327 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 0

3.10.47 P-0-1328, PLC Global Register G28

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	See also " P-0-1370 , Global Register G0"		
	See also " PLC parameters for general purpose (global PLC registers) "		
P-0-1328 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 0

3.10.48 P-0-1329, PLC Global Register G29

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	See also " P-0-1370 , Global Register G0"		
	See also " PLC parameters for general purpose (global PLC registers) "		
P-0-1329 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 0

3.10.49 P-0-1330, PLC Global Register G30

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	See also " P-0-1370 , Global Register G0"		
	See also " PLC parameters for general purpose (global PLC registers) "		
P-0-1330 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 0

3.10.50 P-0-1331, PLC Global Register G31

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	See also " P-0-1370 , Global Register G0"		
	See also " PLC parameters for general purpose (global PLC registers) "		
P-0-1331 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 0

Product-specific parameters

3.10.51 P-0-1350, PLC control word

Allocation	Hardware Funct. package(s): Device parameter:	--																											
Function	16-bit control parameter for controlling the axis-integrated PLC (Technology Function). The bits enable the relevant process with a positive edge. Via the acknowledgement bits in " P-0-1351 ", it can be detected in which status the action currently is (active/done/error).	Also refer to "Rexroth ctrlX DRIVE Technology Function (drive PLC)"																											
Structure	<table border="1"> <thead> <tr> <th>Bit</th><th>Designation/function</th><th>Comment</th></tr> </thead> <tbody> <tr> <td>0</td><td>RUN: The PLC is set to state RUN. Is only possible, when a project has been loaded. The status changes to RUN.</td><td></td></tr> <tr> <td>1</td><td>STOP: The PLC is stopped and goes to state STOP. The tasks are not started anymore after their current run. Attention: Tasks still running may be interrupted after their cycle time with a hard interrupt. The PLC, however, immediately signals STOP.</td><td></td></tr> <tr> <td>2</td><td>Reserved</td><td></td></tr> <tr> <td>3</td><td>Reserved</td><td></td></tr> <tr> <td>4</td><td>RESET warm: The PLC is reset without initializing the retain variables. The status changes to STOP.</td><td></td></tr> <tr> <td>5</td><td>RESET cold: The PLC is reset and the retain variables are initialized. The status changes to STOP.</td><td></td></tr> <tr> <td>6</td><td>RESET hard: All PLC data is deleted. The boot project is therefore deleted as well.</td><td></td></tr> <tr> <td>7</td><td>Reserved</td><td></td></tr> </tbody> </table>	Bit	Designation/function	Comment	0	RUN: The PLC is set to state RUN. Is only possible, when a project has been loaded. The status changes to RUN.		1	STOP: The PLC is stopped and goes to state STOP. The tasks are not started anymore after their current run. Attention: Tasks still running may be interrupted after their cycle time with a hard interrupt. The PLC, however, immediately signals STOP.		2	Reserved		3	Reserved		4	RESET warm: The PLC is reset without initializing the retain variables. The status changes to STOP.		5	RESET cold: The PLC is reset and the retain variables are initialized. The status changes to STOP.		6	RESET hard: All PLC data is deleted. The boot project is therefore deleted as well.		7	Reserved		
Bit	Designation/function	Comment																											
0	RUN: The PLC is set to state RUN. Is only possible, when a project has been loaded. The status changes to RUN.																												
1	STOP: The PLC is stopped and goes to state STOP. The tasks are not started anymore after their current run. Attention: Tasks still running may be interrupted after their cycle time with a hard interrupt. The PLC, however, immediately signals STOP.																												
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3	Reserved																												
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5	RESET cold: The PLC is reset and the retain variables are initialized. The status changes to STOP.																												
6	RESET hard: All PLC data is deleted. The boot project is therefore deleted as well.																												
7	Reserved																												

Bit	Designation/function	Comment
8	<p>Replay Exception: When a PLC exception (F6010) occurred, the corresponding data are saved in "P-0-1362". With ctrlX PLC Engineering logged in, it is possible to trigger the exception again (e.g., on another device) in order to make the faulty position in the IEC code visible. (See also P-0-1365 und F6010)</p> <p>Prerequisite on the other device:</p> <ul style="list-style-type: none"> • The same PLC project has been loaded on the drive (from the same compilation process) • The parameter P-0-1362 has been loaded • The PLC is in STOP • ctrlX PLC Engineering logged in (not obligatory, but makes sense!) <p>Reaction:</p> <ul style="list-style-type: none"> • The same drive reactions: exception, F6010... like in the case of the exception • A prefix text is contained in "P-0-1362": „Replay: “ • If one of the prerequisites is missing, the command is acknowledged with "P-0-1351.12" „Error“ and the error number is displayed in "P-0-1365": „Replay: Error <number>“. The error numbers are described in the documentation on "P-0-1365". <p>Restriction:</p> <p>Local variables of functions are not displayed with the original values.</p>	
15-8	Reserved	

Tab. 3-82: PLC control word

P-0-1350 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte	
Memory:	--	Validity ch.:	SUBD:PM->OM	Format:	BIN	
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--	
AXS:		min./max.: --- / ---				Default value: ---

3.10.52 P-0-1351, PLC status word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is read-only. 16-bit status parameter of the axis-integrated PLC (Technology Function). Also refer to "Rexroth ctrlX DRIVE Technology Function (drive PLC)"	
Structure		

Bit	Designation/function	Comment
0	RUN: The PLC is in state RUN.	
1	The PLC is at a breakpoint (with !RUN).	
2	Reserved	
3	Runtime error: PLC runtime error (e.g., watchdog, division by 0, etc.)	

Product-specific parameters

Bit	Designation/function	Comment
4	Project loaded: A project has been loaded (in RAM).	
7	Reserved	
8	Reserved	
9	Reserved	
10	Acknowledgement bit active : The command is in process	
11	Acknowledgement bit done : Processing was successfully completed	
12	Acknowledgement bit error : Processing was terminated with an error	
15-13	Reserved	

Tab. 3-83: PLC status word

Use **Bit 12/11/10:** The acknowledgement bits indicates the status of the action started by "[P-0-1350](#)". After a control bit was set, "active" shows that the command is in process. As soon as the command is processed, "active" is reset and "done" or "error" is set. The "done" or "error" bit is reset by a falling edge of the control signal. Only one action at a time should be started.

Information on processing:

- It is possible to immediately process a command and directly set "done" or "error" instead of "active".
- If the user resets the control bit before the command has been processed, the "done/error" bit is only generated for a short time and possibly might not be visible.
- If the user sets another bit while a command is processed or sets multiple control bits in parallel, the commands are processed one after the other and the acknowledgement bits are reset by clearing all control bits. In this case, it is impossible to unequivocally recognize which command had which status.

P-0-1351 - Attributes	Function: Par	Editable: --	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: BIN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: ---

3.10.53 P-0-1352, PLC user program area 0

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The PLC boot project "App" of the PLC (Technology Function) is saved in the parameters " P-0-1352 " - " P-0-1358 ".	



These parameters are administrated by the system and cannot be changed by the user. They are used to save and restore the PLC project.

These parameters have to be written in ascending order and not in a segmented way.

P-0-1352 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.10.54 P-0-1353, PLC user program area 1

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	See " P-0-1352 , PLC user program area 0"		
P-0-1353 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.10.55 P-0-1354, PLC user program area 2

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	See " P-0-1352 , PLC user program area 0"		
P-0-1354 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.10.56 P-0-1355, PLC user program area 3

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	See " P-0-1352 , PLC user program area 0"		
P-0-1355 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.10.57 P-0-1356, PLC user program area 4

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	See " P-0-1352 , PLC user program area 0"		
P-0-1356 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.10.58 P-0-1357, PLC user program area 5

Allocation	Hardware Funct. package(s): Device parameter:	--
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Product-specific parameters

Function	See " P-0-1352 , PLC user program area 0"				
P-0-1357 - Attributes	Function: Par	Editable: ALWAYS	Data length: 4Byte var.		
	Memory: --	Validity ch.: --	Format: HEX		
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0		
	Cycl. tra.: --	Comb. check: --	Set-depend.: --		
	AXS:	min./max.: --- / ---	Default value: ---		

3.10.59 P-0-1358, PLC user program area 6

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	See " P-0-1352 , PLC user program area 0"				
P-0-1358 - Attributes	Function: Par	Editable: ALWAYS	Data length: 4Byte var.		
	Memory: --	Validity ch.: --	Format: HEX		
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0		
	Cycl. tra.: --	Comb. check: --	Set-depend.: --		
	AXS:	min./max.: --- / ---	Default value: ---		

3.10.60 P-0-1359, PLC retain data

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	If a PLC program with retain data is used, the retain data can be secured using this list parameter and transferred to other drives.				
	Also see "ctrlX DRIVE Technology Function (PLC drive)"				
Use	The following aspects have to be taken into account:				
	<ul style="list-style-type: none"> • The structure of the individual retain variables can not be seen from the parameter. • Exporting and importing data from/to "P-0-1359" is not admissible while the PLC is running as when doing so, you write directly to or read directly from the PLC's memory. This would lead to inconsistent data. • The retain data is initialized every time the drive identifies a changed boot project. If a new boot project is to be loaded together with "P-0-1359", any other project that may have been loaded before must be deleted (Technology Function - basic parameters or P-0-1350). • The parameter is not included in the list "S-0-0192 IDN-list of all backup operation data" as otherwise, restoring a drive parameter backup would overwrite the PLC retain data. 				
P-0-1359 - Attributes	Function: Par	Editable: SUBD:CM+PM	Data length: 4Byte var.		
	Memory: RETAIN_KUNDE	Validity ch.: SUBD:PM->OM	Format: HEX		
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0		
	Cycl. tra.: --	Comb. check: --	Set-depend.: --		
	AXS:	min./max.: --- / ---	Default value: ---		

3.10.61 P-0-1360, PLC program identifier

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	List parameter with two elements	

Element	Significance
#0	Date: compilation time of the program (time_t) If no program has been loaded, 0 is contained here.
#1	PID: unequivocal program identifier If no program has been loaded, 0 is contained here.

Tab. 3-84: PLC program identifier

P-0-1360 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

3.10.62 P-0-1361, PLC program name

Allocation Hardware
 Funct. package(s):
 Device parameter: --

Function This parameter contains the file name of the current PLC project. The name is assigned to the PLC project during compilation from the project name in ctrlX PLC Engineering.



During the transmission from ctrlX PLC Engineering, the project name is coded in ASCII characters. Characters in the project name that are not contained in the ASCII character set, e.g. "umlauts" like ä, ö and ü, are replaced by the character "?" (0x3F).

P-0-1361 - Attributes

Function:	Par	Editable:	--	Data length:	1Byte var.
Memory:	--	Validity ch.:	--	Format:	ASCII
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

3.10.63 P-0-1362, PLC internal exception data

Allocation Hardware
 Funct. package(s):
 Device parameter: --

Function If a PLC exception occurs (division by zero, incorrect addressing, etc.) this parameter saves data regarding the error. These data are required by the "Replay Exception" function and cannot be interpreted by the user. With this parameter and the original PLC project, the error can be reproduced on another device for diagnostic purposes.

See also Parameter Description "P-0-1350"

P-0-1362 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: s. Text

3.10.64 P-0-1363, PLC project info

Allocation Hardware
 Funct. package(s):
 Device parameter: --

Product-specific parameters

Function The parameter is used for diagnostic purposes and contains information with regard to the PLC project currently loaded in the memory. It is automatically generated and entered by the drive.

This happens:

- when the drive is started
- when the PLC project is loaded with ctrlX PLC Engineering

By reading the parameter, the PLC project currently loaded can be identified unequivocally.

 The maximum and actual length of the list parameter are always 130 elements with 4 bytes each.

- 
- The space for strings is completely filled with "0-characters".
 - Strings are saved in Little Endian byte order (Intel format).
 - The strings "project name", "project title", "project version", "author" and "description" are coded in ASCII characters during the transmission from ctrlX PLC Engineering to the drive.

Characters that are not contained in the ASCII character set, e.g. "umlauts" like ä, ö and ü, are replaced by the character "?" (0x3 F).

Use **Significance of the element content**

0: Time stamp of the PLC project in time_t format (seconds since 1970-1-1),
0 = no project available

1: Project ID

The length is always constant and the space for strings is completely filled with 0-characters.

2..17: Project name (file name)

18..33: Project title

 Is only set if the PLC project contains "project information" POUs
(Set the "Automatically generate 'Project information' POUs" check box in the project information).

34..49: Project version

50..65: Author

66..129: Description (multiline) - a maximum of 255 characters incl. 0-characters.

 If no PLC project is available, all elements are "0".

P-0-1363 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: ---

3.10.65 P-0-1365, PLC error message

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	<p>This parameter displays the current error state of the PLC runtime system (Technology Function) for diagnostic purposes. In case of PLC runtime error, the error text is entered. After a PLC reset, the error is deleted again.</p> <p>If the cause of error is not clear, more detailed information can be read out via the logger of the PLC.</p>	

Error text in parameter	Cause	How to clear F6010	Remedy
EXCEPTION Watchdog application '<app>' task '<task>'	Runtime error in PLC program. Runtime monitor (watchdog) for a task has been activated. In this task, processing was not completed in the preset time.	PLC reset warm/cold	Modify the program to fix the error. (correct a possibly existing infinite loop)...
EXCEPTION ArrayBounds application '<app>' task '<task>'	1. Exceeding array limits 2. Exceeding/falling below a subarea limit	PLC reset warm/cold	Ad 1: Modify PLC program: Check and correct array access Ad 2: Modify PLC program: Eliminate incorrect assignment
EXCEPTION DivisionByZero application '<app>' task '<task>'	Integer division by "0"	PLC reset warm/cold	Modify PLC program: Remove division by "0"
EXCEPTION FPU DivisionByZero application '<app>' task '<task>'	REAL/LREAL division by "0.0"	PLC reset warm/cold	Modify PLC program: Remove division by "0"
EXCEPTION FPU Error application '<app>' task '<task>'	Incorrect call of one of the mathematical functions (tan, ln, log, sqrt, expt).	PLC reset warm/cold	Modify PLC program: Check and correct the transfer values
EXCEPTION AccessViolation application '<app>' task '<task>'	1. Invalid access with a pointer in PLC program Access outside of PLC data ranges cause this error. 2. Error in system event	PLC reset warm/cold	Ad 1: Modify PLC program: Eliminate incorrect assignment Ad 2: Modify PLC program: Incorrect use or change programming refer to information in the task configuration
EXCEPTION Misalignment application '<app>' task '<task>'	Invalid access with a pointer in PLC program. Access outside of PLC data ranges cause this error	PLC reset warm/cold	Modify PLC program: Eliminate incorrect assignment
TF-ERROR Load of boot project was denied - PLC retain data invalid (P-0-1359)	Retain data lost due to system crash or hardware defect. PLC project is not loaded. The error is caused by the exception F8100.	PLC reset cold and afterwards restart or... write P-0-1359 and afterwards restart or... PLC project download	Carry out PLC reset cold or reload PLC project Contact the service team

Product-specific parameters

Replay: <Exception Text>	An exception was reproduced with the Replay Exception function (P-0-1350 , bit 8). The previous text is displayed after the "Replay:" prefix. If an error occurred during Replay, it is displayed instead of the original text: "Replay: Error <error number>" Error numbers: 1: No exception data saved in P-0-1362 2. Exception data have an old version 3. Exception data are invalid 4. Exception data contain incorrect data 5. No PLC project loaded 6. Internal error 7. PLC not in STOP 8. The PLC is not identical	PLC reset warm/cold	See <Exception Text>
TF-ERROR boot project not loaded - Error failed to resolve "Xyz"	The drive firmware does not match the used device in the PLC project. The POU "Xyz" was modified or could not be linked.	Recompile and reload the project with the matching device.	Select a device matching the firmware, recompile and reload the project. Refer to the Bosch Rexroth support for a compatible package if the device is not installed.
SystemError 0xNNNNNNNN Src: 0xoooooooo call support	An unexpected system error has occurred.	Reload the PLC project - Restart	Make a parameter backup Contact the service team.

Tab. 3-85: PLC error message

P-0-1365 - Attributes	Function: Par	Editable: --	Data length: 1Byte var.
	Memory: --	Validity ch.: --	Format: ASCII
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: ---

3.10.66 P-0-1366, PLC maximum task load

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The "Maximum PLC task utilization" parameter shows the maximum utilization of all PLC tasks over the entire runtime. The utilization is displayed in percent referring to the guaranteed computing time for the task interval. The maximum can be reset by writing any value; afterwards, the maximum will be rebuilt.	Also see "ctrlX DRIVE Technology Function (PLC drive)"
P-0-1366 - Attributes		
	Function: Par	Editable: ALWAYS
	Memory: --	Format: DEC_OV
	Unit: 100%	Decim. pl.: 0
	Cycl. tra.: --	Set-depend.: --
AXS:		min./max.: --- / ---
		Default value: ---

3.10.67 P-0-1367, PLC configuration

Allocation	Hardware Funct. package(s): Device parameter:	--						
Function	This parameter is used to configure the basic behavior of the PLC (Technology Function).							
Structure		<table border="1"> <thead> <tr> <th>Bit</th> <th>Designation/function</th> <th>Comment</th> </tr> </thead> <tbody> <tr> <td>31...0</td> <td>Internally reserved</td> <td></td> </tr> </tbody> </table>	Bit	Designation/function	Comment	31...0	Internally reserved	
Bit	Designation/function	Comment						
31...0	Internally reserved							

Tab. 3-86: P-0-1367, PLC configuration

P-0-1367 - Attributes	Function: Par	Editable: SUBD:CM+PM	Data length: 4Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: BIN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:	min./max.: --- / ---		Default value: 0x0

3.10.68 P-0-1368, PLC Global Register AL0

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is a list register with 8192 elements (4 bytes each) and is used for data exchange between the PLC (Technology Function) and a higher-level control unit or an external device.	
Use	The display format for this parameter can be individually adjusted with "P-0-1386, PLC display format Global Register".	
 The data length of "P-0-1368" is 4 bytes and cannot be modified. The content of "P-0-1368" is not buffered in the event of control voltage failure. For non-volatile data, use "P-0-1389"!		

See also "[PLC parameters for general purpose \(global PLC registers\)](#)"

P-0-1368 - Attributes	Function: Par	Editable: ALWAYS	Data length: 4Byte var.
	Memory: --	Validity ch.: --	Format: DEC_MV
	Unit: --	Extr. val. ch.: +	Decim. pl.: 0
	Cycl. tra.: AT + MDT	Comb. check: --	Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: ---

3.10.69 P-0-1369, PLC Global Register AL1

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is a list register with 8192 elements (4 bytes each) and is used for data exchange between the PLC (Technology Function) and a higher-level control unit or an external device.	
Use	The display format for this parameter can be individually adjusted with "P-0-1386, PLC display format Global Register".	
 The data length of "P-0-1369" is 4 bytes and cannot be modified. The content of "P-0-1369" is not buffered in the event of control voltage failure. For non-volatile data, use "P-0-1389"!		

See also "[PLC parameters for general purpose \(global PLC registers\)](#)"

Product-specific parameters

P-0-1369 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte var. Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: ---

3.10.70 P-0-1370, PLC Global Register G0

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Access via "parameters for general purpose" (global registers) can be used for data exchange between the PLC (Technology Function) and a higher-level control unit or an external device.	
	See also " PLC parameters for general purpose (global PLC registers) "	
Use	Single parameter / register with 4 bytes (32 bit)	
	Observe the following points when using the parameter:	
	<ul style="list-style-type: none"> • The global registers (G0... G31; A0... A79 or AT0, AT1) do not have any direct influence on the drive, but only take effect in conjunction with the Technology Function. • The display format for this parameter can be individually adjusted with parameter functions. • The content of this parameter is buffered in the event of a control voltage failure. • In addition to "P-0-1370", other available global registers are the following: <ul style="list-style-type: none"> – G1... G15: P-0-1371 - P-0-1385 – G16... G31: P-0-1316 - P-0-1331 – A0... A31: P-0-1270 - P-0-1301 – A32... A71: P-0-1390 - P-0-1429 – A72... A79: P-0-1440 - P-0-1447 	

P-0-1370 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: 0

3.10.71 P-0-1371, PLC Global Register G1

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1370, Global Register G0 " See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1371 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
	AXS:	min./max.: s. Text / s. Text
		Default value: 0

3.10.72 P-0-1372, PLC Global Register G2

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1370, Global Register G0 " See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1372 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
	AXS:	min./max.: s. Text / s. Text Default value: 0

3.10.73 P-0-1373, PLC Global Register G3

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1370, Global Register G0 " See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1373 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
	AXS:	min./max.: s. Text / s. Text Default value: 0

3.10.74 P-0-1374, PLC Global Register G4

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1370, Global Register G0 " See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1374 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
	AXS:	min./max.: s. Text / s. Text Default value: 0

3.10.75 P-0-1375, PLC Global Register G5

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1370, Global Register G0 " See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1375 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
	AXS:	min./max.: s. Text / s. Text Default value: 0

3.10.76 P-0-1376, PLC Global Register G6

Allocation	Hardware Funct. package(s): Device parameter:	--
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Product-specific parameters

	Function	See also " P-0-1370, Global Register G0 "				
		See also " PLC parameters for general purpose (global PLC registers) "				
P-0-1376 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --			
	AXS:	min./max.: s. Text / s. Text	Default value: 0			

3.10.77 P-0-1377, PLC Global Register G7

	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	See also " P-0-1370, Global Register G0 "				
		See also " PLC parameters for general purpose (global PLC registers) "				
P-0-1377 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --			
	AXS:	min./max.: s. Text / s. Text	Default value: 0			

3.10.78 P-0-1378, PLC Global Register G8

	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	See also " P-0-1370, Global Register G0 "				
		See also " PLC parameters for general purpose (global PLC registers) "				
P-0-1378 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --			
	AXS:	min./max.: s. Text / s. Text	Default value: 0			

3.10.79 P-0-1379, PLC Global Register G9

	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	See also " P-0-1370, Global Register G0 "				
		See also " PLC parameters for general purpose (global PLC registers) "				
P-0-1379 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --			
	AXS:	min./max.: s. Text / s. Text	Default value: 0			

3.10.80 P-0-1380, PLC Global Register G10

	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	See also " P-0-1370, Global Register G0 "				
		See also " PLC parameters for general purpose (global PLC registers) "				

P-0-1380 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 0

3.10.81 P-0-1381, PLC Global Register G11

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	See also " P-0-1370 , Global Register G0"		
	See also " PLC parameters for general purpose (global PLC registers) "		
P-0-1381 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 0

3.10.82 P-0-1382, PLC Global Register G12

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	See also " P-0-1370 , Global Register G0"		
	See also " PLC parameters for general purpose (global PLC registers) "		
P-0-1382 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 0

3.10.83 P-0-1383, PLC Global Register G13

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	See also " P-0-1370 , Global Register G0"		
	See also " PLC parameters for general purpose (global PLC registers) "		
P-0-1383 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 0

3.10.84 P-0-1384, PLC Global Register G14

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	See also " P-0-1370 , Global Register G0"		
	See also " PLC parameters for general purpose (global PLC registers) "		
P-0-1384 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 0

Product-specific parameters

3.10.85 P-0-1385, PLC Global Register G15

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also "P-0-1370, Global Register G0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1385 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: 0

3.10.86 P-0-1387, PLC Global Register AT0

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Freely usable text parameter with a maximum of 255 characters plus terminating 0-character. It is used for data exchange between the ctrlX DRIVE Technology Function and a higher-level control unit or an external device.	
	The following applies:	
	<ul style="list-style-type: none"> The UTF-8 character set can be written to this parameter. Size in number of bytes: 256 A UTF-8 character can have a size of 1 to 3 bytes. The number of characters that can be entered may be less, depending on the UTF-8 characters used. 	
	 The content of this parameter is not buffered in the event of a control voltage failure.	
P-0-1387 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.10.87 P-0-1388, PLC Global Register AT1

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Freely usable text parameter with a maximum of 255 characters plus terminating 0-character. It is used for data exchange between the ctrlX DRIVE Technology Function and a higher-level control unit or an external device.	
	The following applies:	
	<ul style="list-style-type: none"> The UTF-8 character set can be written to this parameter. Size in number of bytes: 256 A UTF-8 character can have a size of 1 to 3 bytes. The number of characters that can be entered may be less, depending on the UTF-8 characters used. 	



The content of this parameter is not buffered in the event of a control voltage failure.

See also "[PLC parameters for general purpose \(global PLC registers\)](#)"

P-0-1388 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	1Byte var.
Memory:	--	Validity ch.:	--	Format:	ASCII
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: s. Text / s. Text			Default value:	---

3.10.88 P-0-1389, PLC Global Register GL0

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter is a list register with 1024 elements (4 bytes each) and is used for data exchange between the Technology Function and a higher-level control unit or an external device..

The display format for this parameter can be individually adjusted with "P-0-1386, PLC display format Global Register".



The data length is set to 4 bytes and cannot be modified. The content is buffered in the event of a control voltage failure.

When default values are being loaded, the parameter is cleared (actual length = 0).

See also "[PLC parameters for general purpose \(global PLC registers\)](#)"

P-0-1389 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: s. Text / s. Text			Default value:	s. Text

3.10.89 P-0-1390, PLC Global Register A32

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

See also "[P-0-1270, PLC Global Register A0](#)"

See also "[PLC parameters for general purpose \(global PLC registers\)](#)"

P-0-1390 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: s. Text / s. Text			Default value:	---

3.10.90 P-0-1391, PLC Global Register A33

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

See also "[P-0-1270, PLC Global Register A0](#)"

See also "[PLC parameters for general purpose \(global PLC registers\)](#)"

Product-specific parameters

P-0-1391 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: ---

3.10.91 P-0-1392, PLC Global Register A34

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	See also " P-0-1270 , PLC Global Register A0"		
	See also " PLC parameters for general purpose (global PLC registers) "		
P-0-1392 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: ---

3.10.92 P-0-1393, PLC Global Register A35

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	See also " P-0-1270 , PLC Global Register A0"		
	See also " PLC parameters for general purpose (global PLC registers) "		
P-0-1393 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: ---

3.10.93 P-0-1394, PLC Global Register A36

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	See also " P-0-1270 , PLC Global Register A0"		
	See also " PLC parameters for general purpose (global PLC registers) "		
P-0-1394 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: ---

3.10.94 P-0-1395, PLC Global Register A37

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	See also " P-0-1270 , PLC Global Register A0"		
	See also " PLC parameters for general purpose (global PLC registers) "		
P-0-1395 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: ---

3.10.95 P-0-1396, PLC Global Register A38

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1396 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: -- Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: s. Text / s. Text	Default value: ---

3.10.96 P-0-1397, PLC Global Register A39

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1397 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: -- Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: s. Text / s. Text	Default value: ---

3.10.97 P-0-1398, PLC Global Register A40

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1398 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: -- Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: s. Text / s. Text	Default value: ---

3.10.98 P-0-1399, PLC Global Register A41

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1399 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: -- Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: s. Text / s. Text	Default value: ---

3.10.99 P-0-1400, PLC Global Register A42

Allocation	Hardware Funct. package(s): Device parameter:	--
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Product-specific parameters

	Function	See also " P-0-1270 , PLC Global Register A0"			
		See also " PLC parameters for general purpose (global PLC registers) "			
P-0-1400 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --		
	AXS:	min./max.: s. Text / s. Text	Default value: ---		

3.10.100 P-0-1401, PLC Global Register A43

	Allocation	Hardware Funct. package(s): Device parameter:	--		
	Function	See also " P-0-1270 , PLC Global Register A0"			
		See also " PLC parameters for general purpose (global PLC registers) "			
P-0-1401 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --		
	AXS:	min./max.: s. Text / s. Text	Default value: ---		

3.10.101 P-0-1402, PLC Global Register A44

	Allocation	Hardware Funct. package(s): Device parameter:	--		
	Function	See also " P-0-1270 , PLC Global Register A0"			
		See also " PLC parameters for general purpose (global PLC registers) "			
P-0-1402 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --		
	AXS:	min./max.: s. Text / s. Text	Default value: ---		

3.10.102 P-0-1403, PLC Global Register A45

	Allocation	Hardware Funct. package(s): Device parameter:	--		
	Function	See also " P-0-1270 , PLC Global Register A0"			
		See also " PLC parameters for general purpose (global PLC registers) "			
P-0-1403 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --		
	AXS:	min./max.: s. Text / s. Text	Default value: ---		

3.10.103 P-0-1404, PLC Global Register A46

	Allocation	Hardware Funct. package(s): Device parameter:	--		
	Function	See also " P-0-1270 , PLC Global Register A0"			
		See also " PLC parameters for general purpose (global PLC registers) "			

P-0-1404 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: ---

3.10.104 P-0-1405, PLC Global Register A47

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1405 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.10.105 P-0-1406, PLC Global Register A48

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1406 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.10.106 P-0-1407, PLC Global Register A49

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1407 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.10.107 P-0-1408, PLC Global Register A50

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1408 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

Product-specific parameters

3.10.108 P-0-1409, PLC Global Register A51

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270, PLC Global Register A0 " See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1409 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.10.109 P-0-1410, PLC Global Register A52

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270, PLC Global Register A0 " See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1410 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.10.110 P-0-1411, PLC Global Register A53

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270, PLC Global Register A0 " See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1411 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.10.111 P-0-1412, PLC Global Register A54

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270, PLC Global Register A0 " See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1412 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.10.112 P-0-1413, PLC Global Register A55

Allocation	Hardware Funct. package(s): Device parameter:	--
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	Function	See also " P-0-1270 , PLC Global Register A0"			
		See also " PLC parameters for general purpose (global PLC registers) "			
P-0-1413 - Attributes	Function:	Par	Editable:	ALWAYS	Data length: 4Byte
	Memory:	--	Validity ch.:	--	Format: DEC_MV
	Unit:	--	Extr. val. ch.:	+	Decim. pl.: 0
	Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.: --
	AXS:	min./max.: s. Text / s. Text		Default value: ---	

3.10.113 P-0-1414, PLC Global Register A56

	Allocation	Hardware Funct. package(s): Device parameter:	--		
	Function	See also " P-0-1270 , PLC Global Register A0"			
		See also " PLC parameters for general purpose (global PLC registers) "			
P-0-1414 - Attributes	Function:	Par	Editable:	ALWAYS	Data length: 4Byte
	Memory:	--	Validity ch.:	--	Format: DEC_MV
	Unit:	--	Extr. val. ch.:	+	Decim. pl.: 0
	Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.: --
	AXS:	min./max.: s. Text / s. Text		Default value: ---	

3.10.114 P-0-1415, PLC Global Register A57

	Allocation	Hardware Funct. package(s): Device parameter:	--		
	Function	See also " P-0-1270 , PLC Global Register A0"			
		See also " PLC parameters for general purpose (global PLC registers) "			
P-0-1415 - Attributes	Function:	Par	Editable:	ALWAYS	Data length: 4Byte
	Memory:	--	Validity ch.:	--	Format: DEC_MV
	Unit:	--	Extr. val. ch.:	+	Decim. pl.: 0
	Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.: --
	AXS:	min./max.: s. Text / s. Text		Default value: ---	

3.10.115 P-0-1416, PLC Global Register A58

	Allocation	Hardware Funct. package(s): Device parameter:	--		
	Function	See also " P-0-1270 , PLC Global Register A0"			
		See also " PLC parameters for general purpose (global PLC registers) "			
P-0-1416 - Attributes	Function:	Par	Editable:	ALWAYS	Data length: 4Byte
	Memory:	--	Validity ch.:	--	Format: DEC_MV
	Unit:	--	Extr. val. ch.:	+	Decim. pl.: 0
	Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.: --
	AXS:	min./max.: s. Text / s. Text		Default value: ---	

3.10.116 P-0-1417, PLC Global Register A59

	Allocation	Hardware Funct. package(s): Device parameter:	--		
	Function	See also " P-0-1270 , PLC Global Register A0"			
		See also " PLC parameters for general purpose (global PLC registers) "			

Product-specific parameters

P-0-1417 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: ---

3.10.117 P-0-1418, PLC Global Register A60

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	See also " P-0-1270 , PLC Global Register A0"		
	See also " PLC parameters for general purpose (global PLC registers) "		
P-0-1418 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: ---

3.10.118 P-0-1419, PLC Global Register A61

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	See also " P-0-1270 , PLC Global Register A0"		
	See also " PLC parameters for general purpose (global PLC registers) "		
P-0-1419 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: ---

3.10.119 P-0-1420, PLC Global Register A62

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	See also " P-0-1270 , PLC Global Register A0"		
	See also " PLC parameters for general purpose (global PLC registers) "		
P-0-1420 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: ---

3.10.120 P-0-1421, PLC Global Register A63

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	See also " P-0-1270 , PLC Global Register A0"		
	See also " PLC parameters for general purpose (global PLC registers) "		
P-0-1421 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: ---

3.10.121 P-0-1422, PLC Global Register A64

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1422 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --
		Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: s. Text / s. Text	Default value: ---

3.10.122 P-0-1423, PLC Global Register A65

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1423 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --
		Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: s. Text / s. Text	Default value: ---

3.10.123 P-0-1424, PLC Global Register A66

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1424 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --
		Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: s. Text / s. Text	Default value: ---

3.10.124 P-0-1425, PLC Global Register A67

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1425 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --
		Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: s. Text / s. Text	Default value: ---

3.10.125 P-0-1426, PLC Global Register A68

Allocation	Hardware Funct. package(s): Device parameter:	--
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Product-specific parameters

	Function	See also " P-0-1270 , PLC Global Register A0"			
		See also " PLC parameters for general purpose (global PLC registers) "			
P-0-1426 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --		
	AXS:	min./max.: s. Text / s. Text	Default value: ---		

3.10.126 P-0-1427, PLC Global Register A69

	Allocation	Hardware Funct. package(s): Device parameter:	--		
	Function	See also " P-0-1270 , PLC Global Register A0"			
		See also " PLC parameters for general purpose (global PLC registers) "			
P-0-1427 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --		
	AXS:	min./max.: s. Text / s. Text	Default value: ---		

3.10.127 P-0-1428, PLC Global Register A70

	Allocation	Hardware Funct. package(s): Device parameter:	--		
	Function	See also " P-0-1270 , PLC Global Register A0"			
		See also " PLC parameters for general purpose (global PLC registers) "			
P-0-1428 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --		
	AXS:	min./max.: s. Text / s. Text	Default value: ---		

3.10.128 P-0-1429, PLC Global Register A71

	Allocation	Hardware Funct. package(s): Device parameter:	--		
	Function	See also " P-0-1270 , PLC Global Register A0"			
		See also " PLC parameters for general purpose (global PLC registers) "			
P-0-1429 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --		
	AXS:	min./max.: s. Text / s. Text	Default value: ---		

3.10.129 P-0-1440, PLC Global Register A72

	Allocation	Hardware Funct. package(s): Device parameter:	--		
	Function	See also " P-0-1270 , PLC Global Register A0"			
		See also " PLC parameters for general purpose (global PLC registers) "			

P-0-1440 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: ---

3.10.130 P-0-1441, PLC Global Register A73

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1441 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.10.131 P-0-1442, PLC Global Register A74

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1442 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.10.132 P-0-1443, PLC Global Register A75

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1443 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.10.133 P-0-1444, PLC Global Register A76

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1444 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

Product-specific parameters

3.10.134 P-0-1445, PLC Global Register A77

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1445 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: -- Data length: 2Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.10.135 P-0-1446, PLC Global Register A78

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1446 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: -- Data length: 2Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.10.136 P-0-1447, PLC Global Register A79

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	See also " P-0-1270 , PLC Global Register A0" See also " PLC parameters for general purpose (global PLC registers) "	
P-0-1447 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: -- Data length: 2Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.10.137 P-0-1450, PLC/setting-up mode, positioning command value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter is used to specify the positioning command value for drive-controlled positioning.	
	 To use positioning in the setting-up mode, the operation mode first has to be preselected with " P-0-0120 , Control word easy startup".	
	See also Functional Description "Drive-controlled positioning"	
Use	In its function, parameter " P-0-1450 " corresponds to parameter " S-0-0282 , Positioning command value", whose operating principle is explained in detail in the Functional Description.	

P-0-1450 - Attributes	Function: Par Memory: -- Unit: S-0-0076 Cycl. tra.: AT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.10.138 P-0-1451, PLC/setting-up mode, positioning velocity

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter is used to specify the positioning velocity for drive-controlled positioning.	
 P-0-1451	To use positioning in the setting-up mode, the operation mode first has to be preselected with " P-0-0120 , Control word easy startup".	

See also Functional Description "Drive-controlled positioning"

In its function, parameter "[P-0-1451](#)" corresponds to parameter "[S-0-0259](#), Positioning velocity" the operating principle of which is explained in detail in the Functional Description.

P-0-1451 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0044 Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: -- Set-depend.: --
AXS:	min./max.: --- / ---		Default value: 0

3.10.139 P-0-1452, PLC/setting-up mode, positioning acceleration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter is used to specify the positioning acceleration for drive-controlled positioning.	
 P-0-1452	To use positioning in the setting-up mode, the operation mode first has to be preselected with " P-0-0120 , Control word easy startup".	

See also Functional Description "Drive-controlled positioning"

Use In its function, parameter "[P-0-1452](#)" corresponds to parameter "[S-0-0260](#), Positioning acceleration", whose operating principle is explained in detail in the Functional Description.

P-0-1452 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0160 Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
AXS:	min./max.: --- / ---		Default value: 0

3.10.140 P-0-1453, PLC/setting-up mode, positioning deceleration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter is used to specify the positioning deceleration for drive-controlled positioning.	

Product-specific parameters



To use positioning in the setting-up mode, the operation mode first has to be preselected with "[P-0-0120](#), Control word easy startup".

See also Functional Description "Drive-controlled positioning"

In its function, parameter "[P-0-1453](#)" corresponds to parameter "[S-0-0359](#), Positioning deceleration", whose operating principle is explained in detail in the functional description.

P-0-1453 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0160	Extr. val. ch.:	--	Decim. pl.:	--
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: --- / ---				Default value: 0

3.10.141 P-0-1454, PLC/setting-up mode, positioning command value acceptance

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

The parameter is used to control the positioning process for drive-controlled positioning.



To use positioning in the setting-up mode, the operation mode first has to be preselected with "[P-0-0120](#), Control word easy startup".

See also Functional Description "Drive-controlled positioning"

Structure

The parameter has the following structure:

Bit	Designation/function	Comment
0	Acceptance of positioning command value Applied by toggling	
8/2/1	Activation of positioning 000: Positioning active, started by toggling of bit 0 Positioning aborted by: 001: Infinite travel in positive direction (jog+) 010: Infinite travel in negative direction (jog-) 011: Stopping the axis (positioning stop) 101: Step mode (recursive as applicable) 110: Reversing mode (recursive as applicable)	
3	Type of positioning command value 0: Absolute 1: Relative (depending on bit 4)	
4	Dedicated point for positioning command values 0: Last effective target position (S-0-0430) 1: Active position feedback value (S-0-0386)	

Bit	Designation/function	Comment
5	Immediate block change 0: Drive moves to current target position, before positioning at new target position 1: Immediate block change, i.e., drive immediately moves to new target position	
7/6	Behavior for sequential block (bit 5=0) 00: Halt at target position of start block 01: Overrunning target position of start block (mode 1) 10: Overrunning target position of start block (mode 2)	
9	Profile generation 0: One-time execution of step mode or reverse 1: Recursive execution of step mode or reverse	

Tab. 3-87: Relevant bits of P-0-1454

P-0-1454 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT + MDT	Comb. check:	+	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: ---

3.10.142 P-0-1455, PLC/setting-up mode, positioning command value acknowledge

Allocation

Hardware --
 Funct. package(s):
 Device parameter:

Function

The parameter is used for internal analysis of the positioning process for drive-controlled positioning.



To use positioning in the setting-up mode, the operation mode first has to be preselected with "P-0-0120, Control word easy startup".

See also Functional Description "Drive-controlled positioning"

In its function, parameter "P-0-1455" corresponds to parameter "S-0-0419, Positioning command acknowledge", whose operating principle is explained in detail in the Functional Description.

P-0-1455 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: ---

3.10.143 P-0-1456, PLC/setting-up mode, positioning jerk

Allocation

Hardware --
 Funct. package(s):
 Device parameter:

Function

The parameter is used to specify the positioning jerk for drive-controlled positioning.

Product-specific parameters



To use positioning in the setting-up mode, the operation mode first has to be preselected with "[P-0-0120](#), Control word easy startup".

See also Functional Description "Drive-controlled positioning"

In its function, parameter "[P-0-1456](#)" corresponds to parameter "[S-0-0193](#), Positioning jerk", whose operating principle is explained in detail in the functional description.

P-0-1456 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0160	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---			
Default value: 0					

3.10.144 P-0-1460, PLC/setting-up mode, velocity command value

Allocation Hardware
Funct. package(s):
Device parameter: --

Function "[P-0-1460](#)" takes effect in the internal secondary operation mode "Velocity control" as velocity command value and is interpolated using the acceleration ramp ("[P-0-1461](#)", "[P-0-1463](#)").



This parameter is limited by the following velocity limit values:

- [P-0-0113](#), Bipolar velocity limit value of motor
- [S-0-0038](#), Positive velocity limit value
- [S-0-0039](#), Negative velocity limit value
- [S-0-0091](#), Bipolar velocity limit value
- [S-0-0113](#), Maximum motor speed
- Limitation from the maximum motor control frequency due to obligatory export licensing (590 Hz)

Intervention by the limitation is displayed by the warning "E2063 Velocity command value > limit value".

See also Functional Description "Velocity control"

P-0-1460 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0044	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---			
Default value: ---					

3.10.145 P-0-1461, PLC/setting-up mode, acceleration ramp

Allocation Hardware
Funct. package(s):
Device parameter: --

Function The acceleration parameterized in "[P-0-1461](#)" takes effect in the internal "velocity control" secondary operation mode. With the acceleration entered here, acceleration takes place from the last effective velocity command value to the currently effective "[P-0-1460](#), PLC/setting-up mode, velocity command value".



This parameter is limited by "[S-0-0138](#), Bipolar acceleration limit value". In case of parameterization with "0" and with values greater than "[S-0-0138](#)", the value set in "[S-0-0138](#)" will take effect instead.

See also Functional Description "Velocity control"

P-0-1461 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0160	Extr. val. ch.:	--	Decim. pl.:	--
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: 0
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3.10.146 P-0-1463, PLC/setting-up mode deceleration ramp

Allocation

Hardware --

Funct. package(s):

Device parameter:

Function

The deceleration parameterized in "[P-0-1463](#)" takes effect in the internal "velocity control" secondary operation mode. With the entered deceleration, deceleration takes place from the last effective velocity command value to the currently effective "[P-0-1460](#), PLC/setting-up mode, velocity command value".



This parameter is limited by "[S-0-0138](#), Bipolar acceleration limit value". In case of parameterization with "0" and with values greater than [S-0-0138](#), the value set in [S-0-0138](#) will take effect.

See also Functional Description "Velocity control"

P-0-1463 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0160	Extr. val. ch.:	--	Decim. pl.:	--
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: 0
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3.10.147 P-0-1465, PLC/setting-up mode, torque/force command value

Allocation

Hardware --

Funct. package(s):

Device parameter:

Function

This parameter is used to specify a torque/force command value in torque control.



To use torque/force control in the setting-up mode, the operation mode first has to be preselected with "[P-0-0120](#), Control word easy startup".

In its function, parameter "[P-0-1465](#)" corresponds to parameter "[S-0-0080](#), Torque/force command value" the operating principle of which is explained in detail in the Functional Description.

P-0-1465 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0086	Extr. val. ch.:	--	Decim. pl.:	--
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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Product-specific parameters

3.10.148 P-0-1466, PLC Torque/force ramp

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	Using the torque/force ramp time (P-0-1467), the PLC torque/force ramp defines a pitch for the PLC torque/force command value (P-0-1465).		
In its function, parameter P-0-1466 corresponds to parameter S-0-0822 , Torque/force ramp, whose operating principle is explained in detail in the Functional Description.			
See also Functional Description "Torque/force control"			
P-0-1466 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0086 Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: 0

3.10.149 P-0-1467, PLC/setting-up mode, torque/force ramp time

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	Using the torque/force ramp time (P-0-1466), the PLC torque/force ramp defines a pitch for the PLC torque/force command value (P-0-1465).		
In its function, parameter P-0-1467 corresponds to parameter S-0-0823 , Torque/force ramp time, whose operating principle is explained in detail in the Functional Description.			
See also Functional Description "Torque/force control"			
P-0-1467 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: 0,0

3.10.150 P-0-1480, PLC/setting-up mode, control word velocity control

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used to control the velocity control mode.	
 To use velocity control in the setting-up mode, the operation mode first has to be preselected with " P-0-0120 , Control word easy startup".		
See also Functional Description "Velocity control"		
Structure	The parameter has the following structure:	

Bit	Designation/function	Comment
0	Application of command value (step mode, reverse) Applied by toggling	
3/2/1	Activation of preset velocity 000: Preset velocity command value Velocity command value aborted by: 001: Infinite travel in positive direction (jog+) 010: Infinite travel in negative direction (jog-) 011: Stopping the axis (stop) 101: Step mode (recursive as applicable) 110: Reversing mode (recursive as applicable)	
4	Profile generation 0: One-time execution of step mode or reverse 1: Recursive execution of step mode or reverse	
15	Deactivate velocity command value fine interpolation 0: No 1: Yes Deactivation of fine interpolation enables specification of velocity jump in controller cycle	

Tab. 3-88: Relevant bits of P-0-1480

P-0-1480 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT + MDT	Comb. check:	+	Set-depend.:	--
AXS:		min./max.: --- / ---			
					Default value: 0x0

3.10.151 P-0-1481, PLC/setting-up mode, ramp velocity**Allocation**

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter is used to specify the ramp velocity in velocity control (jogging, step mode, reverse).

See also Functional Description "Velocity control"

P-0-1481 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0044	Extr. val. ch.:	--	Decim. pl.:	--
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---			
					Default value: 0

3.10.152 P-0-1482, PLC/setting-up mode, travel distance**Allocation**

Hardware --
Funct. package(s):
Device parameter:

Function

The parameter is used to specify the travel distance in velocity control (step mode).

See also Functional Description "Velocity control"

Product-specific parameters

P-0-1482 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0076 Cycl. tra.: AT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: 0

3.10.153 P-0-1483, PLC/setting-up mode, dwell time

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used to specify the dwell time in velocity control. See also Functional Description "Velocity control"	
P-0-1483 - Attributes	Function: Par Memory: PARAM_SP Unit: s Cycl. tra.: AT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: 1,000

3.10.154 P-0-1484, PLC/setting-up mode, end position positive

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used to specify the positive end position in velocity control (reverse) and for positioning (reverse). See also Functional Description "Velocity control"	
P-0-1484 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0076 Cycl. tra.: AT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: s. Text / s. Text Default value: 0

3.10.155 P-0-1485, PLC/setting-up mode, end position negative

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used to specify the negative end position in velocity control (reverse) and for positioning (reverse). See also Functional Description "Velocity control"	
P-0-1485 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0076 Cycl. tra.: AT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: s. Text / s. Text Default value: 0

3.11 P-0-1500 to P-0-1599 Device parameters**3.11.1 P-0-1516.0.1, Carrier unit type data, type-specific**

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter contains general type-specific physical type data of the device in compact parameter format.	

P-0-1516.0.1 - Attributes	Function: Par Memory: COMPONENT_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.11.2 P-0-1516.0.2, Carrier unit type data, unit-specific

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter contains general unit-specific type data of the device in compact parameter format.	
P-0-1516.0.2 - Attributes	Function: Par Memory: COMPONENT_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

3.11.3 P-0-1516.0.3, Component identification data

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-1516.0.3" contains the identification data of the component in XML format.	
P-0-1516.0.3 - Attributes	Function: Par Memory: COMPONENT_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

3.11.4 P-0-1516.0.4, Identification data of complete device

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-1516.0.4" contains the identification data of the complete device in XML format.	
P-0-1516.0.4 - Attributes	Function: Par Memory: COMPONENT_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

3.11.5 P-0-1516.0.5, Type data of complete device

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-1516.0.5" contains the type data of the overall device in compact parameter format.	
P-0-1516.0.5 - Attributes	Function: Par Memory: COMPONENT_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

Product-specific parameters

3.11.6 P-0-1517.0.1, Power supply type data, type-specific

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	The parameter contains type-specific physical type data of the supply unit in compact parameter format.				
P-0-1517.0.1 - Attributes	Function: Par Memory: COMPONENT_SP Unit: -- Cycl. tra.: --	Editable: Validity ch.: Extr. val. ch.: Comb. check:	-- -- -- --	Data length: Format: Decim. pl.: Set-depend.:	4Byte var. HEX 0 --
	AXS:	min./max.:	---	Default value:	---

3.11.7 P-0-1517.0.2, Power supply type data, unit-specific

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	The parameter contains unit-specific physical type data of the supply unit in compact parameter format.				
P-0-1517.0.2 - Attributes	Function: Par Memory: COMPONENT_SP Unit: -- Cycl. tra.: --	Editable: Validity ch.: Extr. val. ch.: Comb. check:	-- -- -- --	Data length: Format: Decim. pl.: Set-depend.:	4Byte var. HEX 0 --
	AXS:	min./max.:	---	Default value:	---

3.11.8 P-0-1518.0.1, Control section identifier, command configuration

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	The parameter contains the condition as supplied of the control section.				
P-0-1518.0.1 - Attributes	Function: Par Memory: ON_BOARD_SP Unit: -- Cycl. tra.: --	Editable: Validity ch.: Extr. val. ch.: Comb. check:	-- -- -- --	Data length: Format: Decim. pl.: Set-depend.:	1Byte var. ASCII 0 --
	AXS:	min./max.:	---	Default value:	---

3.11.9 P-0-1518.0.2, Control section identifier, last detected

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	Command " P-0-0260 , C99 Service function command" with the function specification "HW scan" is used to determine the control section identifier last recognized.				
P-0-1518.0.2 - Attributes	Function: Par Memory: ON_BOARD_SP Unit: -- Cycl. tra.: --	Editable: Validity ch.: Extr. val. ch.: Comb. check:	-- -- -- --	Data length: Format: Decim. pl.: Set-depend.:	1Byte var. ASCII 0 --
	AXS:	min./max.:	---	Default value:	---

3.11.10 P-0-1518.0.3, Power section identifier, last detected

Allocation	Hardware Funct. package(s): Device parameter:	--
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Function	Command "P-0-0260, C99 Service function command" with the function specification "HW scan" is used to determine the power section identifier last recognized.																												
P-0-1518.0.3 - Attributes	<table border="1"> <tr> <td>Function:</td> <td>Par</td> <td>Editable:</td> <td>--</td> <td>Data length:</td> <td>1Byte var.</td> </tr> <tr> <td>Memory:</td> <td>ON_BOARD_SP</td> <td>Validity ch.:</td> <td>--</td> <td>Format:</td> <td>ASCII</td> </tr> <tr> <td>Unit:</td> <td>--</td> <td>Extr. val. ch.:</td> <td>--</td> <td>Decim. pl.:</td> <td>0</td> </tr> <tr> <td>Cycl. tra.:</td> <td>--</td> <td>Comb. check:</td> <td>--</td> <td>Set-depend.:</td> <td>--</td> </tr> </table>					Function:	Par	Editable:	--	Data length:	1Byte var.	Memory:	ON_BOARD_SP	Validity ch.:	--	Format:	ASCII	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
Function:	Par	Editable:	--	Data length:	1Byte var.																								
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Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																								
AXS:	min./max.: --- / ---		Default value: ---																										

3.11.11 P-0-1518.0.4, Axis type data in device

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-3839																								
Function	"P-0-1518" contains the type data of the axis depending on the device in which the components have been installed (axis index in v_device,...) in compact parameter format.																									
P-0-1518.0.4 - Attributes	<table border="1"> <tr> <td>Function:</td> <td>Par</td> <td>Editable:</td> <td>--</td> <td>Data length:</td> <td>4Byte var.</td> </tr> <tr> <td>Memory:</td> <td>ON_BOARD_SP</td> <td>Validity ch.:</td> <td>--</td> <td>Format:</td> <td>HEX</td> </tr> <tr> <td>Unit:</td> <td>--</td> <td>Extr. val. ch.:</td> <td>--</td> <td>Decim. pl.:</td> <td>0</td> </tr> <tr> <td>Cycl. tra.:</td> <td>--</td> <td>Comb. check:</td> <td>--</td> <td>Set-depend.:</td> <td>--</td> </tr> </table>		Function:	Par	Editable:	--	Data length:	4Byte var.	Memory:	ON_BOARD_SP	Validity ch.:	--	Format:	HEX	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
Function:	Par	Editable:	--	Data length:	4Byte var.																					
Memory:	ON_BOARD_SP	Validity ch.:	--	Format:	HEX																					
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																					
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																					
AXS:	min./max.: --- / ---																									
	Default value: ---																									

3.11.12 P-0-1518.0.5, Component identification data

Allocation	Hardware Funct. package(s): Device parameter:	--																								
Function	Contains the identification data for the control section component (material number, serial number, ...) in XML format.																									
P-0-1518.0.5 - Attributes	<table border="1"> <tr> <td>Function:</td> <td>Par</td> <td>Editable:</td> <td>--</td> <td>Data length:</td> <td>1Byte var.</td> </tr> <tr> <td>Memory:</td> <td>ON_BOARD_SP</td> <td>Validity ch.:</td> <td>--</td> <td>Format:</td> <td>ASCII</td> </tr> <tr> <td>Unit:</td> <td>--</td> <td>Extr. val. ch.:</td> <td>--</td> <td>Decim. pl.:</td> <td>0</td> </tr> <tr> <td>Cycl. tra.:</td> <td>--</td> <td>Comb. check:</td> <td>--</td> <td>Set-depend.:</td> <td>--</td> </tr> </table>		Function:	Par	Editable:	--	Data length:	1Byte var.	Memory:	ON_BOARD_SP	Validity ch.:	--	Format:	ASCII	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
Function:	Par	Editable:	--	Data length:	1Byte var.																					
Memory:	ON_BOARD_SP	Validity ch.:	--	Format:	ASCII																					
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																					
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																					
AXS:	min./max.: --- / ---																									
	Default value: ---																									

3.11.13 P-0-1518.0.6, Order number of complete device

Allocation	Hardware Funct. package(s): Device parameter:	--																								
Function	Contains the material number of the ordered complete device in XML format.																									
P-0-1518.0.6 - Attributes	<table border="1"> <tr> <td>Function:</td> <td>Par</td> <td>Editable:</td> <td>--</td> <td>Data length:</td> <td>1Byte var.</td> </tr> <tr> <td>Memory:</td> <td>ON_BOARD_SP</td> <td>Validity ch.:</td> <td>--</td> <td>Format:</td> <td>ASCII</td> </tr> <tr> <td>Unit:</td> <td>--</td> <td>Extr. val. ch.:</td> <td>--</td> <td>Decim. pl.:</td> <td>0</td> </tr> <tr> <td>Cycl. tra.:</td> <td>--</td> <td>Comb. check:</td> <td>--</td> <td>Set-depend.:</td> <td>--</td> </tr> </table>		Function:	Par	Editable:	--	Data length:	1Byte var.	Memory:	ON_BOARD_SP	Validity ch.:	--	Format:	ASCII	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
Function:	Par	Editable:	--	Data length:	1Byte var.																					
Memory:	ON_BOARD_SP	Validity ch.:	--	Format:	ASCII																					
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																					
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																					
AXS:	min./max.: --- / ---																									
	Default value: ---																									

3.11.14 P-0-1518.0.7, Component identification data control section unit

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter contains modules with control-specific identification data in XML format as the FWB version of the control section module.	

Product-specific parameters

P-0-1518.0.7 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.11.15 P-0-1519.0.1, Output stage type data: Axis, type-specific

P-0-1519.0.1 - Attributes	Allocation: Hardware Funct. package(s): Device parameter: Function: The parameter contains axis type-specific physical type data of the power output stage, such as adjustment input values in compact parameter format.	
AXS:	min./max.: --- / ---	

3.11.16 P-0-1519.0.2, Output stage type data: Axis, unit-specific

P-0-1519.0.2 - Attributes	Allocation: Hardware Funct. package(s): Device parameter: Function: The parameter contains axis-related unit-specific type data of the power output stage, such as adjustment result values in compact parameter format.	
AXS:	min./max.: --- / ---	

3.11.17 P-0-1520, Control section type

P-0-1520 - Attributes	Allocation: Hardware Funct. package(s): Device parameter: Function: In this parameter, the type designation of the control section is displayed. By means of circuit board code parameters, the controller firmware identifies all circuit boards incorporated in the control section and generates the type designation. The type designation of the control section also implies firmware dependencies.	
AXS:	min./max.: --- / ---	

3.11.18 P-0-1522.0.1, Brake chopper type data, type-specific

P-0-1522.0.1 - Attributes	Allocation: Hardware Funct. package(s): Device parameter: Function: The parameter contains axis type-specific physical type data of the brake chopper unit, such as adjustment input values in compact parameter format.
----------------------------------	---

P-0-1522.0.1 - Attributes	Function: Par Memory: COMPONENT_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.11.19 P-0-1522.0.2, Brake chopper type data, unit-specific

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The parameter contains axis-related, unit-specific type data of the brake chopper unit, such as adjustment result values in compact parameter format.		
P-0-1522.0.2 - Attributes	Function: Par Memory: COMPONENT_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---	

3.11.20 P-0-1523.0.1, Charging unit type data, type-specific

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter contains axis type-specific physical type data of the charging unit, such as adjustment input values in compact parameter format.	
Use	The parameter contains a list. The following data are included in the elements of the list:	

Element number	Function
0	Basic module designation (1)
1	Basic module designation (2)
2	Basic module designation (3)
3	Material number
4	Serial number
5	Module - firmware code
6	Release/revision index
7	Factory identifier

Tab. 3-89: Elements of parameter P-0-1523

The type designation of the control section also implies firmware dependencies.

P-0-1523.0.1 - Attributes	Function: Par Memory: COMPONENT_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.11.21 P-0-1523.0.2, Charging unit type data, unit-specific

Allocation	Hardware Funct. package(s): Device parameter:	--
------------	---	----

Product-specific parameters

- Function** The parameter contains axis-related, unit-specific type data of the charging unit, such as adjustment result values in compact parameter format.
- Use** The parameter contains a list. The following data are included in the elements of the list:

Element number	Function
0	Basic module designation (1)
1	Basic module designation (2)
2	Basic module designation (3)
3	Material number
4	Serial number
5	Module - firmware code
6	Release/revision index
7	Factory identifier

Tab. 3-90: Elements of parameter P-0-1523

The type designation of the control section also implies firmware dependencies.

P-0-1523.0.2 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	COMPONENT_SP	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
------	----------------------	--------------------

3.11.22 P-0-1523.0.3, Component identification data

- Allocation** Hardware --
Funct. package(s):
Device parameter:
- Function** Contains identification data of the „charging unit“ component, such as material number, serial number, type code ... in XML format.
- Use** The parameter contains a list. The following data are included in the elements of the list:

Element number	Function
0	Basic module designation (1)
1	Basic module designation (2)
2	Basic module designation (3)
3	Material number
4	Serial number
5	Module - firmware code
6	Release/revision index
7	Factory identifier

Tab. 3-91: Elements of parameter P-0-1523

The type designation of the control section also implies firmware dependencies.

P-0-1523.0.3 - Attributes	Function: Par Memory: COMPONENT_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.11.23 P-0-1524.0.1, Type data of control/communication unit: Type-specific

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The parameter contains type-specific type data of the communication unit in compact parameter format.		
P-0-1524.0.1 - Attributes	Function: Par Memory: ON_BOARD_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.11.24 P-0-1524.0.2, Type data of control/communication unit: Unit-specific

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The parameter contains example-specific type data of the communication unit in compact parameter format.		
P-0-1524.0.2 - Attributes	Function: Par Memory: ON_BOARD_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.11.25 P-0-1524.0.7, Identification of control/communication unit

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The parameter contains control-/communication-specific identification data of the module in XML format, such as the FWB version of the control/communication unit module.		
P-0-1524.0.7 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.11.26 P-0-1534, C6100 Command Activate IP settings

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1048" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-1534 - Attributes	Function: Cmd Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

Product-specific parameters

3.11.27 P-0-1550, Container FSoE Master Message

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Besides the size (max. and actual length 8 byte), the parameter contains the corresponding data array that contains the last message received from the FSoE master.	
P-0-1550 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 1Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.11.28 P-0-1550.0.1, FSoE: Master Message Cmd

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter contains the first byte (command) of the last message received by the FSoE master.	
Structure	Valid values FSoE Cmd:	
<i>Tab. 3-92: P-0-1550.0.1, FSoE MasterMessage: Cmd</i>		
P-0-1550.0.1 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.11.29 P-0-1550.0.2, FSoE: Master Message Data 0

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter contains the two data byte (Safe Data0) of the last message received by the FSoE master.	
P-0-1550.0.2 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: HEX Decim. pl.: 0 Set-depend.: --
<i>AXS:</i> min./max.: --- / --- <i>Default value:</i> ---		

3.11.30 P-0-1550.0.3, FSoE: Master Message CRC 0

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The parameter contains the two CRC bytes (CRC 0) of the last message received by the FSoE master.		
P-0-1550.0.3 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.11.31 P-0-1551, Container FSoE Slave Message

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	Besides the size (max. and actual length 8 byte), the parameter contains the corresponding data array that contains the last message transmitted to the FSoE master.		
P-0-1551 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.11.32 P-0-1551.0.1, FSoE: Slave Message Cmd

Allocation	Hardware Funct. package(s): Device parameter:	--														
Function	The parameter contains the first byte (command) of the last FSoE message sent by the drive.															
Structure	Valid values FSoE Cmd:															
	<table border="1"> <thead> <tr> <th>CMD</th> <th>FSoE State</th> </tr> </thead> <tbody> <tr> <td>0x2A</td> <td>Reset</td> </tr> <tr> <td>0x4E</td> <td>Session</td> </tr> <tr> <td>0x64</td> <td>Connection</td> </tr> <tr> <td>0x52</td> <td>Parameters</td> </tr> <tr> <td>0x08</td> <td>FailSafeData</td> </tr> <tr> <td>0x36</td> <td>ProcessData</td> </tr> </tbody> </table>		CMD	FSoE State	0x2A	Reset	0x4E	Session	0x64	Connection	0x52	Parameters	0x08	FailSafeData	0x36	ProcessData
CMD	FSoE State															
0x2A	Reset															
0x4E	Session															
0x64	Connection															
0x52	Parameters															
0x08	FailSafeData															
0x36	ProcessData															

Tab. 3-93: P-0-1551.0.1, FSoE SlaveMessage: Cmd

P-0-1551.0.1 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

Product-specific parameters

3.11.33 P-0-1551.0.2, FSoE: Slave Message Data 0

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The parameter contains the two data byte (Safe Data 0) of the last FSoE message sent by the drive.		
P-0-1551.0.2 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.11.34 P-0-1551.0.3, FSoE: Slave Message CRC 0

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The parameter contains the two CRC bytes (CRC 0) of the last FSoE message sent by the drive.		
P-0-1551.0.3 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.11.35 P-0-1556.x.1, Container J1939-76: Safety Header Message (SHM), consumer

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	 The description of this parameter is in preparation.		
P-0-1556.x.1 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.11.36 P-0-1556.x.2, Container J1939-76: Safety Data Message (SDM), consumer

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	 The description of this parameter is in preparation.		
P-0-1556.x.2 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.11.37 P-0-1557.x.1, Container J1939-76: Safety Header Message (SHM), producer

Allocation Function	Hardware Funct. package(s): Device parameter: P-0-1557.x.1 - Attributes
	 The description of this parameter is in preparation.
	Function: Par Editable: ALWAYS Data length: 1Byte var. Memory: -- Validity ch.: -- Format: HEX Unit: -- Extr. val. ch.: -- Decim. pl.: 0 Cycl. tra.: AT Comb. check: -- Set-depend.: --
	AXS: min./max.: --- / --- Default value: ---

3.11.38 P-0-1557.x.2, Container J1939-76: Safety Data Message (SDM), producer

Allocation Function	Hardware Funct. package(s): Device parameter: P-0-1557.x.2 - Attributes
	 The description of this parameter is in preparation.
	Function: Par Editable: ALWAYS Data length: 1Byte var. Memory: -- Validity ch.: -- Format: HEX Unit: -- Extr. val. ch.: -- Decim. pl.: 0 Cycl. tra.: AT Comb. check: -- Set-depend.: --
	AXS: min./max.: --- / --- Default value: ---

3.12 P-0-1600 to P-0-1999 Cross Communication Drives, CCD

3.12.1 P-0-1602, Mains current controller, control word

Allocation Function	Hardware Funct. package(s): Device parameter: P-0-1602 - Attributes
	"**S-0-1709.0.150**" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).
	Function: Par Editable: SUBD:CM Data length: 2Byte Memory: PARAM_SP Validity ch.: SUBD:CM->PM Format: BIN Unit: -- Extr. val. ch.: -- Decim. pl.: 0 Cycl. tra.: -- Comb. check: + Set-depend.: --
	AXS: min./max.: --- / --- Default value: s. Text

3.12.2 P-0-1604, Power supply switching frequency

Allocation Function	Hardware Funct. package(s): Device parameter: P-0-1604 - Attributes
	"**S-0-1709.0.151**" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).
	Function: Par Editable: SUBD:CM Data length: 2Byte Memory: PARAM_SP Validity ch.: SUBD:CM->PM Format: DEC_OV Unit: Hz Extr. val. ch.: + Decim. pl.: 0 Cycl. tra.: -- Comb. check: -- Set-depend.: --
	AXS: min./max.: s. Text / s. Text Default value: s. Text

Product-specific parameters

3.12.3 P-0-1607, Power supply control, configuration

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1709.0.152" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-1607 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: +	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: s. Text

3.12.4 P-0-1609, Power section configuration

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1709.0.153" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-1609 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: +	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: s. Text

3.12.5 P-0-1611, Power output stage control word

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1709.0.154" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-1611 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.12.6 P-0-1612, Power reduction starting frequency

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1712.0.181" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-1612 - Attributes	Function: Par Memory: PARAM_SP Unit: Hz Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: --
	AXS:	min./max.: 43,00 / 67,00	Default value: 50,20

3.12.7 P-0-1613, Power reduction gradient

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1712.0.182" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

P-0-1613 - Attributes	Function: Par Memory: PARAM_SP Unit: %/Hz Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: s. Text

3.12.8 P-0-1614, Allowed active power increase after power reduction

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1712.0.183" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1614 - Attributes	Function: Par Memory: PARAM_SP Unit: %/min Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: s. Text

3.12.9 P-0-1615, Active power-dependent cos(phi) characteristic: performance

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1712.0.190" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1615 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: -1,000 / 1,000	Default value: s. Text

3.12.10 P-0-1616, Active power-dependent cos(phi) characteristic: cos(phi)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1712.0.191" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1616 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: -1,000 / 1,000	Default value: s. Text

3.12.11 P-0-1617, Nominal active power of power plant

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1712.0.192" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1617 - Attributes	Function: Par Memory: PARAM_SP Unit: W Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: s. Text

Product-specific parameters

3.12.12 P-0-1618, Active power limit value, mains supply

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1713.0.180" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-1618 - Attributes	Function: Par Memory: PARAM_SP Unit: W Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: s. Text

3.12.13 P-0-1619, Basic configuration of supply unit

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1715.0.150" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-1619 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: +	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: s. Text

3.12.14 P-0-1621, Transformer vector group

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1715.0.160" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-1621 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: s. Text

3.12.15 P-0-1622, Primary side transformer voltage

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1715.0.161" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-1622 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --
	AXS:	min./max.: s. Text / 1200,0	Default value: 400,0

3.12.16 P-0-1623, Secondary side transformer voltage

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1715.0.162" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

P-0-1623 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: s. Text / 1200,0		Default value: 400,0

3.12.17 P-0-1624, Transformer magnetizing inductance

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1715.0.170" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1624 - Attributes	Function: Par Memory: PARAM_SP Unit: mH Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: 50,000

3.12.18 P-0-1625, Resistance on primary side of transformer

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1715.0.171" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1625 - Attributes	Function: Par Memory: PARAM_SP Unit: ohm Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / 2000,000	Default value: s. Text

3.12.19 P-0-1626, Leakage inductance on primary side of transformer

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1715.0.172" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1626 - Attributes	Function: Par Memory: PARAM_SP Unit: mH Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: s. Text

3.12.20 P-0-1627, Island grid voltage, maximum value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1716.0.162" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1627 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
AXS:	min./max.: 127,0 / 800,0	Default value: 759,0

Product-specific parameters

3.12.21 P-0-1628, f-P characteristic: f0

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	" S-0-1716.0.170 " replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1628 - Attributes	Function: Par Memory: PARAM_SP Unit: Hz Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: -- Format: DEC_MV Decim. pl.: 2 Set-depend.: --
AXS:	min./max.: 16,00 / 100,00	Default value: 50,00

3.12.22 P-0-1629, f-P characteristic: Slope

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	" S-0-1716.0.171 " replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1629 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: -- Format: DEC_MV Decim. pl.: 2 Set-depend.: --
AXS:	min./max.: -200,00 / 200,00	Default value: ---

3.12.23 P-0-1631, U-Q characteristic: U0

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	" S-0-1716.0.172 " replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1631 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: -- Format: DEC_MV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: 127,0 / 800,0	Default value: 400,0

3.12.24 P-0-1632, U-Q characteristic: Slope

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	" S-0-1716.0.173 " replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1632 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: -- Format: DEC_MV Decim. pl.: 2 Set-depend.: --
AXS:	min./max.: -200,00 / 200,00	Default value: ---

3.12.25 P-0-1633, Voltage controller proportional gain

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	" S-0-1716.0.180 " replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

P-0-1633 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 4 Set-depend.: --
AXS:	min./max.: s. Text / 100000,0000		Default value: 0,0100

3.12.26 P-0-1635, Voltage controller integral action time

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1716.0.181" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1635 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: 1,00

3.12.27 P-0-1637, Filter time constant, island grid frequency, ctrlr output

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1716.0.183" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1637 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: 10,00

3.12.28 P-0-1638, Phase controller proportional gain

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1716.0.184" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1638 - Attributes	Function: Par Memory: PARAM_SP Unit: Hz/degree Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / 100000,0000	Default value: s. Text

3.12.29 P-0-1640, Phase controller integral action time

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1716.0.185" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1640 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: 10,0

Product-specific parameters

3.12.30 P-0-1641, Filter time constant, voltage build-up

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	" S-0-1716.0.186 " replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1641 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: -- Data length: 4Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: s. Text

3.12.31 P-0-1642, Current offset compensation: Proportional gain

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	" S-0-1716.0.190 " replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1642 - Attributes	Function: Par Memory: PARAM_SP Unit: V/A Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: -- Data length: 4Byte Format: DEC_OV Decim. pl.: 4 Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: 0,1000

3.12.32 P-0-1643, Current offset compensation: Integral action time

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	" S-0-1716.0.191 " replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1643 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: -- Data length: 4Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: s. Text

3.12.33 P-0-1644, Current offset compensation: Cutoff frequency

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	" S-0-1716.0.192 " replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1644 - Attributes	Function: Par Memory: PARAM_SP Unit: Hz Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: -- Data length: 4Byte Format: DEC_OV Decim. pl.: 4 Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: 3000,0000

3.12.34 P-0-1645, Current offset compens.: Bipolar ctrler output limitation

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	" S-0-1716.0.193 " replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

P-0-1645 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: s. Text / 2000,0		Default value: 10,0

3.12.35 P-0-1646, Supply unit status

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1717.0.151" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-1646 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---	

3.12.36 P-0-1647, DC/DC converter control word

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1741.0.150" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-1647 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: s. Text	

3.12.37 P-0-1648, DC voltage command value filter, time constant

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1741.0.170" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-1648 - Attributes	Function: Par Memory: PARAM_SP Unit: us Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: s. Text	

3.12.38 P-0-1649, DC voltage controller proportional gain

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1741.0.171" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-1649 - Attributes	Function: Par Memory: PARAM_SP Unit: A/V Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: s. Text	

Product-specific parameters

3.12.39 P-0-1650, DC voltage controller integral action time

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	" S-0-1741.0.172 " replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1650 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: -- Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: s. Text

3.12.40 P-0-1660, Bipolar DC current limit value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	" S-0-1741.0.180 " replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1660 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: -- Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: s. Text

3.12.41 P-0-1670, Positive DC current limit value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	" S-0-1741.0.181 " replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1670 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: -- Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: s. Text

3.12.42 P-0-1671, Negative DC current limit value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	" S-0-1741.0.182 " replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1671 - Attributes	Function: Par Memory: ON_BOARD_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: -- Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: ---

3.12.43 P-0-1672, DC current command value filter, time constant

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	" S-0-1741.0.183 " replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

P-0-1672 - Attributes	Function: Par Memory: PARAM_SP Unit: us Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: s. Text / s. Text		Default value: s. Text

3.12.44 P-0-1673, DC current controller proportional gain

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1741.0.184" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1673 - Attributes	Function: Par Memory: PARAM_SP Unit: V/A Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
	AXS: min./max.: s. Text / s. Text	

3.12.45 P-0-1674, DC current controller integral action time

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1741.0.185" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1674 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
	AXS: min./max.: s. Text / s. Text	

3.12.46 P-0-1675, DC current controller output limitation

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1741.0.186" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1675 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
	AXS: min./max.: s. Text / 2000,0	

3.12.47 P-0-1676, Brake rise time

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0540.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1676 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --
	AXS: min./max.: s. Text / s. Text	

Product-specific parameters

3.12.48 P-0-1677, Brake withstand voltage

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0540.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1677 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --
		Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: Grp. 5

AXS:	min./max.: s. Text / s. Text	Default value: 0,0
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3.12.49 P-0-1678, Brake check velocity command value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0548.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1678 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0044 Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
		Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --

AXS:	min./max.: --- / ---	Default value: s. Text
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3.12.50 P-0-1679, Maximum check duration released brake

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0548.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1679 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
		Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --

AXS:	min./max.: --- / ---	Default value: s. Text
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3.12.51 P-0-1690, Check duration brake applied

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0548.0.3" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1690 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
		Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --

AXS:	min./max.: --- / ---	Default value: s. Text
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3.12.52 P-0-1691, Check duration brake applied

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0548.1.3" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

P-0-1691 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

3.12.53 P-0-1692, SVC: Flux stabilization damping factor

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0592.0.9" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1692 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: 0,00 / 655,35	Default value: 0,50

3.12.54 P-0-1693, SVC: Controller output limitation flux stabilization

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0592.0.12" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1693 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: 0,00 / 625,35	Default value: 10,00

3.12.55 P-0-1694, SVC: Current controller P-gain adjustment factor

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0592.0.20" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1694 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: 0,00 / 625,35	Default value: 1,00

3.12.56 P-0-1695, SVC: Current controller integral action time adjustment factor

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0592.0.21" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1695 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: 0,00 / 625,35	Default value: 1,00

Product-specific parameters

3.12.57 P-0-1696, SVC: Velocity feedback value filter time constant

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0592.0.30" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1696 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
		Data length: 2Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: Grp. 5
	AXS:	min./max.: 0,00 / 625,25 Default value: 4,00

3.12.58 P-0-1697, SVC: Motor resistance adjustment factor

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0592.0.32" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1697 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
		Data length: 2Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: Grp. 5
	AXS:	min./max.: 0,00 / 625,35 Default value: 1,00

3.12.59 P-0-1698, SVC: Motor inductance adjustment factor

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0592.0.33" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1698 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
		Data length: 2Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: Grp. 5
	AXS:	min./max.: 0,00 / 625,35 Default value: 1,00

3.12.60 P-0-1699, SVC: EMF adjustment factor

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0592.0.34" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1699 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
		Data length: 2Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: Grp. 5
	AXS:	min./max.: 0,00 / 625,35 Default value: 1,00

3.12.61 P-0-1700, SVC: Low velocity range, switching vel. adjustment factor

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0592.0.43" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

P-0-1700 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: Grp. 5
AXS:	min./max.: 0,00 / 625,35		Default value: 1,00

3.12.62 P-0-1701, SVC: Load-dependent standstill current increase, gain

Allocation	Hardware Funct. package(s): Device parameter: --		
Function	"P-0-0592.0.44" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-1701 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: Grp. 5
AXS:	min./max.: 0,00 / 625,35		Default value: 0,00

3.12.63 P-0-1702, SVC: Velocity controller P-gain adjustment factor

Allocation	Hardware Funct. package(s): Device parameter: --		
Function	"P-0-0592.0.52" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-1702 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: Grp. 5
AXS:	min./max.: 0,00 / 625,35		Default value: 0,12

3.12.64 P-0-1703, SVC: Velocity controller integral action time adjustment factor

Allocation	Hardware Funct. package(s): Device parameter: --		
Function	"P-0-0592.0.53" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-1703 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: Grp. 5
AXS:	min./max.: 0,00 / 625,35		Default value: 8,10

3.12.65 P-0-1704, SVC: Current at standstill

Allocation	Hardware Funct. package(s): Device parameter: --		
Function	"P-0-0592.0.54" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-1704 - Attributes	Function: Par Memory: PARAM_SP Unit: A Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: Grp. 5
AXS:	min./max.: 0,000 / 20000,000		Default value: 0,000

Product-specific parameters

3.12.66 P-0-1705, SVC: Low velocity range, maximum frequency slope

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0592.0.55" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1705 - Attributes	Function: Par Memory: PARAM_SP Unit: Hz/s Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
		Data length: 4Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: Grp. 5
	AXS:	min./max.: 0,00 / 42949672,95 Default value: 10,00

3.12.67 P-0-1706, SVC: Heavy starting, gain

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0592.0.56" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1706 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
		Data length: 4Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: Grp. 5
	AXS:	min./max.: 0,00 / 42949672,95 Default value: 0,00

3.12.68 P-0-1707, SVC: Motor flux alpha

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0593.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1707 - Attributes	Function: Par Memory: -- Unit: Vs Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 2Byte Format: DEC_MV Decim. pl.: 4 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.12.69 P-0-1708, SVC: Motor flux beta

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0593.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1708 - Attributes	Function: Par Memory: -- Unit: Vs Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 2Byte Format: DEC_MV Decim. pl.: 4 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.12.70 P-0-1709, SVC: Motor flux, absolute value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0593.0.3" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

P-0-1709 - Attributes	Function:	Par	Editable:	--	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_MV
	Unit:	Vs	Extr. val. ch.:	--	Decim. pl.:	4
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS: min./max.: --- / ---					Default value: ---

3.12.71 P-0-1710, SVC: Internal torque / force

Allocation	Hardware Funct. package(s): Device parameter:	--				
Function	"P-0-0593.0.4" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).					
P-0-1710 - Attributes	Function:	Par	Editable:	--	Data length:	4Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_MV
	Unit:	Nm	Extr. val. ch.:	--	Decim. pl.:	3
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS: min./max.: --- / ---					Default value: ---

3.12.72 P-0-1711, SVC: Angle

Allocation	Hardware Funct. package(s): Device parameter:	--				
Function	"P-0-0593.0.5" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).					
P-0-1711 - Attributes	Function:	Par	Editable:	--	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_MV
	Unit:	degrees	Extr. val. ch.:	--	Decim. pl.:	1
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS: min./max.: --- / ---					Default value: ---

3.12.73 P-0-1712, SVC: Motor frequency

Allocation	Hardware Funct. package(s): Device parameter:	--				
Function	"P-0-0593.0.6" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).					
P-0-1712 - Attributes	Function:	Par	Editable:	--	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_MV
	Unit:	Hz	Extr. val. ch.:	--	Decim. pl.:	1
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS: min./max.: --- / ---					Default value: ---

3.12.74 P-0-1713, SVC: Low velocity range, angular difference

Allocation	Hardware Funct. package(s): Device parameter:	--				
Function	"P-0-0593.0.45" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).					
P-0-1713 - Attributes	Function:	Par	Editable:	--	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_MV
	Unit:	degrees	Extr. val. ch.:	--	Decim. pl.:	1
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS: min./max.: --- / ---					Default value: ---

Product-specific parameters

3.12.75 P-0-1714, Selection of firmware functions

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-2003.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1714 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: s. Text

3.12.76 P-0-1715, Activated firmware functions

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-2003.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1715 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: ---

3.12.77 P-0-1716, Selectable firmware functions

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-2003.0.3" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1716 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: ---

3.12.78 P-0-1719, Operation hours when changing firmware functions

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-2003.0.6" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1719 - Attributes	Function: Par Memory: ON_BOARD_SP Unit: s Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: ---

3.12.79 P-0-1720, Performance points maximum

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-2003.0.7" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

P-0-1720 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.12.80 P-0-1721, Logbook event

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-2602.80.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1721 - Attributes	Function: Par Memory: COMPONENT_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / ---

3.12.81 P-0-1722, Time stamp logbook event

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-2602.80.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1722 - Attributes	Function: Par Memory: COMPONENT_SP Unit: s Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / ---

3.12.82 P-0-1723, Operating hours counter

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-2602.80.20" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1723 - Attributes	Function: Par Memory: COMPONENT_SP Unit: s Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / ---

3.12.83 P-0-1724, Logbook event

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-2602.82.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1724 - Attributes	Function: Par Memory: COMPONENT_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / ---

Product-specific parameters

3.12.84 P-0-1725, Time stamp logbook event

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"P-0-2602.82.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			
P-0-1725 - Attributes	Function: Memory: Unit: Cycl. tra.:	Par COMPONENT_SP s --	Editable: Validity ch.: Extr. val. ch.: Comb. check:	-- -- -- --
			Data length: Format: Decim. pl.: Set-depend.:	4Byte var. DEC_OV 1 --
	AXS:	min./max.:	--- / ---	
			Default value: ---	

3.12.85 P-0-1726, Operating hours counter

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"P-0-2602.82.20" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			
P-0-1726 - Attributes	Function: Memory: Unit: Cycl. tra.:	Par COMPONENT_SP s --	Editable: Validity ch.: Extr. val. ch.: Comb. check:	-- -- -- --
			Data length: Format: Decim. pl.: Set-depend.:	4Byte DEC_OV 1 --
	AXS:	min./max.:	--- / ---	
			Default value: ---	

3.12.86 P-0-1727, Activity hours counter

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"P-0-2602.82.22" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			
P-0-1727 - Attributes	Function: Memory: Unit: Cycl. tra.:	Par COMPONENT_SP s --	Editable: Validity ch.: Extr. val. ch.: Comb. check:	-- -- -- --
			Data length: Format: Decim. pl.: Set-depend.:	4Byte DEC_OV 1 --
	AXS:	min./max.:	--- / ---	
			Default value: ---	

3.12.87 P-0-1728, Logbook event

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"P-0-2602.83.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			
P-0-1728 - Attributes	Function: Memory: Unit: Cycl. tra.:	Par COMPONENT_SP -- --	Editable: Validity ch.: Extr. val. ch.: Comb. check:	-- -- -- --
			Data length: Format: Decim. pl.: Set-depend.:	4Byte var. HEX 0 --
	AXS:	min./max.:	--- / ---	
			Default value: ---	

3.12.88 P-0-1729, Time stamp logbook event

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"P-0-2602.83.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			

P-0-1729 - Attributes	Function:	Par	Editable:	--	Data length:	4Byte var.
	Memory:	COMPONENT_SP	Validity ch.:	--	Format:	DEC_OV
	Unit:	s	Extr. val. ch.:	--	Decim. pl.:	1
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: --- / ---				
		Default value: ---				

3.12.89 P-0-1731, Operating hours counter

Allocation	Hardware	--				
	Funct. package(s):					
	Device parameter:					
Function	"P-0-2602.83.20" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).					
P-0-1731 - Attributes	Function:	Par	Editable:	--	Data length:	4Byte
	Memory:	COMPONENT_SP	Validity ch.:	--	Format:	DEC_OV
	Unit:	s	Extr. val. ch.:	--	Decim. pl.:	1
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: --- / ---				
		Default value: ---				

3.12.90 P-0-1732, Activity hours counter

Allocation	Hardware	--				
	Funct. package(s):					
	Device parameter:					
Function	"P-0-2602.83.22" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).					
P-0-1732 - Attributes	Function:	Par	Editable:	--	Data length:	4Byte
	Memory:	COMPONENT_SP	Validity ch.:	--	Format:	DEC_OV
	Unit:	s	Extr. val. ch.:	--	Decim. pl.:	1
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: --- / ---				
		Default value: ---				

3.12.91 P-0-1733, Motor fan switch-on temperature

Allocation	Hardware	--				
	Funct. package(s):					
	Device parameter:					
Function	"P-0-3060.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).					
P-0-1733 - Attributes	Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
	Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
	Unit:	S-0-0208	Extr. val. ch.:	+	Decim. pl.:	--
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: s. Text / s. Text				
		Default value: 0				

3.12.92 P-0-1734, Speed-dependent motor shutdown temperature reduction

Allocation	Hardware	--				
	Funct. package(s):					
	Device parameter:					
Function	"P-0-3060.0.3" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).					
P-0-1734 - Attributes	Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
	Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
	Unit:	S-0-0208	Extr. val. ch.:	+	Decim. pl.:	--
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4
	AXS:	min./max.: s. Text / s. Text				
		Default value: 0				

Product-specific parameters

3.12.93 P-0-1735, Motor mounting situation

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3060.0.4" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1735 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --
		Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: Grp. 4

AXS:	min./max.: 0 / 2	Default value: 1
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3.12.94 P-0-1736, Motor shutdown temperature reduction/1000rpm

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3060.0.5" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1736 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0208 Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
		Data length: 2Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: Grp. 4

AXS:	min./max.: --- / ---	Default value: s. Text
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3.12.95 P-0-1737, Thermal parameters, motor

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3060.0.10" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1737 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
		Data length: 4Byte var. Format: DEC_MV Decim. pl.: 4 Set-depend.: Grp. 4

AXS:	min./max.: --- / ---	Default value: s. Text
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3.12.96 P-0-1739, Module/firmware history, component designation

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3915.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1739 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --

AXS:	min./max.: --- / ---	Default value: s. Text
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3.12.97 P-0-1741, Module/firmware history, cause of error

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3915.0.3" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

P-0-1741 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: --- / ---		Default value: s. Text

3.12.98 P-0-1742, C1700 Disable Parking axis procedure command

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0139.0.150" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1742 - Attributes	Function: Cmd Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS: min./max.: --- / ---	

3.12.99 P-0-1743, Parking axis, list of invalid parameters

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0139.0.151" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1743 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS: min./max.: --- / ---	

3.12.100 P-0-1744, Axis initialization status

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0139.0.152" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1744 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS: min./max.: --- / ---	

3.12.101 P-0-1745, Logbook event

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-2602.10.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1745 - Attributes	Function: Par Memory: COMPONENT_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS: min./max.: --- / ---	

Product-specific parameters

3.12.102 P-0-1746, Time stamp logbook event

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	"P-0-2602.10.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-1746 - Attributes	Function:	Par	Editable:	--	Data length: 4Byte var.
	Memory:	COMPONENT_SP	Validity ch.:	--	Format: DEC_OV
	Unit:	s	Extr. val. ch.:	--	Decim. pl.: 1
	Cycl. tra.:	--	Comb. check:	--	Set-depend.: --
	AXS:	min./max.: --- / ---		Default value: ---	

3.12.103 P-0-1747, Operating hours counter

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	"P-0-2602.10.20" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-1747 - Attributes	Function:	Par	Editable:	--	Data length: 4Byte
	Memory:	COMPONENT_SP	Validity ch.:	--	Format: DEC_OV
	Unit:	s	Extr. val. ch.:	--	Decim. pl.: 1
	Cycl. tra.:	--	Comb. check:	--	Set-depend.: --
	AXS:	min./max.: --- / ---		Default value: ---	

3.12.104 P-0-1748, Temperature sensor coefficients

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	"P-0-3060.0.6" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-1748 - Attributes	Function:	Par	Editable:	SUBD:CM	Data length: 4Byte var.
	Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format: FLOAT
	Unit:	--	Extr. val. ch.:	--	Decim. pl.: 0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.: Grp. 4
	AXS:	min./max.: --- / ---		Default value: s. Text	

3.12.105 P-0-1749, Reactive power controller, control word

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	"S-0-1709.0.160" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-1749 - Attributes	Function:	Par	Editable:	SUBD:CM+PM	Data length: 2Byte
	Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format: BIN
	Unit:	--	Extr. val. ch.:	--	Decim. pl.: 0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.: --
	AXS:	min./max.: --- / ---		Default value: s. Text	

3.12.106 P-0-1751, Component Name

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	"S-0-1019.0.140" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				

P-0-1751 - Attributes	Function:	Par	Editable:	--	Data length:	1Byte var.
	Memory:	--	Validity ch.:	--	Format:	ASCII
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS: min./max.: --- / ---					Default value: ---

3.12.107 P-0-1752, MAC address

Allocation	Hardware Funct. package(s): Device parameter:	--				
Function	"S-0-1019.10.0" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).					
P-0-1752 - Attributes	Function:	Par	Editable:	--	Data length:	1Byte var.
	Memory:	COMPONENT_SP	Validity ch.:	--	Format:	HEX
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS: min./max.: --- / ---					Default value: ---

3.12.108 P-0-1753, Component Name

Allocation	Hardware Funct. package(s): Device parameter:	--				
Function	"S-0-1019.10.140" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).					
P-0-1753 - Attributes	Function:	Par	Editable:	--	Data length:	1Byte var.
	Memory:	--	Validity ch.:	--	Format:	ASCII
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS: min./max.: --- / ---					Default value: ---

3.12.109 P-0-1754, Active IP address

Allocation	Hardware Funct. package(s): Device parameter:	--				
Function	"S-0-1020.10.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).					
P-0-1754 - Attributes	Function:	Par	Editable:	--	Data length:	1Byte var.
	Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS: min./max.: --- / ---					Default value: s. Text

3.12.110 P-0-1755, Active network mask

Allocation	Hardware Funct. package(s): Device parameter:	--				
Function	"S-0-1021.10.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).					
P-0-1755 - Attributes	Function:	Par	Editable:	--	Data length:	1Byte var.
	Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS: min./max.: --- / ---					Default value: s. Text

Product-specific parameters

3.12.111 P-0-1756, Active gateway address

Allocation	Hardware Funct. package(s): Device parameter:	--				
Function	"S-0-1022.10.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).					
P-0-1756 - Attributes	Function:	Par	Editable:	--	Data length:	1Byte var.
	Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: --- / ---		Default value: s. Text		

3.12.112 P-0-1757, Configuration of IP options

Allocation	Hardware Funct. package(s): Device parameter:	--				
Function	"S-0-1048.10.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).					
P-0-1757 - Attributes	Function:	Par	Editable:	ALWAYS	Data length:	4Byte
	Memory:	--	Validity ch.:	--	Format:	BIN
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: --- / ---		Default value: ---		

3.12.113 P-0-1758, Current IP options

Allocation	Hardware Funct. package(s): Device parameter:	--				
Function	"S-0-1048.10.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).					
P-0-1758 - Attributes	Function:	Par	Editable:	--	Data length:	4Byte
	Memory:	PARAM_SP	Validity ch.:	--	Format:	BIN
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: --- / ---		Default value: s. Text		

3.12.114 P-0-1759, EtherCAT: Frame To Sync0 Time

Allocation	Hardware Funct. package(s): Device parameter:	--				
Function	"S-0-1050.0.141" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).					
P-0-1759 - Attributes	Function:	Par	Editable:	--	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_OV
	Unit:	us	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: --- / ---		Default value: ---		

3.12.115 P-0-1761, EtherCAT: Syncmanager for diagnostics

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	"P-0-4011.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				

P-0-1761 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: 2

3.12.116 P-0-1762, EtherCAT: FMMU configuration

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"P-0-4089.0.26" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-1762 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---	

3.12.117 P-0-1763, EtherCAT: Eeprom Data

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"P-0-4089.0.27" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-1763 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---	

3.12.118 P-0-1768, Configuration permanently parked axis

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-0139.0.153" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).		
P-0-1768 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: 0x0	

3.12.119 P-0-1769, Activity hours counter supply unit

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"P-0-2602.0.23" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).		
P-0-1769 - Attributes	Function: Par Memory: COMPONENT_SP Unit: s Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---	

Product-specific parameters

3.12.120 P-0-1771, Mains angle

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	" S-0-1702.0.150 " replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1771 - Attributes	Function: Par Memory: -- Unit: degrees Cycl. tra.: AT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---

3.12.121 P-0-1772, Mains synchronization proportional gain

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	" S-0-1703.0.150 " replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1772 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: s. Text

3.12.122 P-0-1773, Mains synchronization, integral action time

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	" S-0-1703.0.151 " replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1773 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: s. Text

3.12.123 P-0-1774, Mains synchronization, derivative action time

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	" S-0-1703.0.152 " replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1774 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: s. Text

3.12.124 P-0-1775, Synchronization offset

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	" S-0-1703.0.153 " replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

P-0-1775 - Attributes	Function: Par Memory: PARAM_SP Unit: degrees Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --
	AXS: min./max.: s. Text / s. Text		Default value: s. Text

3.12.125 P-0-1776, Mains angle tolerance

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1703.0.154" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1776 - Attributes	Function: Par Memory: PARAM_SP Unit: degrees Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
	AXS: min./max.: s. Text / s. Text	

3.12.126 P-0-1777, Mains current controller, status word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1707.0.150" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1777 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS: min./max.: --- / ---	

3.12.127 P-0-1778, Mains current command value filter time constant

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1708.0.150" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1778 - Attributes	Function: Par Memory: PARAM_SP Unit: us Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
	AXS: min./max.: --- / ---	

3.12.128 P-0-1779, Mains supply configuration word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1712.0.150" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1779 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
	AXS: min./max.: --- / ---	

Product-specific parameters

3.12.129 P-0-1781, Power supply ON/OFF

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1720.0.150" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1781 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---

3.12.130 P-0-1782, Master comm. engineering over IP: Status IP communication

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-1044.10.0" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1782 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 4Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---

3.12.131 P-0-1783, Analog input, control word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-2900.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1783 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: 0x120

3.12.132 P-0-1784, Analog input, target parameter

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-2900.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-1784 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: -- Data length: 4Byte Format: IDN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: 0

3.12.133 P-0-1785, Analog input, nominal value

Allocation	Hardware Funct. package(s): Device parameter:	--
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Function	'P-0-2900.0.3" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-1785 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --	AXS:	min./max.: --- / --- Default value: 0

3.12.134 P-0-1786, Analog input, offset

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	'P-0-2900.0.4" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-1786 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --	AXS:	min./max.: --- / --- Default value: 0

3.12.135 P-0-1787, Analog input, filter time

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	'P-0-2900.0.5" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-1787 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: --	AXS:	min./max.: 0,000 / s. Text Default value: 0,000

3.12.136 P-0-1788, Analog input, lower limit of signal range

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	'P-0-2900.0.8" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-1788 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --	AXS:	min./max.: s. Text / s. Text Default value: 0,000

3.12.137 P-0-1789, Analog input, upper limit of signal range

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	'P-0-2900.0.9" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-1789 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --		

Product-specific parameters

AXS:	min./max.: s. Text / s. Text	Default value: 10,000
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3.12.138 P-0-1791, Analog input, control word

Allocation	Hardware Funct. package(s): Device parameter:	--				
Function	"P-0-2901.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).					
P-0-1791 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: Validity ch.: Extr. val. ch.: Comb. check:	ALWAYS SUBD:PM->OM -- --	Data length: Format: Decim. pl.: Set-depend.:	2Byte BIN 0 --	
	AXS: min./max.: --- / ---				Default value: 0x1000	

3.12.139 P-0-1792, C2800 Analog input adjustment command

Allocation	Hardware Funct. package(s): Device parameter:	--				
Function	"P-0-2901.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).					
P-0-1792 - Attributes	Function: Cmd Memory: -- Unit: -- Cycl. tra.: --	Editable: Validity ch.: Extr. val. ch.: Comb. check:	ALWAYS -- -- --	Data length: Format: Decim. pl.: Set-depend.:	2Byte BIN 0 --	
	AXS: min./max.: --- / ---				Default value: ---	

3.12.140 P-0-1793, Analog input, maximum value for adjustment

Allocation	Hardware Funct. package(s): Device parameter:	--				
Function	"P-0-2901.0.3" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).					
P-0-1793 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: Validity ch.: Extr. val. ch.: Comb. check:	ALWAYS SUBD:PM->OM -- --	Data length: Format: Decim. pl.: Set-depend.:	4Byte DEC_MV 0 --	
	AXS: min./max.: --- / ---				Default value: 0	

3.12.141 P-0-1794, Power limit positive

Allocation	Hardware Funct. package(s): Device parameter:	--				
Function	"S-0-1741.0.187" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).					
P-0-1794 - Attributes	Function: Par Memory: PARAM_SP Unit: W Cycl. tra.: MDT	Editable: Validity ch.: Extr. val. ch.: Comb. check:	ALWAYS SUBD:PM->OM + --	Data length: Format: Decim. pl.: Set-depend.:	4Byte DEC_MV 0 --	
	AXS: min./max.: s. Text / s. Text				Default value: s. Text	

3.12.142 P-0-1795, Power limit negative

Allocation	Hardware Funct. package(s): Device parameter:	--				
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	Function	" S-0-1741.0.188 " replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-1795 - Attributes	Function: Par Memory: PARAM_SP Unit: W Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --			
	AXS:	min./max.: s. Text / s. Text			Default value: s. Text	

3.12.143 P-0-1796, Output power actual value

	Allocation	Hardware -- Funct. package(s): Device parameter:				
	Function	" S-0-1742.0.163 " replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-1796 - Attributes	Function: Par Memory: -- Unit: W Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --			
	AXS:	min./max.: --- / ---			Default value: ---	

3.12.144 P-0-1930, J1939: Control word

	Allocation	Hardware -- Funct. package(s): Device parameter:
	Function	With active drive profile J1939, this control word can be used to switch the axis into different operation modes and to determine the target for the dynamic "SetpointReg" command value (P-0-1930.0.1 , command value).
	Structure	For the control word, only the values specified in the table are admissible. If other values are specified, error F2007 will be triggered.

Value	Designation/function	Comment
0	Power On (Passive Mode) Only admissible until a value unequal to 0 has been specified. Afterwards, "0" will trigger error F2007.	
2	Standby (Passive Mode) If the axis is switched on, it will be switched off when this mode is selected.	
7	Enable Torque Control Mode (Active Mode) Switching the axis on in the primary operation mode. The command value from " P-0-1930.0.1 " is copied to " S-0-0080 ".	Axis is switched on
8	Enable Speed Control Mode (Active Mode) Switching the axis on in the secondary operation mode 1. The command value from " P-0-1930.0.1 " is copied to " S-0-0036 ".	Axis is switched on
9	Enable DC Side Voltage Mode (Active Mode) Switching the axis on in the secondary operation mode 2. The command value from " P-0-1930.0.1 " is copied to " S-0-1706.0.1 ".	Axis is switched on

Product-specific parameters

Value	Designation/function	Comment
20	Inverter active discharge mode (Special Mode) As long as the mode is selected, the HV discharge is activated. If the mode is quit, the HV discharge is deactivated.	
21	Inverter power down command mode (Special Mode) This mode internally starts the "P-0-1634.0.10, C6900 Request Shutdown" command. The command checks whether the axis is switched off, the actual velocity = 0 and the DC bus voltage uDC < 60 V. If these conditions are met, the shutdown is initiated.	Only admissible in the "bb" status
28	Error Reset (Special Mode) Selection of this mode causes execution of the "S-0-0099, C0500 Reset class 1 diagnostics" command.	Cannot be activated from an "active mode"

Tab. 3-94: P-0-1930.0.0, J1939:control word

 The J1939: control word is only active with active J1939 drive profile (see [P-0-4084](#)).

P-0-1930 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.12.145 P-0-1930.0.1, J1939: Command value

- Allocation** Hardware --
 Funct. package(s):
 Device parameter:
- Function** The parameter is used to specify the active "SetpointReg" command value.
The target and the scaling of the command value in the drive are determined by the selected mode from "SetpointModeReq" (P-0-1930.0.0).
- Structure** The table shows the target of the command value depending on the selected mode from "P-0-1930.0.0".

Mode	Designation/function	Reference parameters
7	Torque Control Mode The command value is evaluated with the set J1939 reference parameter and copied to parameter " S-0-0080 ".	P-0-1920.0.20, J1939: Nominal torque value (0.5/100%)
8	Speed Control Mode The command value is evaluated with the set J1939 reference parameter and copied to parameter " S-0-0036 ".	P-0-1920.0.21, J1939: Nominal velocity value (4/100%)

Mode	Designation/function	Reference parameters
9	DC Side Voltage Mode The command value is evaluated with the set J1939 reference parameter and copied to parameter "S-0-1706.0.1".	P-0-1920.0.24, J1939: Nominal voltage value (0.125/100%)
others	The comm and value is not processed in the drive	

Tab. 3-95: P-0-1930.0.1, J1939: Command value

P-0-1930.0.1 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.12.146 P-0-1930.0.2, J1939: Status word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The status word (CtrlSetpointMode) displays the operating status. Drive status word (CtrlSetpointMode) with active drive profile J1939. This status word displays the operating status of the axis.	
Structure	The status word may take the values specified in the table.	

Status	Designation/function	Comment
0	Power On This status is notified if no error is pending in the device and the "OM" status has not been achieved yet.	
1	Waiting for Operational conditions This status corresponds to the "bb" condition.	
2	Standby This status corresponds to the "Ab" condition.	
7	Torque Control Mode Acknowledgment of the active "Torque Control Mode" (also as long as NC reaction is active)	Axis in control
8	Speed Control Mode Acknowledgment of the active "Speed Control Mode" (also as long as NC reaction is active)	Axis in control
9	DC Side Voltage Mode Acknowledgment of the active "DC Side Voltage Mode" (also as long as NC reaction is active)	Axis in control
19	Manufacturer specific special mode 2 Acknowledgment of an internally active status, e.g. "Easy Startup" or drive command, etc.	Axis in control
20	Inverter active discharge mode Acknowledgment of the HV discharge function	

Product-specific parameters

Status	Designation/function	Comment
21	Inverter power down command It is tried to switch the MobileX inverter into the "Sleep" condition by means of the C6900 Request Shutdown command. If this is not possible, warning E2032 is output. The acknowledgment is effected as long as the device is switched on and the mode is commanded.	
30	Error This status is notified if an error occurred in the inverter, it is still pending or has not been deleted using "ZSK1 Reset". Attention: If an error occurred an a parameterizable NC error reaction is active, status "30" must not be notified. The most recently "Active Mode" is still notified.	Axis in control as long as NC error reaction is active

Tab. 3-96: P-0-1930.0.2, J1939: Status word

 The J1939: status word is only generated with active J1939 drive profile (see [P-0-4084](#)).

P-0-1930.0.2 - Attributes	Function:	Par	Editable:	--	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_MV
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---			Default value: ---	

3.12.147 P-0-1930.0.3, J1939: Actual torque/force value

P-0-1930.0.3 - Attributes	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	Parameter to transfer the current torque/force feedback value to the J1939 profile (unit 1/16%). The value is calculated from " S-0-0084 " with the " P-0-19300..20 " reference value and limited to a maximum of 4015.				
P-0-1930.0.4 - Attributes	Function:	Par	Editable:	--	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_OV
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---			Default value: ---	

3.12.148 P-0-1930.0.4, J1939: Actual velocity value

P-0-1930.0.4 - Attributes	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	Parameter to transfer the current velocity feedback value to the J1939 profile (unit 1/256%). The value is calculated from " S-0-0040 " with the " P-0-1930.0.21 " reference value and limited to a maximum of 64255.				
P-0-1930.0.4 - Attributes	Function:	Par	Editable:	--	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_OV
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---			Default value: ---	

3.12.149 P-0-1930.0.5, J1939: Actual DC bus current

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	Parameter to transfer the current DC bus current to the J1939 profile (unit 1/16%).	The value is calculated from " S-0-0381 " with the " P-0-1930.0.23 " reference value and limited to a maximum of 4015.	
P-0-1930.0.5 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.12.150 P-0-1930.0.6, J1939: Actual DC bus voltage

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	Parameter to transfer the current DC bus voltage to the J1939 profile (unit 1/16%).	The value is calculated from " S-0-0380 " with the " P-0-1930.0.24 " reference value and limited to a maximum of 4015.	
P-0-1930.0.6 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.12.151 P-0-1930.0.7, J1939: Motor temperature 1

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The parameter displays the current motor temperature of sensor 1 (unit: Degrees Celsius, offset: -40 °C, value range: -40 °C to 210 °C). If the measurement is not supported, value 255 is displayed.		
P-0-1930.0.7 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.12.152 P-0-1930.0.8, J1939: Motor temperature 2

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The parameter displays the current motor temperature of sensor 2 (unit: Degrees Celsius, offset: -40 °C, value range: -40 °C to 210 °C). If the measurement is not supported, value 255 is displayed.		
P-0-1930.0.8 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --

Product-specific parameters

AXS:	min./max.: --- / ---	Default value: ---
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3.12.153 P-0-1930.0.9, J1939: Motor temperature 3

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	The value is not supported. 0x00ff is always returned.				
P-0-1930.0.9 - Attributes	Function:	Par	Editable:	--	Data length: 2Byte
	Memory:	--	Validity ch.:	--	Format: DEC_OV
	Unit:	--	Extr. val. ch.:	--	Decim. pl.: 0
	Cycl. tra.:	AT	Comb. check:	--	Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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3.12.154 P-0-1930.0.10, J1939: Motor temperature 4

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	The value is not supported. 0x00ff is always returned.				
P-0-1930.0.10 - Attributes	Function:	Par	Editable:	--	Data length: 2Byte
	Memory:	--	Validity ch.:	--	Format: DEC_OV
	Unit:	--	Extr. val. ch.:	--	Decim. pl.: 0
	Cycl. tra.:	AT	Comb. check:	--	Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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3.12.155 P-0-1930.0.11, J1939: Thermal motor load

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	The parameter displays the current thermal load of the motor (unit: Degrees 0.5%, offset: 0, value range: 0 to 125%).				
P-0-1930.0.11 - Attributes	Function:	Par	Editable:	--	Data length: 2Byte
	Memory:	--	Validity ch.:	--	Format: DEC_OV
	Unit:	--	Extr. val. ch.:	--	Decim. pl.: 0
	Cycl. tra.:	AT	Comb. check:	--	Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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3.12.156 P-0-1930.0.12, J1939: Amplifier temperature 1

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	The parameter displays the current amplifier temperature. Unit: Degrees Celsius, offset: -40 °C, value range: -40 °C to 210 °C. If the measurement is not supported, value 255 is displayed.				
P-0-1930.0.12 - Attributes	Function:	Par	Editable:	--	Data length: 2Byte
	Memory:	--	Validity ch.:	--	Format: DEC_OV
	Unit:	--	Extr. val. ch.:	--	Decim. pl.: 0
	Cycl. tra.:	AT	Comb. check:	--	Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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3.12.157 P-0-1930.0.13, J1939: Amplifier temperature 2

Allocation	Hardware Funct. package(s): Device parameter:	--
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Function	The parameter displays the current amplifier temperature of sensor 2 (unit: Degrees Celsius, offset: -40 °C, value range: -40 °C to 210 °C). If the measurement is not supported, value 255 is displayed.																											
P-0-1930.0.13 - Attributes	<table border="1"> <tr> <td>Function:</td><td>Par</td> <td>Editable:</td><td>--</td> <td>Data length:</td><td>2Byte</td> </tr> <tr> <td>Memory:</td><td>--</td> <td>Validity ch.:</td><td>--</td> <td>Format:</td><td>DEC_OV</td> </tr> <tr> <td>Unit:</td><td>--</td> <td>Extr. val. ch.:</td><td>--</td> <td>Decim. pl.:</td><td>0</td> </tr> <tr> <td>Cycl. tra.:</td><td>AT</td> <td>Comb. check:</td><td>--</td> <td>Set-depend.:</td><td>--</td> </tr> </table>				Function:	Par	Editable:	--	Data length:	2Byte	Memory:	--	Validity ch.:	--	Format:	DEC_OV	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
Function:	Par	Editable:	--	Data length:	2Byte																							
Memory:	--	Validity ch.:	--	Format:	DEC_OV																							
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																							
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--																							
AXS:	min./max.: --- / ---		Default value: ---																									

3.12.158 P-0-1930.0.14, J1939: Amplifier temperature 3

Allocation	Hardware Funct. package(s): Device parameter:	--																								
Function	The value is not supported. The value "255" is continuously displayed.																									
P-0-1930.0.14 - Attributes	<table border="1"> <tr> <td>Function:</td><td>Par</td> <td>Editable:</td><td>--</td> <td>Data length:</td><td>2Byte</td> </tr> <tr> <td>Memory:</td><td>--</td> <td>Validity ch.:</td><td>--</td> <td>Format:</td><td>DEC_OV</td> </tr> <tr> <td>Unit:</td><td>--</td> <td>Extr. val. ch.:</td><td>--</td> <td>Decim. pl.:</td><td>0</td> </tr> <tr> <td>Cycl. tra.:</td><td>AT</td> <td>Comb. check:</td><td>--</td> <td>Set-depend.:</td><td>--</td> </tr> </table>		Function:	Par	Editable:	--	Data length:	2Byte	Memory:	--	Validity ch.:	--	Format:	DEC_OV	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
Function:	Par	Editable:	--	Data length:	2Byte																					
Memory:	--	Validity ch.:	--	Format:	DEC_OV																					
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																					
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--																					
AXS:	min./max.: --- / ---	Default value: ---																								

3.12.159 P-0-1930.0.15, J1939: Amplifier temperature 4

Allocation	Hardware Funct. package(s): Device parameter:	--																								
Function	The value is not supported. The value "255" is continuously displayed.																									
P-0-1930.0.15 - Attributes	<table border="1"> <tr> <td>Function:</td><td>Par</td> <td>Editable:</td><td>--</td> <td>Data length:</td><td>2Byte</td> </tr> <tr> <td>Memory:</td><td>--</td> <td>Validity ch.:</td><td>--</td> <td>Format:</td><td>DEC_OV</td> </tr> <tr> <td>Unit:</td><td>--</td> <td>Extr. val. ch.:</td><td>--</td> <td>Decim. pl.:</td><td>0</td> </tr> <tr> <td>Cycl. tra.:</td><td>AT</td> <td>Comb. check:</td><td>--</td> <td>Set-depend.:</td><td>--</td> </tr> </table>		Function:	Par	Editable:	--	Data length:	2Byte	Memory:	--	Validity ch.:	--	Format:	DEC_OV	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
Function:	Par	Editable:	--	Data length:	2Byte																					
Memory:	--	Validity ch.:	--	Format:	DEC_OV																					
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																					
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--																					
AXS:	min./max.: --- / ---	Default value: ---																								

3.12.160 P-0-1930.0.16, J1939: Thermal amplifier load

Allocation	Hardware Funct. package(s): Device parameter:	--																								
Function	The parameter displays the current amplifier load (unit: Degrees 0.5%, offset: 0, value range: 0 to 125%).																									
P-0-1930.0.16 - Attributes	<table border="1"> <tr> <td>Function:</td><td>Par</td> <td>Editable:</td><td>--</td> <td>Data length:</td><td>2Byte</td> </tr> <tr> <td>Memory:</td><td>--</td> <td>Validity ch.:</td><td>--</td> <td>Format:</td><td>DEC_OV</td> </tr> <tr> <td>Unit:</td><td>--</td> <td>Extr. val. ch.:</td><td>--</td> <td>Decim. pl.:</td><td>0</td> </tr> <tr> <td>Cycl. tra.:</td><td>AT</td> <td>Comb. check:</td><td>--</td> <td>Set-depend.:</td><td>--</td> </tr> </table>		Function:	Par	Editable:	--	Data length:	2Byte	Memory:	--	Validity ch.:	--	Format:	DEC_OV	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
Function:	Par	Editable:	--	Data length:	2Byte																					
Memory:	--	Validity ch.:	--	Format:	DEC_OV																					
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																					
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--																					
AXS:	min./max.: --- / ---	Default value: ---																								

3.12.161 P-0-1930.0.20, J1939: Nominal torque (0.5/100%)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The reference parameter (torque standardization according to J1939) is necessary to calculate the standardization factors for the relative torque command values, limit values and actual values. With the maximum value of 64255 and the evaluation of 0.5 Nm/100%, a possible setting range from 0 - 32127.5 Nm/100% results.	

Product-specific parameters

 All relative J1939 torque parameters refer to the setting in "[P-0-1930.0.20](#)".

P-0-1930.0.20 - Attributes	Function: Par	Editable: SUBD:CM	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: SUBD:CM->PM	Format: DEC_OV
	Unit: Nm	Extr. val. ch.: +	Decim. pl.: 0
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --
AXS:	min./max.: 0 / 64255		Default value: 200

3.12.162 P-0-1930.0.21, J1939: Nominal speed (4/100%)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The reference parameter (velocity standardization according to J1939) is necessary to calculate the standardization factors for the relative velocity command values, limit values and actual values.	
	With the maximum value of 64255 and the evaluation of 4 r/min/100%, a possible setting range from 0 - 257020 r/min/100% results.	
	 All relative J1939 velocity parameters refer to the setting in " P-0-1930.0.21 ".	

P-0-1930.0.21 - Attributes	Function: Par	Editable: SUBD:CM	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: SUBD:CM->PM	Format: DEC_OV
	Unit: rpm	Extr. val. ch.: +	Decim. pl.: 0
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --
AXS:	min./max.: 0 / 64255		Default value: 1250

3.12.163 P-0-1930.0.22, J1939: Nominal power (62.5/100%)

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The reference parameter (power standardization according to J1939) is necessary to calculate the standardization factors for the relative power command values, limit values and actual values.		
	With the maximum value of 64255 and the evaluation of 62.5 W/100%, a possible setting range from 0 - 4015938.5 W/100% results.		
	 All relative J1939 power parameters refer to the setting in " P-0-1930.0.22 ".		
P-0-1930.0.22 - Attributes	Function: Par	Editable: SUBD:CM	Data length: 2Byte

	Memory: PARAM_SP	Validity ch.: SUBD:CM->PM	Format: DEC_OV
	Unit: W	Extr. val. ch.: +	Decim. pl.: 0
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --
AXS:	min./max.: 0 / 64255		Default value: 16

3.12.164 P-0-1930.0.23, J1939: Nominal current (0.125/100%)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The reference parameter (current standardization according to J1939) is necessary to calculate the standardization factors for the relative current command values, limit values and actual values.	

With the maximum value of 64255 and the evaluation of 0.125 A/100%, a possible setting range from 0 - 8031.875 A/100% results.



All relative J1939 current parameters refer to the setting in "[P-0-1930.0.23](#)".

P-0-1930.0.23 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	A	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: 0 / 64255

Default value: 800

3.12.165 P-0-1930.0.24, J1939: Nominal voltage (0.125/100%)

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

The reference parameter (voltage standardization according to J1939) is necessary to calculate the standardization factors for the relative voltage command values, limit values and actual values.

With the maximum value of 64255 and the evaluation of 0.125 V/100%, a possible setting range from 0 - 8031.875 V/100% results.



All relative J1939 voltage parameters refer to the setting in "[P-0-1930.0.24](#)".

P-0-1930.0.24 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	V	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: 0 / 64255

Default value: 8000

3.12.166 P-0-1931.0.1, J1939: Selection of cyclic limit values

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

The transferred values determine the limit values of [P-0-1931.0.2](#) and [P-0-1931.0.3](#).



After writing [P-0-1931.0.1](#), the limit values [P-0-1931.0.2](#) and [P-0-1931.0.3](#) must subsequently be written.

Product-specific parameters

Structure	Bit	Designation/function	Comment
	3-0	<p>0: Dynamic fast limit values are not active: The subsequently transferred fast dynamic values "P-0-1931.0.2" and "P-0-1931.0.3" are ignored. The limit values for torque, velocity, power, DC bus current and DC bus voltage are reset to the dynamic limit values.</p> <p>1 = Torque Limits Mode</p> <p>2 = Speed Limits Mode</p> <p>3 = DC Side Voltage Limits Mode (evaluation by technology function)</p> <p>4 = DC Side Current Limits Mode</p> <p>5 = DC Side Power Limits Mode</p> <p>6 = Mechanical Power Limits Mode is not supported The subsequently transferred fast dynamic values "P-0-1931.0.2" and "P-0-1931.0.3" are ignored. The corresponding limit values for torque, velocity, power, DC bus current and DC bus voltage are reset to the limit values.</p> <p>No warning E2002 is displayed.</p> <p>7 to 13: SAE Reserved The subsequently transferred fast dynamic values "P-0-1931.0.2" and "P-0-1931.0.3" are ignored. The corresponding limit values for torque, velocity, power, DC bus current and DC bus voltage are reset to the dynamic limit values.</p> <p>No warning E2002 is displayed.</p> <p>14: Error The warning "E2002 parameter outside of valid value range" is output. The subsequently transferred fast dynamic values "P-0-1931.0.2" and "P-0-1931.0.3" still act on the previously valid, transferred target values.</p> <p>15: Not Available - no change in pre-selection The subsequently transferred fast dynamic values "P-0-1931.0.2" and "P-0-1931.0.3" are ignored. The corresponding limit values for torque, velocity, power, DC bus current and DC bus voltage are reset to the limit values.</p>	

Tab. 3-97: P-0-1931.0.1, Selection of cyclic limit values

P-0-1931.0.1 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---		Default value: ---	

3.12.167 P-0-1931.0.2, J1939: Cyclic limit value, positive

Allocation	Hardware
Funct. package(s):	--
Device parameter:	

Function	Positive limit value for the limit value according to J1939 profile preselected in " P-0-1931.0.1 " (unit 1/16%). The parameter is transferred in the fast cyclic telegram and overwrites the preselected limit value. The reference values are:																												
	<ul style="list-style-type: none"> • P-0-1930.0.20: in case of torque limit value pre-selection • P-0-1930.0.21: in case of velocity limit value pre-selection • P-0-1930.0.22: in case of power limit value pre-selection • P-0-1930.0.23: in case of current limit value pre-selection • P-0-1930.0.24: in case of voltage limit value pre-selection 																												
P-0-1931.0.2 - Attributes	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Function:</td> <td>Par</td> <td>Editable:</td> <td>ALWAYS</td> <td>Data length:</td> <td>2Byte</td> </tr> <tr> <td>Memory:</td> <td>--</td> <td>Validity ch.:</td> <td>--</td> <td>Format:</td> <td>DEC_OV</td> </tr> <tr> <td>Unit:</td> <td>--</td> <td>Extr. val. ch.:</td> <td>--</td> <td>Decim. pl.:</td> <td>0</td> </tr> <tr> <td>Cycl. tra.:</td> <td>MDT</td> <td>Comb. check:</td> <td>--</td> <td>Set-depend.:</td> <td>--</td> </tr> </table>					Function:	Par	Editable:	ALWAYS	Data length:	2Byte	Memory:	--	Validity ch.:	--	Format:	DEC_OV	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--
Function:	Par	Editable:	ALWAYS	Data length:	2Byte																								
Memory:	--	Validity ch.:	--	Format:	DEC_OV																								
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																								
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--																								
	AXS: min./max.: --- / --- Default value: ---																												

3.12.168 P-0-1931.0.3, J1939: Cyclic limit value, negative

Allocation	Hardware Funct. package(s): Device parameter:	--																								
Function	Negative limit value for the limit value according to J1939 profile preselected in " P-0-1931.0.1 " (unit 1/16%). The parameter is transferred in the fast cyclic telegram and overwrites the preselected limit value.																									
	The reference values are:																									
	<ul style="list-style-type: none"> • P-0-1930.0.20: in case of torque limit value pre-selection • P-0-1930.0.21: in case of velocity limit value pre-selection • P-0-1930.0.22: in case of power limit value pre-selection • P-0-1930.0.23: in case of current limit value pre-selection • P-0-1930.0.24: in case of voltage limit value pre-selection 																									
P-0-1931.0.3 - Attributes	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Function:</td> <td>Par</td> <td>Editable:</td> <td>ALWAYS</td> <td>Data length:</td> <td>2Byte</td> </tr> <tr> <td>Memory:</td> <td>--</td> <td>Validity ch.:</td> <td>--</td> <td>Format:</td> <td>DEC_OV</td> </tr> <tr> <td>Unit:</td> <td>--</td> <td>Extr. val. ch.:</td> <td>--</td> <td>Decim. pl.:</td> <td>0</td> </tr> <tr> <td>Cycl. tra.:</td> <td>MDT</td> <td>Comb. check:</td> <td>--</td> <td>Set-depend.:</td> <td>--</td> </tr> </table>		Function:	Par	Editable:	ALWAYS	Data length:	2Byte	Memory:	--	Validity ch.:	--	Format:	DEC_OV	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--
Function:	Par	Editable:	ALWAYS	Data length:	2Byte																					
Memory:	--	Validity ch.:	--	Format:	DEC_OV																					
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																					
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--																					
	AXS: min./max.: --- / --- Default value: ---																									

3.12.169 P-0-1931.0.4, J1939: Torque limit value, positive

Allocation	Hardware Funct. package(s): Device parameter:	--																								
Function	Parameter to transfer the "positive torque limit value" to the J1939 profile (unit 1/16%). Parameter " P-0-1930.0.20 " is the reference value.																									
	The parameter overwrites the parameter " S-0-0082 , Torque/force limit value positive".																									
P-0-1931.0.4 - Attributes	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Function:</td> <td>Par</td> <td>Editable:</td> <td>ALWAYS</td> <td>Data length:</td> <td>2Byte</td> </tr> <tr> <td>Memory:</td> <td>--</td> <td>Validity ch.:</td> <td>--</td> <td>Format:</td> <td>DEC_OV</td> </tr> <tr> <td>Unit:</td> <td>--</td> <td>Extr. val. ch.:</td> <td>--</td> <td>Decim. pl.:</td> <td>0</td> </tr> <tr> <td>Cycl. tra.:</td> <td>MDT</td> <td>Comb. check:</td> <td>--</td> <td>Set-depend.:</td> <td>--</td> </tr> </table>		Function:	Par	Editable:	ALWAYS	Data length:	2Byte	Memory:	--	Validity ch.:	--	Format:	DEC_OV	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--
Function:	Par	Editable:	ALWAYS	Data length:	2Byte																					
Memory:	--	Validity ch.:	--	Format:	DEC_OV																					
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																					
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--																					
	AXS: min./max.: --- / --- Default value: ---																									

Product-specific parameters

3.12.170 P-0-1931.0.5, J1939: Torque limit value, negative

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Parameter to transfer the "negative torque limit value" to the J1939 profile (unit 1/16%). Parameter " P-0-1930.0.20 " is the reference value.	
	The parameter overwrites the parameter " S-0-0083 , Torque/force limit value negative".	
P-0-1931.0.5 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: ---

3.12.171 P-0-1931.0.6, J1939: Velocity limit value, positive

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Parameter to transfer the "positive velocity limit value" to the J1939 profile (unit 1/16%). Parameter " P-0-1930.0.21 " is the reference value.	
	The parameter overwrites the parameter " S-0-0038 , Positive velocity limit value".	
P-0-1931.0.6 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: ---

3.12.172 P-0-1931.0.7, J1939: Velocity limit value, negative

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Parameter to transfer the "negative velocity limit value" to the J1939 profile (unit 1/16%). Parameter " P-0-1930.0.21 " is the reference value.	
	The parameter overwrites the parameter " S-0-0039 , Negative velocity limit value".	
P-0-1931.0.7 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: ---

3.12.173 P-0-1931.0.8, J1939: Mechanical power limit value, positive

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter is currently not supported by the firmware.	
P-0-1931.0.8 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: ---

3.12.174 P-0-1931.0.9, J1939: Mechanical power limit value, negative

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter is currently not supported by the firmware.	
P-0-1931.0.9 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.12.175 P-0-1931.0.10, J1939: DC bus power, positive limit value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Parameter to transfer the "positive DC bus power limit value" to the J1939 profile (unit 1/16%). Parameter " P-0-1930.0.22 " is the reference value. The parameter overwrites the parameter " S-0-0561 , Power limit value: Withdrawal from DC bus".	
P-0-1931.0.10 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.12.176 P-0-1931.0.11, J1939: DC bus power, negative limit value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Parameter to transfer the "negative DC bus power limit value" to the J1939 profile (unit 1/16%). Parameter " P-0-1930.0.22 " is the reference value. The parameter overwrites the parameter " S-0-0562 , Power limit value: Supply to DC bus".	
P-0-1931.0.11 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.12.177 P-0-1931.0.12, J1939: DC bus voltage, positive limit value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Parameter to transfer the "positive DC bus voltage limit value" to the J1939 profile (unit 1/16%). Parameter " P-0-1930.0.24 " is the reference value. The parameter overwrites the parameter " S-0-1708.0.152 , Lower DC bus voltage threshold".	
P-0-1931.0.12 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

Product-specific parameters

3.12.178 P-0-1931.0.13, J1939: DC bus voltage, negative limit value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Parameter to transfer the "negative DC bus voltage limit value" to the J1939 profile (unit 1/16%). Parameter " P-0-1930.0.24 " is the reference value.	
	The parameter overwrites the parameter " S-0-1708.0.153 , Upper DC bus voltage threshold".	
P-0-1931.0.13 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.12.179 P-0-1931.0.14, J1939: DC bus current, positive limit value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Parameter to transfer the "positive DC bus current limit value" to the J1939 profile (unit 1/16%). Parameter " P-0-1930.0.23 " is the reference value.	
	The parameter overwrites the parameter " S-0-0563 , DC bus current limit value, withdrawal."	
P-0-1931.0.14 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: +
	AXS:	min./max.: --- / --- Default value: ---

3.12.180 P-0-1931.0.15, J1939: DC bus current, negative limit value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Parameter to transfer the "negative DC bus current limit value" to the J1939 profile (unit 1/16%). Parameter " P-0-1930.0.23 " is the reference value.	
	The parameter overwrites the parameter " S-0-0564 , DC bus current limit value, feed-in".	
P-0-1931.0.15 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.12.181 P-0-1932.0.1, J1939: Status of control limits override mode

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Feedback for the fast limitations, i.e. the limit values written in the parameters " P-0-1931.0.2 " and " P-0-1931.0.3 " are torque, velocity, voltage, current and power limit values.	
Structure	Status word fast limit values	

Bit	Designation/function	Comment
3 to 0	1 = Torque Limits mode active 2 = Speed Limits mode active 3 = DC Side Voltage Limits mode active. Evaluation by TechFunc 4 = DC Side Current Limits Mode aktiv 5 = DC Side Power Limits mode active 15 = is not supported (P-0-1931.0.1)	

Tab. 3-98: P-0-1932.0.1, Status word limit value override

P-0-1932.0.1 - Attributes	Function:	Par	Editable:	--	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_OV
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
	AXS:		min./max.:	--- / ---	Default value:	---

3.12.182 P-0-1932.0.2, J1939: HVIL status

P-0-1932.0.2 - Attributes	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	The parameter is currently not supported in the firmware. The value "3" is continuously displayed.				
	Function:	Par	Editable:	--	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_OV
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
	AXS:		min./max.:	--- / ---	Default value:	---

3.12.183 P-0-1932.0.3, J1939: Available mech. power, positive

P-0-1932.0.3 - Attributes	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	The parameter displays which power could be output to the motor shaft with the currently available maximum torque and the current velocity (unit 1/16%). Parameter " P-0-1930.0.22 " is the reference value.				
	Function:	Par	Editable:	--	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_OV
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
	AXS:		min./max.:	--- / ---	Default value:	---

3.12.184 P-0-1932.0.4, J1939: Available mech. power, negative

P-0-1932.0.4 - Attributes	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	The parameter displays which power could be decelerated at the motor shaft with the currently available maximum torque and the current velocity (unit 1/16%). Parameter " P-0-1930.0.22 " is the reference value.				
	Function:	Par	Editable:	--	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_OV
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

Product-specific parameters

AXS:	min./max.: --- / ---	Default value: ---
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3.12.185 P-0-1932.0.5, J1939: Available DC bus power, positive

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The parameter displays which power could be removed from the DC bus with the currently available maximum torque and the current velocity (unit 1/16%). Parameter " P-0-1930.0.22 " is the reference value.		
P-0-1932.0.5 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS: min./max.: --- / --- Default value: ---			

3.12.186 P-0-1932.0.6, J1939: Available DC bus power, negative

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The parameter displays which power could be fed into the DC bus with the currently available maximum torque and the current velocity (unit 1/16%). Parameter " P-0-1930.0.22 " is the reference value.		
P-0-1932.0.6 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS: min./max.: --- / --- Default value: ---			

3.12.187 P-0-1932.0.7, J1939: Available torque, positive

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The parameter shows which torque is currently available in positive direction. (Unit 1/16%). Parameter " P-0-1930.0.20 " is the reference value. With a currently positive speed, this is a motor torque, with a currently negative speed, it is a generator torque.		
P-0-1932.0.7 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS: min./max.: --- / --- Default value: ---			

3.12.188 P-0-1932.0.8, J1939: Available torque, negative

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The parameter shows which torque is currently available in negative direction (unit 1/16%). Parameter " P-0-1930.0.20 " is the reference value. With a currently positive speed, this is a generator torque, with a currently negative speed, it is a motor torque.		
P-0-1932.0.8 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS: min./max.: --- / --- Default value: ---			

AXS:	min./max.: --- / ---	Default value: ---
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3.12.189 P-0-1932.0.9, J1939: Current velocity limit value, positive

Allocation	Hardware Funct. package(s): Device parameter:			--
Function	The parameter shows which velocity limit value is currently effective in positive direction (unit 1/16%). Parameter "P-0-1930.0.21" is the reference value.			
P-0-1932.0.9 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT			
	Editable: --	Validity ch.: --	Extr. val. ch.: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: --- / ---			Default value: ---

3.12.190 P-0-1932.0.10, J1939: Current velocity limit value, negative

Allocation	Hardware Funct. package(s): Device parameter:			--
Function	The parameter shows which velocity limit value is currently effective in negative direction (unit 1/16%). Parameter "P-0-1930.0.21" is the reference value.			
P-0-1932.0.10 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --		Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: --- / ---			Default value: ---

3.12.191 P-0-1932.0.11, J1939: Available DC bus current, positive

Allocation	Hardware Funct. package(s): Device parameter:			--
Function	The parameter shows which DC bus current limit value is currently effective in motor operation (unit 1/16%). Parameter "P-0-1930.0.22" is the reference value.			
	The value is calculated from the current power limit value of the motor considering the current DC bus voltage.			
P-0-1932.0.11 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --		Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: --- / ---			Default value: ---

3.12.192 P-0-1932.0.12, J1939: Available DC bus current, negative

Allocation	Hardware Funct. package(s): Device parameter:			--
Function	The parameter shows which DC bus current limit value is currently effective in generator operation (unit 1/16%). Parameter "P-0-1930.0.23" is the reference value.			
	The value is calculated from the current power limit value of the motor considering the current DC bus voltage.			

Product-specific parameters

P-0-1932.0.12 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.12.193 P-0-1932.0.13, J1939: Current voltage limit value, positive

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter displays the current maximum DC bus voltage command value. Parameter "P-0-1930.0.24" is the reference value.	
P-0-1932.0.13 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

3.12.194 P-0-1932.0.14, J1939: Current voltage limit value, negative

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter displays the current minimum DC bus voltage command value. Parameter "P-0-1930.0.24" is the reference value.	
P-0-1932.0.14 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

3.12.195 P-0-1932.0.15, J1939: Current maximum torque, positive

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter shows the maximum torque in positive direction which could be currently provided by the motor/amplifier combination with the external limitations.	
P-0-1932.0.15 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

3.12.196 P-0-1932.0.16, J1939: Current maximum torque, negative

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter shows the maximum torque in negative direction which could be currently accepted by the motor/amplifier combination with the external limitations.	
P-0-1932.0.16 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --

AXS:	min./max.: --- / ---	Default value: ---
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3.12.197 P-0-1932.0.17, J1939: Status limitations 1

Allocation Function Structure	Hardware Funct. package(s): Device parameter: The parameters shows the status of the currently effective limitations.	
Bit	Designation/function	Comment
1/0	The output power is limited due to an unknown cause 11: the message is not supported	
3/2	Limitation of the output power due to the DC bus current maximum 00: The positive DC bus current limit value does currently not have a limiting effect 01: The positive DC bus current limit value is currently limiting the output power 10: not supported 11: The status information is currently not available	Derived from P-0-0445 bit 29
5/4	Limitation of the output power due to the DC bus current minimum 00: The negative DC bus current limit value does currently not have a limiting effect 01: The negative DC bus current limit value is currently limiting the output power 10: not supported 11: The status information is currently not available	Derived from P-0-0445 bit 30
7/6	Limitation of the output power due to the DC bus voltage maximum 00: The positive DC bus voltage limit value does currently not have a limiting effect 01: The positive DC bus voltage limit value is currently limiting the output power 10: not supported 11: The status information is currently not available	Power limitation due to DC bus overvoltage E8025 -> bit supports P-0-0046 current controller status bit 2
9/8	Limitation of the output power due to the DC bus voltage minimum 11: The status information is currently not available	
11/10	Limitation of the output power due to the maximum of the mechanical power limit value 11: The status information is currently not available	
13/12	Limitation of the output power due to the minimum of the mechanical power limit value 11: The status information is currently not available	

Product-specific parameters

Bit	Designation/function	Comment
15/14	Limitation of the output power due to the DC bus power maximum 00: The motor DC bus power limit value does currently not have a limiting effect 01: The motor DC bus power limit value is currently limiting the output power 10: not supported 11: The status information is currently not available	Derived from P-0-0445 bit 27
17/16	Limitation of the output power due to the DC bus power minimum 00: The generator DC bus power limit value does currently not have a limiting effect 01: The generator DC bus power limit value is currently limiting the output power 10: not supported 11: The status information is currently not available	Derived from P-0-0445 bit 28
19/18	Limitation of the output power due to the torque limit value maximum 00: The positive torque limit value does currently not have a limiting effect 01: The positive torque limit value is currently limiting the output power 10: not supported 11: The status information is currently not available	Derived from P-0-0445 bit 16
21/20	Limitation of the output power due to the torque limit value minimum 00: The negative torque limit value does currently not have a limiting effect 01: The negative torque limit value is currently limiting the output power 10: not supported 11: The status information is currently not available	Derived from P-0-0445 bit 11
23/22	Limitation of the output power due to the velocity limit value maximum 11: The status information is currently not available	
25/24	Limitation of the output power due to the velocity limit value minimum 11: The status information is currently not available	

Bit	Designation/function	Comment
27/26	Limitation of the output power due to the amplifier load and/or overtemperature 00: The amplifier temperature and/or the amplifier load does currently not have a limiting effect 01: The amplifier temperature and/or the amplifier load is currently limiting the output power 10: not supported 11: The status information is currently not available	Derived from P-0-0445 bit 8
29/28	Limitation of the output power due to the motor load and/or overtemperature 00: The motor temperature and/or the motor load does currently not have a limiting effect 01: The motor temperature and/or the motor load is currently limiting the output power 10: not supported 11: The status information is currently not available	Derived from P-0-0445 bit 9
31/30	Limitation of the output power due to an error state 11: The status information is currently not available	

Tab. 3-99: P-0-1939.0.17, Status limitations 1

P-0-1932.0.17 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---		Default value: ---	

3.12.198 P-0-1932.0.18, J1939: Status limitations 2

Allocation Hardware
 Funct. package(s): --
 Device parameter:

Function The parameters shows the status of the currently effective limitations.

Product-specific parameters

Structure	Bit	Designation/function	Comment
	1.0	Output power depending on the torque rate limitation 00: does currently not have a limiting effect 01: is currently limiting the output power 10: not supported 11: Message is not supported	P-0-0445 Bit 19
	3.2	Output power depending on the maximum velocity change 00: does currently not have a limiting effect 01: is currently limiting the output power 10: not supported 11: the message is not supported	
	5.4	Output power depending on the motor control and/or motor characteristics (e.g. field weakening) 00: does currently not have a limiting effect 01: are currently limiting the output power 10: not supported 11: Status information is currently not available	P-0-0445 Bit 10

Tab. 3-100: P-0-1932.x.18, Status limitations 2

P-0-1932.0.18 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

3.12.199 P-0-1933, J1939: Standardized proportional gain (Kpn)

Allocation Hardware
 Funct. package(s):
 Device parameter: --

Function Using this parameter, the standardized proportional gain of the velocity controller can be parameterized while the J1939 application profile is active (unit 1/16 (%/%)). The reference value (%/%) is the quotient of parameter "P-0-1930.0.20" divided by parameter "P-0-1930.0.21".

The parameters "P-0-1933.0.0" and "P-0-1933.0.1" are used to calculate the parameters "S-0-0100" and "S-0-0101" and overwrite them in the RAM. 0 can be used to deactivate the controller. The P-term and I-term of the controller will then remain 0 until the controller is re-activated.

With OFBFh, the manufacturer-specific proportional gain of the controller can be re-activated. It is calculated upon switch-on from the parameter "S-0-0100" stored in the flash.

P-0-1933 - Attributes	Function:	Par	Editable:	ALWAYS	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	HEX
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

3.12.200 P-0-1933.0.1, J1939: Standardized integral gain (Kin)

Allocation Hardware
 Funct. package(s):
 Device parameter: --

Function Using this parameter, the standardized integral gain of the velocity controller can be parameterized while the J1939 application profile is active (unit 1/64 (%/%) s). The reference value (%/%) is the quotient of parameter "[P-0-1930.0.20](#)" divided by parameter "[P-0-1930.0.21](#)".

The parameters "[P-0-1933.0.0](#)" and "[P-0-1933.0.1](#)" are used to calculate the parameters "[S-0-0100](#)" and "[S-0-0101](#)" and overwrite them in the RAM. 0 or FB00h can be used to deactivate the I-term of the controller. The I-term of the controller will then remain 0 until the controller is re-activated.

FB01h can be used for the one-time zeroing of the I-term of the controller. This does not have any effect on the integral gain of the controller and the I-term will also be calculated again directly afterwards.

With FBFFh, the manufacturer-specific integral gain of the controller can be re-activated. It is calculated upon switch-on from the parameters "[S-0-0100](#)" and "[S-0-0101](#)" stored in the flash.

P-0-1933.0.1 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.12.201 P-0-1933.0.2, J1939: Standardized differential gain (Kdn)**Allocation**

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter displays the content of the related J1939 object. As this function is currently not supported, there is no further processing of the data in the firmware.

P-0-1933.0.2 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.12.202 P-0-1933.0.3, J1939: Absolute torque change limitation**Allocation**

Hardware --
Funct. package(s):
Device parameter:

Function

Using this parameter, the absolute torque change limitation can be parameterized while the J1939 application profile is active (unit 2%/ s). Parameter "[P-0-1930.0.20](#)" is the reference value. With active J1939 profile in Torque Control Mode, this limitation acts on the command value transferred by the superior control and with active velocity controller (e.g. in Speed Control Mode) on the torque command value generated there.

From these parameters, the parameters "[S-0-0822](#)" and "[S-0-0823](#)" are calculated and overwritten in the RAM. With 0FBFh, the manufacturer-specific absolute torque change limitation can be re-activated. It is calculated upon switch-on from the parameters "[S-0-0822](#)" and "[S-0-0823](#)" stored in the flash. The absolute torque change limitation is calculated from parameters "[S-0-0822](#)" and "[S-0-0823](#)" by reading the parameter.

P-0-1933.0.3 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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Product-specific parameters

3.12.203 P-0-1933.0.4, J1939: Absolute velocity change limitation

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Using this parameter, the absolute velocity change limitation can be specified while the J1939 application profile is active (unit 1/4%/s). Parameter "P-0-1930.0.21" is the reference value. With active J1939 profile in Speed Control Mode, this limitation acts on the target command value transferred by the superior control as acceleration and deceleration limitation.	
	From these parameters, the parameters "S-0-1203" and "S-0-1213" are calculated and overwritten in the RAM. With 0FBFh, the manufacturer-specific, active, absolute velocity change limitation can be re-activated. It is calculated upon switch-on from the parameter "S-0-1203" stored in the flash and contains the parameter stored in the flash.	
	The absolute velocity change limitation is generated from parameters "P-0-1203" and "P-0-1213" by reading the parameter while the Speed Control Mode is active. Outside the Speed Control Mode, the limitation is not active and reading the parameter returns 0FFFh.	
P-0-1933.0.4 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: --- / ---	Default value: ---

3.12.204 P-0-1933.0.5, J1939: Precontrol torque command value (Kff)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter displays the content of the related J1939 object. As this function is currently not supported, there is no further processing of the data in the firmware.	
P-0-1933.0.5 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: --- / ---	Default value: ---

3.12.205 P-0-1933.0.6, J1939: PID mode

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter displays the content of the related J1939 object. As this function is currently not supported, there is no further processing of the data in the firmware.	
P-0-1933.0.6 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: --- / ---	Default value: ---

3.12.206 P-0-1934.0.10, C6900 Shutdown request

Allocation	Hardware Funct. package(s): Device parameter:	--

Function Using this parameter, the command for switching the MobileX inverter off can be started.

The command checks the following prerequisites:

1. DC bus voltage < 60V
2. Drive disabled
3. Actual velocity = 0 (standstill notification)

If these prerequisites are satisfied, switch-off is prepared.

The switch-off is delayed in the command by a parameterizable time ([P-0-1934.0.11](#)) to be able to send an acknowledgment of the request (default = 2 s). The command function will then wait for the switch-off for a parameterizable time ([P-0-1934.0.12](#)). If switch-off has not been completed by that time, the command execution is terminated with an error.

P-0-1934.0.10 - Attributes

Function:	Cmd	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: 0x0 / 0x3	Default value: ---
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3.12.207 P-0-1934.0.11, Delay of switch-off

Allocation Hardware --
Funct. package(s):
Device parameter:

Function

Execution of the command C6900 Switch-off request ([P-0-1934.0.10](#)) can be delayed using this parameter to be able to send an acknowledgment of the request (default = 2 s).

P-0-1934.0.11 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	s	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: 0,0 / 100,0	Default value: 2,0
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3.12.208 P-0-1934.0.12, Switch-off error time

Allocation Hardware --
Funct. package(s):
Device parameter:

Function

Using this adjustable time, the execution of the command C6900 Switch-off request ([P-0-1934.0.10](#)) is monitored.

In the command function, the switch-off is delayed for this parameterizable time. If switch-off has not been completed by that time, the command execution is terminated with an error.

P-0-1934.0.12 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	s	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: 0,0 / 300,0	Default value: 10,0
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3.12.209 P-0-1935, J1939: Lamp codes DM01

Allocation Hardware --
Funct. package(s):
Device parameter:

Function

This parameter contains information on the generation of J1939-relevant bus objects.

Product-specific parameters

Structure	Bit	Designation/function	Comment
	1/0	Protection Lamp (PL) status 0: Off 1: On 2: Reserved 3: Reserved	
	3/2	Amber Warning Lamp (AWL) status 0: Off 1: On 2: Reserved 3: Reserved	
	5/4	Red Stop Lamp (RSL) status 0: Off 1: On 2: Reserved 3: Reserved	
	7/6	Malfunction Indicator Lamp (MIL) status 0: Off 1: On 2: Reserved 3: Reserved	
	9/8	Protection Lamp (PL) flashing 0: flashing slowly 1: flashing quickly 2: Reserved 3: no flashing	
	11/10	Amber Warning Lamp (AWL) flashing 0: flashing slowly 1: flashing quickly 2: Reserved 3: no flashing	

Bit	Designation/function	Comment
13/12	Red Stop Lamp (RSL) flashing 0: flashing slowly 1: flashing quickly 2: Reserved 3: no flashing	
15/14	Malfunction Indicator Lamp (MIL) flashing 0: flashing slowly 1: flashing quickly 2: Reserved 3: no flashing	

Tab. 3-101: P-0-1935.0.0, J1939: Lamp status DM01

This parameter is used by the service and development personnel for diagnosis.

P-0-1935 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: ---

3.12.210 P-0-1935.x.1, J1939: DTC**Allocation**

Hardware
Funct. package(s):
Device parameter:

Function

This parameter contains information on the generation of J1939-relevant bus objects.

Structure

Bit	Designation/function	Comment
18-0	Suspect Parameter Number (SPN) see J1939 specification	
23-19	Failure Mode Identifier (FMI) see J1939 specification	
31-24	Reserved	

Tab. 3-102: P-0-1935.0.1, J1939: DTC

This parameter is used by the service and development personnel for diagnosis.

P-0-1935.x.1 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: ---

Product-specific parameters

3.13 P-0-2000 to P-0-2299 General device parameters

3.13.1 P-0-2000.x.0, Licence info

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The parameter contains the designation of an OSS license used in the drive. With the structure index, the contained licenses are numbered.		
P-0-2000.x.0 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.13.2 P-0-2000.x.1, Licence text 1

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The parameter contains the license text of an OSS license used in the drive. With the structure index, the contained licenses are numbered.		
P-0-2000.x.1 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.13.3 P-0-2000.x.2, Licence text 2

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The parameter contains the license text of an OSS license used in the drive. With the structure index, the contained licenses are numbered.		
P-0-2000.x.2 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.13.4 P-0-2003.0.1, Selection of firmware functions

Allocation	Hardware Funct. package(s): Device parameter: Alias:	--	
Function	The parameter "P-0-2003.0.1" allows optional firmware functions to be activated (with a licensed Productivity package only). The enabling code for a firmware function from "P-0-2003.0.3, Selectable firmware functions" may be entered in the individual list elements. The total of activated functions cannot exceed the "activatable range of functions" restricted by the calculating time of the individual firmware functions that are active.		
P-0-2003.0.1 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --

AXS:	min./max.: --- / ---	Default value: s. Text
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3.13.5 P-0-2003.0.2, Activated firmware functions

Allocation Function	Hardware Funct. package(s): Device parameter: Alias: P-0-1715	--		
P-0-2003.0.2 - Attributes	Parameter "P-0-2003.0.2" displays the active firmware functions selected in "P-0-2003.0.1" and activated by means of command "C1100" or a "reboot".			
Function	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --	
AXS: min./max.: --- / --- Default value: ---				

3.13.6 P-0-2003.0.3, Selectable firmware functions

Allocation Function	Hardware Funct. package(s): Device parameter: Alias: P-0-1716	--		
P-0-2003.0.3 - Attributes	Parameter "P-0-2003.0.3" displays the available firmware functions that can be selected in "P-0-2003.0.1" and activated by means of command C1100 or a reboot.			
Function	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --	
AXS: min./max.: --- / --- Default value: ---				

3.13.7 P-0-2003.0.6, Operation hours when changing firmware functions

Allocation Function	Hardware Funct. package(s): Device parameter: Alias: P-0-1719	--		
P-0-2003.0.6 - Attributes	In list element 1, the parameter "P-0-2003.0.6" stores the operating hours count of the control section at the time of a change in license. Any change in the activated firmware functions "P-0-2003.0.2" is stored in list element 2.			
Function	Function: Par Memory: ON_BOARD_SP Unit: s Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: DEC_OV Decim. pl.: 1 Set-depend.: --	
AXS: min./max.: --- / --- Default value: ---				

3.13.8 P-0-2003.0.7, Performance points maximum

Allocation Function	Hardware Funct. package(s): Device parameter: Alias: P-0-1720	--		
P-0-2003.0.7 - Attributes	The parameter "P-0-2003.0.7" shows the maximum value of the sum of performance points of activatable firmware functions. With the command "C1100", this sum is generated over all activated firmware functions. If the maximum value has been exceeded, a command error occurs.			
Function	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --	
AXS: min./max.: --- / --- Default value: ---				

Product-specific parameters

AXS:	min./max.: --- / ---	Default value: ---
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3.13.9 P-0-2004.0.1, Activation of functional hardware package

Allocation	Hardware Funct. package(s): Device parameter: --
Function	The function is reserved for development personnel for diagnosing internal sequences and cannot be used by the customer. For this reason, the values for this parameter are only available to development personnel.

P-0-2004.0.1 - Attributes	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Function:</td><td>Par</td><td style="width: 25%;">Editable:</td><td>--</td><td style="width: 25%;">Data length:</td><td>4Byte</td></tr> <tr> <td>Memory:</td><td>PARAM_SP</td><td>Validity ch.:</td><td>--</td><td>Format:</td><td>HEX</td></tr> <tr> <td>Unit:</td><td>--</td><td>Extr. val. ch.:</td><td>--</td><td>Decim. pl.:</td><td>0</td></tr> <tr> <td>Cycl. tra.:</td><td>--</td><td>Comb. check:</td><td>--</td><td>Set-depend.:</td><td>--</td></tr> </table>	Function:	Par	Editable:	--	Data length:	4Byte	Memory:	PARAM_SP	Validity ch.:	--	Format:	HEX	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
Function:	Par	Editable:	--	Data length:	4Byte																				
Memory:	PARAM_SP	Validity ch.:	--	Format:	HEX																				
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																				
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																				

AXS:	min./max.: --- / ---	Default value: ---
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3.13.10 P-0-2051, Operating hours counter, motor

Allocation	Hardware Funct. package(s): Device parameter: --
Function	<p>This parameter displays the current count of the operating hours counter of the motor.</p> <p>The operating hours counter records the duration of three different operating states:</p> <ul style="list-style-type: none"> • Motor enabled (AF, electric load) • Motor in motion (actual velocity unequal to "0") • Motor temperature less than 10 K away from "S-0-0204, Motor shutdown temperature" <p>The following motor standstill thresholds take effect:</p> <ul style="list-style-type: none"> • Rotary motor: 10 rpm • Linear motor: 10 mm/min
Structure	Every hour the operating hours counter of the motor is saved and written to the encoder memory. If the 24V supply is interrupted within the 60 minutes, the parameter is not saved additionally.
	See Functional Description "Diagnostic data of motor operation"
	List parameter with three elements

List element	Operating time	Default value	Definition
0	Drive enable duration	0.0	Time period during which "drive enable" (AF) was set for the motor.
1	Motion duration	0.0	Time period during which the actual velocity of the motor was unequal to "0".
2	Motor warning temperature duration	0.0	Time period during which the motor temperature had been less than 10K below the switch-off threshold.

Tab. 3-103: *List elements of "P-0-2051, Operating hours counter, motor"*

Use For motors without encoder data memory, the diagnostic data are only saved in the controller or programming module. In the case of motor replacement, the user is responsible for resetting the diagnostic data.

For motors with encoder data memory, the diagnostic data are saved in the encoder when switching on the control voltage if the same motor is connected. If the motor was replaced, the diagnostic data are read out from the motor and written to the parameters "[P-0-2051](#)", "[P-0-2052](#)" and "[P-0-2053](#)".

P-0-2051 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV
Unit:	s	Extr. val. ch.:	--	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 5

AXS:	min./max.: --- / ---	Default value: s. Text
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3.13.11 P-0-2052, Thermal operating data, motor

Allocation Hardware
Funct. package(s): --
Device parameter:

Function This parameter displays the current status of the thermal operating data:

- Maximum temperature of motor
- Average motor temperature during total operating time (motor in "AF")

 The values of the thermal operating data are only realistic, when the temperature sensor allows winding temperature measurement! This is impossible for temperature sensors with switching performance!

Structure See functional description "Diagnostic data of motor operation"

List parameter with two elements

List element	Operating time	Default value	Unit	Definition
0	Maximum temperature	0.0	°C	Maximum winding temperature which ever occurred during the operating time (AF)
1	Average temperature	0.0	°C	Average winding temperature, averaged over the total operating time (AF) of the motor

Tab. 3-104: List elements of P-0-2052, Thermal operating data, motor

Use At motors without encoder data memory, the diagnostic data are only saved in the controller or programming module. At motor replacement, the user is responsible for reset of diagnostic data.

At motors with encoder data memory, the diagnostic data is saved in the encoder when switching on the control voltage if the same motor is connected. If the motor was replaced, the diagnostic data is read out of the motor and written to parameters [P-0-2051](#), [P-0-2052](#) and [P-0-2053](#).

P-0-2052 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	2Byte var.
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_MV
Unit:	°C	Extr. val. ch.:	--	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 5

AXS:	min./max.: --- / ---	Default value: s. Text
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Product-specific parameters

3.13.12 P-0-2053, Mechanical operating data, motor

Allocation	Hardware Funct. package(s): Device parameter:	--															
Function	This parameter displays the current status of the mechanical operating data: <ul style="list-style-type: none"> • Maximum velocity of motor shaft or of moving part of motor • Average velocity of motor shaft or of moving part of motor during total operating time (motor in AF) 	See functional description "Diagnostic data of motor operation"															
Structure	List parameter with two elements	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>List element</th> <th>Operating time</th> <th>Default value</th> <th>Unit</th> <th>Definition</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Maximum velocity</td> <td>0</td> <td>1/min or mm/min</td> <td>Maximum velocity of motor which ever occurred during the operating time (AF)</td> </tr> <tr> <td>1</td> <td>Average velocity</td> <td>0</td> <td>1/min or mm/min</td> <td>Average velocity of motor during motion, averaged over the time period during which the motor is in motion.</td> </tr> </tbody> </table>	List element	Operating time	Default value	Unit	Definition	0	Maximum velocity	0	1/min or mm/min	Maximum velocity of motor which ever occurred during the operating time (AF)	1	Average velocity	0	1/min or mm/min	Average velocity of motor during motion, averaged over the time period during which the motor is in motion.
List element	Operating time	Default value	Unit	Definition													
0	Maximum velocity	0	1/min or mm/min	Maximum velocity of motor which ever occurred during the operating time (AF)													
1	Average velocity	0	1/min or mm/min	Average velocity of motor during motion, averaged over the time period during which the motor is in motion.													

Tab. 3-105: List elements of P-0-2053, Mechanical operating data, motor

Use At motors without encoder data memory, the diagnostic data are only saved in the controller or programming module. At motor replacement, the user is responsible for reset of diagnostic data.
At motors with encoder data memory, the diagnostic data is saved in the encoder when switching on the control voltage if the same motor is connected. If the motor was replaced, the diagnostic data is read out of the motor and written to parameters **P-0-2051**, **P-0-2052** and **P-0-2053**.

P-0-2053 - Attributes	Function: Par	Editable: SUBD:CM+PM	Data length: 4Byte var.
	Memory: PARAM_SP	Validity ch.: --	Format: DEC_OV
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: Grp. 5
AXS:		min./max.: --- / ---	Default value: s. Text

3.13.13 P-0-2053.0.1, Velocity histogram

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In this parameter, the velocity distribution is displayed over the motor operating hours. By means of the data, statements regarding the load on the motor and thus on the service life of the motor can be made.	
P-0-2053.0.1 - Attributes	Function: Par	Editable: SUBD:CM+PM
	Memory: PARAM_SP	Validity ch.: SUBD:CM->PM
	Unit: s	Extr. val. ch.: --
	Cycl. tra.: --	Comb. check: --
AXS:		min./max.: --- / ---
		Default value: s. Text

3.13.14 P-0-2053.0.2, Torque histogram

Allocation	Hardware Funct. package(s): Device parameter:	--
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Function	In this parameter, the distribution of the motor torque and/or the motor force is displayed over the motor operating hours. By means of this data, statements regarding the load on the motor and thus on the service life of the motor can be made.				
P-0-2053.0.2 - Attributes					
Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_MV
Unit:	s	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: --- / ---		Default value: s. Text		

3.13.15 P-0-2053.0.3, Temperature histogram

Allocation	Hardware Funct. package(s): Device parameter:	--
Function		
Function:	Par	Editable:
Memory:	PARAM_SP	Validity ch.:
Unit:	s	Extr. val. ch.:
Cycl. tra.:	--	Comb. check:
AXS:	min./max.: --- / ---	Default value: s. Text

3.13.16 P-0-2053.0.4, Motor current histogram

Allocation	Hardware Funct. package(s): Device parameter:	--
Function		
Function:	Par	Editable:
Memory:	PARAM_SP	Validity ch.:
Unit:	s	Extr. val. ch.:
Cycl. tra.:	--	Comb. check:
AXS:	min./max.: --- / ---	Default value: s. Text

3.13.17 P-0-2054, Operational performance, motor

Allocation	Hardware Funct. package(s): Device parameter:	--
Function		
Function:	To quantify the mechanical motion of the motor or the axis, the drive determines the operational performance of the connected motor. For this purpose, a current value is generated in intervals of 8ms and added up. This value is calculated from the following product:	
<ul style="list-style-type: none"> • Current velocity (average absolute value over 8ms) • Duration of motor motion (rotary motor > 10min⁻¹, linear motor >100mm/min), max. 8ms 		
The unit of the operational performance depends on the mechanical motor design (configured in P-0-4014):		
<ul style="list-style-type: none"> • Rotary motor: unit is 1000 rev 		

Product-specific parameters

- Linear motor: unit is meter

 The operational performance can be used as threshold value, e.g. for lubrication intervals. The user can reset or change the value.

Replacing motors with diagnostic data in encoder memory (e.g. MSK, MS2N):

- Changed motor serial numbers are recognized by the drive (comparison of "S-0-1300.20.12" (encoder memory) and "P-0-02055" (drive))
- The previous operational performance of the motor is saved in "P-0-2054" and calculated from the product of:
 - P-0-3051, Encoder memory, operating hours counter, motor, "list element 1, motion duration", and
 - P-0-3053, Encoder memory, mechanical operating data, motor, "list element 1, average velocity of motor in motion"

 The value of "P-0-2054" that is already available in the drive is overwritten with the operational performance value of the replacement motor without notification!

Replacing MSM motors (encoder data memory can be used in a restricted way)

- Value of "P-0-2054, Operational performance, motor" available in the drive parameter set is deleted, if "P-0-2055, Serial number, motor" in the drive did not contain any value. Furthermore, the serial number of the replacement motor in this case is applied to "P-0-2055"!
- Value of "P-0-2054, Operational performance, motor" available in the drive parameter set is retained, if "P-0-2055, Serial number, motor" in the drive already contained a value. Furthermore, the serial number of the replacement motor in this case is applied to "P-0-2055".

See functional description "Diagnostic data of motor operation"

P-0-2054 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV
Unit:	1000 rev	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 5

AXS: min./max.: --- / --- Default value: s. Text

3.13.18 P-0-2054.0.1, Diagnostic data of brake

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In this parameter, the operating data of the motor holding brake are displayed over the motor operating hours. By means of the data, statements regarding the load on the motor holding brake and thus on the service life of the brake can be made.	

P-0-2054.0.1 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	FLOAT
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: s. Text

3.13.19 P-0-2055, Change identifier of motor diagnostics

Allocation	Hardware Funct. package(s): Device parameter:	--																								
Function	<p>This parameter serves for detection of motor replacement for the diagnostic motor data and the connected motor unit.</p> <p>This functionality is only available for Rexroth motors with a QEM encoder data memory of version 4 (MSK) or 7 (MS2N). The serial number of the motor serves for identification of the motor unit currently connected to the controller. This shows whether the motor connected to the controller was replaced. Depending on the motor unit connected, the diagnostic motor data stored in the encoder are applied to the controller or, if necessary, synchronized with the diagnostic motor data available in the controller.</p> <p>See Functional Description "Diagnostic data of motor operation"</p>																									
P-0-2055 - Attributes	<table border="1"> <tr> <td>Function:</td><td>Par</td> <td>Editable:</td><td>SUBD:CM+PM</td> <td>Data length:</td><td>1Byte var.</td> </tr> <tr> <td>Memory:</td><td>PARAM_SP</td> <td>Validity ch.:</td><td>--</td> <td>Format:</td><td>ASCII</td> </tr> <tr> <td>Unit:</td><td>--</td> <td>Extr. val. ch.:</td><td>--</td> <td>Decim. pl.:</td><td>0</td> </tr> <tr> <td>Cycl. tra.:</td><td>--</td> <td>Comb. check:</td><td>--</td> <td>Set-depend.:</td><td>Grp. 5</td> </tr> </table>	Function:	Par	Editable:	SUBD:CM+PM	Data length:	1Byte var.	Memory:	PARAM_SP	Validity ch.:	--	Format:	ASCII	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 5	
Function:	Par	Editable:	SUBD:CM+PM	Data length:	1Byte var.																					
Memory:	PARAM_SP	Validity ch.:	--	Format:	ASCII																					
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																					
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 5																					
	AXS:	min./max.: --- / ---																								
		Default value: s. Text																								

3.13.20 P-0-2141, Device Name

Allocation	Hardware Funct. package(s): Device parameter:	--																								
Function	<p>Type name of the motor in the encoder data memory. When the controller is switched on and during the "CM → PM" transition, the content of the parameter is copied to the parameter "S-0-1300.20.4, Device Name".</p> <p>When the controller default values are loaded from the encoder memory (C0700), the type name is compared to the parameter "S-0-0141, Motor type". If the type names differ, the controller default values from the encoder memory are applied to the controller, and the type name from the encoder memory is copied to the parameter "S-0-0141, Motor type".</p>																									
P-0-2141 - Attributes	<table border="1"> <tr> <td>Function:</td><td>Par</td> <td>Editable:</td><td>SUBD:CM</td> <td>Data length:</td><td>1Byte var.</td> </tr> <tr> <td>Memory:</td><td>--</td> <td>Validity ch.:</td><td>--</td> <td>Format:</td><td>ASCII</td> </tr> <tr> <td>Unit:</td><td>--</td> <td>Extr. val. ch.:</td><td>--</td> <td>Decim. pl.:</td><td>0</td> </tr> <tr> <td>Cycl. tra.:</td><td>--</td> <td>Comb. check:</td><td>--</td> <td>Set-depend.:</td><td>--</td> </tr> </table>	Function:	Par	Editable:	SUBD:CM	Data length:	1Byte var.	Memory:	--	Validity ch.:	--	Format:	ASCII	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--	
Function:	Par	Editable:	SUBD:CM	Data length:	1Byte var.																					
Memory:	--	Validity ch.:	--	Format:	ASCII																					
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																					
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																					
	AXS: min./max.: --- / ---																									
	Default value: ---																									

3.13.21 P-0-2295, Performance load, unfiltered

Allocation	Hardware Funct. package(s): Device parameter:	--																								
Function	" P-0-0322.0.3 " replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).																									
P-0-2295 - Attributes	<table border="1"> <tr> <td>Function:</td><td>Par</td> <td>Editable:</td><td>--</td> <td>Data length:</td><td>4Byte</td> </tr> <tr> <td>Memory:</td><td>--</td> <td>Validity ch.:</td><td>--</td> <td>Format:</td><td>DEC_OV</td> </tr> <tr> <td>Unit:</td><td>%</td> <td>Extr. val. ch.:</td><td>--</td> <td>Decim. pl.:</td><td>2</td> </tr> <tr> <td>Cycl. tra.:</td><td>AT</td> <td>Comb. check:</td><td>--</td> <td>Set-depend.:</td><td>--</td> </tr> </table>	Function:	Par	Editable:	--	Data length:	4Byte	Memory:	--	Validity ch.:	--	Format:	DEC_OV	Unit:	%	Extr. val. ch.:	--	Decim. pl.:	2	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--	
Function:	Par	Editable:	--	Data length:	4Byte																					
Memory:	--	Validity ch.:	--	Format:	DEC_OV																					
Unit:	%	Extr. val. ch.:	--	Decim. pl.:	2																					
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--																					
	AXS:	min./max.: --- / ---																								
	Default value: ---																									

Product-specific parameters

3.14 P-0-2300 to P-0-2999 16-bit alias IDNs

3.14.1 P-0-2300, List of 32-bit IDNs

Allocation Hardware Funct. package(s): Device parameter: Function The following parameter lists allow 32-bit EIDNs to be converted to 16-bit alias IDNs. <ul style="list-style-type: none"> • P-0-2300 List of 32-bit IDNs and • P-0-2301 List of 16-bit alias IDNs <p>With the 16-bit alias IDNs, it is possible to parameterize the functionality accessible via EIDNs via a conventional communication interface which cannot handle 32-bit EIDNs. "P-0-2300" contains the list of those EIDNs for which 16-bit alias IDNs have been defined. The list is displayed in hexadecimal form and classified in ascending order. For each entry there is a corresponding entry in "P-0-2301" which indicates the associated 16-bit alias IDN.</p>	P-0-2300 - Attributes <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Function:</td> <td>Par</td> <td>Editable:</td> <td>--</td> <td>Data length:</td> <td>4Byte var.</td> </tr> <tr> <td>Memory:</td> <td>--</td> <td>Validity ch.:</td> <td>--</td> <td>Format:</td> <td>HEX</td> </tr> <tr> <td>Unit:</td> <td>--</td> <td>Extr. val. ch.:</td> <td>--</td> <td>Decim. pl.:</td> <td>0</td> </tr> <tr> <td>Cycl. tra.:</td> <td>--</td> <td>Comb. check:</td> <td>--</td> <td>Set-depend.:</td> <td>--</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>AXS:</td> <td>min./max.: --- / ---</td> <td>Default value: ---</td> </tr> </table>	Function:	Par	Editable:	--	Data length:	4Byte var.	Memory:	--	Validity ch.:	--	Format:	HEX	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--	AXS:	min./max.: --- / ---	Default value: ---
Function:	Par	Editable:	--	Data length:	4Byte var.																							
Memory:	--	Validity ch.:	--	Format:	HEX																							
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																							
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																							
AXS:	min./max.: --- / ---	Default value: ---																										

3.14.2 P-0-2301, List of 16-bit alias IDNs

Allocation Hardware Funct. package(s): Device parameter: Function The following parameter lists allow 32-bit EIDNs to be converted to 16-bit alias IDNs. <ul style="list-style-type: none"> • P-0-2300 List of 32-bit IDNs and • P-0-2301 List of 16-bit alias IDNs <p>With the 16-bit alias IDNs, it is possible to parameterize the functionality accessible via EIDNs via a conventional communication interface which cannot handle 32-bit EIDNs. "P-0-2301" contains the list of 16-bit alias IDNs. The list is displayed in hexadecimal form and is not classified. For each entry there is a corresponding entry in "P-0-2300" which indicates the associated EIDN.</p>	P-0-2301 - Attributes <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Function:</td> <td>Par</td> <td>Editable:</td> <td>--</td> <td>Data length:</td> <td>2Byte var.</td> </tr> <tr> <td>Memory:</td> <td>--</td> <td>Validity ch.:</td> <td>--</td> <td>Format:</td> <td>HEX</td> </tr> <tr> <td>Unit:</td> <td>--</td> <td>Extr. val. ch.:</td> <td>--</td> <td>Decim. pl.:</td> <td>0</td> </tr> <tr> <td>Cycl. tra.:</td> <td>--</td> <td>Comb. check:</td> <td>--</td> <td>Set-depend.:</td> <td>--</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>AXS:</td> <td>min./max.: --- / ---</td> <td>Default value: ---</td> </tr> </table>	Function:	Par	Editable:	--	Data length:	2Byte var.	Memory:	--	Validity ch.:	--	Format:	HEX	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--	AXS:	min./max.: --- / ---	Default value: ---
Function:	Par	Editable:	--	Data length:	2Byte var.																							
Memory:	--	Validity ch.:	--	Format:	HEX																							
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																							
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																							
AXS:	min./max.: --- / ---	Default value: ---																										

3.14.3 P-0-2310, Master communication: Protocol

Allocation Hardware Funct. package(s): Device parameter: Function Alias parameter. <p>"P-0-4089.0.1" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).</p>	
---	--

P-0-2310 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

3.14.4 P-0-2311, Master communication: Device name

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-4089.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2311 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: s. Text

3.14.5 P-0-2320, System data

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0250.0.1" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).	
P-0-2320 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: s. Text

3.14.6 P-0-2321, IP address

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1020.10.0" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2321 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

3.14.7 P-0-2323, Commutation choke temperature

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-2665.0.4" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2323 - Attributes	Function: Par Memory: COMPONENT_SP Unit: °C Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

Product-specific parameters

3.14.8 P-0-2325, Network mask

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1021.10.0" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2325 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 1Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---

3.14.9 P-0-2327, Gateway address

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1022.10.0" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2327 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 1Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---

3.14.10 P-0-2329, C6100 Command Activate IP settings

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1048.10.0" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2329 - Attributes	Function: Cmd Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---

3.14.11 P-0-2331, Connection: Allowed data losses

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1050.1.11" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2331 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: FKM:PO Validity ch.: -- Extr. val. ch.: + Comb. check: -- Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: 1 / 65535	Default value: 2

3.14.12 P-0-2411, Compact parameters diagnostics

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0660.0.128" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).	

P-0-2411 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.14.13 P-0-2412, Instance parameters diagnostics

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0660.0.129" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).	
P-0-2412 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

3.14.14 P-0-2413, Ramp torque reset

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0119.0.1" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).	
P-0-2413 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: 0 / 500	

3.14.15 P-0-2414, Connection: Allowed data losses

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1050.3.11" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).	
P-0-2414 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: FKM:PO Validity ch.: -- Extr. val. ch.: + Comb. check: --
AXS:	min./max.: 1 / 65535	

3.14.16 P-0-2462, SMO: Safety function status

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3264.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2462 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

Product-specific parameters

3.14.17 P-0-2463, SMO: State machine control word, functional

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3261.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2463 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: MDT	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.14.18 P-0-2464, SMO: Configuration of normal operation

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3277.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2464 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: -- Verify: +	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: +
		Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.14.19 P-0-2467, C8300 SMO: Command Activate parameter image

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3231.0.3" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2467 - Attributes	Function: Cmd Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.14.20 P-0-2468, SMO: Password

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3230.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2468 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.14.21 P-0-2469, SMO: System configuration

Allocation	Hardware Funct. package(s): Device parameter:	--
------------	---	----

	Function	"P-0-3231.0.4" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-2469 - Attributes	Function:	Par	Editable:	SMO depend	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	BIN
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--
	Verify:	+				
	AXS:	min./max.: --- / ---			Default value: ---	

3.14.22 P-0-2508, SMO: IO mapper block type, compact

	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	"P-0-3331.1.130" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-2508 - Attributes	Function:	Par	Editable:	SMO depend	Data length:	4Byte var.
	Memory:	--	Validity ch.:	--	Format:	HEX
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: --- / ---			Default value: ---	

3.14.23 P-0-2509, SMO: IO mapper block type, compact

	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	"P-0-3331.2.130" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-2509 - Attributes	Function:	Par	Editable:	SMO depend	Data length:	4Byte var.
	Memory:	--	Validity ch.:	--	Format:	HEX
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: --- / ---			Default value: ---	

3.14.24 P-0-2510, SMO: IO mapper block type, compact

	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	"P-0-3331.3.130" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-2510 - Attributes	Function:	Par	Editable:	SMO depend	Data length:	4Byte var.
	Memory:	--	Validity ch.:	--	Format:	HEX
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: --- / ---			Default value: ---	

3.14.25 P-0-2511, SMO: IO mapper block type, compact

	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	"P-0-3331.4.130" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-2511 - Attributes	Function:	Par	Editable:	SMO depend	Data length:	4Byte var.
	Memory:	--	Validity ch.:	--	Format:	HEX
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

Product-specific parameters

AXS:	min./max.: --- / ---	Default value: ---
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3.14.26 P-0-2512, SMO: IO mapper block type, compact

Allocation	Hardware Funct. package(s): Device parameter:	--				
Function	"P-0-3331.5.130" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).					
P-0-2512 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: Validity ch.: Extr. val. ch.: Comb. check:	SMO depend -- -- --	Data length: Format: Decim. pl.: Set-depend.:	4Byte var. HEX 0 --	

AXS:	min./max.: --- / ---	Default value: ---
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3.14.27 P-0-2513, SMO: IO mapper block type, compact

Allocation	Hardware Funct. package(s): Device parameter:	--				
Function	"P-0-3331.6.130" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).ern (EIDN) unterstützen.					
P-0-2513 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: Validity ch.: Extr. val. ch.: Comb. check:	SMO depend -- -- --	Data length: Format: Decim. pl.: Set-depend.:	4Byte var. HEX 0 --	

AXS:	min./max.: --- / ---	Default value: ---
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3.14.28 P-0-2514, SMO: IO mapper block type, compact

Allocation	Hardware Funct. package(s): Device parameter:	--				
Function	"P-0-3331.7.130" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).					
P-0-2514 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: Validity ch.: Extr. val. ch.: Comb. check:	SMO depend -- -- --	Data length: Format: Decim. pl.: Set-depend.:	4Byte var. HEX 0 --	

AXS:	min./max.: --- / ---	Default value: ---
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3.14.29 P-0-2515, SMO: Safety function 2 selection

Allocation	Hardware Funct. package(s): Device parameter:	--				
Function	"P-0-3264.0.3" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).					
P-0-2515 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: Validity ch.: Extr. val. ch.: Comb. check:	SMO depend -- -- --	Data length: Format: Decim. pl.: Set-depend.:	4Byte BIN 0 --	

AXS:	min./max.: --- / ---	Default value: ---
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3.14.30 P-0-2516, SMO: Safety function 2 status

Allocation	Hardware Funct. package(s): Device parameter:	--
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	Function	"P-0-3264.0.4" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).				
P-0-2516 - Attributes	Function:	Par	Editable:	SMO depend	Data length:	4Byte
	Memory:	--	Validity ch.:	--	Format:	BIN
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: --- / ---			Default value: ---	

3.14.31 P-0-2519, SMO: Signal control status safety bus, IDN assignment

	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	"P-0-3336.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-2519 - Attributes	Function:	Par	Editable:	SMO depend	Data length:	4Byte var.
	Memory:	--	Validity ch.:	--	Format:	IDN
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	Verify:	+				
	AXS:	min./max.: --- / ---			Default value: ---	

3.14.32 P-0-2520, SMO: Signal control status safety bus, bit number

	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	"P-0-3336.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-2520 - Attributes	Function:	Par	Editable:	SMO depend	Data length:	2Byte var.
	Memory:	--	Validity ch.:	--	Format:	DEC_OV
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	Verify:	+				
	AXS:	min./max.: --- / ---			Default value: ---	

3.14.33 P-0-2521, SMO: Signal control status safety bus, possible source IDN

	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	"P-0-3336.0.3" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-2521 - Attributes	Function:	Par	Editable:	SMO depend	Data length:	4Byte var.
	Memory:	--	Validity ch.:	--	Format:	IDN
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: --- / ---			Default value: ---	

3.14.34 P-0-2522, SMO: Signal control, status, safety bus, poss. source bits

	Allocation	Hardware Funct. package(s): Device parameter:	--	
	Function	"P-0-3336.0.4" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		

Product-specific parameters

P-0-2522 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: --- / ---		Default value: ---

3.14.35 P-0-2526, SMO: Functional input signals, local

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3322.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2526 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS: min./max.: --- / ---	

3.14.36 P-0-2527, SMO: IO mapper inputs, minimum pulse duration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3332.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2527 - Attributes	Function: Par Memory: -- Unit: ms Cycl. tra.: -- Verify: +	Editable: SMO depend Validity ch.: -- Extr. val. ch.: + Comb. check: --
	AXS: min./max.: 0,0 / 10000,0	

3.14.37 P-0-2528, SMO: Mask of control word, safety bus

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3340.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2528 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: -- Verify: +	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS: min./max.: --- / ---	

3.14.38 P-0-2529, SMO: Signal control, status, safety bus, SMMx coding

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3336.0.5" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2529 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: -- Verify: +	Editable: SMO depend Validity ch.: -- Extr. val. ch.: + Comb. check: --

AXS:	min./max.: 0 / 16	Default value: ---
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3.14.39 P-0-2533, SMO: Active axis ID

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3235.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2533 - Attributes	Function: Par Editable: SMO depend Data length: 1Byte var. Memory: -- Validity ch.: -- Format: ASCII Unit: -- Extr. val. ch.: -- Decim. pl.: 0 Cycl. tra.: -- Comb. check: -- Set-depend.: --	
AXS:	min./max.: --- / ---	Default value: ---

3.14.40 P-0-2534, SMO: Proposed axis identifier

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3235.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2534 - Attributes	Function: Par Editable: SMO depend Data length: 1Byte var. Memory: -- Validity ch.: -- Format: ASCII Unit: -- Extr. val. ch.: -- Decim. pl.: 0 Cycl. tra.: -- Comb. check: -- Set-depend.: -- Verify: +	
AXS:	min./max.: --- / ---	Default value: ---

3.14.41 P-0-2535, C8500 SMO: Command Apply identification data

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3235.0.3" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2535 - Attributes	Function: Cmd Editable: SMO depend Data length: 2Byte Memory: -- Validity ch.: -- Format: BIN Unit: -- Extr. val. ch.: -- Decim. pl.: 0 Cycl. tra.: -- Comb. check: -- Set-depend.: --	
AXS:	min./max.: --- / ---	Default value: ---

3.14.42 P-0-2536, SMO: Axis identification: Control word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3235.0.4" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2536 - Attributes	Function: Par Editable: SMO depend Data length: 2Byte Memory: -- Validity ch.: -- Format: BIN Unit: -- Extr. val. ch.: -- Decim. pl.: 0 Cycl. tra.: -- Comb. check: -- Set-depend.: --	
AXS:	min./max.: --- / ---	Default value: ---

Product-specific parameters

3.14.43 P-0-2537, SMO: Verification interface, configuration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3236.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2537 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 4Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.14.44 P-0-2538, SMO: Verification interface, data

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3236.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2538 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 1Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.14.45 P-0-2539, SMO: Verification interface, acknowledgement

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3236.0.3" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2539 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 1Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.14.46 P-0-2540, SMO: Verification interface, axis ID

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3236.0.4" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2540 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 4Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.14.47 P-0-2541, SMO: Verification interface, commissioning ID

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3236.0.5" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

P-0-2541 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.14.48 P-0-2542, SMO: Position difference measured

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3210.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2542 - Attributes	Function: Par Memory: -- Unit: S-0-0076 Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

3.14.49 P-0-2543, SMO: Status axis validation

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3210.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2543 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: -- Verify: +	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

3.14.50 P-0-2544, SMO: Configuration of safe braking and holding function

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3265.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2544 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: -- Verify: +	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: +
AXS:	min./max.: --- / ---	Default value: ---

3.14.51 P-0-2545, SMO: Control word of safe braking and holding function

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3265.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2545 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --

Product-specific parameters

AXS:	min./max.: --- / ---	Default value: ---
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3.14.52 P-0-2546, SMO: Control word safety zone

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"P-0-3266.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-2546 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	
	Default value: ---		

3.14.53 P-0-2547, SMO: Configuration of safety zone

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"P-0-3266.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-2547 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: -- Verify: +	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	
	Default value: ---		

3.14.54 P-0-2549, SMO: Configuration of consumer connection Safety bus

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"P-0-3342.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-2549 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: -- Verify: +	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	
	Default value: ---		

3.14.55 P-0-2550, SMO: Configuration list of consumer connection Safety bus

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"P-0-3342.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-2550 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: IDN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	
	Default value: ---		

3.14.56 P-0-2551, SMO: Configuration producer connection Safety bus

	Allocation	Hardware Funct. package(s): Device parameter:	--	
	Function	"P-0-3343.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-2551 - Attributes	Function:	Par	Editable: SMO depend	
	Memory:	--	Validity ch.: --	
	Unit:	--	Extr. val. ch.: --	
	Cycl. tra.:	--	Comb. check: --	
	Verify:	+	Set-depend.: --	
	AXS:	min./max.: --- / ---	Default value: ---	

3.14.57 P-0-2552, SMO: Configuration list producer connection Safety bus

	Allocation	Hardware Funct. package(s): Device parameter:	--	
	Function	"P-0-3343.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-2552 - Attributes	Function:	Par	Editable: SMO depend	
	Memory:	--	Validity ch.: --	
	Unit:	--	Extr. val. ch.: --	
	Cycl. tra.:	--	Comb. check: --	
	AXS:	min./max.: --- / ---	Default value: ---	

3.14.58 P-0-2553, SMO: Identification data image

	Allocation	Hardware Funct. package(s): Device parameter:	--	
	Function	"P-0-3235.0.5" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-2553 - Attributes	Function:	Par	Editable: SMO depend	
	Memory:	--	Validity ch.: ?????	
	Unit:	--	Extr. val. ch.: --	
	Cycl. tra.:	--	Comb. check: --	
	AXS:	min./max.: --- / ---	Default value: ---	

3.14.59 P-0-2554, SMO: Module ID

	Allocation	Hardware Funct. package(s): Device parameter:	--	
	Function	"P-0-3200.0.5" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-2554 - Attributes	Function:	Par	Editable: SMO depend	
	Memory:	--	Validity ch.: --	
	Unit:	--	Extr. val. ch.: --	
	Cycl. tra.:	--	Comb. check: --	
	AXS:	min./max.: --- / ---	Default value: ---	

3.14.60 P-0-2570, SMO: PCB ID

	Allocation	Hardware Funct. package(s): Device parameter:	--
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Product-specific parameters

Function	'P-0-3200.0.6" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-2570 - Attributes	Function: Par	Editable:	SMO depend	Data length:	4Byte
	Memory: --	Validity ch.:	--	Format:	HEX
	Unit: --	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.: --	Comb. check:	--	Set-depend.:	--
	AXS:		min./max.: --- / ---	Default value: ---	

3.14.61 P-0-2596, Power limitation: Torque/force limit, positive

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	'P-0-0444.0.1" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).				
P-0-2596 - Attributes	Function: Par	Editable:	--	Data length:	2Byte
	Memory: --	Validity ch.:	--	Format:	DEC_MV
	Unit: S-0-0086	Extr. val. ch.:	--	Decim. pl.:	--
	Cycl. tra.: AT	Comb. check:	--	Set-depend.:	--
	AXS:		min./max.: --- / ---	Default value: ---	

3.14.62 P-0-2597, Power limitation: Torque/force limit, negative

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	'P-0-0444.0.2" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).				
P-0-2597 - Attributes	Function: Par	Editable:	--	Data length:	2Byte
	Memory: --	Validity ch.:	--	Format:	DEC_MV
	Unit: S-0-0086	Extr. val. ch.:	--	Decim. pl.:	--
	Cycl. tra.: AT	Comb. check:	--	Set-depend.:	--
	AXS:		min./max.: --- / ---	Default value: ---	

3.14.63 P-0-2598, Current power limit value, motive

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	'P-0-0444.0.3" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).				
P-0-2598 - Attributes	Function: Par	Editable:	--	Data length:	4Byte
	Memory: --	Validity ch.:	--	Format:	DEC_MV
	Unit: W	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.: AT	Comb. check:	--	Set-depend.:	--
	AXS:		min./max.: --- / ---	Default value: ---	

3.14.64 P-0-2599, Current power limit value, regenerative

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	'P-0-0444.0.4" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).				
P-0-2599 - Attributes	Function: Par	Editable:	--	Data length:	2Byte
	Memory: --	Validity ch.:	--	Format:	DEC_MV
	Unit: W	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.: AT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.14.65 P-0-2602.x.1, Logbook event

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1721, P-0-1724, P-0-1728, P-0-1745
Function	<p>This parameter displays a code through which the drive development staff can diagnose internal power section states.</p> <p>The entries in this parameter are automatically made by the controller depending on the internal states. The time of the entry is logged in "P-0-2602.0.2, Time stamp of power section logbook event".</p>	
The value displayed for this parameter can only be interpreted with internal knowledge of the firmware!		
This parameter is of no use to the user! It is write protected and cannot be changed!		

P-0-2602.x.1 - Attributes	Function: Par Memory: COMPONENT_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
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AXS:	min./max.: --- / ---	Default value: ---
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3.14.66 P-0-2602.x.2, Time stamp logbook event

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1722, P-0-1725, P-0-1729, P-0-1746
Function	<p>This parameter displays the time of the last entry in "P-0-2602.0.1, Power section logbook event". The value of "P-0-2602.0.2, Operating hours counter of power section" is logged in parameter "P-0-2602.0.2" at the proper time.</p>	
This parameter is of no use to the user! It is write protected and cannot be changed!		

P-0-2602.x.2 - Attributes	Function: Par Memory: COMPONENT_SP Unit: s Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: DEC_OV Decim. pl.: 1 Set-depend.: --
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AXS:	min./max.: --- / ---	Default value: ---
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3.14.67 P-0-2602.x.20, Operating hours counter

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1723, P-0-1726, P-0-1731, P-0-1747
Function	<p>This parameter is used to display the operating hours of the power section (infeed/converter or inverter) from the time the device was delivered.</p>	
The value is displayed in seconds and is saved on the power section.		

Product-specific parameters

P-0-2602.x.20 - Attributes	Function: Par Memory: COMPONENT_SP Unit: s Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.14.68 P-0-2602.x.22, Activity hours counter

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-0191, P-0-1727, P-0-1732
Function	This parameter is used to display the operating hours of the power section (infeed or inverter) from the time the device was delivered. It refers to the time in which the drive was operated with mains infeed (infeed/converter) or control enable (inverter) activated.	
	The value is displayed in seconds and is saved on the power section.	

P-0-2602.x.22 - Attributes	Function: Par Memory: COMPONENT_SP Unit: s Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.14.69 P-0-2602.x.23, Activity hours counter supply unit

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1769
Function	This parameter is used to display the operating hours of the power section (infeed) from the delivery of the device. It refers to the time in which the drive was operated with mains infeed (infeed/converter) activated.	
	The value is displayed in seconds and is saved on the power section.	

P-0-2602.x.23 - Attributes	Function: Par Memory: COMPONENT_SP Unit: s Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.14.70 P-0-2603.0.152, Calibration: Definition values main system

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	For internal use only!		
P-0-2603.0.152 - Attributes	Function: Par Memory: COMPONENT_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: DEC_MV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.14.71 P-0-2603.0.153, Calibration: Setting values main system

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	For internal use only!	
P-0-2603.0.153 - Attributes	Function: Par Memory: COMPONENT_SP Unit: -- Cycl. tra.: --	Editable: Validity ch.: -- Extr. val. ch.: -- Comb. check: -- SUBD:CM+PM Format: Decim. pl.: 3 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.14.72 P-0-2603.x.150, Calibration: Definition values component

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	For internal use only!	
P-0-2603.x.150 - Attributes	Function: Par Memory: COMPONENT_SP Unit: -- Cycl. tra.: --	Editable: Validity ch.: -- Extr. val. ch.: -- Comb. check: -- SUBD:CM+PM Format: Decim. pl.: 3 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.14.73 P-0-2603.x.151, Calibration: Setting values component

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	For internal use only!	
P-0-2603.x.151 - Attributes	Function: Par Memory: COMPONENT_SP Unit: -- Cycl. tra.: --	Editable: Validity ch.: -- Extr. val. ch.: -- Comb. check: -- SUBD:CM+PM Format: Decim. pl.: 3 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.14.74 P-0-2660, Configurable factory default values

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0660.0.1" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).	
P-0-2660 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: s. Text

3.14.75 P-0-2665.0.4, Commutation choke temperature

Allocation	Hardware Funct. package(s): Device parameter: Alias:	--
Function	The parameter displays the current temperature of the commutation choke.	P-0-2323

Product-specific parameters

P-0-2665.0.4 - Attributes	Function: Par Memory: COMPONENT_SP Unit: °C Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: FLOAT Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.14.76 P-0-2702, DC bus voltage command value supply

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1706.0.152" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2702 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: s. Text

3.14.77 P-0-2703, DC bus voltage command value recovery

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1706.0.153" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2703 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: s. Text

3.14.78 P-0-2706, Lower DC bus voltage threshold

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1708.0.152" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2706 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
AXS:	min./max.: --- / ---	Default value: s. Text

3.14.79 P-0-2707, Upper DC bus voltage threshold

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1708.0.153" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2707 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
AXS:	min./max.: --- / ---	Default value: s. Text

3.14.80 P-0-2714, Power supply control word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1720.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2714 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.14.81 P-0-2715, Power supply status word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1720.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2715 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.14.82 P-0-2729, Detailed diagnostics

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0390.0.136" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).	
P-0-2729 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 4Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.14.83 P-0-2730, Generate type plate, IDN list of type plates

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0660.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2730 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 4Byte var. Format: IDN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.14.84 P-0-2732, Reactive power, command value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1706.0.160" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

Product-specific parameters

P-0-2732 - Attributes	Function: Par Memory: PARAM_SP Unit: var Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: s. Text

3.14.85 P-0-2733, Reactive power, actual value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1707.0.160" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2733 - Attributes	Function: Par Memory: -- Unit: var Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

3.14.86 P-0-2738, Generate type plate, configuration list

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0660.0.3" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2738 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

3.14.87 P-0-2739, Voltage command value filter time constant

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1708.0.151" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2739 - Attributes	Function: Par Memory: PARAM_SP Unit: us Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: s. Text

3.14.88 P-0-2740, Proportional gain of reactive power controller

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1708.0.160" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2740 - Attributes	Function: Par Memory: PARAM_SP Unit: 1/kV Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: 0,500

3.14.89 P-0-2741, Integral action time of reactive power controller

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1708.0.161" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2741 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: -- Data length: 2Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: --
	AXS:	min./max.: s. Text / 160,00 Default value: 10,00

3.14.90 P-0-2751, SMO: IO mapper block type, compact

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3331.8.130" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2751 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.14.91 P-0-2752, SMO: IO mapper block type, compact

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3331.9.130" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2752 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.14.92 P-0-2753, SMO: IO mapper block type, compact

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3331.10.130" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2753 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.14.93 P-0-2754, SMO: IO mapper inputs, IO mapper block status

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3332.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

Product-specific parameters

P-0-2754 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.14.94 P-0-2755, System fine time

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1305.0.2" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).	
P-0-2755 - Attributes	Function: Par Memory: -- Unit: us Cycl. tra.: AT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

3.14.95 P-0-2756, System coarse time

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1305.0.3" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).	
P-0-2756 - Attributes	Function: Par Memory: -- Unit: s Cycl. tra.: AT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

3.14.96 P-0-2757, EtherCAT: SII Configured Station Alias

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-4089.0.7" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).	
P-0-2757 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

3.14.97 P-0-2758, EtherCAT: Register Configured Station Alias

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-4089.0.8" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).	
P-0-2758 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

3.14.98 P-0-2759, ctrlX DRIVE Engineering view manager

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0250.0.10" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).	
P-0-2759 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: s. Text

3.14.99 P-0-2767, Test IDN for conformity check - 4bytes

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1099.0.150" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-2767 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: ---

3.14.100 P-0-2780, Application: Profile configuration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-4084.0.3" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).	
P-0-2780 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: 0x0

3.14.101 P-0-2790, Performance load prewarning threshold

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-0322.0.2" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).	
P-0-2790 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
	AXS:	min./max.: 0,00 / 100,00 Default value: 90,00

3.14.102 P-0-2799, SMO: Actual position value, coded

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3257.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

Product-specific parameters

P-0-2799 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.14.103 P-0-2802, Flow command value of controller

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter displays the current internal "flow command value". It is the input value for the p/Q changeover logic or, in the case of flow control, it is the input command value for flow calculation. The internal flow command value consists of the sum of flow command value (S-0-0840 , after the ramp-function generator) and the "flow command value additive" (S-0-0841). Afterwards, the sum goes through the limiter and can then be displayed as " P-0-2802 ".	
P-0-2802 - Attributes	Function: Par Memory: -- Unit: ERROR Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / ---

3.14.104 P-0-2803, Pressure command value of controller

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter displays the current "internal pressure command value". It is the input value for the pressure controller.	
	The "internal pressure command value" consists of the sum of pressure command value (S-0-0800 , after the ramp-function generator) and the "pressure command value additive" (S-0-0801). Afterwards, the sum goes through the limiter and can be displayed as " P-0-2803 ".	
P-0-2803 - Attributes	Function: Par Memory: -- Unit: ERROR Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / ---

3.14.105 P-0-2806.0.2, Output pressure controller P-gain

Allocation	Hardware Funct. package(s): Device parameter: Alias:	--
Function	This parameter displays the pressure controller proportional term.	
P-0-2806.0.2 - Attributes	Function: Par Memory: -- Unit: ERROR Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / ---

3.14.106 P-0-2806.0.3, Pressure controller filter pressure change threshold

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-3400
Function	This parameter determines the time coefficient of the low-pass filter that is used for filtering the differentiated actual pressure value.	The output of this low-pass filter is compared to the parameter P-0-2806.0.5 (pressure controller integrator pressure change threshold). If the filtered value is smaller, one of three „integrator enabling conditions“ is fulfilled for the pressure controller.
P-0-2806.0.3 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: Grp. 2 AXS: min./max.: --- / --- Default value: 0,0

3.14.107 P-0-2806.0.4, Pressure controller integration time

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-3401
Function	This parameter determines the integration time of the integrator in the pressure controller.	
P-0-2806.0.4 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: Grp. 2 AXS: min./max.: --- / --- Default value: 0,0

3.14.108 P-0-2806.0.5, Pressure controller integrator pressure change threshold

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-3402
Function	The integrator only becomes active, if the increase in the actual pressure value drops below this threshold. The increase is filtered through a low-pass filter and the absolute value is used.	
 In order that the integrator can become active, all conditions must be fulfilled.		

A value of zero deactivates the evaluation of the change threshold.

P-0-2806.0.5 - Attributes	Function: Par Memory: PARAM_SP Unit: ERROR Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: Set-depend.: Grp. 2
	AXS: min./max.: --- / ---	Default value: 0

3.14.109 P-0-2806.0.6, Pressure controller accuracy window integrator

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-3403
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Product-specific parameters

	Function	If the absolute value of "S-0-0827, Pressure control deviation" is smaller than the accuracy window, the current value of the pressure integrator is frozen. In this way, the integrator is prevented from working below a threshold and the system from getting to a limit cycle.
P-0-2806.0.6 - Attributes	Function: Par Editable: ALWAYS Data length: 4Byte Memory: PARAM_SP Validity ch.: -- Format: DEC_MV Unit: ERROR Extr. val. ch.: -- Decim. pl.: Cycl. tra.: -- Comb. check: -- Set-depend.: Grp. 2	
	AXS:	min./max.: --- / --- Default value: 0

3.14.110 P-0-2806.0.7, Pressure controller integrator limitation

	Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-3404
	Function	This parameter is used for limiting the integrator. The integrator is limited by the absolute value. This means that the integrator is limited with the same value in positive and negative direction.
	Use	This limitation should be used to prevent an integrator from reaching too high a value, which cannot be reduced via the time constant within a reasonable time. In the case of the pressure controller, it is possible that due to the integrator a short-term pressure increase occurs at the limit stop, because the integrator continues opening the valve although the controller should already close it. This time can be reduced by the limitation.
P-0-2806.0.7 - Attributes	Function: Par Editable: ALWAYS Data length: 4Byte Memory: PARAM_SP Validity ch.: -- Format: DEC_MV Unit: ERROR Extr. val. ch.: -- Decim. pl.: Cycl. tra.: -- Comb. check: -- Set-depend.: Grp. 2	
	AXS:	min./max.: --- / --- Default value: 0

3.14.111 P-0-2806.0.9, Output pressure controller I-part

	Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-3405
	Function	The parameter displays the current value of the pressure controller integrator.
P-0-2806.0.9 - Attributes	Function: Par Editable: -- Data length: 4Byte Memory: -- Validity ch.: -- Format: DEC_MV Unit: ERROR Extr. val. ch.: -- Decim. pl.: Cycl. tra.: -- Comb. check: -- Set-depend.: --	
	AXS:	min./max.: --- / --- Default value: ---

3.14.112 P-0-2806.0.12, Output pump pressure controller I-part

	Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-3889
	Function	The parameter displays the current value of the integrator in the pressure controller for pump control.
P-0-2806.0.12 - Attributes	Function: Par Editable: -- Data length: 4Byte Memory: -- Validity ch.: -- Format: DEC_MV Unit: ERROR Extr. val. ch.: -- Decim. pl.: Cycl. tra.: -- Comb. check: -- Set-depend.: --	
	AXS:	min./max.: --- / --- Default value: ---

3.14.113 P-0-2806.0.13, Pressure controller volume A-side

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-3406	
Function	This parameter specifies the "oil dead volume" on the A side of the valve.		
Use	With the "dead volume" parameter, the control variable of the pressure controller is converted to a flow. This is done to allow for the amount of oil in the pipe/hose between the connection A of the valve and the corresponding amount of oil in the cylinder on the A side. To calculate the amount of oil in the cylinder, the most probable piston position during pressure control should be taken as a basis.		
P-0-2806.0.13 - Attributes	Function: Par Memory: PARAM_SP Unit: I Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: Grp. 2
	AXS:	min./max.: --- / ---	Default value: 0,000

3.14.114 P-0-2806.0.14, Pressure controller volume B-side

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-3407	
Function	This parameter specifies the "oil dead volume" on the B side of the valve.		
Use	With the "dead volume" parameter, the control variable of the pressure controller is converted to a flow. This is done to allow for the amount of oil in the pipe/hose between the connection B of the valve and the corresponding amount of oil in the cylinder on the B side. To calculate the amount of oil in the cylinder, the most probable piston position during pressure control should be taken as a basis.		
P-0-2806.0.14 - Attributes	Function: Par Memory: PARAM_SP Unit: I Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: Grp. 2
	AXS:	min./max.: --- / ---	Default value: 0,000

3.14.115 P-0-2806.0.15, Pressure controller initialization integrator, threshold 1

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-3438
Function	This parameter defines the lower pressure change limit value. If changes in the actual pressure value (derivative of the actual pressure value) are smaller than this pressure change limit value, the complete difference between the flow command value and the pressure controller output is taken over by the integrator of the pressure controller while switching from flow control to pressure. This will, however, only take place, if the integrator time constant ("P-0-2806.0.4") is unequal to zero.	
	P-0-2806.15 has to be smaller than P-0-2806.0.16 in order that the difference can be taken over. In the operating mode (OM) this is checked while writing the parameters.	
	This parameter provides for jerk-free switching from flow control to pressure control and is useful in particular for "easing", flow-controlled axes, for the	

Product-specific parameters

integrator in the pressure controller is only activated when changing over to pressure control takes place. Otherwise, the integrator is cleared. With a cleared integrator, an "easing" axis would firstly come to a standstill when being switched to pressure control.

Reason: The integrator is still 0 and has to be charged first. To achieve nevertheless a jerk-free changeover to pressure control, the integrator can take over the difference between the flow command value and the pressure controller output at the time of changing over. This will then result in a "smooth continued travel" of the now pressure-controlled axis.

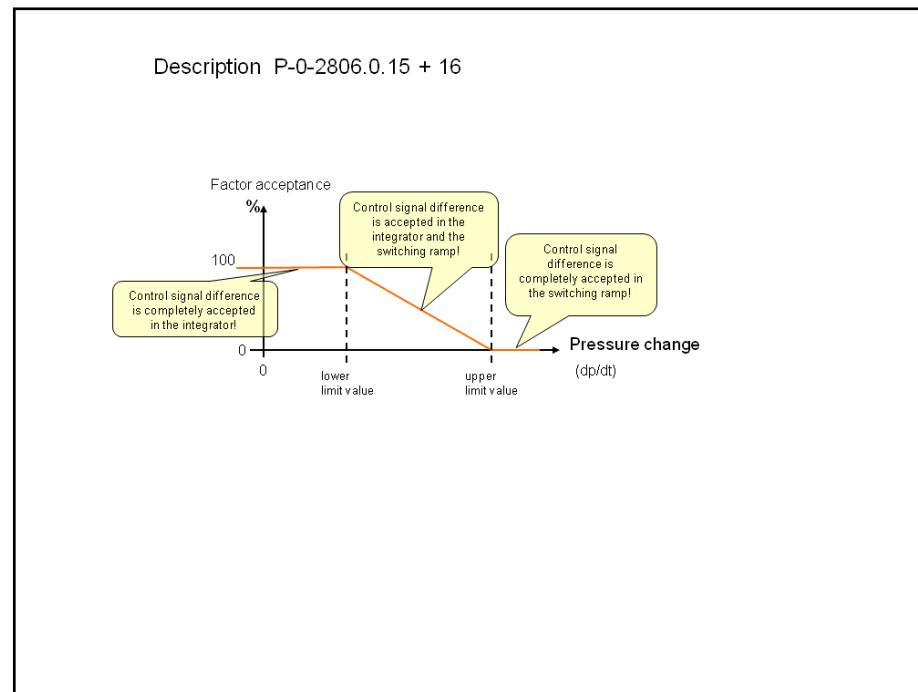


Fig. 3-30: Diagram for calculating the factor for applying the control variable difference in the pressure controller integrator

P-0-2806.0.15 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	ERROR	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 2

AXS:	min./max.: --- / ---	Default value: 0
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3.14.116 P-0-2806.0.16, Pressure controller initialization integrator, threshold 2

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-3531
Function	This parameter defines the upper pressure change limit value. If the changes of the actual pressure value (derivative of the actual pressure value) are greater than this pressure change limit value, the integrator in the pressure controller remains cleared.
	P-0-2806.15 has to be smaller than " P-0-2806.0.16 " in order that the value can be taken over. In the operating mode (OM) this is checked while writing the parameters.

The entire difference between the flow command value and the position controller actuating signal is then applied in the changeover ramp. By contrast, if the changes of the actual pressure value (derivative of the actual

pressure value) are less than this limit value and greater than "P-0-2806.0.15", a part is applied in the integrator and the remainder is loaded to the changeover ramp via linear scaling of the difference between the flow command value and the pressure controller actuating signal (see drawing).

This parameter is used for jerk-free switching from flow control to pressure control. In case of a flow-controlled axis moving a movable mass, the integrator is to be loaded as the pressure controller is only activated (computes) after changing over to pressure control. Otherwise, the integrator is cleared. With a cleared integrator, an "easing" axis would firstly come to a standstill when being switched to pressure control. Reason: The integrator is still 0 and has to be charged first. To achieve nevertheless a jerk-free changeover to pressure control, the integrator can take over the difference between the flow command value and the pressure controller output at the time of changeover. This will then result in a "smooth continued travel" of the now pressure-controlled axis.

The difference can also be taken over by the changeover ramp instead of the integrator. The extent, to which the difference is accepted by the integrator and/or the changeover ramp, depends on the current pressure change (derivative of the actual pressure value) as well as on the parameters "P-0-2806.0.15" and "P-0-2806.0.16". The following diagram explains the relationship.

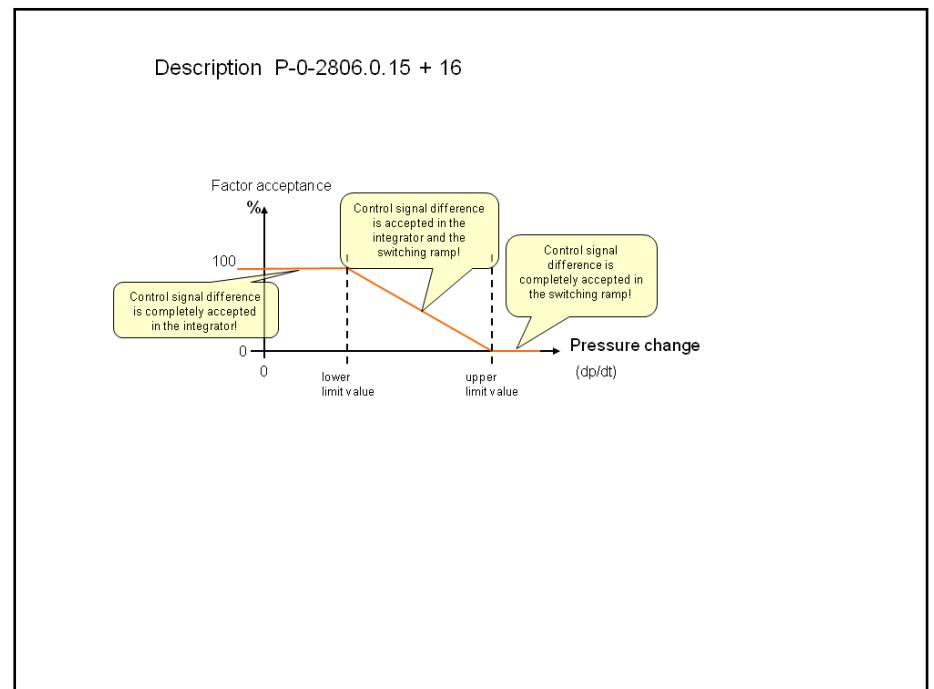


Fig. 3-31: Diagram for calculating the factor for applying the control variable difference in the pressure controller integrator

P-0-2806.0.16 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	ERROR	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 2

AXS:	min./max.: --- / ---	Default value: 0
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Product-specific parameters

3.14.117 P-0-2807, Pressure controller volume feedforward command value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter is used for pilot flow control and takes effect on the pressure controller actuating signal. The value is added to the actuating signal of the pressure controller and generates the pressure controller actuating signal for the changeover logic.	
Use	The pilot flow control in the pressure controller branch is used, for example, for jerk-free switching from flow control to pressure control in the case of axes moving a movable mass.	
P-0-2807 - Attributes	Function: Par Memory: -- Unit: ERROR Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: -- AXS: min./max.: --- / --- Default value: ---

3.14.118 P-0-2818, Pressure controller in the cascade, upper integrator limit

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter is intended for the manual limitation of the integrator in the pressure controller. This value limits the integrator to a maximum value.	
Use	This limitation is to prevent the integrator from reaching too high a value, which cannot be reduced via the time constant within a reasonable time.	
P-0-2818 - Attributes	Function: Par Memory: PARAM_SP Unit: ERROR Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: -- Data length: 4Byte Format: DEC_OV Decim. pl.: -- Set-depend.: Grp. 2 AXS: min./max.: --- / --- Default value: 0

3.14.119 P-0-2875.0.3, Maximum flow

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-3473
Function	This parameter contains the maximum possible flow. The value results from the performance data of the valve and the electronics and is stored as the default value in the valve.	
P-0-2875.0.3 - Attributes	Function: Par Memory: PARAM_SP Unit: l/min Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: -- Data length: 4Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: -- AXS: min./max.: s. Text / s. Text Default value: 180,000

3.14.120 P-0-2875.0.4, Maximum pressure

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-3474
Function	This parameter contains the maximum allowed pressure for the valve as the default value.	

P-0-2875.0.4 - Attributes	Function: Par Memory: PARAM_SP Unit: bar Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 315,000

3.14.121 P-0-2900.x.1, Analog input, control word

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1783, P-0-3481, P-0-3482, P-0-3483																		
Function	Each instance of the parameter "P-0-2900.x.1" stands for one of the analog inputs. x = 0: Analog input 1 (onboard) x = 1: Analog input 1 (DA option) x = 2: Analog input 2 (DA option) x = 3: Analog input 3 (DA option)																			
	The parameter is used for selecting the clock in which the analog input is processed, and for selecting the measuring range.																			
	See also Functional Description "Analog inputs"																			
Structure	The parameter has the following structure:																			
	<table border="1"> <thead> <tr> <th>Bit</th><th>Designation/function</th><th>Comment</th></tr> </thead> <tbody> <tr> <td>4-0</td><td>Reserved</td><td></td></tr> <tr> <td>7-5</td><td>Clock cycle, at which the assignment is calculated 001: Controller clock cycle 100: 2ms</td><td></td></tr> <tr> <td>11-8</td><td>Settings for the measuring range of the analog inputs 0001: Voltage ±10 V 0111: User-defined voltage range (wire break monitoring can be activated) 1001: Current 4mA- 20mA only possible with DA option (wire break monitoring can be activated)</td><td></td></tr> <tr> <td>13-12</td><td>Reserved</td><td></td></tr> <tr> <td>15-14</td><td>Type of diagnostics for wire break monitoring The monitoring function is active if P-0-2900.x.10 != 0 00: Warning E2270 01: Warning F2270</td><td></td></tr> </tbody> </table>	Bit	Designation/function	Comment	4-0	Reserved		7-5	Clock cycle, at which the assignment is calculated 001: Controller clock cycle 100: 2ms		11-8	Settings for the measuring range of the analog inputs 0001: Voltage ±10 V 0111: User-defined voltage range (wire break monitoring can be activated) 1001: Current 4mA- 20mA only possible with DA option (wire break monitoring can be activated)		13-12	Reserved		15-14	Type of diagnostics for wire break monitoring The monitoring function is active if P-0-2900.x.10 != 0 00: Warning E2270 01: Warning F2270		
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13-12	Reserved																			
15-14	Type of diagnostics for wire break monitoring The monitoring function is active if P-0-2900.x.10 != 0 00: Warning E2270 01: Warning F2270																			

P-0-2900.x.1 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: 0x120

3.14.122 P-0-2900.x.2, Analog input, target parameter

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1784, P-0-3488, P-0-3489, P-0-3490
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Product-specific parameters

Function	Each instance of this parameter stands for one of the analog channels. In this parameter, enter the IDN of the parameter to which a value is to be written that corresponds to the voltage or the current at the respective analog input. Only such IDNs can be entered in " P-0-2900.x.2 " that are contained in " P-0-0212 , Analog input, list of assignable parameters". x = 0: Analog input 1 (onboard) x = 1: Analog input 1 (DA option) x = 2: Analog input 2 (DA option) x = 3: Analog input 3 (DA option)																														
See also Functional Description "Analog inputs"																															
P-0-2900.x.2 - Attributes	<table border="1"> <tr> <td>Function:</td><td>Par</td><td>Editable:</td><td>SUBD:CM+PM</td><td>Data length:</td><td>4Byte</td></tr> <tr> <td>Memory:</td><td>PARAM_SP</td><td>Validity ch.:</td><td>SUBD:PM->OM</td><td>Format:</td><td>IDN</td></tr> <tr> <td>Unit:</td><td>--</td><td>Extr. val. ch.:</td><td>--</td><td>Decim. pl.:</td><td>0</td></tr> <tr> <td>Cycl. tra.:</td><td>--</td><td>Comb. check:</td><td>--</td><td>Set-depend.:</td><td>--</td></tr> <tr> <td>AXS:</td><td colspan="2">min./max.: --- / ---</td><td colspan="3">Default value: 0</td></tr> </table>	Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte	Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	IDN	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--	AXS:	min./max.: --- / ---		Default value: 0		
Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte																										
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	IDN																										
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																										
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																										
AXS:	min./max.: --- / ---		Default value: 0																												

3.14.123 P-0-2900.x.3, Analog input, nominal value

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1785 , P-0-3495 , P-0-3496 , P-0-3497																														
Function	Each instance of this parameter stands for one of the analog inputs. This parameter is used for scaling the analog input for the individual assignment. The nominal value is always the value, which is generated at the upper signal limit of the measuring range (without consideration of offset). The unit, the decimal places and the data type are determined by the parameter assigned in " P-0-2900.x.2 , Analog input, target parameter". x = 0: Analog input 1 (onboard) x = 1: Analog input 1 (DA option) x = 2: Analog input 2 (DA option) x = 3: Analog input 3 (DA option)																														
See also Functional Description "Analog inputs"																															
P-0-2900.x.3 - Attributes	<table border="1"> <tr> <td>Function:</td><td>Par</td><td>Editable:</td><td>SUBD:CM+PM</td><td>Data length:</td><td>4Byte</td></tr> <tr> <td>Memory:</td><td>PARAM_SP</td><td>Validity ch.:</td><td>SUBD:PM->OM</td><td>Format:</td><td>DEC_MV</td></tr> <tr> <td>Unit:</td><td>--</td><td>Extr. val. ch.:</td><td>--</td><td>Decim. pl.:</td><td>0</td></tr> <tr> <td>Cycl. tra.:</td><td>--</td><td>Comb. check:</td><td>--</td><td>Set-depend.:</td><td>--</td></tr> <tr> <td>AXS:</td><td colspan="2">min./max.: --- / ---</td><td colspan="3">Default value: 0</td></tr> </table>	Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte	Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--	AXS:	min./max.: --- / ---		Default value: 0		
Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte																										
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV																										
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																										
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																										
AXS:	min./max.: --- / ---		Default value: 0																												

3.14.124 P-0-2900.x.4, Analog input, offset

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1786 , P-0-3502 , P-0-3503 , P-0-3504																														
Function	Each instance of this parameter stands for one of the analog inputs. The offset of the analog input is set in this parameter. The offset corresponds to the value that the assignment parameter has with a signal value of 0. If "0" is not included in the selected measuring range, the offset refers to the lower limit of the signal range. The unit, the decimal places and the data type are determined by the parameter assigned in " P-0-2900.x.2 , Analog input x, target parameter".																														
See also Functional Description "Analog inputs"																															
P-0-2900.x.4 - Attributes	<table border="1"> <tr> <td>Function:</td><td>Par</td><td>Editable:</td><td>SUBD:CM+PM</td><td>Data length:</td><td>4Byte</td></tr> <tr> <td>Memory:</td><td>PARAM_SP</td><td>Validity ch.:</td><td>SUBD:PM->OM</td><td>Format:</td><td>DEC_MV</td></tr> <tr> <td>Unit:</td><td>--</td><td>Extr. val. ch.:</td><td>--</td><td>Decim. pl.:</td><td>0</td></tr> <tr> <td>Cycl. tra.:</td><td>--</td><td>Comb. check:</td><td>--</td><td>Set-depend.:</td><td>--</td></tr> <tr> <td>AXS:</td><td colspan="2">min./max.: --- / ---</td><td colspan="3">Default value: 0</td></tr> </table>	Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte	Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--	AXS:	min./max.: --- / ---		Default value: 0		
Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte																										
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV																										
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																										
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																										
AXS:	min./max.: --- / ---		Default value: 0																												

- $x = 0$: Analog input 1 (onboard)
- $x = 1$: Analog input 1 (DA option)
- $x = 2$: Analog input 2 (DA option)
- $x = 3$: Analog input 3 (DA option)

See also Functional Description "Analog inputs"

P-0-2900.x.4 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: 0
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3.14.125 P-0-2900.x.5, Analog input, filter time

Allocation

Hardware --

Funct. package(s):

Device parameter:

Alias: P-0-1787, P-0-3509, P-0-3510, P-0-3511

Function

Each instance of this parameter stands for one of the analog inputs.

To improve the signal quality of the analog input, a filter can be activated and set via the parameter "[P-0-2900.x.5](#)".

$x = 0$: Analog input 1 (onboard)

$x = 1$: Analog input 1 (DA option)

$x = 2$: Analog input 2 (DA option)

$x = 3$: Analog input 3 (DA option)

See also Functional Description "Analog inputs"

P-0-2900.x.5 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	ms	Extr. val. ch.:	--	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: 0,000 / s. Text	Default value: 0,000
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3.14.126 P-0-2900.x.8, Analog input, lower limit of signal range

Allocation

Hardware --

Funct. package(s):

Device parameter:

Alias: P-0-1788, P-0-3561, P-0-3562, P-0-3563

Function

Each instance of the parameter "[P-0-2900.x.8](#)" stands for one of the analog inputs.

$x = 0$: Analog input 1 (onboard)

$x = 1$: Analog input 1 (DA option)

$x = 2$: Analog input 2 (DA option)

$x = 3$: Analog input 3 (DA option)

This parameter contains the lower limit of the selected measuring range. If a user-defined measuring range is selected, this parameter can be written. Otherwise, it is used for display purposes only.

The lower limit cannot be greater than or equal to the upper limit.

See also Functional Description "Analog inputs"

P-0-2900.x.8 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	V	Extr. val. ch.:	+	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

Product-specific parameters

AXS:	min./max.: s. Text / s. Text	Default value: 0,000
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3.14.127 P-0-2900.x.9, Analog input, upper limit of signal range

Allocation Hardware --
 Funct. package(s):
 Device parameter:
 Alias: P-0-1789, P-0-3566, P-0-3567, P-0-3568

Function Each instance of the parameter "P-0-2900.x.9" stands for one of the analog inputs.

- x = 0:** Analog input 1 (onboard)
- x = 1:** Analog input 1 (DA option)
- x = 2:** Analog input 2 (DA option)
- x = 3:** Analog input 3 (DA option)

This parameter contains the upper limit of the selected measuring range. If a user-defined measuring range is selected, this parameter can be written. Otherwise, it is used for display purposes only.

The upper limit cannot be less than or equal to the lower limit.

See also Functional Description "Analog inputs"

P-0-2900.x.9 - Attributes	Function:	Par	Editable:	SUBD:CM+PM	Data length:	2Byte
	Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
	Unit:	V	Extr. val. ch.:	+	Decim. pl.:	3
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: 10,000
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3.14.128 P-0-2900.x.10, Analog input, wire break threshold

Allocation Hardware --
 Funct. package(s):
 Device parameter:
 Alias: P-0-3480, P-0-3487, P-0-3494, P-0-3501

Function Each instance of this parameter stands for one of the analog inputs.

The parameter "P-0-2900.x.10" specifies the threshold value for wire break monitoring. Wire break monitoring is available individually for each input. The monitoring function is active as soon as a value greater than "0" is entered in the parameter.

Using the parameter "P-0-2900.x.1", you can configure whether the wire break message is to be output as an error or as a warning.

- x = 0:** Analog input 1 (onboard)
- x = 1:** Analog input 1 (DA option)
- x = 2:** Analog input 2 (DA option)
- x = 3:** Analog input 3 (DA option)

See also Functional Description "Analog inputs"

P-0-2900.x.10 - Attributes	Function:	Par	Editable:	ALWAYS	Data length:	2Byte
	Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
	Unit:	V	Extr. val. ch.:	+	Decim. pl.:	3
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: 0,000 / s. Text	Default value: 0,000
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3.14.129 P-0-2901.0.1, Analog input, control word

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1791																														
Function Structure	Parameter for controlling the automatic adjustment of the analog inputs.																															
	<table border="1"> <thead> <tr> <th>Bit</th><th>Designation/function</th><th>Comment</th></tr> </thead> <tbody> <tr> <td>3-0</td><td>Number of analog input to be adjusted corresponds to structure index of "P-0-2900.x.1"</td><td></td></tr> <tr> <td>7-4</td><td>Reserved</td><td></td></tr> <tr> <td>8</td><td> Target of adjustment 0: Adjustment signal value at 0V 1: Adjustment maximum value for adjustment (P-0-2901.0.3) </td><td></td></tr> </tbody> </table>	Bit	Designation/function	Comment	3-0	Number of analog input to be adjusted corresponds to structure index of "P-0-2900.x.1"		7-4	Reserved		8	Target of adjustment 0: Adjustment signal value at 0V 1: Adjustment maximum value for adjustment (P-0-2901.0.3)																				
Bit	Designation/function	Comment																														
3-0	Number of analog input to be adjusted corresponds to structure index of "P-0-2900.x.1"																															
7-4	Reserved																															
8	Target of adjustment 0: Adjustment signal value at 0V 1: Adjustment maximum value for adjustment (P-0-2901.0.3)																															
	<i>Tab. 3-106: Structure</i>																															
Use	Using "P-0-2901.0.2" and "P-0-2901.0.3", the zero point and amplification can be adjusted for the selected analog input (P-0-2901.0.1; bit 0-3).																															
P-0-2901.0.1 - Attributes	<table border="1"> <tr><td>Function:</td><td>Par</td><td>Editable:</td><td>ALWAYS</td><td>Data length:</td><td>2Byte</td></tr> <tr><td>Memory:</td><td>PARAM_SP</td><td>Validity ch.:</td><td>SUBD:PM->OM</td><td>Format:</td><td>BIN</td></tr> <tr><td>Unit:</td><td>--</td><td>Extr. val. ch.:</td><td>--</td><td>Decim. pl.:</td><td>0</td></tr> <tr><td>Cycl. tra.:</td><td>--</td><td>Comb. check:</td><td>--</td><td>Set-depend.:</td><td>--</td></tr> <tr> <td>AXS:</td><td colspan="2">min./max.: --- / ---</td><td colspan="3">Default value: 0x1000</td></tr> </table>		Function:	Par	Editable:	ALWAYS	Data length:	2Byte	Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	BIN	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--	AXS:	min./max.: --- / ---		Default value: 0x1000		
Function:	Par	Editable:	ALWAYS	Data length:	2Byte																											
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	BIN																											
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																											
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																											
AXS:	min./max.: --- / ---		Default value: 0x1000																													

3.14.130 P-0-2901.0.2, C2800 Analog input adjustment command

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1792																														
Function	Command for the automatic adjustment of an analog input.																															
Use	The command C2800 causes the values for P-0-2900.x.3 and P-0-2900.x.4 to be automatically determined and saved.																															
	The „x“ represents the analog input selected in "P-0-2901.0.1; bit 0-3".																															
P-0-2901.0.2 - Attributes	<table border="1"> <tr><td>Function:</td><td>Cmd</td><td>Editable:</td><td>ALWAYS</td><td>Data length:</td><td>2Byte</td></tr> <tr><td>Memory:</td><td>--</td><td>Validity ch.:</td><td>--</td><td>Format:</td><td>BIN</td></tr> <tr><td>Unit:</td><td>--</td><td>Extr. val. ch.:</td><td>--</td><td>Decim. pl.:</td><td>0</td></tr> <tr><td>Cycl. tra.:</td><td>--</td><td>Comb. check:</td><td>--</td><td>Set-depend.:</td><td>--</td></tr> <tr> <td>AXS:</td><td colspan="2">min./max.: --- / ---</td><td colspan="3">Default value: ---</td></tr> </table>		Function:	Cmd	Editable:	ALWAYS	Data length:	2Byte	Memory:	--	Validity ch.:	--	Format:	BIN	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--	AXS:	min./max.: --- / ---		Default value: ---		
Function:	Cmd	Editable:	ALWAYS	Data length:	2Byte																											
Memory:	--	Validity ch.:	--	Format:	BIN																											
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																											
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																											
AXS:	min./max.: --- / ---		Default value: ---																													

3.14.131 P-0-2901.0.3, Analog input, maximum value for adjustment

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1793																								
Function	This parameter provides a defined command value for determining the value of "P-0-2900.x.3".																									
	The „x“ represents the analog input selected in "P-0-2901.0.1; bit 0-3".																									
P-0-2901.0.3 - Attributes	<table border="1"> <tr><td>Function:</td><td>Par</td><td>Editable:</td><td>ALWAYS</td><td>Data length:</td><td>4Byte</td></tr> <tr><td>Memory:</td><td>PARAM_SP</td><td>Validity ch.:</td><td>SUBD:PM->OM</td><td>Format:</td><td>DEC_MV</td></tr> <tr><td>Unit:</td><td>--</td><td>Extr. val. ch.:</td><td>--</td><td>Decim. pl.:</td><td>0</td></tr> <tr><td>Cycl. tra.:</td><td>--</td><td>Comb. check:</td><td>--</td><td>Set-depend.:</td><td>--</td></tr> </table>		Function:	Par	Editable:	ALWAYS	Data length:	4Byte	Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
Function:	Par	Editable:	ALWAYS	Data length:	4Byte																					
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV																					
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																					
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																					

Product-specific parameters

AXS:	min./max.: --- / ---	Default value: 0
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3.14.132 P-0-2911.x.1, Analog output: Control parameters

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-3532, P-0-3539	--										
Function	Each instance of the parameter "P-0-2911.x.1" stands for one of the analog outputs. x = 1: analog output 1 (DA option) x = 2: analog output 2 (DA option)											
	The analog output source is defined via the control word of the assignment: Also refer to the functional description "Analog Inputs and Outputs"											
Structure	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Bit</th><th style="text-align: center;">Designation/function</th><th style="text-align: center;">Comment</th></tr> </thead> <tbody> <tr> <td style="text-align: center;">1-0</td><td> Signal source 00: Direct output of the parameter value, e.g. P-0-0414 01: Output via parameter selection of P-0-2911.x.3 </td><td></td></tr> <tr> <td style="text-align: center;">15-2</td><td>Reserved</td><td></td></tr> </tbody> </table>			Bit	Designation/function	Comment	1-0	Signal source 00: Direct output of the parameter value, e.g. P-0-0414 01: Output via parameter selection of P-0-2911.x.3		15-2	Reserved	
Bit	Designation/function	Comment										
1-0	Signal source 00: Direct output of the parameter value, e.g. P-0-0414 01: Output via parameter selection of P-0-2911.x.3											
15-2	Reserved											

Tab. 3-107: P-0-2911.x.1, structure

Use The following parameters are also part of each analog output:

- P-0-2911.x.3
- P-0-2911.x.4
- P-0-2911.x.5
- P-0-2911.x.6
- P-0-2911.x.7

P-0-2911.x.1 - Attributes	Function:	Par	Editable:	ALWAYS	Data length:	2Byte
	Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	BIN
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: 0x0
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3.14.133 P-0-2911.x.3, Analog output: Parameter selection

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-3534, P-0-3541	--	
Function	Each instance of the parameter "P-0-2911.x.2" stands for one of the analog outputs. x = 1: analog output 1 (DA option) x = 2: analog output 2 (DA option)		
	In this parameter, enter the IDN of the parameter. The current value of the parameter is to be output to the corresponding analog output. The source of the analog output is set in "P-0-2911.x.1". Only ident numbers contained in "P-0-0426, Analog output IDN list of assignable parameters" can be entered in this parameter.		
	Also refer to the functional description "Analog Inputs and Outputs"		
Use	The following parameters are part of each analog output:		
	<ul style="list-style-type: none"> • P-0-2911.x.1 		

- [P-0-2911.x.4](#)
- [P-0-2911.x.5](#)
- [P-0-2911.x.6](#)
- [P-0-2911.x.7](#)

P-0-2911.x.3 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: IDN Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: --- / ---		Default value: 0

3.14.134 P-0-2911.x.4, Analog output: Offset

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-3535, P-0-3542
Function	Each instance of the parameter "P-0-2911.x.4" stands for one of the analog outputs. x = 1: analog output 1 (DA option) x = 2: analog output 2 (DA option)
	An offset is set for the corresponding analog output via this parameter. The offset is added to the current signal value of the drive parameter during the output.
	Also refer to the functional description "Analog Inputs and Outputs"
Use	The following parameters are part of each analog output:
	<ul style="list-style-type: none"> ● P-0-2911.x.1 ● P-0-2911.x.3 ● P-0-2911.x.5 ● P-0-2911.x.6 ● P-0-2911.x.7
P-0-2911.x.4 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --
	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
	AXS: min./max.: --- / ---
	Default value: 0

3.14.135 P-0-2911.x.5, Analog output: Value range

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-3536, P-0-3543
Function	Each instance of the parameter "P-0-2911.x.5" stands for one of the analog outputs. x = 1: analog output 1 (DA option) x = 2: analog output 2 (DA option)
	The value range of the drive parameter is set for the corresponding analog output via this parameter which is to be output to the corresponding analog output.
	Also refer to the functional description "Analog Inputs and Outputs"
Use	The following parameters are part of each analog output:
	<ul style="list-style-type: none"> ● P-0-2911.x.1

Product-specific parameters

- [P-0-2911.x.3](#)
- [P-0-2911.x.4](#)
- [P-0-2911.x.6](#)
- [P-0-2911.x.7](#)

P-0-2911.x.5 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: 1

3.14.136 P-0-2911.x.6, Analog output: Signal range, lower limit

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-3537, P-0-3544
Function	Each instance of the parameter " P-0-2911.x.6 " stands for an analog output. x = 1: analog output 1 (DA option) x = 2: analog output 2 (DA option)
Via this parameter, the lower signal range limit of the analog output is defined. In connection with parameter " P-0-2911.x.7 " (upper limit), the signal range of the analog output is defined on which the drive parameter signal is to be mapped. Furthermore, this parameter is used to define a lower limit for the output to the analog output. This means, the lowest voltage that can be output or the lowest current that can be output is specified. If as a result of mapping the current signal of the drive parameter, a lower signal or lower current is generated, the output value is limited to the value in parameter P-0-2911.x.6 .	

The following conditions have to be complied with when entering this parameter:

- [P-0-2911.x.6](#) >= Minimum voltage (e.g. -10 V) / minimum current of the analog output (e.g. 4mA) containing the assignment
- [P-0-2911.x.6](#) < Maximum voltage (e.g. 10 V) / maximum current of the analog output (e.g. 20mA) containing the assignment
- [P-0-2911.x.6](#) < [P-0-2911.x.7](#)

Also refer to the functional description "Analog Inputs and Outputs"

Use The following parameters are part of each analog output:

- [P-0-2911.x.1](#)
- [P-0-2911.x.3](#)
- [P-0-2911.x.4](#)
- [P-0-2911.x.5](#)
- [P-0-2911.x.7](#)

P-0-2911.x.6 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: ---

3.14.137 P-0-2911.x.7, Analog output: Signal range, upper limit

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-3538, P-0-3545	
Function	Each instance of parameter " P-0-2911.x.7 " stands for one of the analog outputs. x = 1: analog output 1 (DA option) x = 2: analog output 2 (DA option)	Via this parameter, the upper limit of the signal range is defined by the analog output. In connection with parameter P-0-2911.x.6 (lower limit), the value range of the analog output is defined on which the drive parameter signal is to be mapped. Furthermore, this parameter is used to define an upper limit for the output to the analog output. This means, the highest voltage that can be output or the highest current that can be output is specified. If as a result of mapping the current signal of the drive parameter, a higher voltage or higher current is generated, the output value is limited to the value in parameter P-0-2911.x.7 . The following conditions have to be complied with when entering this parameter: <ul style="list-style-type: none"> • P-0-2911.x.7 > Minimum voltage (e.g. -10V) / minimum current of the analog output (e.g. 4mA), it is assigned to • P-0-2911.x.7 <= Maximum voltage (e.g. 10V) / maximum current of the analog output (e.g. 20mA), it is assigned to • P-0-2911.x.7 > P-0-2911.x.6 Also refer to the functional description "Analog Inputs and Outputs"	
Use	The following parameters are part of each analog output: <ul style="list-style-type: none"> • P-0-2911.x.1 • P-0-2911.x.3 • P-0-2911.x.4 • P-0-2911.x.5 • P-0-2911.x.6 		
P-0-2911.x.7 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: 10,000

3.14.138 P-0-2943, Pump displacement volume

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter " P-0-2943, Pump displacement volume " specifies the displacement volume of the pump in the unit cm ³ .	
P-0-2943 - Attributes	Function: Par Memory: PARAM_SP Unit: cm ³ Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
	AXS:	min./max.: s. Text / s. Text
		Default value: 100,0

Product-specific parameters

3.14.139 P-0-2944, Motor nominal speed

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter "P-0-2944, Motor nominal speed" specifies the nominal speed of the drive motor in the operation mode "pressure/swivel angle control" or "pressure control/flow" (open-loop control/closed-loop control).	
P-0-2944 - Attributes	Function: Par Memory: PARAM_SP Unit: rpm Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: -- Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: 1500

3.14.140 P-0-2952, Torque limitation pump relative

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	To protect the drive motor against overloading, the maximum torque of the SY(H)DFED pump can be limited. The settings always refer to the maximum torque of the pump. If the current torque exceeds the maximum allowed torque, the swivel angle command value is reduced.	
	The settings for "P-0-2952, Torque limitation of pump, relative" correspond to the values for power limitation of the SY(H)DFEE systems at constant speed.	
P-0-2952 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: -- Format: DEC_OV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: 0,0

3.15 P-0-3000 to P-0-3199 Encoder memory**3.15.1 P-0-3053.0.2, Encoder memory: Torque histogram**

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In this parameter, the distribution of the motor torque and/or the motor force is displayed over the motor operating hours. By means of this data, statements regarding the load on the motor and thus on the service life of the motor can be made.	
	This parameter is only available for Rexroth motors with QEM encoder data memory version 7 (MS2N, MS2S).	
P-0-3053.0.2 - Attributes	Function: Par Memory: -- Unit: s Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---

3.15.2 P-0-3053.0.3, Encoder memory: Temperature histogram

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In this parameter, the distribution of the motor temperature is displayed over the motor operating hours. By means of this data, statements regarding the load on the motor and thus on the service life of the motor can be made.	



This parameter is only available for Rexroth motors with QEM encoder data memory version 7 (MS2N, MS2S).

P-0-3053.0.3 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	s	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: ---

3.15.3 P-0-3053.0.4, Encoder memory: Motor current histogram

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In this parameter, the distribution of the motor current is displayed over the motor operating hours. By means of this data, statements regarding the load on the motor and thus on the service life of the motor can be made.	



This parameter is only available for Rexroth motors with QEM encoder data memory version 7 (MS2N, MS2S).

P-0-3053.0.4 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	s	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: ---

3.15.4 P-0-3054.0.1, Encoder memory: Diagnostic data of brake

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In this parameter, the operating data of the motor holding brake are displayed over the motor operating hours. By means of this data, statements regarding the load on the motor holding brake and thus on the service life of the brake can be made.	



This parameter is only available for Rexroth motors with QEM encoder data memory version 7 (MS2N, MS2S).

P-0-3054.0.1 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	--	Validity ch.:	--	Format:	FLOAT
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

Product-specific parameters

AXS:	min./max.: --- / ---	Default value: ---
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3.15.5 P-0-3060.0.1, Motor fan switch-on temperature

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1733
Function	For temperature sensors providing a measured value of the motor temperature, this parameter defines switching on and off of the fan. The signal for switching on corresponds to the value of the parameter. The signal for switching off is 10K lower.	
P-0-3060.0.1 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0208 Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
		Data length: 2Byte Format: DEC_MV Decim. pl.: Set-depend.: --

AXS:	min./max.: s. Text / s. Text	Default value: 0
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3.15.6 P-0-3060.0.3, Speed-dependent motor shutdown temperature reduction

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1734
Function	This parameter defines the temperature difference by which the motor shutdown temperature is reduced by the temperature model depending on the current speed. The data are specified according to the currently set temperature scaling based on 1000 revolutions per minute.	
	Example: For scaling in degrees Celsius, a value of 3.0 in this parameter defines that the motor shutdown temperature is to be reduced by 3.0 °C at a speed of 1000 rpm.	
	Speed-dependent motor shutdown temperature reduction is initialized depending on the mounting situation from the respective list element in parameter "P-0-3060.0.5". The mounting position is defined in "P-0-3060.0.4".	
	 For Bosch Rexroth motors, the parameters required for initialization of "P-0-3060.0.3" are read from the encoder memory. For third-party motors, "P-0-3060.0.3" can be configured directly.	
P-0-3060.0.3 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0208 Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --
		Data length: 2Byte Format: DEC_OV Decim. pl.: Set-depend.: Grp. 4

AXS:	min./max.: s. Text / s. Text	Default value: 0
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3.15.7 P-0-3060.0.4, Motor mounting situation

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1735
Function	With this parameter, the motor mounting situation is defined. Based on this, the speed-dependent motor shutdown temperature reduction is set.	
Structure	Possible mounting situations are:	

Value	Mounting situation	Comment
0	Gears Under this mounting situation, the gear temperature is also increased. For this reason, only a low overtemperature is admissible.	
1	60 K: Under this mounting situation, a maximum housing overtemperature of 60 K is admissible.	
2	100 K: Under this mounting situation, a maximum winding overtemperature of 100 K is admissible.	

Tab. 3-108: Overview of possible mounting situations

Use The numerical value in "P-0-3060.0.4" serves as list index for the reduction factor in "P-0-3060.0.5" belonging to the respective mounting situation. For initialization of the motor temperature model, the respective factor is applied from "P-0-3060.0.5" to "P-0-3060.0.3" according to this index.

P-0-3060.0.4 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS:	min./max.: 0 / 2	Default value: 1
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3.15.8 P-0-3060.0.5, Motor shutdown temperature reduction/1000rpm**Allocation**

Hardware --
Funct. package(s):
Device parameter:
Alias: P-0-1736

Function

This parameter contains factors for the possible mounting situations and related cooling conditions of the motor. Based on the respective factor, the shutdown temperature of the related mounting situation of the motor is to be reduced accordingly by the motor temperature model.

Structure

The list is structured as follows:

Element	Designation/function	Comment
0	Reduction in the case of gear attachment	
1	Reduction at 60 K Also serves as default setting (set by the default value of P-0-3060.0.4)	
2	Reduction at 100 K	

Tab. 3-109: Speed-dependent motor shutdown temperature reduction

Use

For initialization of the motor temperature model, the reduction factor of the respective mounting situation is selected from the list in "P-0-3060.0.5" by means of the list index in "P-0-3060.0.4" and applied in "P-0-3060.0.3".

P-0-3060.0.5 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	S-0-0208	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS:	min./max.: --- / ---	Default value: s. Text
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Product-specific parameters

3.15.9 P-0-3060.0.6, Temperature sensor coefficients

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1748	
Function	The winding temperature can be estimated using a thermal model for motors in which the temperature sensor has not been installed directly in the winding, but in the motor housing, for example. These calculation coefficients are used to estimate the winding temperature from the measuring point. These values are made available for the Rexroth motors. Using the values for third-party motors is not recommended, since the point of installation of a sensor and the temperature distribution in the motor are unknown.		
P-0-3060.0.6 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: FLOAT Decim. pl.: 0 Set-depend.: Grp. 4
	AXS:	min./max.: --- / ---	Default value: s. Text

3.15.10 P-0-3060.0.10, Thermal parameters, motor

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1737
Function	This list parameter contains the thermal motor data applied for control in the motor temperature model. The thermal time constant housing is also applied for the rotor protective function.	
	Only if all thermal parameters have a value above zero, the motor temperature model is activated.	

Element no.	Name	Unit	Decimal places	Length in bytes
0	Thermal conductance of housing-environment	W/K	4	4
1	Thermal conductance of winding-housing	W/K	4	4
2	Thermal time constant of housing	min	4	4
3	Thermal time constant of winding	s	4	4

Tab. 3-110: Thermal motor parameters

P-0-3060.0.10 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: DEC_MV Decim. pl.: 4 Set-depend.: Grp. 4
	AXS:	min./max.: --- / ---	Default value: s. Text

3.15.11 P-0-3061, Status of motor fan control

Allocation	Hardware Funct. package(s): Device parameter:	--
-------------------	---	----

Function The fan control provides a status bit in "[P-0-3061](#)", which has to be assigned to the digital output of the control section to control the motor fan.

Structure

Bit	Designation/function	Comment
0	Motor fan control* 0: Motor fan off 1: Motor fan on	
15-1	Reserved	

* Assign to digital output to control the motor fan

Tab. 3-111: P-0-3061, Status of motor fan control

See also Functional Description "Digital inputs/outputs"

P-0-3061 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: ---

3.15.12 P-0-3071, Identification data, type plate

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter contains the identification data of the motor. The parameter is stored in the motor data memory. If the firmware detects this type of motor, e.g. MS2N motors, the data are copied to the controller when switching on the control voltage.

On "[P-0-0660](#), C6300 Command Generate nameplate", the identification data of third-party motors (to be configured by the customer) are displayed in this parameter and stored in the encoder memory (password required).

For Rexroth motors, the following data are stored:

- S-0-1300.20.03, Vendor Code
- S-0-1300.20.04, Device Name
- S-0-1300.20.08, Hardware version
- [S-0-1300.20.11](#), Order Number
- [S-0-1300.20.12](#), Serial Number
- [P-0-3100](#), Version of data structure in encoder memory

P-0-3071 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	COMPONENT_SP	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: ---

3.15.13 P-0-3072, Motor: Static type data, type plate

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter contains the type data of the motor. The parameter is stored in the motor data memory. If the firmware detects this type of motor, the data are copied to the controller when switching on the control voltage.

Product-specific parameters

On command "[P-0-0660](#), C6300 Generate nameplate", the type data of third-party motors (to be configured by the customer) are displayed in this parameter and stored in the encoder memory (password required).

For Rexroth motors, it may contain the following parameter data.

- [S-0-0109](#), Motor peak current
- [S-0-0111](#), Motor current at standstill
- [S-0-0113](#), Maximum motor speed
- [S-0-0204](#), Motor shutdown temperature
- [S-0-0533](#), Nominal torque/force of motor
- [S-0-0534](#), Maximum torque/force of motor

- [P-0-0018](#), Number of pole pairs/pole pair distance
- [P-0-0051](#), Torque/force constant
- [P-0-0448](#), Temperature-dependent torque/force coefficient
- [P-0-0449](#), Speed-dependent torque/force coefficient
- [P-0-0510](#), Rotor inertia
- [P-0-0512](#), Temperature sensor
- [P-0-0540](#), Torque of holding brake
- [P-0-0853](#), Max. DC bus voltage, motor
- [P-0-3060.0.3](#), Speed-dependent motor shutdown temperature reduction
- [P-0-3060.0.5](#), Motor shutdown temperature reduction / 1000rpm
- [P-0-3060.0.10](#), Thermal parameters, motor
- [P-0-3941](#), Motor torque/force at maximum current when using reluctance
- [P-0-3942](#), Reluctance angle at nominal motor current
- [P-0-3943](#), Reluctance angle at maximum motor current
- [P-0-4002](#), Charact. of quadrature-axis induct. of motor, inductances
- [P-0-4003](#), Charact. of quadrature-axis inductance of motor, currents
- [P-0-4005](#), Flux-generating current, limit value
- [P-0-4013](#), Current limit value of demagnetization
- [P-0-4014](#), Type of construction of motor
- [P-0-4016](#), Direct-axis inductance of motor
- [P-0-4017](#), Quadrature-axis inductance of motor
- [P-0-4048](#), Stator resistance

P-0-3072 - Attributes	Function:	Par	Editable:	--	Data length:	4Byte var.
	Memory:	COMPONENT_SP	Validity ch.:	--	Format:	HEX
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

3.15.14 P-0-3073, Motor: Control loop default values, type plate

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter contains the default control data of the motor stored in the motor data memory. If the firmware detects this type of motor, e.g. MS2N	

motors, the data can be loaded into the controller with the controller default values command (motor-specific controller values).

On execution of "[P-0-0660](#), C6300 Generate type plate command", the default controller data of third-party motors (to be configured by the customer) are displayed in this parameter and stored in the encoder memory (password required).

For Rexroth motors, it may contain the following parameter data:

- [S-0-0100](#), Velocity controller proportional gain
- [S-0-0101](#), Velocity loop integral action time
- [S-0-0104](#), Position loop Kv-factor
- [S-0-0106](#), Current controller proportional gain 1
- [S-0-0107](#), Current loop integral action time 1
- [P-0-0004](#), Velocity controller smoothing time constant
- [P-0-0533](#), Voltage controller proportional gain
- [P-0-0534](#), Voltage loop integral action time
- [P-0-0535](#), Motor voltage at no load
- [P-0-0536](#), Maximum motor voltage
- [P-0-3945](#), Motor control configuration

P-0-3073 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	COMPONENT_SP	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

3.15.15 P-0-3074, Motor: Control loop default values 2, type plate

Allocation Hardware
Funct. package(s):
Device parameter: --

Function This parameter contains additional default control data of the motor stored in the motor data memory. If the firmware detects such a motor, e.g. MS2N motors, the data can be loaded to the controller with the controller default values command (motor-specific controller values).

For Rexroth motors, the following data are stored:

- [P-0-0062](#), Velocity-dependent PWM switching: Switching velocity

P-0-3074 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	COMPONENT_SP	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

3.15.16 P-0-3075, Application-specific data, type plate

Allocation Hardware
Funct. package(s):
Device parameter: --

Function This parameter contains the application-specific default values of the motor stored in the motor data memory. If the firmware detects this type of motor, e.g. MS2N motors, the data can be loaded into the controller with the controller default values command (application data).

On execution of "[P-0-0660](#), C6300 Generate type plate command", the application-specific default values of third-party motors (to be configured by

Product-specific parameters

the customer) are displayed in this parameter and stored in the encoder memory (password required).

For Rexroth motors, such data are not configured on delivery.

P-0-3075 - Attributes	Function: Par Memory: COMPONENT_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.15.17 P-0-3100, Version of data structure in encoder memory

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter indicates the version of the data in the encoder memory of Rexroth motors. See also Functional Description "Rexroth housing motors with encoder data memory"	

Structure			
Motor	Encoder memory vers.	P-0-3100	Comment
MSK	4.1	0x0401	Standard
	4.2	0x0402	IndraDrive Mi
	4.3	0x0403	4.1 + diagnostic data motor operation
	4.4	0x0404	4.3 + field weakening
	4.5	0x0405	4.4 + correction of torque constant
	4.6	0x0406	4.5 + reluctance utilization MSK133
MS2N with encoder performance A	4.6 and 7.1	0x0406 0x0701	4.5 + reluctance utilization MSK133 Standard
MS2N with encoder performance C	7.1	0x0701	Standard
MS2S	7.1	0x0701	with extended range for motor diagnosis data

Tab. 3-112: Encoder memory versions and properties installed in motors

P-0-3100 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.16 P-0-3200 to P-0-3599 Safety technology

3.16.1 P-0-3200, SMO: Manufacturer version

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter contains the version of the safety firmware.	
P-0-3200 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / ---

3.16.2 P-0-3200.0.5, SMO: Module ID

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-2554
Function	The parameter displays the content of the assembly identifier of the safety option.	
P-0-3200.0.5 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 4Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.16.3 P-0-3200.0.6, SMO: PCB ID

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-2570
Function	The parameter displays the content of the PCB identifier of the safety option.	
P-0-3200.0.6 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 4Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.16.4 P-0-3200.0.20, SMO: Service password

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	 This parameter is only used for service purposes and is not relevant for any application!	
P-0-3200.0.20 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 4Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.17 P-0-3600 to P-0-4067 General device parameters

3.17.1 P-0-3600, C8400 SMO: Interface configuration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-3254.0.1" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).	
P-0-3600 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

Product-specific parameters

3.17.2 P-0-3650.0.12, UDS: bootSoftwareFingerprintDataIdentifier

Allocation Hardware Funct. package(s): Device parameter:	--																											
Function  The description of this parameter is in preparation.																												
P-0-3650.0.12 - Attributes	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Function:</td> <td>Par</td> <td style="width: 20%;">Editable:</td> <td>ALWAYS</td> <td style="width: 20%;">Data length:</td> <td>1Byte var.</td> </tr> <tr> <td>Memory:</td> <td>--</td> <td>Validity ch.:</td> <td>--</td> <td>Format:</td> <td>HEX</td> </tr> <tr> <td>Unit:</td> <td>--</td> <td>Extr. val. ch.:</td> <td>--</td> <td>Decim. pl.:</td> <td>0</td> </tr> <tr> <td>Cycl. tra.:</td> <td>--</td> <td>Comb. check:</td> <td>--</td> <td>Set-depend.:</td> <td>--</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">AXS:</td> <td style="width: 40%;">min./max.: --- / ---</td> <td style="width: 40%;">Default value: ---</td> </tr> </table>	Function:	Par	Editable:	ALWAYS	Data length:	1Byte var.	Memory:	--	Validity ch.:	--	Format:	HEX	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--	AXS:	min./max.: --- / ---	Default value: ---
Function:	Par	Editable:	ALWAYS	Data length:	1Byte var.																							
Memory:	--	Validity ch.:	--	Format:	HEX																							
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																							
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																							
AXS:	min./max.: --- / ---	Default value: ---																										

3.17.3 P-0-3720, Default profile

Allocation Hardware Funct. package(s): Device parameter:	--																											
Function "P-0-4084.0.2" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).																												
P-0-3720 - Attributes	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Function:</td> <td>Par</td> <td style="width: 20%;">Editable:</td> <td>--</td> <td style="width: 20%;">Data length:</td> <td>2Byte</td> </tr> <tr> <td>Memory:</td> <td>--</td> <td>Validity ch.:</td> <td>--</td> <td>Format:</td> <td>HEX</td> </tr> <tr> <td>Unit:</td> <td>--</td> <td>Extr. val. ch.:</td> <td>--</td> <td>Decim. pl.:</td> <td>0</td> </tr> <tr> <td>Cycl. tra.:</td> <td>--</td> <td>Comb. check:</td> <td>--</td> <td>Set-depend.:</td> <td>--</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">AXS:</td> <td style="width: 40%;">min./max.: --- / ---</td> <td style="width: 40%;">Default value: ---</td> </tr> </table>	Function:	Par	Editable:	--	Data length:	2Byte	Memory:	--	Validity ch.:	--	Format:	HEX	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--	AXS:	min./max.: --- / ---	Default value: ---
Function:	Par	Editable:	--	Data length:	2Byte																							
Memory:	--	Validity ch.:	--	Format:	HEX																							
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																							
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																							
AXS:	min./max.: --- / ---	Default value: ---																										

3.17.4 P-0-3748, Password configuration

Allocation Hardware Funct. package(s): Device parameter:	--																											
Function "P-0-4064.0.1" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).																												
P-0-3748 - Attributes	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Function:</td> <td>Par</td> <td style="width: 20%;">Editable:</td> <td>ALWAYS</td> <td style="width: 20%;">Data length:</td> <td>2Byte</td> </tr> <tr> <td>Memory:</td> <td>PARAM_SP</td> <td>Validity ch.:</td> <td>--</td> <td>Format:</td> <td>HEX</td> </tr> <tr> <td>Unit:</td> <td>--</td> <td>Extr. val. ch.:</td> <td>--</td> <td>Decim. pl.:</td> <td>0</td> </tr> <tr> <td>Cycl. tra.:</td> <td>--</td> <td>Comb. check:</td> <td>+</td> <td>Set-depend.:</td> <td>--</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">AXS:</td> <td style="width: 40%;">min./max.: --- / ---</td> <td style="width: 40%;">Default value: 0x0</td> </tr> </table>	Function:	Par	Editable:	ALWAYS	Data length:	2Byte	Memory:	PARAM_SP	Validity ch.:	--	Format:	HEX	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--	AXS:	min./max.: --- / ---	Default value: 0x0
Function:	Par	Editable:	ALWAYS	Data length:	2Byte																							
Memory:	PARAM_SP	Validity ch.:	--	Format:	HEX																							
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																							
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--																							
AXS:	min./max.: --- / ---	Default value: 0x0																										

3.17.5 P-0-3749, Password hash

Allocation Hardware Funct. package(s): Device parameter:	--																											
Function "P-0-4064.0.2" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).																												
P-0-3749 - Attributes	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Function:</td> <td>Par</td> <td style="width: 20%;">Editable:</td> <td>SUBD:CM+PM</td> <td style="width: 20%;">Data length:</td> <td>1Byte var.</td> </tr> <tr> <td>Memory:</td> <td>--</td> <td>Validity ch.:</td> <td>--</td> <td>Format:</td> <td>HEX</td> </tr> <tr> <td>Unit:</td> <td>--</td> <td>Extr. val. ch.:</td> <td>--</td> <td>Decim. pl.:</td> <td>0</td> </tr> <tr> <td>Cycl. tra.:</td> <td>--</td> <td>Comb. check:</td> <td>--</td> <td>Set-depend.:</td> <td>--</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">AXS:</td> <td style="width: 40%;">min./max.: --- / ---</td> <td style="width: 40%;">Default value: ---</td> </tr> </table>	Function:	Par	Editable:	SUBD:CM+PM	Data length:	1Byte var.	Memory:	--	Validity ch.:	--	Format:	HEX	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--	AXS:	min./max.: --- / ---	Default value: ---
Function:	Par	Editable:	SUBD:CM+PM	Data length:	1Byte var.																							
Memory:	--	Validity ch.:	--	Format:	HEX																							
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																							
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																							
AXS:	min./max.: --- / ---	Default value: ---																										

3.17.6 P-0-3750, Test IDN for conformity purpose - configuration

Allocation Hardware Funct. package(s): Device parameter:	--
--	----

	Function	"S-0-1099.0.1" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).				
P-0-3750 - Attributes	Function:	Par	Editable:	ALWAYS	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	HEX
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: --- / ---			Default value: ---	

3.17.7 P-0-3751, Test IDN for conformity check - container

	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	"S-0-1099.0.2" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).				
P-0-3751 - Attributes	Function:	Par	Editable:	ALWAYS	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	HEX
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: --- / ---			Default value: ---	

3.17.8 P-0-3809, Island grid mode status word

	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	"S-0-1717.0.150" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-3809 - Attributes	Function:	Par	Editable:	--	Data length:	4Byte
	Memory:	--	Validity ch.:	--	Format:	BIN
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: --- / ---			Default value: ---	

3.17.9 P-0-3810, External synchronization, voltage difference

	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	"S-0-1718.0.160" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-3810 - Attributes	Function:	Par	Editable:	ALWAYS	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_MV
	Unit:	V	Extr. val. ch.:	+	Decim. pl.:	1
	Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: -1000,0 / 1000,0			Default value: ---	

3.17.10 P-0-3811, External synchronization, phase shift

	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	"S-0-1718.0.161" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-3811 - Attributes	Function:	Par	Editable:	ALWAYS	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_MV
	Unit:	degrees	Extr. val. ch.:	+	Decim. pl.:	2
	Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--

Product-specific parameters

AXS:	min./max.: -180,00 / 180,00	Default value: ---
------	-----------------------------	--------------------

3.17.11 P-0-3816, Braking resistor energy counter

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1702.0.140" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).		
P-0-3816 - Attributes	Function: Par Memory: -- Unit: Ws Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		

3.17.12 P-0-3817, Braking resistor power command value

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1702.0.142" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).		
P-0-3817 - Attributes	Function: Par Memory: -- Unit: W Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: 0 / s. Text		

3.17.13 P-0-3818, Master communication: List of available protocols

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"P-0-4089.0.17" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-3818 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		

3.17.14 P-0-3819, Encoder 1, absolute encoder buffer (static)

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"P-0-0177.0.1" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).		
P-0-3819 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		

3.17.15 P-0-3829, Island grid voltage command value

Allocation	Hardware Funct. package(s): Device parameter:	--
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Function	"S-0-1716.0.160" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-3829 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --		
	AXS: min./max.: 127,0 / 800,0			Default value: 400,0	

3.17.16 P-0-3830, Island grid frequency command value

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	"S-0-1716.0.161" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-3830 - Attributes	Function: Par Memory: PARAM_SP Unit: Hz Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 2 Set-depend.: --		
	AXS: min./max.: 16,00 / 100,00		Default value: 50,00		

3.17.17 P-0-3832, DC voltage command value

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	"S-0-1741.0.160" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-3832 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --		
	AXS: min./max.: s. Text / 2000,0		Default value: s. Text		

3.17.18 P-0-3833, DC current command value

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	"S-0-1741.0.161" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-3833 - Attributes	Function: Par Memory: PARAM_SP Unit: A Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --		
	AXS: min./max.: -20000,000 / 20000,000		Default value: s. Text		

3.17.19 P-0-3835, DC voltage feedback value

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	"S-0-1742.0.160" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
P-0-3835 - Attributes	Function: Par Memory: -- Unit: V Cycl. tra.: AT + MDT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --		

Product-specific parameters

AXS:	min./max.: --- / ---	Default value: ---
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3.17.20 P-0-3836, DC current feedback value

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1742.0.161" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-3836 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
	AXS:	min./max.: --- / ---	
	Default value: ---		

3.17.21 P-0-3839, Axis type data in device

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"P-0-1518.0.4" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-3839 - Attributes	Function: Par Memory: ON_BOARD_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	
	Default value: ---		

3.17.22 P-0-3840, SMO: Use of local input X(1)41

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"P-0-3322.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-3840 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: -- Verify: +	SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	
	Default value: ---		

3.17.23 P-0-3842, Communication block patch - control word

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1099.0.140" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-3842 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	
	Default value: ---		

3.17.24 P-0-3843, Communication block patch - container

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1099.0.141" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-3843 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.17.25 P-0-3860, DC current, effective command value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1742.0.162" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-3860 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT + MDT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: +
		Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.17.26 P-0-3863, Island grid mode control word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1716.0.150" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-3863 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: +
		Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: s. Text / s. Text Default value: s. Text

3.17.27 P-0-3865, Connection: Allowed data losses

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1050.0.11" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-3865 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: FKM:PO Validity ch.: -- Extr. val. ch.: + Comb. check: --
		Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: 1 / 65535 Default value: 2

3.17.28 P-0-3866, Serial number of encoder

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0601.2.136" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

Product-specific parameters

P-0-3866 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

3.17.29 P-0-3867, Absolute position range internal

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-0601.2.158" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-3867 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: s. Text	

3.17.30 P-0-3868, Serial number of encoder

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-0601.3.136" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-3868 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: s. Text	

3.17.31 P-0-3869, Absolute position range internal

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-0601.3.158" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-3869 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: s. Text	

3.17.32 P-0-3870, Serial number of encoder

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-0602.10.136" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-3870 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: s. Text	

3.17.33 P-0-3871, Absolute position range internal

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0601.10.158" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-3871 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: s. Text

3.17.34 P-0-3872, Phys. encoder evaluation configuration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0602.2.136" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-3872 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: 0x0

3.17.35 P-0-3873, Phys. encoder software version

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0602.2.137" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-3873 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: s. Text

3.17.36 P-0-3874, Phys. encoder software version build date

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0602.2.138" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-3874 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: s. Text

3.17.37 P-0-3875, Phys. encoder designation

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0602.2.139" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

Product-specific parameters

P-0-3875 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

3.17.38 P-0-3876, Phys. encoder evaluation configuration

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-0602.3.136" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-3876 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: 0x0	

3.17.39 P-0-3877, Phys. encoder software version

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-0602.3.137" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-3877 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: s. Text	

3.17.40 P-0-3878, Phys. encoder software version build date

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-0602.3.138" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-3878 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: s. Text	

3.17.41 P-0-3879, Phys. encoder designation

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-0602.3.139" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-3879 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: s. Text	

3.17.42 P-0-3880, Phys. encoder evaluation configuration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0602.10.136" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-3880 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: 0x0

3.17.43 P-0-3881, Phys. encoder software version

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0602.10.137" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-3881 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: s. Text

3.17.44 P-0-3882, Phys. encoder software version build date

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0602.10.138" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-3882 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: s. Text

3.17.45 P-0-3883, Phys. encoder designation

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0602.10.139" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-3883 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: s. Text

3.17.46 P-0-3884, Serial number of encoder

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0611.1.136" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

Product-specific parameters

P-0-3884 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

3.17.47 P-0-3885, Absolute position range internal, (input)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0611.1.158" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-3885 - Attributes	Function: Par Memory: PARAM_SP Unit: incr Cycl. tra.: --	Editable: SUBD:CM Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: s. Text

3.17.48 P-0-3886, Serial number of encoder

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0611.2.136" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-3886 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: s. Text

3.17.49 P-0-3887, Absolute position range internal, (input)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0611.2.158" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-3887 - Attributes	Function: Par Memory: PARAM_SP Unit: incr Cycl. tra.: --	Editable: SUBD:CM Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: s. Text

3.17.50 P-0-3888, Absolute encoder offset, encoder memory

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0613.1.156" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
P-0-3888 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

3.17.51 P-0-3889, Output pump pressure controller I-part

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"S-0-0613.1.157" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			
P-0-3889 - Attributes	Function: Par Memory: -- Unit: ERROR Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: Set-depend.: --	
	AXS:	min./max.: --- / ---	Default value: ---	

3.17.52 P-0-3890, Absolute encoder offset, encoder memory

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"S-0-0613.2.156" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			
P-0-3890 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --	
	AXS:	min./max.: --- / ---	Default value: ---	

3.17.53 P-0-3891, Output pressure controller P-gain

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"S-0-0613.2.157" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			
P-0-3891 - Attributes	Function: Par Memory: -- Unit: ERROR Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: Set-depend.: --	
	AXS:	min./max.: --- / ---	Default value: ---	

3.17.54 P-0-3892, NC reaction time F2/F3

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"P-0-0117.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			
P-0-3892 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --	
	AXS:	min./max.: 0 / 60000	Default value: 0	

3.17.55 P-0-3893, NC reaction time F4/F6/F7

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"P-0-0117.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			

Product-specific parameters

P-0-3893 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: 0 / 60000		Default value: 0

3.17.56 P-0-3899, SMO: Proposed axis identifier, auto commissioning

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"P-0-3235.0.6" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).		
P-0-3899 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---	

3.17.57 P-0-3908.x.1, PCB identification data (XML)

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter contains the information on identification of the PCB, such as serial number, material number, manufacturing date, ..., as an XML string.		
P-0-3908.x.1 - Attributes	Function: Par Memory: COMPONENT_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---	

3.17.58 P-0-3908.x.2, PCB type data: Type-specific

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter contains the type-specific, device-independent type data of the PCB (e.g., adjustment input values) in compact parameter format.		
P-0-3908.x.2 - Attributes	Function: Par Memory: COMPONENT_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---	

3.17.59 P-0-3908.x.3, PCB type data: Unit-specific

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter contains the unit-specific, device-independent type data of the PCB (e.g., adjustment result values) in compact parameter format.		
P-0-3908.x.3 - Attributes	Function: Par Memory: COMPONENT_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---	

3.17.60 P-0-3908.x.8, Subsystem firmware identifier

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter contains firmware information in XML format.	
P-0-3908.x.8 - Attributes	Function: Par Memory: COMPONENT_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Format: ASCII Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.17.61 P-0-3915.0.1, Module/firmware history, time stamp

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter logs the system time of recognized hardware/firmware changes. The respective changes are logged in parameter "P-0-3915.0.2 Module/firmware history, component designation".	
P-0-3915.0.1 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 8Byte var. Format: TIME Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: s. Text

3.17.62 P-0-3915.0.2, Module/firmware history, component designation

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1739
Function	This parameter logs the recognized hardware/firmware changes. In case of firmware changes, the last recognized firmware version (S-0-1300.0.9) is logged in short form. In case of hardware changes, the serial number of the new component is logged. The times of the changes are logged in parameter "P-0-3915.0.1 Module/firmware history, time stamp".	
P-0-3915.0.2 - Attributes	This parameter contains a maximum of 32 HW/FW changes. The top entry is the latest entry, the last one is the oldest entry. If more than 32 changes have been recognized, the latest entry pushes the oldest one out of the list.	
	The parameter contains a maximum of 32 HW/FW changes. The top entry is the latest entry, the last one is the oldest entry. If more than 32 changes have been recognized, the latest entry pushes the oldest one out of the list.	
	The changes respectively separated by a semicolon. If one change contains more information, they are separated by a comma.	
	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: s. Text

3.17.63 P-0-3915.0.3, Module/firmware history, cause of error

Allocation	Hardware Funct. package(s): Device parameter: Alias:	--
		P-0-1741

Product-specific parameters

Function This parameter logs the last error that occurred before recognition of a change. This is list index 0 of the parameter "[P-0-0192](#), Error memory of diagnostic numbers". The times as well as the respective firmware/hardware change are recorded in the parameters "[P-0-3915.0.1](#) Module/firmware history, time stamp" and "[P-0-3915.0.2](#) Module/firmware history, component designation".

The parameter contains a maximum of 32 HW/FW changes. The top entry is the latest entry, the last one is the oldest entry. If more than 32 changes have been recognized, the latest entry pushes the oldest one out of the list.

P-0-3915.0.3 - Attributes	Function:	Par	Editable:	--	Data length:	4Byte var.
	Memory:	PARAM_SP	Validity ch.:	--	Format:	HEX
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:			min./max.: --- / ---		Default value: s. Text	

3.17.64 P-0-3915.0.130, Module/firmware history, compact

P-0-3915.0.130 - Attributes	Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- -- -- P-0-3591			
	Function	Summary of the structure elements module/firmware history (P-0-3915.0.1 to P-0-3915.0.3).				
			Function:	Par	Editable:	--
			Memory:	PARAM_SP	Validity ch.:	--
			Unit:	--	Extr. val. ch.:	--
			Cycl. tra.:	--	Comb. check:	--
			AXS:	min./max.: --- / ---		Default value: s. Text

3.17.65 P-0-3916, Communication - Connection: Process Data Image

P-0-3916 - Attributes	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	"S-0-1050.0.140" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
			Function:	Par	Editable:	--
			Memory:	--	Validity ch.:	--
			Unit:	--	Extr. val. ch.:	--
			Cycl. tra.:	--	Comb. check:	--
			AXS:	min./max.: --- / ---		Default value: ---

3.17.66 P-0-3917, Communication - Connection: Process Data Image

P-0-3917 - Attributes	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	"S-0-1050.1.140" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).				
			Function:	Par	Editable:	--
			Memory:	--	Validity ch.:	--
			Unit:	--	Extr. val. ch.:	--
			Cycl. tra.:	--	Comb. check:	--
			AXS:	min./max.: --- / ---		Default value: ---

3.17.67 P-0-3918, Oscilloscope: Trigger time

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"P-0-0035.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-3918 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.17.68 P-0-3919, Encoder 2, absolute encoder buffer (static)

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"P-0-0178.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-3919 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: s. Text

3.17.69 P-0-3920, Exception data

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter has been implemented for internal purposes.		
 The functional principle of the parameter is documented only internally, and changes or evaluations are reserved to customer support.			
P-0-3920 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.17.70 P-0-3921, Performance load

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"P-0-0322.20.0" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
P-0-3921 - Attributes	Function: Par Memory: -- Unit: % Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

Product-specific parameters

3.17.71 P-0-3940, Motor torque/force at nominal current when using reluctance

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	If the reluctance torque is used, the available motor torque is increased while the current remains the same. This requires the appropriate motor design. Parameter "P-0-3940" specifies the corresponding torque and/or force developed by the motor if the reluctance effect is utilized. The current to which the torque refers, is entered in parameter "S-0-0111, Motor current at standstill".	
The value of the torque must be higher than the torque calculated from the product of: P-0-0051, Torque/force constant × S-0-0111, Motor current at standstill		
P-0-3940 - Attributes	Function: Par Memory: PARAM_SP Unit: Nm Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
		Data length: 4Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: Grp. 5
	AXS:	min./max.: s. Text / s. Text Default value: 0,000

3.17.72 P-0-3941, Motor torque/force at maximum current when using reluctance

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	If the reluctance torque is used, the available motor torque is increased while the current remains the same. This requires the appropriate motor design. Parameter "P-0-3941" specifies the corresponding torque and/or force developed by the motor if the reluctance effect is utilized. The current to which the torque refers, is entered in parameter "S-0-0109, Motor peak current".	
The value of the torque must be higher than the torque specified in parameter "S-0-0534, Maximum torque/force of motor".		
P-0-3941 - Attributes	Function: Par Memory: PARAM_SP Unit: Nm Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
		Data length: 4Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: Grp. 5
	AXS:	min./max.: s. Text / s. Text Default value: 0,000

3.17.73 P-0-3942, Reluctance angle at nominal motor current

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	If the reluctance torque is used, the available motor torque is increased while the current remains the same. This requires the appropriate motor design. Parameter "P-0-3942" specifies the electrical angle by which the current is to be imprinted into the motor as compared with the commutation offset. The angle applies to the current value which is specified in parameter "S-0-0111, Motor current at standstill".	
P-0-3942 - Attributes	Function: Par Memory: PARAM_SP Unit: degrees Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
		Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: Grp. 5

AXS:	min./max.: s. Text / s. Text	Default value: 0,0
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3.17.74 P-0-3943, Reluctance angle at maximum motor current

Allocation Hardware
Funct. package(s):
Device parameter: --

Function If the reluctance torque is used, the available motor torque is increased while the current remains the same. This requires the appropriate motor design. Parameter "P-0-3943" specifies the electrical angle by which the current is to be imprinted into the motor as compared with the commutation offset. The angle applies to the current value which is specified in parameter "S-0-0109, Motor peak current".

P-0-3943 - Attributes	Function: Par	Editable: SUBD:CM	Data length: 2Byte
Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_OV	
Unit: degrees	Extr. val. ch.: +	Decim. pl.: 1	
Cycl. tra.: --	Comb. check: --	Set-depend.: Grp. 5	

AXS:	min./max.: s. Text / s. Text	Default value: 0,0
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3.17.75 P-0-3944, Motor torque/force at maximum current without using reluctance

Allocation Hardware
Funct. package(s):
Device parameter: --

Function If the reluctance torque is used, the available motor torque is increased while the current remains the same. This requires the appropriate motor design. To use the optimal torque of the motor, different values have to be specified in addition to the motor parameters for synchronous motors. Parameter "P-0-3944" specifies the corresponding torque and/or force developed by the motor if the reluctance effect is **not** utilized.



The current to which the torque refers, is entered in parameter "S-0-0109, Motor peak current".

P-0-3944 - Attributes	Function: Par	Editable: SUBD:CM+PM	Data length: 4Byte
Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_OV	
Unit: Nm	Extr. val. ch.: +	Decim. pl.: 3	
Cycl. tra.: --	Comb. check: --	Set-depend.: Grp. 5	

AXS:	min./max.: s. Text / s. Text	Default value: 0,000
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3.17.76 P-0-3945, Motor control configuration

Allocation Hardware
Funct. package(s):
Device parameter: --

Function Motor control is configured with this parameter. For Rexroth motors, the parameter is set to the value configured in the encoder memory when the controller default values (motor-specific controller values) are loaded.

Product-specific parameters

Structure	Bit	Designation/function	Comment
	0	Field weakening with synchronous motors 0: Disabled 1: Enabled	
	1	Actual current value preparation, dynamic The function can only be used for synchronous motors. 0: Not active 1: Active By enabling the function, the actual current value filter is active. The filter time is set in parameter P-0-0082 . Use a filter time of 0, the filter is disabled.	
	2	Actual current value filter 0: Not active 1: actual current value is filtered. The filter time is set in parameter P-0-0082 .	
	3	Reserved	
	11	Activation of correction of torque constants of synchronous motors 0: No dynamic correction of the torque constants 1: Dynamic correction of the torque constants - Depending on the saturation and the motor temperature	
	13	Asynchronous motors: Reduction of velocity control loop gain in field weakening operation 0: Reduction not active 1: Reduction is proportional to field weakening (default value) Synchronous motors: Velocity control loop gain is corrected when torque constant is corrected (see bit 11) 0: Adjustment of control loop gain to corrected torque constant 1: Correction switched off (default value)	

Tab. 3-113: Motor control configuration

[P-0-3945 - Attributes](#)

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 5
AXS:		min./max.: --- / ---		Default value: 0x2001	

3.17.77 P-0-4002, Charact. of quadrature-axis induct. of motor, inductances

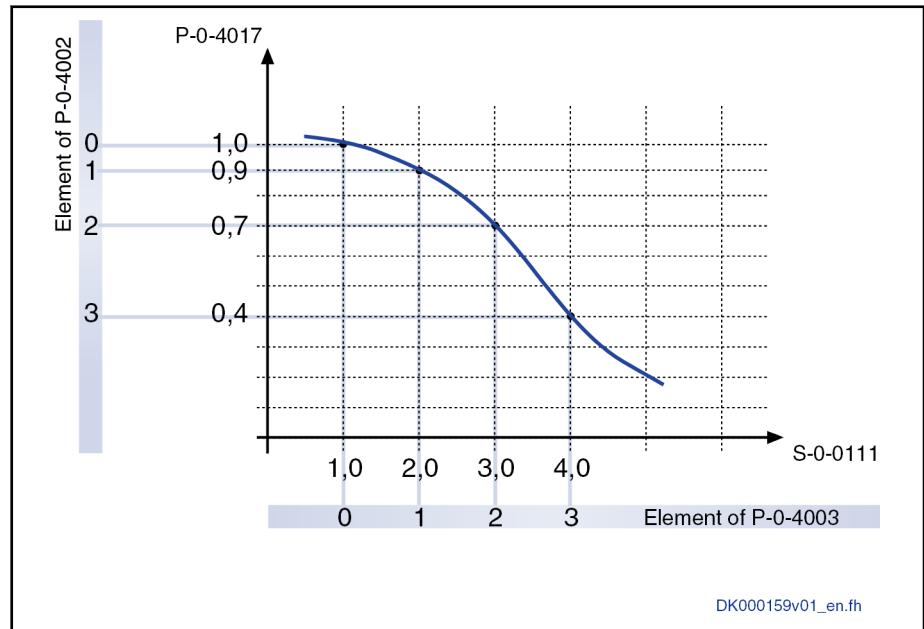
Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Along with parameter "P-0-4003, Charact. of quadrature-axis inductance of motor, currents", this parameter describes the characteristic curve of the quadrature-axis inductance of the motor (L_q) in relation to the torque-generating current (I_q).	



If required (e.g. saturation phenomena), it is thereby possible to achieve a reduction of the effective current controller gain for higher currents.

Structure

"P-0-4002" has a list structure and its list elements each form value pairs with those of "P-0-4003". These value pairs define the characteristic curve.



DK000159v01_en.fh

Fig. 3-32: Significance and function of P-0-4002 and P-0-4003

The values in parameter "P-0-4002" are factors which refer to parameter "P-0-4017", Quadrature-axis inductance of motor". The inductance values Lq of the characteristic are resulting by multiplication with this value.

Use

The parameter must always contain 4 list elements. The values of these elements have to be monotonically decreasing.



Writing the correct value to this parameter:

- In the case of MBS high-speed motors by Rexroth, by loading the motor parameters with the ctrlX DRIVE Engineering commissioning software
- In the case of MSK motors and MS2N motors with encoder data memory, by loading the value from the encoder data memory when the control voltage of the drive is switched on
- In the case of other motors, manual input according to manufacturer's specification

P-0-4002 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS:

min./max.: s. Text / 30,000

Default value: s. Text

3.17.78 P-0-4003, Charact. of quadrature-axis inductance of motor, currents

Allocation
Hardware

Funct. package(s):
Device parameter:

--

Product-specific parameters

Function Along with parameter "P-0-4002, Charact. of quadrature-axis induct. of motor, inductances", this parameter describes the characteristic curve of the quadrature-axis inductance of the motor Lq in relation to the torque-generating current Iq.



If required (e.g. saturation phenomena), it is thereby possible to achieve a reduction of the effective current controller gain for higher currents.

Structure "P-0-4002" has a list structure and its list elements each form value pairs with those of "P-0-4003". These value pairs define the characteristic curve.

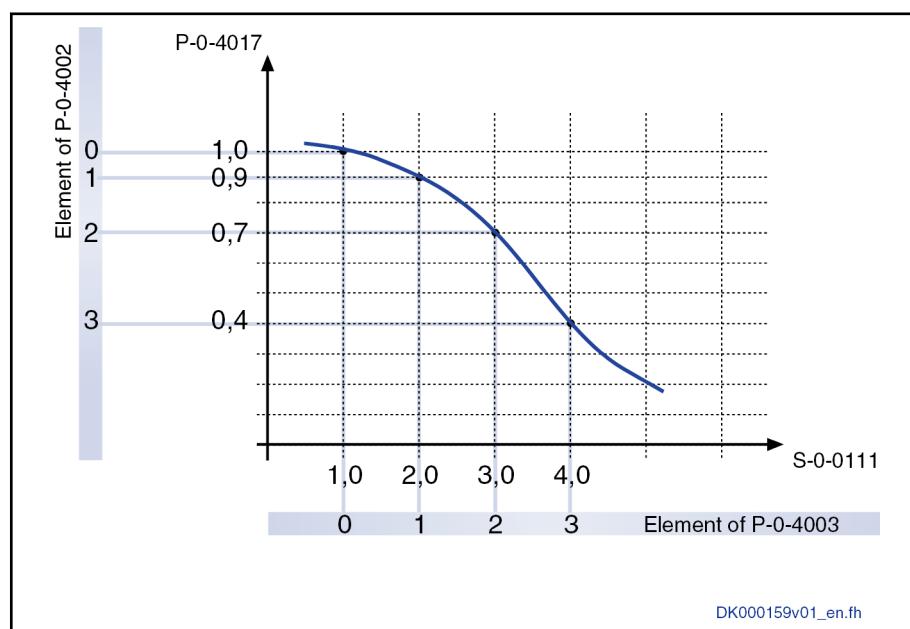


Fig. 3-33: Significance and function of P-0-4002 and P-0-4003

The values in parameter "P-0-4003" are factors which refer to the value in parameter "S-0-0111, Motor current at standstill". The current values Iq of the characteristic are resulting by multiplication with this value.

Use Observe the following during parameterization:

- The parameter must always contain 4 list elements. The values of these elements have to be monotonously ascending.
- Writing the correct value to this parameter:
 - In the case of MBS high-speed motors by Rexroth, by loading the motor parameters with the ctrlX DRIVE Engineering commissioning software
 - In the case of MSK motors and MS2N motors with encoder data memory, by loading the value from the encoder data memory when the control voltage of the drive is switched on
 - In the case of other motors, manual input according to manufacturer's specification

P-0-4003 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS:

min./max.: s. Text / 30,000

Default value: s. Text

3.17.79 P-0-4004, Magnetizing current

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In case of asynchronous motors, this parameter is used to enter the nominal magnetizing current defined by Bosch Rexroth. The actually flowing magnetizing current in the basic speed range results from multiplying the value of "P-0-4004" by "P-0-0532, Premagnetization factor". In the field-weakening range, the magnetizing current is reduced with increasing speed, starting from the value of this product by the field controller.	
 Writing the correct value to this parameter:		
<ul style="list-style-type: none"> • In the case of Rexroth motors with motor data memory in the encoder, the value is automatically loaded from the motor data memory. • In the case of Rexroth motors without motor data memory, e.g. 2AD, ADF series or kit motors, the value is set by loading the motor parameters via the ctrlX DRIVE commissioning software. • In the case of other asynchronous motors: manual input according to manufacturer's specification or the value is determined by motor data identification, commands C32, C36. • The parameter is not used for synchronous motors. 		

See also Functional Description "Operating motors with ctrlX DRIVE"

P-0-4004 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	A	Extr. val. ch.:	--	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS:	min./max.: --- / ---	Default value: 0,500
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3.17.80 P-0-4005, Flux-generating current, limit value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter can be used to enter a negative limit value for the flux-generating current. This limit value is provided for field-weakening operation of synchronous motors. It is the maximum value of the current specified in the field weakening range of the controller.	
Writing the correct value to this parameter:		

Product-specific parameters



Writing the correct value to this parameter:

- In the case of Rexroth motors with motor data memory in the encoder, the value is automatically loaded from the motor data memory.
- In the case of Rexroth motors without motor data memory, e.g. kit motors and linear motors, the value is set by loading the motor parameters via the ctrlX DRIVE Engineering commissioning software.
- In the case of other motors: manual input according to manufacturer's specification or the value is determined by motor data identification, commands C32, C36.
- The parameter is not used for asynchronous motors.

See also functional description "Limitations"

See also Functional Description "Determining the parameter values of third-party motors"

P-0-4005 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_MV
Unit:	A	Extr. val. ch.:	--	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS: min./max.: --- / --- Default value: 0,000

3.17.81 P-0-4006, Positioning block target position**Allocation**

Hardware
Funct. package(s):
Device parameter:

Function

This parameter is used in the "positioning block mode" to individually define the different target positions of a maximum of 64 positioning blocks (→ list parameter with 64 elements).



The significance and internal interpretation of each of the entered values depends on "[P-0-4019, Positioning block mode](#)".



This parameter is only available upon enabling (enabled package: positioning block mode).

See also Functional Description "Positioning block mode"

P-0-4006 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	+	Decim. pl.:	--
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: s. Text / s. Text Default value: s. Text

3.17.82 P-0-4007, Positioning block velocity**Allocation**

Hardware
Funct. package(s):
Device parameter:

Function

This parameter is used in the positioning block mode to individually define the different travel velocities of a maximum of 64 positioning blocks (→ list parameter with 64 elements).



This parameter is only available upon enabling (enabled package: positioning block mode).

P-0-4007 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0044	Extr. val. ch.:	+	Decim. pl.:	--
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: s. Text / s. Text **Default value:** s. Text

3.17.83 P-0-4008, Positioning block acceleration

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter is used in the positioning block mode to individually define the different positioning accelerations of a maximum of 64 positioning blocks (→ list parameter with 64 elements).



Together with the corresponding jerk value entered in "P-0-4009", the positioning acceleration entered in "P-0-4008" defines the parameter content of "P-0-0042, Current position command average value filter order".

"P-0-4008" takes effect if the value is smaller than "P-0-4063".



This parameter is only available upon enabling (enabled package: positioning block mode).

P-0-4008 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0160	Extr. val. ch.:	+	Decim. pl.:	--
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: s. Text / s. Text **Default value:** s. Text

3.17.84 P-0-4009, Positioning block jerk

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter is used in the positioning block mode to individually define the different positioning jerk values of a maximum of 64 positioning blocks (→ list parameter with 64 elements).



Together with the corresponding jerk value entered in "P-0-4009", the positioning acceleration entered in "P-0-4008" or the positioning deceleration entered in "P-0-4063" defines the parameter content of "P-0-0042, Current position command average value filter order".



This parameter is only available upon enabling (enabled package: positioning block mode).

See also Functional Description "Positioning block mode"

Product-specific parameters

P-0-4009 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0160 Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte var. Format: DEC_MV Decim. pl.: Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: s. Text

3.17.85 P-0-4010, Load inertia

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is provided for the (motor-related) load inertia reduced to the motor. The value can be determined with the command for automatic control loop setting (C1800). The value is used to determine the velocity control loop gain.	
	Depending on the type of construction of the motor (linear or rotary), the value has the following significance:	
	<ul style="list-style-type: none"> • Load inertia, motor-related (without rotor inertia) for rotary motors • Load mass (without primary part mass) for linear motors 	
Use	Automatic control loop setting	
	The load inertia can be automatically determined by executing the command "P-0-0162, C1800 Command Drive optimization / command value box". If the axis-side inertia value is exactly known, then this value should be entered in "P-0-4010". The load inertia or load mass is essential for optimizing the velocity control loop.	
	Sensorless, flux-controlled motor operation (SVC)	
	In sensorless, flux-controlled motor operation, the value of the motor-related load inertia is essential for setting the frequency controller. Therefore, the motor-related axis-side inertia value has to be entered. The value may be available from the machine design, otherwise it has to be determined by a run-up test.	
	Unit	
	The drive firmware automatically adjusts the unit to the type of construction of the motor (rotary or linear) entered in "P-0-4014, Type of construction of motor".	

Unit for type of constr. of motor (P-0-4014)

Rotary	Linear
kgm^2	kg

Tab. 3-114: Rotary/linear unit

P-0-4010 - Attributes	Function: Par Memory: PARAM_SP Unit: kgm^2 Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 7 Set-depend.: Grp. 1
AXS:	min./max.: --- / ---		Default value: 0,0000000

3.17.86 P-0-4011, EtherCAT: Frame Diagnostics

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	With EtherCAT master communication: Displays the time range of the EtherCAT telegram.	

Structure	Value	Designation/function
	0	EtherCAT Frame in range t5 - t11
	1	EtherCAT Frame in range t11
	2	EtherCAT Frame in range t5
	3	EtherCAT Frame in range t5/t11 (ranges overlap)
	4	No EtherCAT Frame in last bus cycle

Tab. 3-115: P-0-4011

P-0-4011 - Attributes	Function: Par	Editable: --	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: DEC_OV
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: ---

3.17.87 P-0-4011.0.1, EtherCAT: Syncmanager for diagnostics

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1761
Function	With EtherCAT master communication: Used to select the Syncmanager for diagnostics generation in the parameters "P-0-4011" and "S-0-1050.0.141".	
P-0-4011.0.1 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: 2

3.17.88 P-0-4013, Current limit value of demagnetization

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter contains a percentage value which refers to parameter "S-0-0109, Motor peak current" for synchronous motors. If this percentage value is multiplied by the value of "S-0-0109", the result is the current limit value. If the electric current limit value is exceeded, the magnets of the synchronous motor risk being permanently demagnetized. In case the limit value is exceeded, the power output stage of the controller is temporarily disabled to protect the motor, until the electric current has fallen below the limit value again.	
	Warning E8028 is generated in the disabled state.	



The correct value is written to this parameter as follows:

- For Rexroth motors with encoder data memory:
Automatic when controller is switched on.
- In the case of Rexroth motors without encoder data memory:
By loading the motor parameters with the "ctrlX DRIVE Engineering" commissioning software.
- In the case of other motors:
By manual input according to the manufacturer's specification.

Product-specific parameters

See also functional description "Limitations"					
P-0-4013 - Attributes	Function: Par	Editable:	SUBD:CM	Data length:	2Byte
	Memory: PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
	Unit: %	Extr. val. ch.:	+	Decim. pl.:	0
	Cycl. tra.: --	Comb. check:	--	Set-depend.:	Grp. 4
	AXS:	min./max.:	100 / 150	Default value:	120

3.17.89 P-0-4014, Type of construction of motor

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter is used to inform the controller of control-relevant features of the connected motor.		
See also Functional Description "Operating motors with ctrlX DRIVE"			
Structure			
	Bit	Designation/function	Comment
	4	Motor winding 0: for clockwise rotary field 1: for counter-clockwise rotary field This bit is only evaluated for motors with the type plate 7 or 8! When the bit has been set, bit 3 for the inversion of the encoder data becomes active in S-0-0277 . In this way, the rotary field direction matches the rotational direction of the encoder. The position change with positive rotational direction (clockwise, with view to the motor shaft) is negative.	
	11/9/8/3	Type of construction of motor 0000: Synchronous motor rotary, standard 0100: Synchronous motor linear, standard 1000: Synchronous motor rotary with reluctance torque 0010: Asynchronous motor rotary 0001: Synchronous reluctance motor rotary	
	10	Encoder data memory 0: Not available 1: Available	
	13	"P-0-0640, Cooling type" taken into account 0: Inactive 1: Active and has to be adjusted to the implemented motor cooling!	only for motors of the MSK series
	14	Thermal time constant in standstill 0: No reduction 1: Reduction to half the value (P-0-4034 , P-0-4035)	

Tab. 3-116: P-0-4014, Type of construction of motor

Use Units, decimal places

For some parameters it is necessary that the drive firmware adjusts the units and decimal places to the type of construction of the motor (rotary or linear). In this case, the respective units and decimal places are specified directly for the concerned parameter.

Motors with encoder data memory

In the case of Rexroth motors with encoder data memory, the bits of this parameter are automatically set correctly! This is done during boot-up (after switching on the controller) and with every transition to phase 4 (ready for operation state).

Motors without encoder data memory

In the case of Rexroth motors without encoder data memory, the bits of this parameter are automatically set correctly when the motor parameters are loaded from the database of the ctrlX DRIVE Engineering commissioning software.

P-0-4014 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: +	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: Grp. 5
	AXS:	min./max.: --- / ---	Default value: s. Text

3.17.90 P-0-4015, Motor voltage constant

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter contains the value of the e.m.f. constant of the motor. The effective value of phase-to-phase motor voltage at 1000 rpm has to be specified for a motor current = 0 A. For linear motors, the voltage has to be specified at a velocity of one meter per second.	
	The correct value is written to this parameter as follows:	

- **For Rexroth motors with encoder data memory:** Automatically when the controller is switched on.
- **For Rexroth motors without encoder data memory:** by loading the motor parameters with the "ctrlX DRIVE Engineering" commissioning software.
- **For other motors:** manual input according to manufacturer's specification.

If the parameter of standard synchronous motors is set to 0, the e.m.f. constant is calculated acc. to parameter "[P-0-0051 Torque/force constant](#)".



For motors with reluctance, a value always has to be entered in the parameter.

P-0-4015 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 4 Set-depend.: Grp. 4
	AXS:	min./max.: s. Text / s. Text	Default value: 0,0000

3.17.91 P-0-4016, Direct-axis inductance of motor

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	For synchronous motors, the direct-axis inductance of the motor is entered in this parameter. The direct-axis inductance is the inductance of the d-axis in the field-oriented d-q coordinate system and is also called Ld. Observe that for the direct-axis inductance of the motor a value is expected that was determined from the inductances of the 3-phase motor model by space vector transformation.	

Product-specific parameters



The correct value is written to this parameter as follows:

- For Rexroth motors with encoder data memory:
Automatic when controller is switched on.
- In the case of Rexroth motors without encoder data memory:
By loading the motor parameters with the "ctrlX DRIVE Engineering" commissioning software.
- In the case of other motors:
By manual input according to the manufacturer's specification.

P-0-4016 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	mH	Extr. val. ch.:	+	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS:	min./max.: s. Text / s. Text	Default value: 1,000
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3.17.92 P-0-4017, Quadrature-axis inductance of motor

Allocation Hardware
Funct. package(s): --
Device parameter:

Function For synchronous motors, the quadrature-axis inductance of the motor is entered in this parameter. The quadrature-axis inductance is the inductance of the q-axis in the field-oriented d-q coordinate system and is also called Lq. Observe that for the quadrature-axis inductance of the motor a value is expected that was determined from the inductances of the 3-phase motor model by space vector transformation.



The correct value is written to this parameter as follows:

- For Rexroth motors with encoder data memory:
Automatic when controller is switched on.
- In the case of Rexroth motors without encoder data memory:
By loading the motor parameters with the "ctrlX DRIVE Engineering" commissioning software.
- In the case of other motors:
By manual input according to the manufacturer's specification.

P-0-4017 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	mH	Extr. val. ch.:	+	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS:	min./max.: s. Text / s. Text	Default value: 1,000
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3.17.93 P-0-4018, Positioning block delay time

Allocation Hardware
Funct. package(s): --
Device parameter:

Function "P-0-4018" is used in the positioning block mode to parameterize a defined delay time between the individual positioning blocks.



This parameter is only available upon enabling (enabled package: positioning block mode).

See also Functional Description "Positioning block mode"

Use Since this is a list parameter with 64 elements, different delay times during block transition can be individually defined for all 64 positioning blocks.

The following aspects have to be observed for the parameter setting:

- The positioning block delay time only takes effect for a sequential block with intermediate stop
- When the programmed target position of the block has been reached, there is a delay time "[P-0-4018\[n\]](#)" until the sequential block {n+1} is started

P-0-4018 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	ms	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: 0 / 60000

Default value: s. Text

3.17.94 P-0-4019, Positioning block mode

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter is used in the positioning block operation mode to set the positioning block mode. It is possible to individually define a different mode for each of the max. 64 available positioning blocks.



This parameter is only available upon enabling (enabled package: positioning block mode).

Structure

See also Functional Description "Positioning block mode"

The table below explains the operating principles of the individual bits:

Bit	Designation/function	Comment
1	0 = abs. 1= rel.	
2	Infinite travel in pos. direction	
3	Infinite travel in negative direction	
4	Sequential block without halt mode 1	
5	Sequential block without halt mode 2	
6	Sequential block with halt	
7	Sequential block at switching signal	
8	Residual path processing for relative process blocks	

Tab. 3-117: P-0-4019, Positioning block mode

P-0-4019 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT + MDT	Comb. check:	+	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: s. Text

Product-specific parameters

3.17.95 P-0-4026, Positioning block selection

Allocation **Hardware** --
Funct. package(s):
Device parameter:

Function By means of this parameter, a positioning block (0 to 63) can be selected.



This parameter is only available upon enabling (enabled package: positioning block mode).

See also Functional Description "Positioning block mode"

P-0-4026 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: 0 / 63	Default value: ---
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3.17.96 P-0-4028, Device control word

Allocation **Hardware** --
Funct. package(s):
Device parameter:

Function The parameter serves devices with active "analog" application profile ([P-0-4084 = 0xFF00](#)) for drive control. For this purpose, bit 15 of parameter "[P-0-4028](#)" must be assigned to a digital input.



Bit 14 and 13 don't have to be applied. Their default value is 1.

Structure	Bit	Designation/function	Comment
	11/9/8	Command operation mode 000: Primary operation mode 001: Secondary operation mode 1 010: Secondary operation mode 2 011: Secondary operation mode 3 100: Secondary operation mode 4 101: Secondary operation mode 5 110: Secondary operation mode 6 111: Secondary operation mode 7	
	13	Drive Halt 1-0 change: Deceleration of drive while maintaining maximum acceleration (S-0-0372 - only possible if bits 14 and 15 = 1)	
	14	Drive enable 1-0 change: Torque disable without delay (independent of bit 15 or 13)	
	15	Drive on 1-0 change: Best possible deceleration (only possible if bit 14 = 1)	

Tab. 3-118: Relevant bits of P-0-4028, Device control word

P-0-4028 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: SUBD:OM Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.17.97 P-0-4032, Motor type plate data

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	For asynchronous third-party motors it is possible via "C3200 Command Calculate motor data" to calculate the values for motor parameters from the type plate data and then the values of the motor control parameters.	
 Note	With FW 20VRS and above, "C3200 Command Calculate motor data" can also be used for rotary synchronous third-party motors.	
The activation of C3200 first requires manual input of the motor data from the type plate of the motor in list parameter " P-0-4032, Motor type plate data ".		
 Note	If a Rexroth motor is used, the content of " P-0-4032 " and the command C3200 are irrelevant as for these motors all parameters required for operation are stored in the database for motor data (Drive Base).	

Structure See also Functional Description "Autom. setting of motor control"
The individual list elements have the following function:

List element	Motor variable	Default value	Unit	Definition
0	Rated current	4.000	A _{rms}	Effective value of the electrical current in motor supply (motor phase) at rated load
1	Rated voltage (asynchronous motor only)	380.000	V _{rms}	Effective value of interlinked voltage between motor connection terminals at rated load
2	Rated frequency	50.000	Hz	Frequency of supply, sine, electric voltage
3	Rated speed	925.000	rpm	Speed of the motor output shaft at rated load
4	Power factor cos φ (asynchronous motor only)	0.760	1	Power factor at rated load
5	Rated power	1.500	kW	permanent mechanical power output at rated load

Tab. 3-119: List elements P-0-4032

Product-specific parameters



Rated load means load of the motor output shaft with the rated torque at supply of the motor with rated voltage and rated frequency. The rated load point must not be within the field weakening range. The power at the output shaft is the rated power.

Use Observe the following for parameterization or element input:

- All specifications in "[P-0-4032](#)" must describe the same working point of the motor. This working point must not inside the field weakening range and should describe S1 operation (continuous power of the motor).
- All list elements are 32-bit values and have 3 decimal places.
- The list parameter has a fixed length of 6 elements.
- The parameter can only be written in CM and PM.
- The data in "[P-0-4032](#)" do not have a direct influence on motor control. Not before starting command C3200 via "[P-0-4033](#)", all motor data (T equivalent diagram) and motor control parameters are calculated.

P-0-4032 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS:	min./max.: 0,000 / 250000,000	Default value: s. Text
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3.17.98 P-0-4033, C3200 Command Calculate motor data

Allocation Hardware
Funct. package(s):
Device parameter: --

Function For third party asynchronous motors it is possible via C3200 to calculate the values for motor parameters from the type plate data and then the values of the motor control parameters. The activation of C3200 first requires manual input of the motor data from the type plate of the asynchronous motor in list parameter "[P-0-4032](#), Motor type plate data".



If a Rexroth motor is used, the content of "[P-0-4032](#)" and the command C3200 are irrelevant as for these motors all parameters required for operation are stored in the database for motor data (DriveBase).

See also functional description "Automatic setting of motor control"

P-0-4033 - Attributes

Function:	Cmd	Editable:	SUBD:CM+PM	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.17.99 P-0-4034, Thermal time constant of winding

Allocation Hardware
Funct. package(s):
Device parameter: --

Function This parameter is used to enter the value for the thermal time constant of the motor winding.



The correct value is written to this parameter as follows:

- For Rexroth motors with encoder data memory:
Automatic when controller is switched on.
- In the case of Rexroth motors without encoder data memory:
By loading the motor parameters with the "ctrlX DRIVE Engineering" commissioning software.
- In the case of other motors:
By manual input according to the manufacturer's specification.

See also Functional Description "Motor temperature model"

Use

The thermal time constant of the motor winding is the time after which the motor winding has reached 63% of this final temperature if it carries a constant current.



In the case of Rexroth motors with selectable cooling type (MSK, MHD, MKD, MKE), the value of "[P-0-4034](#)" is independent of the actually implemented cooling type and the associated setting in "[P-0-0640](#), Cooling type".



The motor temperature model uses a time constant for the heating of the motor winding ([P-0-4034](#)) and a time constant for the heating of the motor housing ([P-0-4035](#)).

P-0-4034 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	s	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 5
AXS:		min./max.: s. Text / s. Text		Default value: s. Text	

3.17.100 P-0-4035, Thermal time constant of motor

Allocation

Hardware
Funct. package(s):
Device parameter: --

Function

The thermal time constant of the motor is the time after which the motor housing has reached 63% of its final temperature if its cooling type is set to the standard value (see table) and the current in the motor winding is constant.

In the firmware-internal motor temperature model, the value forms the basis for determining the cooling-type-dependent effective motor housing time constant:

- In the case of motors with invariable cooling type, the value corresponds to the effective motor housing time constant.
- In the case of motors with variable cooling type, the effective motor housing time constant is determined via "[P-0-4035](#)" and "[P-0-0640](#), Cooling type".

Product-specific parameters

Motor type	Standard cooling type	Notes
MSK	Non-ventilated	Cooling type variable: " P-0-0640 , Cooling type" must be set according to the implemented cooling type
MAD, MAL, 2AD, MCL	Ventilated	Cooling type not variable: " P-0-0640 , Cooling type" is inactive
MAF, ADF, MBS, MBT, 1MB, MLF, LSF	Liquid-cooled	Cooling type not variable: " P-0-0640 , Cooling type" is inactive
MS2N	unit-specific	Cooling type not variable: " P-0-0640 , Cooling type" is inactive Motors are protected with a changed thermal model. Parameter P-0-3060.0.10 is effective
MSM	Non-ventilated	Cooling type not variable: " P-0-0640 , Cooling type" is inactive Motors are protected with a changed thermal model.
Third-party motor	Unknown	Is considered to have no variable cooling type: " P-0-0640 , Cooling type" is inactive!

Tab. 3-120: Standard cooling types of motors



The motor temperature model uses a time constant for the heating of the motor winding ([P-0-4034](#)) and a time constant for the heating of the motor housing ([P-0-4035](#)).

See also Functional Description "Motor temperature model"

Use "[P-0-4035](#)" is used to enter the value for the thermal time constant of the motor.



The correct value is written to this parameter as follows:

- For Rexroth motors with encoder data memory:
Automatic when controller is switched on.
- In the case of Rexroth motors without encoder data memory:
By loading the motor parameters with the "ctrlX DRIVE Engineering" commissioning software.
- In the case of other motors:
By manual input according to the manufacturer's specification.



If "0" is entered for [P-0-4035](#), the motor temperature model only uses the time constant of the motor winding ([P-0-4034](#)). The output current of the controller is only limited to the maximum KB current and not to the maximum allowed constant current.

P-0-4035 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	min	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 5

AXS:	min./max.: s. Text / s. Text	Default value: s. Text
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3.17.101 P-0-4036, Rated motor speed

Allocation	Hardware Funct. package(s): Device parameter: --
Function	Three-phase asynchronous motor: The rated speed of an asynchronous motor is achieved by operation at three-phase supply with a rated voltage and rated frequency providing the rated torque at the motor shaft. Three-phase synchronous motor: The rated speed of a synchronous motor is achieved by operation at three-phase supply with a rated voltage and rated frequency. See also Functional Description "Motor control"
<hr/>	
ctrlX DRIVE systems supply three-phase a.c. motors with three-phase and variable voltage and variable frequency. The level of DC bus voltage limits the maximum supply voltage for the motor and defines the transition from the basic speed range to the field weakening range if the motor velocity (speed) is to be further increased. The level of DC bus voltage depends on:	
<ul style="list-style-type: none"> • Voltage of the supplying three-phase system for uncontrolled supply • Supply unit for controlled supply For Rexroth motors, the DC bus voltage 540V DC is the reference value for the rated speed. This voltage is generated for uncontrolled supply of the drive system with a mains voltage of 3x400V AC (-5%).	

	The correct value is written to this parameter as follows: <ul style="list-style-type: none"> • For Rexroth motors with encoder data memory: Automatic when controller is switched on. • In the case of Rexroth motors without encoder data memory: By loading the motor parameters with the "ctrlX DRIVE Engineering" commissioning software. • In the case of other motors: By manual input according to the manufacturer's specification.
--	---

P-0-4036 - Attributes	Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
	Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
	Unit:	s. text	Extr. val. ch.:	+	Decim. pl.:	
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4
<hr/>						
AXS:		min./max.: s. Text / s. Text		Default value: 0		

3.17.102 P-0-4037, Thermal short-time overload of winding

Allocation	Hardware Funct. package(s): Device parameter: --
------------	--

Product-specific parameters

Function	This parameter is used to enter the value for the thermal short-time overload factor of the motor winding. This is achieved as follows: <ul style="list-style-type: none">• In the case of Rexroth motors with encoder data memory, when the control voltage of the drive is switched on• Manually via the motor database of the commissioning software (e.g. "ctrlX DRIVE Engineering") at Rexroth motors without encoder data memory• Manually in the case of third-party motors See also Functional Description "Motor temperature model"
Use	The thermal short-time overload factor of the motor winding has a multiplicative effect on " S-0-0111 , Motor current at standstill". It specifies the value to which the motor current is limited with the thermal time constant of the motor winding as long as no other thermal limitation by the thermal time constant of the motor (housing) becomes effective.
 Note:	This parameter is not used for MS2N and MSM motors as they are protected by a changed thermal model.
 Note:	With Rexroth motors, the value of " S-0-0111 " always refers to the standard cooling type of the motor! In the case of motors with selectable cooling type (MSK, MHD, MKD, MKE), this is always the non-ventilated type.
	See also Parameter Description " P-0-0640 "
 Note:	The motor temperature model uses a time constant for the heating of the motor winding (P-0-4034) and a time constant for the heating of the motor housing (P-0-4035).

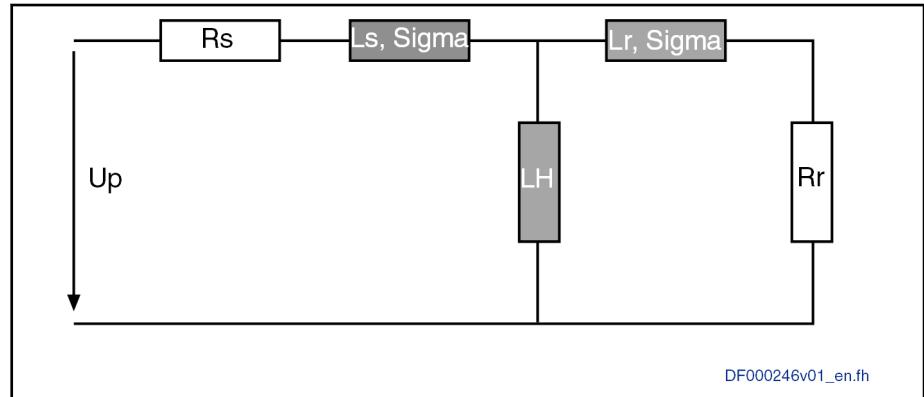
P-0-4037 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 5
AXS:		min./max.: 1,0 / 4,5		Default value: 2,2	

3.17.103 P-0-4039, Stator leakage inductance

Allocation	Hardware Funct. package(s): Device parameter:
Function	This parameter is only used during operation of asynchronous motors and takes effect during electric current control of the motor. For Rexroth motors, this value is stored in the DriveBase and loaded from the database together with the motor parameters. For asynchronous motors with encoder data memory, the parameter is loaded from the encoder data memory. For third-party motors, the value can be parameterized. If the equivalent circuit diagram data is unknown, it can be calculated from the type plate data value " P-0-4032 " by means of command C3200. See also Functional Description "Motor control"
Use	Technical background: The stator leakage inductance $L_{s,\Sigma\mu}$ is part of the T equivalent diagram and used to describe an asynchronous machine. The T equivalent diagram is the basis for motor control of asynchronous motors. The specified values refer to

one winding strand while the approach is based on a start connection. It does not specify the actual connection of windings inside the motor.



Rs:	Stator resistance
L_{s,Sigma}	Stator leakage inductance
L_H	Magnetizing inductance
L_{r,Sigma}	Rotor leakage inductance
R_r	Rotor resistance

Fig. 3-34: T equivalent diagram of asynchronous machine

P-0-4039 - Attributes

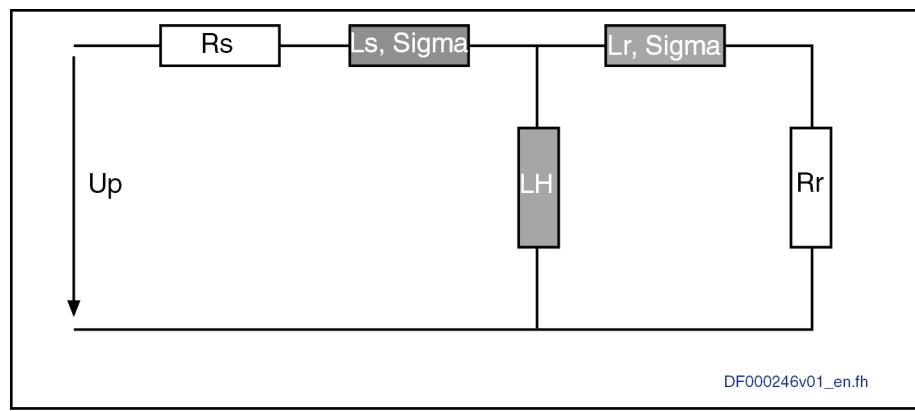
Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	mH	Extr. val. ch.:	+	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS:	min./max.: 0,001 / s. Text	Default value: 5,000
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3.17.104 P-0-4040, Rotor leakage inductance

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is only used during operation of asynchronous motors and takes effect during electric current control of the motor. For Rexroth motors, this value is stored in the DriveBase and loaded from the database together with the motor parameters. For asynchronous motors with encoder data memory, the parameter is loaded from the encoder data memory. For third-party motors, the value can be parameterized. If the equivalent circuit diagram data is unknown, it can be calculated from the type plate data value "P-0-4032" by means of command "C3200".	
Use	See also Functional Description "Motor control"	
Technical background:	The rotor leakage inductance $L_{r,Sigma}$ is part of the T equivalent diagram and used to describe an asynchronous machine. The T equivalent diagram is the basis for motor control of asynchronous motors. The specified values refer to one winding strand while the approach is based on a start connection. It does not specify the actual connection of windings inside the motor.	

Product-specific parameters



Rs: Stator resistance
L_{s,Sigma} Stator leakage inductance
L_H Magnetizing inductance
L_{r,Sigma} Rotor leakage inductance
R_r Rotor resistance

Fig. 3-35: T equivalent diagram of asynchronous machine

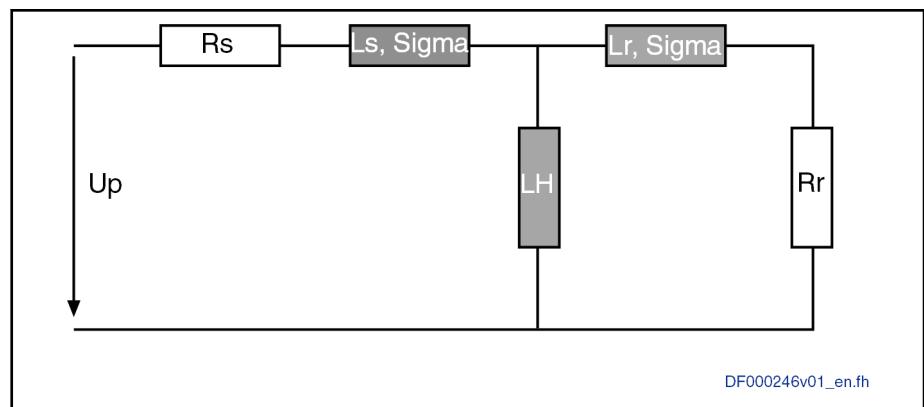
P-0-4040 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	mH	Ext. val. ch.:	+	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS:	min./max.: 0,001 / s. Text	Default value: 5,000
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3.17.105 P-0-4041, Motor magnetizing inductance

- Allocation** **Hardware**
Funct. package(s): --
Device parameter:
- Function** This parameter is only used during operation of asynchronous motors and takes effect during electric current control of the motor.
 For Rexroth motors, this value is stored in the DriveBase and loaded from the database together with the motor parameters. For asynchronous motors with encoder data memory, the parameter is loaded from the encoder data memory. For third-party motors, the value can be parameterized. If the equivalent circuit diagram data is unknown, it can be calculated from the type plate data value "[P-0-4032](#)" by means of command "C3200".
 See also Functional Description "Motor control"
- Use** The motor magnetizing inductance L_H is part of the T equivalent diagram and used to describe an asynchronous machine. The T equivalent diagram is the basis for motor control of asynchronous motors. The specified values refer to one winding strand while the approach is based on a start connection. It does not specify the actual connection of windings inside the motor.



Rs: Stator resistance
L_{s,Sigma} Stator leakage inductance
L_H Magnetizing inductance
L_{r,Sigma} Rotor leakage inductance
R_r Rotor resistance

Fig. 3-36: T equivalent diagram of asynchronous machine

P-0-4041 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	mH	Extr. val. ch.:	+	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS: min./max.: 0,010 / s. Text Default value: 50,000

3.17.106 P-0-4042, Characteristic curve of motor main inductance

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This list parameter is only used during operation of asynchronous motors and takes effect during electric current control of the motor. For Rexroth motors, this value is stored in the DriveBase and loaded from the database together with the motor parameters. For asynchronous motors with encoder data memory, the parameter is loaded from the encoder data memory. For third-party motors, the value can be parameterized. If the saturation is unknown, the value 1.0 can be applied to deactivate consideration of saturation. Or the characteristic curve can be determined by means of identification of motor data (P-0-0565).	
Use	See also Functional Description "Motor control"	
	The magnetizing inductance of an asynchronous motor shows already saturation behavior in nominal operation. The value of the motor magnetizing inductance depends on the currently flowing magnetizing current and increases with decreasing current.	

List element No. of P-0-4042	Value factor "fLh(n)" (Value range 0.5... 2.0) $(Lh(n) = fLh(n) * (P-0-4041))$	Reference value
1	fLh (No. 1) >= fLh (No. 2)	0% of P-0-4004 (0.0)
2	fLh (No. 2) >= fLh (No. 3)	20% of P-0-4004 (0.2)
3	fLh (No. 3) >= fLh (No. 4)	40% of P-0-4004 (0.4)
4	fLh (No. 4) >= fLh (No. 5)	60% of P-0-4004 (0.6)

Product-specific parameters

List element No. of P-0-4042	Value factor "fLh(n)" (Value range 0.5... 2.0) ($Lh(n) = fLh(n) * (P-0-4041)$)	Reference value
5	fLh (No. 5) $\geq fLh$ (No. 6)	80% of P-0-4004 (0.8)
6	1.0	100% of P-0-4004 (1.0)
7	fLh (No. 7) $\geq fLh$ (No. 6)	120% of P-0-4004 (1.2)
8	fLh (No. 8) $\geq fLh$ (No. 7)	140% of P-0-4004 (1.4)
9	fLh (No. 9) $\geq fLh$ (No. 8)	160% of P-0-4004 (1.6)

P-0-4004 Magnetizing current**P-0-4041** Motor magnetizing inductance

Tab. 3-121: Characteristic of the magnetizing inductance (Lh) in factors (fLh) regarding P-0-4041, depending on the magnetizing current flowing (%-value of P-0-4004)

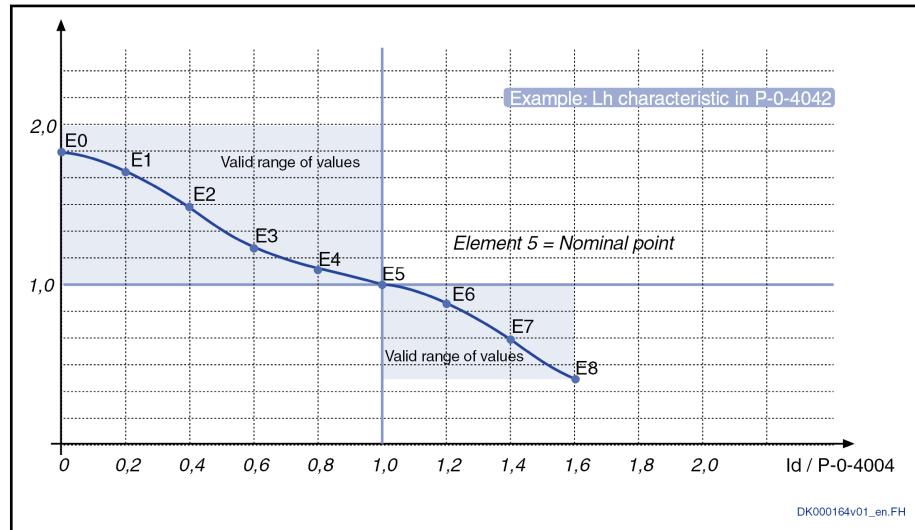


Fig. 3-37: Lh characteristic of P-0-4042

P-0-4042 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS: min./max.: 0,500 / 2,000 Default value: s. Text

3.17.107 P-0-4043, Rotor time constant

Allocation Hardware
Funct. package(s):
Device parameter: --

Function This parameter is only active with asynchronous motors. It has a considerable influence on the torque generation of the motor. It decisively determines the "slip" in the case of load.

"Slip" is the difference of the output frequency of the electric rotary field in the stator divided by the number of pole pairs of the motor, and the mechanical output frequency of the rotor.

The value for "P-0-4043" is motor-specific, and for asynchronous Rexroth motors it is made available via the commissioning software (e.g., ctrlX DRIVE

Engineering) or via the Intranet version of the manufacturer-side DriveBase database.

P-0-4043 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	ms	Extr. val. ch.:	+	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS:	min./max.: 0,100 / 10000.000	Default value: 100,000
-------------	------------------------------	-------------------------------

3.17.108 P-0-4044, Phase inductance of preconnected choke

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter affects the current control of the motor. It is an inductance restrictor that is added in line to the leakage inductance in case of low motor inductance (operation of motors with reduced voltage resistance).

To take the restrictor into account, a value has to be entered into this parameter for third-party motors before the following commands are executed.

- [P-0-4033](#), C3200 Command Calculate motor data
- [P-0-0566](#), C4600 Calculate motor control parameters
- [P-0-0565](#), C3600 Command Motor data identification

See also Functional Description "Motor control"

P-0-4044 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	mH	Extr. val. ch.:	+	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS:	min./max.: 0,001 / s. Text	Default value: 0,001
-------------	----------------------------	-----------------------------

3.17.109 P-0-4046, Effective peak current

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter indicates the maximum current that can be temporarily provided to the motor by the controller at current load. It is the effective value of the total current, i.e. torque and magnetic field-generating factors are included.

Use

This parameter is calculated and preset on start-up to operating mode of drive controllers. This value is reduced by dynamic current limitation depending on the amplifier or motor load.

For determination of this limit value, the following parameters are applied:

Id. no.	Name	Units
S-0-0109	Motor peak current	A _{rms}
S-0-0110	Amplifier peak current	A _{rms}
P-0-4004	Magnetizing current	A _{rms}
P-0-1519.0.1	Axis output stage type data, type-specific	

Tab. 3-122: Effective peak current, dependencies

Product-specific parameters

P-0-4046 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.17.110 P-0-4048, Stator resistance

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter specifies the winding resistance of the motor between two terminal pins. For Rexroth motors, this value is stored in the DriveBase and loaded from the database together with the motor parameters. For motors with encoder data memory, the parameter is loaded from the encoder data memory. For third-party motors, the value can be parameterized. If the equivalent circuit diagram data is unknown, it can be calculated from the type plate data value "P-0-4032" by means of command C3200. C3600 Command Motor data identification determines the currently precise value of the motor.	



The correct value is written to this parameter as follows:

- For Rexroth motors with encoder data memory:
Automatic when controller is switched on.
- In the case of Rexroth motors without encoder data memory:
By loading the motor parameters with the "ctrlX DRIVE Engineering" commissioning software.
- In the case of other motors:
By manual input according to the manufacturer's specification.

See also Functional Description "Operating motors with ctrlX DRIVE"

P-0-4048 - Attributes	Function: Par Memory: PARAM_SP Unit: ohm Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: Grp. 4
	AXS:	min./max.: 0,000 / 2000,000	Default value: 0,000

3.17.111 P-0-4051, Positioning block acknowledgment

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The positioning block acknowledgment is used for feedback of the execution of the active positioning block.	



This parameter is only available upon enabling (enabled package: positioning block mode).

See also Functional Description "Positioning block mode"

See also Functional Description "Positioning block acknowledgment"

P-0-4051 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.17.112 P-0-4052, Positioning block, last accepted

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Last accepted positioning block (retain data). For sequential block chains, this is the first block with which the sequential block chain was started.	



This parameter is only available upon enabling (enabled package: positioning block mode).

See also Functional Description "Positioning block mode"

P-0-4052 - Attributes	Function: Par Memory: RETAIN_KUNDE Unit: -- Cycl. tra.: AT	Editable: SUBD:CM+PM Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.17.113 P-0-4053, Positioning block, last active

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Last active positioning block(retain data). For sequential block chains, this is the last active block of the sequential block chain. For individual blocks, "P-0-4052" and "P-0-4053" are always identical.	



This parameter is only available upon enabling (enabled package: positioning block mode).

See also Functional Description "Positioning block mode"

P-0-4053 - Attributes	Function: Par Memory: RETAIN_KUNDE Unit: -- Cycl. tra.: AT	Editable: SUBD:CM+PM Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.17.114 P-0-4057, Positioning block, input linked blocks

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter "P-0-4057" is an image of the sequential block inputs. Triggered by an external switch signal, the switch-signal-dependent block advance allows transition to a sequential block. Two sequential block inputs are available as input for this switching signal: P-0-4057 ; bit 0 -> sequential block cam 1 The drive switches to the next process block n+1, as soon as the input for the sequential block cam 1 changes from "0" to "1". P-0-4057 ; bit 1 -> sequential block cam 2	

Product-specific parameters

The drive switches to the block following the next process block n+2, as soon as the input for the sequential block cam 2 changes from "0" to "1".



This parameter is only available upon enabling (enabled package: positioning block mode).

See also Functional Description "Positioning block mode"

P-0-4057 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: --- / ---			Default value: ---	

3.17.115 P-0-4060, Positioning block control word

Allocation Hardware
Funct. package(s):
Device parameter:

Function This parameter is used to control the positioning block mode.

Structure of the parameter:

Bit	Designation/function	Comment
0	Positioning block selected in " P-0-4026 " is applied by a 0 → 1 edge (only relevant for parallel interface and field bus I/O mode)	
1	0: Traveling with the velocity of the current positioning block 1: Velocity is limited to " S-0-0259 , Positioning velocity"	

Tab. 3-123: *P-0-4060, Positioning block control word*



This parameter is only available upon enabling (enabled package: positioning block mode).

See also Functional Description "Positioning block mode"

P-0-4060 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	BIN
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: 0x0 / 0x3 Default value: 0x2

3.17.116 P-0-4061, Positioning block status word

Allocation Hardware
Funct. package(s):
Device parameter:

Function This parameter contains the status bits that are only valid for the positioning block mode. All other general status bits for positioning are contained in the parameter "[S-0-0437](#), Positioning status".



This parameter is only available upon enabling (enabled package: positioning block mode).

See also Functional Description "Positioning block mode"

Structure The bits in "P-0-4061" have the following significances:

Bit 4: "end position reached" is set when a positioning block has been completed. For sequential block chains, the bit is set when the end of the sequential block chain has been reached. For this purpose, the "In standstill" message is queried if the following applies:

|S-0-0430 - S-0-0051| < S-0-0057 (In Position)

AND

|S-0-0040| < S-0-0124 (In standstill)

AND

no sequential block has been selected

P-0-4061 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: ---

3.17.117 P-0-4063, Positioning block deceleration

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter is used in the positioning block mode to individually define the different positioning decelerations of a maximum of 64 positioning blocks (list parameter with 64 elements).



Together with the corresponding jerk value entered in "P-0-4009", the positioning deceleration entered in "P-0-4063" defines the parameter content of "P-0-0042, Current position command average value filter order".

"P-0-4063" takes effect if the value is smaller than "P-0-4008".



This parameter is only available upon enabling (enabled package: positioning block mode).

See also Functional Description "Positioning block mode"

P-0-4063 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0160	Extr. val. ch.:	+	Decim. pl.:	
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: s. Text / s. Text

Default value: s. Text

3.17.118 P-0-4064, Password level

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter can be used to read out the current password protection. All passwords mentioned in the table are entered via "S-0-0267, Password".

See also Functional Description "Using a password"

Product-specific parameters

Content of P-0-4064	Content of S-0-0267	Structure	Description	Parameters acc. to S-0-0279	Administration parameters	Remaining parameters
<0	"XXX"		Password entry temporarily locked	R	R	W, R
0	"007"		No password available	W, R	R	W, R
1	"\$\$\$\$"		Customer password available but deactivated	W, R	R	W, R
2	"***"		Customer password available and activated	R	R	W, R
3	"\$\$\$\$"		Control password entered	W, R	R	W, R

W Write access
R Read access

Tab. 3-124: Overview of password levels

 "Management parameters" are motor parameters (P-0-3000...), device parameters (P-0-1509...), encoder parameters (P-0-1000...), error memories (P-0-0192...), etc.

P-0-4064 - Attributes	Function: Par	Editable: --	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: DEC_MV
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

3.17.119 P-0-4064.0.1, Password configuration

Allocation	Hardware -- Funct. package(s): Device parameter: Alias: P-0-3748						
Function	The following can be configured with the help of this parameter: See also Functional Description "Using a password"						
Structure	<table border="1"> <thead> <tr> <th>Bit</th><th>Designation/function</th></tr> </thead> <tbody> <tr> <td>0</td><td>Activation of a firmware download lock 0: Firmware download possible independently of the password level (default)</td></tr> <tr> <td>1</td><td>"User" customer password for FTP and Telnet 0: Standard customer password boschrexroth for FTP and Telnet active (default)</td></tr> </tbody> </table>	Bit	Designation/function	0	Activation of a firmware download lock 0: Firmware download possible independently of the password level (default)	1	"User" customer password for FTP and Telnet 0: Standard customer password boschrexroth for FTP and Telnet active (default)
Bit	Designation/function						
0	Activation of a firmware download lock 0: Firmware download possible independently of the password level (default)						
1	"User" customer password for FTP and Telnet 0: Standard customer password boschrexroth for FTP and Telnet active (default)						
P-0-4064.0.1 - Attributes							

P-0-4064.0.1 - Attributes	Function: Par	Editable: ALWAYS	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: --	Format: HEX
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: +	Set-depend.: --
AXS:	min./max.: --- / ---		Default value: 0x0

3.17.120 P-0-4064.0.2, Password hash

Allocation	Hardware -- Funct. package(s): Device parameter: Alias: P-0-3749
------------	---

	Function	For internal use only.				
P-0-4064.0.2 - Attributes	Function:	Par	Editable:	SUBD:CM+PM	Data length:	1Byte var.
	Memory:	--	Validity ch.:	--	Format:	HEX
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: --- / ---			Default value: ---	

3.18 P-0-4068 to P-0-4095 Field bus and serial communication

3.18.1 P-0-4073, Communication diagnostics

	Allocation	Hardware Funct. package(s): Device parameter:	--																				
	Function	This parameter contains the state of the field bus status machine in plain text. The diagnostic message depends on the field bus used and is based on the nomenclature used in the standard.																					
		The texts are identical in all buses, however, they are not supported by all. The precise significance of the display texts is specified in the respective description of the diagnostic message.																					
	Use	<table border="1"> <tr><td>Display text</td></tr> <tr><td>A0000 Communication phase 0</td></tr> <tr><td>A0001 Communication phase 1</td></tr> <tr><td>A0003 Communication phase 2</td></tr> <tr><td>A0004 Communication phase 3</td></tr> <tr><td>A0005 Initialization Pre-Operational</td></tr> <tr><td>A0006 Safe-Operational</td></tr> <tr><td>A0007 Operational</td></tr> <tr><td>A0008 Sercos: NRT-Mode</td></tr> <tr><td>A0022 WAIT_PRM</td></tr> <tr><td>A0023 WAIT_CFG</td></tr> <tr><td>A0024 Connection established</td></tr> <tr><td>A0025 Basic ethernet mode</td></tr> <tr><td>A0026 Ready to operate</td></tr> <tr><td>A0029 Bootstrap</td></tr> <tr><td>A0030 Hot-plug phase 0</td></tr> <tr><td>A0031 Hot-plug phase 1</td></tr> <tr><td>A0032 Hot-plug phase 2</td></tr> <tr><td>A0040 Communication phase 4</td></tr> </table>			Display text	A0000 Communication phase 0	A0001 Communication phase 1	A0003 Communication phase 2	A0004 Communication phase 3	A0005 Initialization Pre-Operational	A0006 Safe-Operational	A0007 Operational	A0008 Sercos: NRT-Mode	A0022 WAIT_PRM	A0023 WAIT_CFG	A0024 Connection established	A0025 Basic ethernet mode	A0026 Ready to operate	A0029 Bootstrap	A0030 Hot-plug phase 0	A0031 Hot-plug phase 1	A0032 Hot-plug phase 2	A0040 Communication phase 4
Display text																							
A0000 Communication phase 0																							
A0001 Communication phase 1																							
A0003 Communication phase 2																							
A0004 Communication phase 3																							
A0005 Initialization Pre-Operational																							
A0006 Safe-Operational																							
A0007 Operational																							
A0008 Sercos: NRT-Mode																							
A0022 WAIT_PRM																							
A0023 WAIT_CFG																							
A0024 Connection established																							
A0025 Basic ethernet mode																							
A0026 Ready to operate																							
A0029 Bootstrap																							
A0030 Hot-plug phase 0																							
A0031 Hot-plug phase 1																							
A0032 Hot-plug phase 2																							
A0040 Communication phase 4																							

Tab. 3-125: Plain text and entries in parameter P-0-4073

P-0-4073 - Attributes	Function:	Par	Editable:	--	Data length:	1Byte var.
	Memory:	--	Validity ch.:	--	Format:	ASCII
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: --- / ---			Default value: ---	

Product-specific parameters

3.18.2 P-0-4075, Field bus: Watchdog

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used to store the watchdog time in ms which the master transmits in the parameterization telegram. If the master communication is interrupted for an interval exceeding this time, a communication error is generated.	
P-0-4075 - Attributes	Function: Par Memory: -- Unit: ms Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

3.18.3 P-0-4084, Application: Profile type

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	With the setting in " P-0-4084 ", the active application profile in the drive is selected.	
	The active profile activates various profile-specific functions in the drive and reveals the related parameters. If the active application profile is changed after switching on, the drive may need to be restarted. This is signaled by command error C0299, at the latest when switching to the operating mode "OM".	
	The selected application profile defines the active control and status word of the drive.	
	Through the selected profile, default settings for various parameters can be defined:	
	<ul style="list-style-type: none"> • Preselection of the operation modes or default values set in the drive • Default assignment of process data channel or default values 	
	See also Functional Description "Profile types"	
Use	The following settings are possible: 0x0000: No profile selected 0x0002: ServoDrive profile 0x0102: FSP drive profile 0xF002: ServoDrive profile without evaluation of bit 14 "drive enable" 0xF102: FSP drive profile without evaluation of bit 14 "drive enable" 0xFF00: Analog profile	



If profiles are switched requiring new parameters to be revealed and current parameters to be hidden, the drive has to be restarted. An attempt to switch to "OM" without a restart causes command error C0299.

Possible combinations of "[P-0-4084](#), Application: Profile type" for active master communication ([P-0-4089.0.1](#)) are listed in the following table:

		P-0-4084 , Field bus: Axis profile type						
		Standard profile			Bosch Rexroth profile			
		No profile	ServoDrive profile	FSP Drive (Sercos profile) DEFAULT	Analog	Servodrive without bit 14	FSP Drive without bit 14	
P-0-4089.0.1 , Master communication: Protocol								
Value	Significance	0x0000	0x0002	0x0102	0xFF00	0xF002	0xF102	
1	Master communication hardware not available	x	-	x	x	-	x	
2	Master communication not active	x	-	x	x	-	x	
5	EtherCAT® (SoE)	-	x	-	-	x	-	
6	Sercos → DEFAULT	x	-	x	x	-	x	

Tab. 3-126: Application profile type

[P-0-4084](#) - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: s. Text

3.18.4 [P-0-4084.0.1](#), List of available profile types

Allocation

Hardware	--
Funct. package(s):	
Device parameter:	
Alias:	P-0-3581

Function

This parameter lists all application profile types supported in the drive if master communication is configured. The coding (hexadecimal) of the profile types for entry in parameter "[P-0-4084](#)" is displayed.

See also Functional Description "Profile types"

[P-0-4084.0.1](#) - Attributes

Function:	Par	Editable:	--	Data length:	2Byte var.
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: ---

Product-specific parameters

3.18.5 P-0-4084.0.2, Default profile

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-3720
Function	This parameter contains the default application profile type for parameter "P-0-4084". This depends on the master communication configured in "P-0-4089.0.1, Master communication: Protocol".	
	See also Functional Description "Profile types"	
P-0-4084.0.2 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: --- / ---	Default value: ---

3.18.6 P-0-4084.0.3, Application: Profile configuration

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-2780									
Function	Using this parameter, the behavior of a selected application profile can be changed.										
Structure											
	<table border="1"> <thead> <tr> <th>Bit</th> <th>Designation/function</th> <th>Comment</th> </tr> </thead> <tbody> <tr> <td>0</td> <td> Extended error bit in S-0-0135: 0: Supply unit errors are not displayed in S-0-0135, bit 13 (default). Example: F2820, Bleeder overload does - by default - not set an error bit in S-0-0135. 1: Supply unit errors are displayed in S-0-0135, bit 13. With bit 0 = 1:, compatibility with AXS-V-01 is established. Example: F2820 Bleeder overload sets the error bit in S-0-0135. </td> <td></td> </tr> <tr> <td>15-1</td> <td>Reserved</td> <td></td> </tr> </tbody> </table>	Bit	Designation/function	Comment	0	Extended error bit in S-0-0135: 0: Supply unit errors are not displayed in S-0-0135, bit 13 (default). Example: F2820, Bleeder overload does - by default - not set an error bit in S-0-0135. 1: Supply unit errors are displayed in S-0-0135, bit 13. With bit 0 = 1:, compatibility with AXS-V-01 is established. Example: F2820 Bleeder overload sets the error bit in S-0-0135.		15-1	Reserved		
Bit	Designation/function	Comment									
0	Extended error bit in S-0-0135: 0: Supply unit errors are not displayed in S-0-0135, bit 13 (default). Example: F2820, Bleeder overload does - by default - not set an error bit in S-0-0135. 1: Supply unit errors are displayed in S-0-0135, bit 13. With bit 0 = 1:, compatibility with AXS-V-01 is established. Example: F2820 Bleeder overload sets the error bit in S-0-0135.										
15-1	Reserved										

Tab. 3-127: P-0-4084.0.3, Application: Profile configuration

P-0-4084.0.3 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: --- / ---	Default value: 0x0

3.18.7 P-0-4085, C4700 Command Activate easy startup mode

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	With this command, the "Easy Startup Mode" setting-up mode can be activated or completed. If the drive is in parameter mode, switching to operating mode takes place automatically. When the command is deactivated, master communication becomes active again.	

If the "easy startup mode" command is active, the control word of parameter [P-0-0120](#), Control word easy startup" becomes active. It can be controlled via the engineering interface or digital inputs.



The "easy startup mode" switches off any possibly active master communication!

After deactivation of "easy startup mode", the controller is in its initial state again. All changes automatically made to the configuration were undone.

See also Functional Description "Easy startup mode"

P-0-4085 - Attributes

Function:	Cmd	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: s. Text / s. Text

Default value: ---

3.18.8 P-0-4088, Master communication: Drive configuration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter contains the configuration bits of master communication or device control. It is used to configure the functions and the behavior of the master communication interface.	
Structure	The parameter has the following structure:	

Bit	Designation/function	Comment
0	Connection of the operating states of the axis to the communication phases Target state of the sub-device state machine in case of "uncoupled" 0: Independent of bus communication, the device carries out axis initialization. This means that the device is automatically switched to the operating mode (OM). 1: The device does not automatically carry out axis initialization. The axis remains in configuration mode (CM).	
2/1	Reaction to failure of cyclic communication (bus failure, bus stop and PLC stop) 00: Bus failure as error (F4xxx) and config. error reaction of the device (P-0-0119) 01: Reserved 11: Reserved 10: Reserved	
3	Readiness for operation without active master communication Relevant for control communication interfaces coupled by default (e.g. Sercos, EtherCAT). 0: The time at which the device is ready for operation is defined by the status of master communication. Exception: Easy startup mode. 1: Readiness for operation, even without master communication. This means, the device is automatically switched to operating mode if the control voltage is switched on, even without master communication (only if P-0-4088 , bit 0 = 0). As soon as master communication is activated, it takes over the control of the device.	

Product-specific parameters

9-4	Reserved	
10	Configuration of coupling of operating states of the sub-device to the states of master communication 0: Directly coupled operation: Sub-device is always connected with the respective master communication state (PreOP-->CM, SafeOP-->PM, OP-->OM) 1: Coupled operation: Sub-device is not run up before SafeOp-->OP (PreOP-->CM, SafeOP-->CM, OP-->OM)	

Tab. 3-128: P-0-4088, Master communication: Drive configuration

P-0-4088 - Attributes	Function: Par	Editable:	SUBD:CM+PM	Data length:	2Byte
	Memory: PARAM_SP	Validity ch.:	--	Format:	BIN
	Unit: --	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.: --	Comb. check:	+	Set-depend.:	--
AXS:	min./max.: --- / ---				Default value: 0x0

3.18.9 P-0-4089.0.1, Master communication: Protocol

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-2310
Function	This parameter is used to select the master communication protocols supported by the hardware or to deactivate existing hardware which is not to be used.

Make the setting by means of the corresponding number according to the following table:

Associated number	Selected master communication
2	Master communication not active
5	EtherCAT®
6	Sercos

Tab. 3-129: Supported values



The setting is applied after the drive has been restarted.

P-0-4089.0.1 - Attributes	Function: Par	Editable:	SUBD:CM+PM	Data length:	4Byte
	Memory: PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
	Unit: --	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.: --	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: --- / ---				Default value: s. Text

3.18.10 P-0-4089.0.2, Master communication: Device name

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-2311
Function	This parameter contains an unequivocal device name which is used for master communication. A device can be identified by this name. For PROFINET it is the "station name".
Structure	The device name has to be unequivocal within an installation.

The following restrictions have to be complied with for the device name:

- 240 characters at most (lowercase letters (a-z), numerals, hyphen or dot).
- A string between two dots must not be longer than 63 characters at most.
- No special characters except for hyphen ("umlaut", bracket, underscore, slash, blank, etc.).
- The device name may neither begin nor end with the "-" character.
- The device name may not take the form n.n.n.n (n = 0...999).
- The device name may not begin with the string "port-xyz-" (x,y,z = 0...9).

P-0-4089.0.2 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	1Byte var.
Memory:	PARAM_SP	Validity ch.:	--	Format:	ASCII
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- **Default value:** s. Text

3.18.11 P-0-4089.0.7, EtherCAT: SII Configured Station Alias

Allocation

Hardware --

Funct. package(s):

Device parameter:

Alias: [P-0-2757](#)

Function

With EtherCAT, the parameter displays the "SII Configured Station Alias" (from the slave EEPROM). For compatibility reasons, this value can be used for "Device Identification". However, it is recommended to use the parameter "[S-0-1040](#)" for "Device Identification".

See also Functional Description "EtherCAT"

P-0-4089.0.7 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- **Default value:** 0

3.18.12 P-0-4089.0.8, EtherCAT: Register Configured Station Alias

Allocation

Hardware --

Funct. package(s):

Device parameter:

Alias: [P-0-2758](#)

Function

With EtherCAT: For diagnostics, the parameter displays the current contents of the "Configured Station Alias" register (0x0012:0x0013). The contents of this register can be used by the EtherCAT Master for "Device Identification".

In case of any other field bus, the value "0" is returned.

See also Functional Description "EtherCAT"

P-0-4089.0.8 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- **Default value:** ---

3.18.13 P-0-4089.0.16, LED status pattern master communication

Allocation

Hardware --

Funct. package(s):

Device parameter:

Function

The parameter illustrates the flashing patterns of the master communication LEDs.

Product-specific parameters

Structure Structure for EtherCAT master communication

Bit	Designation/function	Comment
4-7	Run LED flashing pattern	
7-0	Error LED flashing pattern	

Tab. 3-130: P-0-4089.0.16, LED status pattern master communication

P-0-4089.0.16 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.18.14 P-0-4089.0.17, Master communication: List of available protocols

Allocation	Hardware	--
Funct. package(s):		
Device parameter:		
Alias:		P-0-3818

Function This parameter lists all master communication protocols supported by the device. Each entry in this list corresponds to a possible value of parameter "P-0-4089.0.1, Master communication: Protocol".

P-0-4089.0.17 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.18.15 P-0-4089.0.26, EtherCAT: FMMU configuration

Allocation	Hardware	--
Funct. package(s):		
Device parameter:		

Alias: P-0-1762

Function With EtherCAT master communication: Displays the FMMU configuration registers (0x0600) in the EtherCAT Slave Controller, for diagnostic purposes.

Structure

Element	Designation/function	Comment
0	Logical Start Address (Low Word)	FMMU 0
1	Logical Start Address (High Word)	
2	Length	
3	Logical Start/Stop Bit	
4	Physical Start Address	
5	Physical Start Bit	
6	Activate	
7	Reserved (0)	
8	Logical Start Address (Low Word)	FMMU 1
9	Logical Start Address (High Word)	
10	Length	
11	Logical Start/Stop Bit	
12	Physical Start Address	

Element	Designation/function	Comment
13	Physical Start Bit	
14	Activate	
15	Reserved (0)	
16	Logical Start Address (Low Word)	FMMU 2
17	Logical Start Address (High Word)	
18	Length	
19	Logical Start/Stop Bit	
20	Physical Start Address	
21	Physical Start Bit	
22	Activate	
23	Reserved (0)	

Tab. 3-131: P-0-4089.0.26

P-0-4089.0.26 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte var.
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:				Default value: ---	

3.18.16 P-0-4089.0.27, EtherCAT: Eeprom Data**Allocation** **Hardware** --**Funct. package(s):****Device parameter:****Alias:** [P-0-1763](#)**Function** With EtherCAT master communication: Displays the content of the Eeprom for the EtherCAT Slave Controller, for diagnostic purposes.**P-0-4089.0.27 - Attributes**

Function:	Par	Editable:	--	Data length:	1Byte var.
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:				Default value: ---	

3.18.17 P-0-4089.0.28, EtherCAT: Requested bus phase**Allocation** **Hardware** --**Funct. package(s):****Device parameter:****Function** With EtherCAT master communication: Displays the "AL Control (0x0120:0x0121)" register in the EtherCAT Slave Controller, for diagnostic purposes. Via this register, the EtherCAT master controls the bus state machine of the slave.

Product-specific parameters

Structure	Bit	Designation/function	Comment
	3-0	Initiate State Transition of the Device State Machine: 1: Request Init State 2: Request Pre-Operational State 3: Request Bootstrap State 4: Request Safe-Operational State 8: Request Operational State	
	4	Error Ind Ack Flag: 0: No Ack of Error Ind in AL status register 1: Ack of Error Ind in AL status register	
	15-5	Reserved (0)	

Tab. 3-132: P-0-4089.0.28,

P-0-4089.0.28 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.18.18 P-0-4089.0.29, EtherCAT: Active bus phase

Allocation	Hardware	--
Funct. package(s):		
Device parameter:		

Function	With EtherCAT master communication: Displays the "AL Status (0x0130:0x0131)" register and AL Status Code (0x0134:0x0135) register in the EtherCAT Slave Controller, for diagnostic purposes. In this register, the EtherCAT slave signals its Bus State or error codes to the master.
----------	---

Structure

Bit	Designation/function	Comment
3-0	Actual State of the Device State Machine: 1: Init State 2: Pre-Operational State 3: Bootstrap State 4: Safe-Operational State 8: Operational State	
4	Error Ind Flag: 0: Device is in State as requested or Flag cleared by command 1: Device has not entered requested State or changed State as result of a local action	
15-5	Reserved (0)	
31-16	AL Status Code (AL Status Code (0x0134:0x0135) register)	

Tab. 3-133: P-0-4089.0.29,

P-0-4089.0.29 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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3.18.19 P-0-4089.0.127, Master communication: Master debugging

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The parameter is used to commission Sercos master communications. It allows individual monitoring functions for debug operation to be switched off.	--	
P-0-4089.0.127 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: FKM:PO Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

3.18.20 P-0-4090, Configuration for loading default values

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The effects of the command "S-0-0262, C07_x Load defaults procedure command" depend on the configuration set in "P-0-4090" when the command is started. See also Functional Description "Default settings in the encoder data memory (load motor default values)" See also Functional Description "Loading, storing and saving parameters"	--
Structure	The input values for P-0-4090 have the following significance:	

Coding	Designation/ function of the active command	Load defaults procedure (motor- specific)	XVR only: Load defaults procedure (power supply control)	Load defaults procedure (SMO)	Load defaults procedure (factory settings)	Load application- specific default values	Set all motor parameters to factory settings
0x0000	Load motor- specific controller values	C0700					
0x0**1	Load factory settings				C0750 **: Certain parameter groups can be excluded from the load defaults procedure.		
0x0005	Load defaults procedure for SMO			C0720			
0x0006	Load power-supply specific controller values (XVR only)		C0710				
0x0007	Load application- specific default values					C0760	
0x0008	Set all motor parameters to factory settings						C0770

Tab. 3-134: Significance of P-0-4090

Use C0700 Load defaults procedure command (motor-specific controller values)

Product-specific parameters

Possible in CM, PM or OM. Loads the motor-specific default parameter values for the control loop available in the motor encoder data memory. Parameters which are protected by the customer password remain unchanged.

C0710 Command Load power-supply specific controller values

With XVR, possible in CM, PM or OM. Only during the soft start phase after the DC bus capacitance and the commutation choke inductance have been verified successfully (once). The device must not be locked with a customer password.

C0720 Load defaults procedure (SMO)

Possible in CM. The axis must not be locked with a customer password. All parameters of SMO, that have a default value, are set to this default value.

C0750 Load defaults procedure (factory settings)

Possible in CM. Locking with customer password must not be active. All buffered parameters are set to default values. The non-buffered parameters "[S-0-0175](#), Offset of position feedback value of encoder 1" and "[S-0-0176](#), Offset of position feedback value of encoder 2" (if available) are set to "0". The parameters of SMO (if available and not deselected), are also set to default values.

Certain parameter groups may be excluded from the "load defaults procedure".

There are the following groups:

- Master communication group (**FKM**)
- Technology function group (**TF**)
- Engineering interface group (**ENG**)
- Safety technology group (**SMO**)

C0760 Load defaults procedure (application data from the motor type plate)

Possible in CM. Locking with customer password must not be active. The application-specific data from the motor encoder are loaded.

C0770 Set all motor parameters to factory default values

Possible in CM. For motors without a motor type plate in the encoder memory, it is recommended to set all motor parameters to default values before the motor is replaced. This allows internal dependencies to be detected and parameters for control and thermal model parameters are reset.

There are the following input options for "[P-0-4090](#)":

P-0-4090	Effect	Diagnostic message name	Diagnostics
0x0000 (default)	Load motor-specific control loop parameter values	Load defaults procedure (motor-spec. controller values) command	C0700
0x0001	Load factory settings	Load defaults procedure command (factory settings)	C0750
0x0011	Load factory settings without FKM		
0x0021	Load factory settings without TF		
0x0031	Load factory settings without FKM and TF		
0x0041	Load factory settings without ENG		
0x0051	Load factory settings without ENG and FKM		
0x0061	Load factory settings without ENG and TF		

P-0-4090	Effect	Diagnostic message name	Diagnostics
0x0071	Load factory settings without ENG , TF and FKM		
0x0101	Load factory settings without SMO		
0x0111	Load factory settings without SMO and FKM		
0x0121	Load factory settings without SMO and TF		
0x0131	Load factory settings without SMO , FKM and TF		
0x0141	Load factory settings without SMO and ENG		
0x0151	Load factory settings without SMO , ENG and FKM		
0x0161	Load factory settings without SMO , ENG and TF		
0x0171	Load factory settings without SMO , ENG , TF and FKM		
0x0005	Loads the default values for safety technology	SMO: Load defaults procedure command	C0720
0x0006	XVR only: Loads the power-supply specific controller values	Command Load power-supply specific controller values	C0710
0x0007	Loads the application-specific default values	Load defaults procedure command (application data)	C0760
0x0008	Sets the group of motor parameters to factory settings	Load defaults procedure command (all motor parameters)	C0770

Tab. 3-135: Possible values of P-0-4090

P-0-4090 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

4 Standard parameters

4.1 S-0-0000 to S-0-0099 Standard parameters

4.1.1 S-0-0000, Dummy parameter

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter serves as placeholder and has no function. The parameter can be cyclically written and read.	
Possible applications:		
	<ul style="list-style-type: none"> • S-0-0370, filling the MDT data container configuration list with placeholders. • Down time for writing and reading measured via the bus. • etc. 	
S-0-0000 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

4.1.2 S-0-0001, NC cycle time (TNcyc)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The NC cycle time defines the cycle of internal command value processing of the active operating mode. If "Sercos" master communication is active, the NC cycle is derived from the cycle time of the main consumer connection (MDT). The operating modes "position control ..." define their command value cycle according to the connection containing the related command value (e.g. S-0-0047).	
S-0-0001 - Attributes		
	Function: Par Memory: PARAM_SP Unit: us Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: -- Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: 125 / 32000 Default value: 2000

4.1.3 S-0-0002, Sercos cycle time (TScyc)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The content of " S-0-0002 " defines the time intervals in which the cyclic real-time data (MDT and AT) are transmitted via EtherCAT and processed in the drive. EtherCAT: The input is defined at 125us, 250us, 500us, 1ms, 2ms, ... to 65ms in steps of 1 ms. See also Functional Description "EtherCAT"	
S-0-0002 - Attributes		
	Function: Par Memory: PARAM_SP Unit: us Cycl. tra.: --	Editable: FKM:PO Validity ch.: FKM:PO->SOP Extr. val. ch.: + Comb. check: -- Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --

Standard parameters

AXS:	min./max.: 250 / 65000	Default value: 2000
------	------------------------	---------------------

4.1.4 S-0-0005, Minimum feedback acquisition time (T4min)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter describes the maximum required time in the slave between the beginning of actual value acquisition and the first time of transmission in a telegram. With EtherCAT: Minimum time between DC Sync0 and cycl. actual value telegram	
	See also Functional Description "EtherCAT"	

S-0-0005 - Attributes	Function: Par Memory: -- Unit: us Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
-----------------------	---	---	--

AXS:	min./max.: --- / ---	Default value: ---
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4.1.5 S-0-0011, Class 1 diagnostics

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	When a class 1 diagnostics error is detected in the drive, this causes the static error bit to be set in the corresponding status word of the master communication:	
	<ul style="list-style-type: none"> • Sercos: S-0-0135, Drive status word, bit 13 • Field bus: P-0-4078, Field bus: Status word, bit 13 • Analog/parallel: P-0-0115, Device control: Status word, bit 13 for class 1 diagnostics 	

See also Functional Description "Status classes, status displays, control parameters"

Structure

Bit	Designation/function	Comment
0	Overload shutdown	
1	Amplifier overtemperature shutdown	
2	motor shutdown temperature (S-0-0204)	
3	Reserved	
4	Control voltage error	
5	Encoder error	
6	Reserved	
7	Overcurrent error	
8	Oversupply error	
9	Undervoltage error in power section	
10	Reserved	
11	Excessive deviation	
12	Communication error	

Bit	Designation/function	Comment
13	Position limit value exceeded	
14	Reserved	
15	Manufacturer-specific error	

Tab. 4-1: S-0-0011, Class 1 diagnostics

Use



Bits 0 to 14 are defined in the Sercos specification. All unspecified messages are displayed via bit 15.

The following setting generally applies:

- **Bit x = "0":** No error of class 1 diagnostics present
- **Bit x = "1":** Class 1 diagnostics error present

The error bit will only be reset to "0" by the drive, when

- there are no more class 1 diagnostics errors and
- the "S-0-0099" command was started.

Drive lock-out

Any class 1 diagnostics error situation detected by the drive will cause

- the drive to initiate an "error reaction", and
- the static error bit for class 1 diagnostics to be set.

S-0-0011 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

4.1.6 S-0-0012, Class 2 diagnostics

Allocation Hardware
Funct. package(s):
Device parameter: --

Function When a class 2 diagnostics warning becomes active or inactive in the drive, this causes the change bit to be set in the corresponding status word:

- **Sercos:** The change bit "S-0-0135, Drive status word", bit 12, for class 2 diagnostics is only cleared by the drive when parameter "[S-0-0012](#)" is read.
- **Field bus:** The change bit "P-0-4078, Field bus: Status word", bit 12, for class 2 diagnostics is immediately cleared by the drive when the condition for the warning is no longer fulfilled.

See also Functional Description "Status classes, status displays, control parameters"

Structure

Bit	Designation/function	Comment
0	Overload warning (See also P-0-0445; bit 8, P-0-0445; bit 9)	
1	Amplifier overtemperature warning (See also P-0-0861; bit 12, P-0-0861; bit 14, P-0-0861; bit 7)	

Standard parameters

Bit	Designation/function	Comment
2	Motor overtemperature warning (See also P-0-0445 ; bit 14)	
4/3	Reserved	
5	Positioning velocity > nlimit (See also P-0-0315 ; bit 0)	
8-6	Reserved	
9	Undervoltage in DC bus (See also P-0-0861 ; bit 0, P-0-0861 ; bit 3)	
12-10	Reserved	
13	Target position outside of position limit values (See also S-0-0323 ; bit 0)	
15	Manufacturer-specific warning (See also P-0-0115 ; bit 2)	

Tab. 4-2: *S-0-0012, Class 2 diagnostics*

Use As regards the bits, the following setting generally applies:

- **Bit x = "0":** Condition for warning not fulfilled
- **Bit x = "1":** Condition for warning fulfilled

As illustrated in the table above, the individual status bits are mapped to other manufacturer-specific parameters ([P-0-0861](#), [P-0-0115](#), ...).



For configuration in "[S-0-0144](#), Signal status word", preferably use the manufacturer-specific bits in the P-parameters.

S-0-0012 - Attributes	Function: Par	Editable: --	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: BIN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: ---

4.1.7 S-0-0013, Class 3 diagnostics

Allocation Hardware --
Funct. package(s):
Device parameter:

Function When a class 3 diagnostics message becomes active or inactive in the drive, this causes the change bit to be set in the status word:

Field bus: Change bit "P-0-4078, Field bus: Status word", bit 11, for class 3 diagnostics is immediately cleared by the drive when the condition for the warning is no longer fulfilled.

See also Functional Description "Status classes, status displays, control parameters"

Structure Defined operating status messages are assigned to the individual bits of this parameter. The structure of the parameter and the significance of the individual bits are explained below.

Bit	Designation/function	Comment
0	Feedback velocity = Command velocity (S-0-0330 , Status "n_feedback = n_command"): Absolute plus command-value-percentage-based tolerance windows $ (\text{S-0-0040}) - (\text{S-0-0036}) - (\text{S-0-0037}) \leq ((\text{S-0-0157}) + \text{S-0-0036} + (\text{S-0-0037}) + (\text{P-0-0690}) \times (\text{S-0-0272}))$	
1	$ \text{Actual velocity} < \text{Standstill window}$ (S-0-0331 , Status "n_feedback = 0"): $ \text{S-0-0040} < \text{S-0-0124}$	
2	$ \text{Feedback velocity} < \text{velocity threshold}$ (S-0-0332 , Status "n_feedback < n_x"): $ \text{S-0-0040} < \text{S-0-0125}$	
3	$ \text{Torque/force feedback value} \geq \text{torque threshold}$ (S-0-0333 , Status "T >= Tx"): $ \text{S-0-0084} \geq \text{S-0-0126}$	
4	$ \text{Torque/force feedback value} \geq \text{minimum torque limit value}$ (S-0-0334 , Status "T >= Tlimit"): $ \text{S-0-0084} \geq \text{minimum from (P-0-0444, P-0-0442, P-0-0443)}$	
5	$ \text{Command velocity} > \text{velocity limit value}$ (S-0-0335 , Status "n_command > n_limit"): $ (\text{S-0-0036}) + (\text{S-0-0037}) > \text{S-0-0091}$	
6	In position (S-0-0336 , Status "In position") lag error < positioning window $ \text{S-0-0189} < \text{S-0-0057}$ Only with active "Position spindle procedure command": $ \text{S-0-0040} < \text{S-0-0124}$ (S-0-0331) and $ \text{position feedback value} - (\text{S-0-0430}) < \text{S-0-0057}$ and $ \text{S-0-0036} + \text{S-0-0037} < \text{S-0-0124}$	
7	$ \text{Power feedback value} \geq \text{power threshold}$ (S-0-0337 , Status "P >= Px"): $ \text{S-0-0382} \geq \text{S-0-0158}$	
11	Lag error < coarse positioning window (S-0-0341 , Status "In coarse position"): $ \text{S-0-0189} < \text{S-0-0261}$	
12	Target position attained (S-0-0342 , Status "Target position attained"): Internal position command value = effective target position $\text{P-0-0434} = \text{S-0-0430}$	

Tab. 4-3: *S-0-0013, Class 3 diagnostics*

The following setting generally applies:

- **Bit x = 0:** Condition for message not fulfilled
- **Bit x = 1:** Condition for message fulfilled

Standard parameters

S-0-0013 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

4.1.8 S-0-0014, Interface status

Allocation	Hardware Funct. package(s): Device parameter:	--																																										
Function	This parameter contains important status bits with regard to master communication and the communication phases.																																											
Structure	<table border="1"> <thead> <tr> <th>Bit</th> <th>Designation/function</th> <th>Comment</th> </tr> </thead> <tbody> <tr><td>2-0</td><td>Communication state (see below)</td><td></td></tr> <tr><td>3</td><td>F4001 Bus synchronization failure</td><td></td></tr> <tr><td>4</td><td>F4002 Failure of a consumer connection</td><td></td></tr> <tr><td>5</td><td>F4003 Invalid communication phase shutdown</td><td></td></tr> <tr><td>6</td><td>F4004 Error during phase progression</td><td></td></tr> <tr><td>7</td><td>F4005 Error during phase regression</td><td></td></tr> <tr><td>8</td><td>F4006 Phase switching without ready signal</td><td></td></tr> <tr><td>9</td><td>F4009 Bus failure</td><td></td></tr> <tr><td>10</td><td>F4009 PLC stop</td><td></td></tr> <tr><td>11</td><td>F4009 Slave shutdown</td><td></td></tr> <tr><td>12</td><td>F4017 Incorrect sequence during phase switch</td><td></td></tr> <tr><td>13</td><td>F4019 Incorrect sequence upon phase start</td><td></td></tr> <tr><td>15/14</td><td>Reserved</td><td></td></tr> </tbody> </table>	Bit	Designation/function	Comment	2-0	Communication state (see below)		3	F4001 Bus synchronization failure		4	F4002 Failure of a consumer connection		5	F4003 Invalid communication phase shutdown		6	F4004 Error during phase progression		7	F4005 Error during phase regression		8	F4006 Phase switching without ready signal		9	F4009 Bus failure		10	F4009 PLC stop		11	F4009 Slave shutdown		12	F4017 Incorrect sequence during phase switch		13	F4019 Incorrect sequence upon phase start		15/14	Reserved		
Bit	Designation/function	Comment																																										
2-0	Communication state (see below)																																											
3	F4001 Bus synchronization failure																																											
4	F4002 Failure of a consumer connection																																											
5	F4003 Invalid communication phase shutdown																																											
6	F4004 Error during phase progression																																											
7	F4005 Error during phase regression																																											
8	F4006 Phase switching without ready signal																																											
9	F4009 Bus failure																																											
10	F4009 PLC stop																																											
11	F4009 Slave shutdown																																											
12	F4017 Incorrect sequence during phase switch																																											
13	F4019 Incorrect sequence upon phase start																																											
15/14	Reserved																																											

Tab. 4-4: Value description

Use Communication states:

Generic state	Bus-specific state	Diagnostic code	S-0-0014.2...0
BootStrap	---	---	---
NonRealTime	NRT	A0008	111 b
Initialize	CP0	A0000	000 b
	CP1	A0001	001 b
	HP0	A0030	100 b
Pre-Operational	CP2	A0002	010 b
	HP1	A0031	100 b
Safe-Operational	CP3	A0003	011 b
	HP2	A0032	100 b
Operational	CP4	A0040	100 b

Tab. 4-5: S-0-0014.0.0: Bit 2...0 with Sercos

Generic state	Bus-specific state	Diagnostic code	S-0-0014.2...0
BootStrap	BootStrap	A0029	111 b
NonRealTime	---	---	---
Initialize	INI	A0004	000 b
Pre-Operational	PO	A0005	010 b
Safe-Operational	SOP	A0006	011 b
Operational	OP	A0007	100 b

Tab. 4-6: S-0-0014.0.0: Bit 2...0 with EtherCAT

 The communication error bits will only be cleared by the drive when the respective interface error is no longer present and the "S-0-0099, C0500 Reset class 1 diagnostics" command was started.

S-0-0014 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: ---

4.1.9 S-0-0015, Telegram type parameter

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

In the telegram type parameter, it is possible to choose between standard telegrams and configured telegram.

- When "configurable telegram" has been selected, it is possible to configure "S-0-0016, Configuration list of AT" and "S-0-0024, Configuration list of MDT" as desired.
- In standard telegrams, the content of "S-0-0016" and "S-0-0024" is automatically adjusted to the selected standard telegram.
- With Sercos, the parameter takes effect when the configuration type selected in "S-0-1050.0.1, SIII-Connection: Configuration" is "10".

 The telegram type selected is activated in the master and in the slave only from communication phase 3 (Safe-Operational) on.

See also Functional Description "Sercos"

Structure

Bit	Designation/function	Comment
2-0	Selection of standard telegram or configured telegram	
3	0: Position feedback value 1 1: Position feedback value 2	

Standard parameters

Bit	Designation/function	Comment
9/8	MDT service channel data width: 00: 2 bytes info (EtherCAT) 01: 4 bytes info (Sercos) 10: 6 bytes info 11: 8 bytes info	
11/10	AT service channel data width: 00: 2 bytes info (EtherCAT) 01: 4 bytes info (Sercos) 10: 6 bytes info 11: 8 bytes info	

Tab. 4-7: Table S-0-0015.0.0: Parameter structure

The following table describes the individual standard telegrams that can be selected via bit 2...0.

Bit 2... 0		MDT (cyclic command values)	AT (cyclic actual values)
000	VZ 0	No cyclic data	No cyclic data
001	VZ 1	DF1: S-0-0080, Torque/force command value	No cyclic data
010	VZ 2	DF1: S-0-0036, Velocity command value	DF1: S-0-0040, Velocity feedback value
011	VZ 3	DF1: S-0-0036, Velocity command value	DF1: S-0-0051/S-0-0053 Position feedback 1/2 value
100	VZ 4	DF1: S-0-0047, Position command value	DF1: S-0-0051/S-0-0053 Position feedback value
101	VZ 5	DF1: S-0-0047, Position command value DF2: S-0-0036, Velocity command value	DF1: S-0-0051/S-0-0053 Position feedback value DF2: S-0-0040, Velocity feedback value
110	VZ 6	DF1: S-0-0036, Velocity command value	No cyclic data
111	Config. telegram		Configurable telegram

VZ: Standard telegram

DF1/2: Data field 1/2

Tab. 4-8: Standard telegrams - supported bits

S-0-0015 - Attributes

Function:	Par	Editable:	FKM:PO	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	FKM:PO->SOP	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: 0x0
------	----------------------	--------------------

4.1.10 S-0-0016, Configuration list of AT

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter specifies the parameters which are contained in the drive telegram (AT) when the configurable telegram has been defined by parameter " S-0-0015 , Telegram type parameter". The configurable parameters are contained in " S-0-0187 , List of configurable data in the AT". See also Functional Description "EtherCAT"	
S-0-0016 - Attributes		
Function:	Par	Editable: FKM:PO
Memory:	PARAM_SP	Validity ch.: FKM:PO->SOP
Unit:	--	Extr. val. ch.: --
Cycl. tra.:	--	Comb. check: --
AXS:	min./max.: --- / ---	Default value: s. Text

4.1.11 S-0-0017, IDN-list of all operation data

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The IDNs of all operating data available in the drive are stored in this IDN list. See also Functional Description "Parameters, general information"	
S-0-0017 - Attributes		
Function:	Par	Editable: --
Memory:	--	Validity ch.: --
Unit:	--	Extr. val. ch.: --
Cycl. tra.:	--	Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

4.1.12 S-0-0018, IDN list of operating data for communication phase 2

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In this IDN list, the IDNs of all those parameters are stored which the drive checks in the transition check command for phase 3. Only if the data of the contained IDNs are correct can the transition check command be positively acknowledged and switching to communication phase 3 can be allowed. See also Functional Description "IDN lists of parameters"	
S-0-0018 - Attributes		
Function:	Par	Editable: --
Memory:	--	Validity ch.: --
Unit:	--	Extr. val. ch.: --
Cycl. tra.:	--	Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

4.1.13 S-0-0019, IDN list of operating data for communication phase 3

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In this IDN list, the IDNs of all those parameters are stored which the drive checks in the transition check command for phase 4. Only if the data of the contained IDNs are correct can the transition check command be positively acknowledged and switching to communication phase 4 can be allowed. See also Functional Description "IDN lists of parameters"	

Standard parameters

S-0-0019 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: IDN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.1.14 S-0-0021, Invalid operation data Safe-Operational transition check

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Before the drive switches from Pre- to Safe-Operational in accordance with the command " S-0-0127 , C0100 Safe-Operational transition check", it checks whether all communication parameters are complete and correct. If the drive recognizes one or more invalid IDNs, it writes the operating data still required or invalid to this IDN list. At the drive, this is additionally displayed via fault diagnostics C01xx.	
See also Functional Description "Sercos"		
S-0-0021 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

4.1.15 S-0-0022, Invalid operation data Operational transition check

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Before the drive switches from Safe- to Operational in accordance with the command " S-0-0128 , C5200 Operational transition check", it checks whether all communication parameters are complete and correct. If the drive recognizes one or more invalid IDNs, it writes the operating data still required or invalid to this IDN list. At the drive, this is additionally displayed via fault diagnostics C52xx.	
See also Functional Description "Sercos"		
S-0-0022 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

4.1.16 S-0-0024, Configuration list of MDT

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter specifies the parameters which are contained in the master data telegram (MDT) if the configurable telegram has been defined by parameter " S-0-0015 , Telegram type parameter". The configurable parameters are contained in " S-0-0188 , List of configurable data in the MDT".	
See also Functional Description "EtherCAT"		

S-0-0024 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: FKM:PO Validity ch.: FKM:PO->SOP Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: IDN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

4.1.17 S-0-0025, IDN-list of all procedure commands

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The IDNs of all commands available in the drive are stored in the data of the IDN list. See also Functional Description "Commands"	
S-0-0025 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

4.1.18 S-0-0026, Configuration list for signal status word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In this parameter it is possible to list (configure) a maximum of 16 parameter IDNs, one bit of each is to be mapped to " S-0-0144 , Signal status word". The first line of the list corresponds with the LSB of " S-0-0144 ". The following lines correspond with the respective more significant bits. See also Functional Description "Configurable signal status word"	
Use	<ul style="list-style-type: none"> The IDNs of the parameters that can be entered in "S-0-0026" are contained in "S-0-0398, IDN-list of configurable data in signal status word". The assignment with regard to which bit of the respective parameter is mapped to "S-0-0144" is made in "S-0-0328, Assign list signal status word". 	
	<ul style="list-style-type: none"> If the IDN "S-0-0000" is entered, this position does not have any function. The respective bit in "S-0-0144, Signal status word" displays the value "0". If an IDN is entered that is not contained in "S-0-0398", the parameter error "Invalid data" (error code 7008h) is generated. 	

S-0-0026 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: IDN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

4.1.19 S-0-0027, Configuration list for signal control word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In this parameter it is possible to list (configure) a maximum of 16 parameter IDNs, one bit of each is to be written via " S-0-0145 , Signal control word". The	

Standard parameters

first line of the list corresponds with the LSB of "[S-0-0145](#)", the following lines with the respective more significant bits.

See also Functional Description "Configurable signal status word"

- Use**
- The IDNs of the parameters that can be entered in "[S-0-0027](#)" are contained in "S-0-0399, IDN-list of configurable data in signal control word".
 - The assignment with regard to which bit of the respective parameter is to be written in "[S-0-0027](#)" is made in "[S-0-0329](#), Assign list signal control word".
 - If the IDN "[S-0-0000](#)" is entered, the respective bit does not have any function in the signal control word "[S-0-0145](#)".
 - If an IDN is entered that is not contained in "S-0-0399", the parameter error "Invalid data" (error code 7008h) is generated.

S-0-0027 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: IDN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: s. Text

4.1.20 S-0-0029, Error counter MDT

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	In this parameter, the number of all invalid master data telegrams (MDT) in the operational communication phase are displayed for EtherCAT. EtherCAT: Number of all invalid master data telegrams (MDT) in the operational communication phase. The parameter contains the same value as parameter " S-0-1050.0.12 , Connection: Error counter data losses"		
	See also Functional Description "EtherCAT"		
S-0-0029 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

4.1.21 S-0-0030, Software revision

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	" S-0-1300.0.9 " replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).		
S-0-0030 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: s. Text
	AXS:	min./max.: --- / ---	Default value: ---

4.1.22 S-0-0032, Primary operation mode

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Using this input parameter, an operation mode can be preselected from the List of supported operation modes (S-0-0292). The operation modes are	

controlled in the various communication buses by using the respective control word.

- Sercos and EtherCAT: [S-0-0134](#), Master control word
- Easy Startup mode: [P-0-0120](#), Control word easy startup

The operation mode determined in this parameter is activated in the drive if:

- the primary operation mode is selected in the control word, and
- control and power sections are ready for operation and
- drive enable "RF" was set.

See also Functional Description "Selecting the operation mode"

Use The operation mode is set by entering a binary value in this parameter.

Possible operation modes are:

- Velocity control
- Torque control
- Cyclic position control
- Drive-internal interpolation
- Drive-controlled positioning
- ...

For operation modes with position control, this parameter defines the following options:

- Lagless / with lag error
- Encoder 1/encoder 2
- hybrid position
- Activation of position control in interaction with/without parameter "[S-0-0520](#)"

The operation modes supported by the respective firmware are stored in parameter "[S-0-0292](#), List of supported operation modes" and when being read are displayed in the form of a hexadecimal code.



The binary values assigned to the operation modes are listed in the "Overview of operation modes" table in the description of parameter "[S-0-0292](#)".

S-0-0032 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--
AXS:		min./max.: --- / ---			
Default value: 0x2					

4.1.23 S-0-0033, Secondary operation mode 1

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

Using this input parameter, an operation mode can be preselected from the List of supported operation modes ([S-0-0292](#)). The operation modes are controlled in the various communication buses by using the respective control word.

- Sercos and EtherCAT: [S-0-0134](#), Master control word
- Easy Startup mode: [P-0-0120](#), Control word easy startup

The operation mode determined in this parameter is activated in the drive if:

Standard parameters

- the secondary operation mode 1 has been selected in the control word, and
- control and power sections are ready for operation and
- drive enable "RF" was set.

See also Functional Description "Selecting the operation mode"

Use The operation mode is set by entering a binary value in this parameter.

Possible operation modes are:

- Velocity control
- Torque control
- Cyclic position control
- Drive-internal interpolation
- Drive-controlled positioning
- ...

For operation modes with position control, this parameter defines the following options:

- Lagless / with lag error
- Encoder 1/encoder 2
- hybrid position
- Activation of position control in interaction with/without parameter "[S-0-0520](#)"

The operation modes supported by the respective firmware are stored in parameter "[S-0-0292](#), List of supported operation modes" and when being read are displayed in the form of a hexadecimal code.



The binary values assigned to the operation modes are listed in the "Overview of operation modes" table in the description of parameter "[S-0-0292](#)".

S-0-0033 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: 0x2

4.1.24 S-0-0034, Secondary operation mode 2

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

Using this input parameter, an operation mode can be preselected from the List of supported operation modes ([S-0-0292](#)). The operation modes are controlled in the various communication buses by using the respective control word.

- Sercos and EtherCAT: [S-0-0134](#), Master control word
- Field buses: P-0-4077, Field bus: Control word

The operation mode determined in this parameter is activated in the drive if:

- the secondary operation mode 2 has been selected in the control word, and
- control and power sections are ready for operation and
- drive enable "RF" was set.

	See also Functional Description "Selecting the operation mode"																											
Use	The operation mode is set by entering a binary value in this parameter. Possible operation modes are:																											
	<ul style="list-style-type: none"> • Velocity control • Torque control • Cyclic position control • Drive-internal interpolation • Drive-controlled positioning • ... 																											
	For operation modes with position control, this parameter defines the following options:																											
	<ul style="list-style-type: none"> • Lagless / with lag error • Encoder 1/encoder 2 • hybrid position • Activation of position control in interaction with/without parameter "S-0-0520" 																											
	The operation modes supported by the respective firmware are stored in parameter " S-0-0292 , List of supported operation modes" and when being read are displayed in the form of a hexadecimal code.																											
	 The binary values assigned to the operation modes are listed in the "Overview of operation modes" table in the description of parameter " S-0-0292 ".																											
S-0-0034 - Attributes	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Function:</td> <td>Par</td> <td>Editable:</td> <td>SUBD:CM+PM</td> <td>Data length:</td> <td>2Byte</td> </tr> <tr> <td>Memory:</td> <td>PARAM_SP</td> <td>Validity ch.:</td> <td>SUBD:PM->OM</td> <td>Format:</td> <td>BIN</td> </tr> <tr> <td>Unit:</td> <td>--</td> <td>Extr. val. ch.:</td> <td>--</td> <td>Decim. pl.:</td> <td>0</td> </tr> <tr> <td>Cycl. tra.:</td> <td>--</td> <td>Comb. check:</td> <td>+</td> <td>Set-depend.:</td> <td>--</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>AXS:</td> <td>min./max.: --- / ---</td> <td>Default value: 0x2</td> </tr> </table>	Function:	Par	Editable:	SUBD:CM+PM	Data length:	2Byte	Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	BIN	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--	AXS:	min./max.: --- / ---	Default value: 0x2
Function:	Par	Editable:	SUBD:CM+PM	Data length:	2Byte																							
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	BIN																							
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																							
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--																							
AXS:	min./max.: --- / ---	Default value: 0x2																										

4.1.25 S-0-0035, Secondary operation mode 3

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Using this input parameter, an operation mode can be preselected from the List of supported operation modes (S-0-0292). The operation modes are controlled in the various communication buses by using the respective control word.	
	<ul style="list-style-type: none"> • Sercos and EtherCAT: S-0-0134, Master control word • Easy Startup mode: P-0-0120, Control word easy startup 	
	The operation mode determined in this parameter is activated in the drive if:	
	<ul style="list-style-type: none"> • the secondary operation mode 3 has been selected in the control word, and • control and power sections are ready for operation and • drive enable "RF" was set. 	
	See also Functional Description "Selecting the operation mode"	
Use	The operation mode is set by entering a binary value in this parameter. Possible operation modes are:	
	<ul style="list-style-type: none"> • Velocity control 	

Standard parameters

- Torque control
- Cyclic position control
- Drive-internal interpolation
- Drive-controlled positioning
- ...

For operation modes with position control, this parameter defines the following options:

- Lagless / with lag error
- Encoder 1/encoder 2
- hybrid position
- Activation of position control in interaction with/without parameter "[S-0-0520](#)"

The operation modes supported by the respective firmware are stored in parameter "[S-0-0292](#), List of supported operation modes" and when being read are displayed in the form of a hexadecimal code.



The binary values assigned to the operation modes are listed in the "Overview of operation modes" table in the description of parameter "[S-0-0292](#)".

S-0-0035 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--
AXS:		min./max.: --- / ---			
			Default value: 0x2		

4.1.26 S-0-0036, Velocity command value

Allocation **Hardware** --
Funct. package(s):
Device parameter:

Function In the "Velocity control" mode, "[S-0-0036](#)" takes effect as velocity command value. Depending on the mode selected in "[P-0-1220](#), Velocity control mode configuration", bit 0, it will be internally processed in different ways.

In the Target command value specification mode ("[P-0-1220](#)" bit 0 = 0), "[S-0-0036](#)" is interpolated using the acceleration ramps ("[P-0-1201](#)", "[P-0-1202](#)", "[P-0-1203](#)", "[P-0-1211](#)", "[P-0-1213](#)").

In the Cyclic command value specification mode ("[P-0-1220](#)" Bit 0 = 1), "[S-0-0036](#)" directly acts in every NC cycle.



This parameter is limited by the following velocity limit values:

- [P-0-0113](#), Bipolar velocity limit value of motor
- [S-0-0038](#), Positive velocity limit value
- [S-0-0039](#), Negative velocity limit value
- [S-0-0091](#), Bipolar velocity limit value
- [S-0-0113](#), Maximum motor speed
- Limitation from the maximum motor control frequency due to obligatory export licensing (590 Hz)

Intervention by the limitation is displayed by the warning "E2063 Velocity command value > limit value".



Using "[P-0-1222](#), Velocity command filter", the velocity command values can additionally be transferred.

See also Functional Description "Velocity control"

S-0-0036 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0044	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: s. Text / s. Text			Default value:	---

4.1.27 S-0-0037, Additive velocity command value

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

Input parameter "[S-0-0037](#)" takes effect in position- and velocity controlled modes as additive command value in the velocity controller. It is available in addition to "[P-0-0690](#), Additive velocity command value, process loop" as additive velocity command value and takes effect in the velocity controller immediately.



The actually effective velocity command value (addition of all components generating the velocity command value) at the input of the velocity controller is displayed in "[P-0-0048](#) Effective velocity command value".

See also Functional Description "Velocity controller"

S-0-0037 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0044	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: s. Text / s. Text			Default value:	---

4.1.28 S-0-0038, Positive velocity limit value

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

Value for the maximum permissible positive velocity command value of the motor, depending on the application.

See also Functional Description "Velocity limitation"

Use

- The maximum value for "[S-0-0038](#)" is the value of "[S-0-0113](#), Maximum motor speed" in positive direction. This value is also the maximum value for all additional velocity parameters.
- If "[S-0-0091](#), Bipolar velocity limit value" falls below "[S-0-0038](#), Positive velocity limit value", the limit value in "[S-0-0091](#)" becomes effective.
- The default value for "[S-0-0038](#)" is "0" (switched off). This way, the value in "[S-0-0091](#)" serves as limit for positive velocities.

S-0-0038 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0044	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	Grp. 1
AXS:	min./max.: s. Text / s. Text			Default value:	0

Standard parameters

4.1.29 S-0-0039, Negative velocity limit value

Allocation	Hardware Funct. package(s): Device parameter:	--																								
Function	Value for the maximum permissible negative velocity command value of the motor, depending on the application.																									
	See also Functional Description "Velocity limitation"																									
Use	<ul style="list-style-type: none"> The maximum value for "S-0-0039" is the value of "S-0-0113, Maximum motor speed" in negative direction. This value is also the maximum value for all additional velocity parameters. If the value of "S-0-0091, Bipolar velocity limit value" falls below "S-0-0039, Negative velocity limit value", the limit value in "S-0-0091" becomes effective. The default value for "S-0-0039" is "0" (switched off). This way, the value in "S-0-0091" serves as limit for negative velocities. 																									
S-0-0039 - Attributes	<table border="1"> <tr> <td>Function:</td><td>Par</td> <td>Editable:</td><td>ALWAYS</td> <td>Data length:</td><td>4Byte</td> </tr> <tr> <td>Memory:</td><td>PARAM_SP</td> <td>Validity ch.:</td><td>SUBD:PM->OM</td> <td>Format:</td><td>DEC_MV</td> </tr> <tr> <td>Unit:</td><td>S-0-0044</td> <td>Extr. val. ch.:</td><td>--</td> <td>Decim. pl.:</td><td></td> </tr> <tr> <td>Cycl. tra.:</td><td>MDT</td> <td>Comb. check:</td><td>--</td> <td>Set-depend.:</td><td>Grp. 1</td> </tr> </table>	Function:	Par	Editable:	ALWAYS	Data length:	4Byte	Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV	Unit:	S-0-0044	Extr. val. ch.:	--	Decim. pl.:		Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	Grp. 1	
Function:	Par	Editable:	ALWAYS	Data length:	4Byte																					
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV																					
Unit:	S-0-0044	Extr. val. ch.:	--	Decim. pl.:																						
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	Grp. 1																					
	AXS: min./max.: s. Text / s. Text	Default value: 0																								

4.1.30 S-0-0040, Actual velocity value of encoder 1

Allocation	Hardware Funct. package(s): Device parameter:	--																								
Function	The velocity feedback value of encoder 1 can be transferred from the drive controller to the control system cyclically or through the service channel.																									
	 Parameter "S-0-0040" takes into account the load gear (S-0-0121/S-0-0122) and as required the feed constant (S-0-0123) in case of data reference at the load " S-0-0044 " for the velocity data.																									
S-0-0040 - Attributes	<table border="1"> <tr> <td>Function:</td><td>Par</td> <td>Editable:</td><td>--</td> <td>Data length:</td><td>4Byte</td> </tr> <tr> <td>Memory:</td><td>--</td> <td>Validity ch.:</td><td>--</td> <td>Format:</td><td>DEC_MV</td> </tr> <tr> <td>Unit:</td><td>S-0-0044</td> <td>Extr. val. ch.:</td><td>--</td> <td>Decim. pl.:</td><td></td> </tr> <tr> <td>Cycl. tra.:</td><td>AT</td> <td>Comb. check:</td><td>--</td> <td>Set-depend.:</td><td>--</td> </tr> </table>	Function:	Par	Editable:	--	Data length:	4Byte	Memory:	--	Validity ch.:	--	Format:	DEC_MV	Unit:	S-0-0044	Extr. val. ch.:	--	Decim. pl.:		Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--	
Function:	Par	Editable:	--	Data length:	4Byte																					
Memory:	--	Validity ch.:	--	Format:	DEC_MV																					
Unit:	S-0-0044	Extr. val. ch.:	--	Decim. pl.:																						
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--																					
	AXS: min./max.: --- / ---	Default value: ---																								

4.1.31 S-0-0041, Homing velocity

Allocation	Hardware Funct. package(s): Device parameter:	--																								
Function	The product from "S-0-0041" and "S-0-0108, Feedrate override" defines the maximum velocity of the axis during "S-0-0148, C0600 Drive-controlled homing procedure command".																									
	See also Functional Description "Establishing the position data reference"																									
S-0-0041 - Attributes	<table border="1"> <tr> <td>Function:</td><td>Par</td> <td>Editable:</td><td>ALWAYS</td> <td>Data length:</td><td>4Byte</td> </tr> <tr> <td>Memory:</td><td>PARAM_SP</td> <td>Validity ch.:</td><td>SUBD:PM->OM</td> <td>Format:</td><td>DEC_OV</td> </tr> <tr> <td>Unit:</td><td>S-0-0044</td> <td>Extr. val. ch.:</td><td>--</td> <td>Decim. pl.:</td><td></td> </tr> <tr> <td>Cycl. tra.:</td><td>AT + MDT</td> <td>Comb. check:</td><td>--</td> <td>Set-depend.:</td><td>Grp. 3</td> </tr> </table>	Function:	Par	Editable:	ALWAYS	Data length:	4Byte	Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV	Unit:	S-0-0044	Extr. val. ch.:	--	Decim. pl.:		Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	Grp. 3	
Function:	Par	Editable:	ALWAYS	Data length:	4Byte																					
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV																					
Unit:	S-0-0044	Extr. val. ch.:	--	Decim. pl.:																						
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	Grp. 3																					
	AXS: min./max.: s. Text / s. Text	Default value: 10000000																								

4.1.32 S-0-0042, Homing acceleration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used to enter the value for acceleration. With this value, the drive changes the internally generated velocity command value during execution of "S-0-0148, C0600 Drive-controlled homing procedure command".	
	 The acceleration is limited to the value of "S-0-0138, Bipolar acceleration limit value". The value of parameter "S-0-0042, Homing acceleration" should always be smaller than the value of the parameter "S-0-0138, Bipolar acceleration limit value" because otherwise a lag error will build up due to internal control processes. If the value 0 is input for the parameter, the parameter "S-0-0138" takes effect.	

S-0-0042 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	S-0-0160	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 3

AXS: min./max.: s. Text / s. Text Default value: 10000000

4.1.33 S-0-0043, Velocity polarity parameter

Allocation	Hardware Funct. package(s): Device parameter:	--												
Function	In this parameter, the polarity of velocity data can be switched for the application. The polarities are switched outside of the controlled system, (i.e. at the input and output).													
Structure	See also Functional Description Scaling of physical data													
	<table border="1"> <thead> <tr> <th>Bit</th> <th>Designation/function</th> <th>Comment</th> </tr> </thead> <tbody> <tr> <td>0</td> <td> Velocity command value 0: Positive polarity 1: Negative polarity </td> <td></td> </tr> <tr> <td>1</td> <td> Additive velocity command value 0: Positive polarity 1: Negative polarity </td> <td></td> </tr> <tr> <td>2</td> <td> Velocity feedback value 0: Positive polarity 1: Negative polarity </td> <td></td> </tr> </tbody> </table>	Bit	Designation/function	Comment	0	Velocity command value 0: Positive polarity 1: Negative polarity		1	Additive velocity command value 0: Positive polarity 1: Negative polarity		2	Velocity feedback value 0: Positive polarity 1: Negative polarity		
Bit	Designation/function	Comment												
0	Velocity command value 0: Positive polarity 1: Negative polarity													
1	Additive velocity command value 0: Positive polarity 1: Negative polarity													
2	Velocity feedback value 0: Positive polarity 1: Negative polarity													

Tab. 4-9: Velocity polarities

 Bits 1 and 2 are copies from bit 0. Only changes in bit 0 become effective. Different settings for the individual bits are not possible!

- Use
- The following is true for rotatory motors: Clockwise rotation of motor output shaft causes positive velocity feedback value (positive polarity).

Standard parameters

- **This applies to linear motors:** Motion of primary part in the direction of the cable connection side causes positive velocity feedback value (positive polarity).

S-0-0043 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	BIN
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: 0x0 / 0x7 Default value: 0x0

4.1.34 S-0-0044, Velocity data scaling type

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The scaling type of the velocity data defines the format and the relationship in which the velocity data are exchanged between the drive and the control or interface.	



Any change in the parameter setting has an effect on the scaling. Such a change therefore has an effect on the display and processing of velocity, position or acceleration data in the drive.

Structure

Bit	Designation/function	Comment
2-0	Scaling type 001: Linear scaling 010: Rotary scaling	
3	0: Preferred scaling 1: Parameter scaling	
4	Unit for linear scaling 0: Millimeter [mm] 1: Inch [in] Unit for rotary scaling 0: Revolution 1: degrees	
5	Unit of time 0: Minute [min] 1: Second [s]	
6	Data reference 0: At motor shaft 1: At load	
15-7	Reserved	

Tab. 4-10: S-0-0044, Velocity data scaling type

Use	The drive represents the values of the velocity data parameters (e.g. S-0-0040, Velocity feedback value) with the set scaling. The setting of the scaling is specified by the control. If the preferred scaling is selected (bit 3 = 0), the following parameters are preset and cannot be changed:
-----	--

- [S-0-0045](#), Velocity data scaling factor
- [S-0-0046](#), Velocity data scaling exponent

In the case of parameter scaling, the scaling is set by inputting the desired parameter values.

S-0-0044 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--

AXS: min./max.: --- / --- Default value: 0x2

4.1.35 S-0-0045, Velocity data scaling factor

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

For parameter scaling ([S-0-0044](#)), the scaling factor and the decimal format decimal format (decimal place) of velocity data are defined by the following parameters.

- [S-0-0045](#), Velocity data scaling factor
- [S-0-0046](#), Velocity data scaling exponent



Any change in the parameter setting has an effect on the scaling. Such a change therefore has an effect on the display and processing of velocity, position or acceleration data in the drive.



If preferred scaling is selected in "[S-0-0044](#), Velocity data scaling type", the values in "[S-0-0045](#)" and "[S-0-0046](#)" are automatically set by the drive.

See also Functional Description Scaling of physical data

S-0-0045 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: s. Text / s. Text Default value: 1

4.1.36 S-0-0046, Velocity data scaling exponent

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

For parameter scaling ([S-0-0044](#)), the scaling factor and the decimal format decimal format (decimal place) of velocity data are defined by the following parameters.

- [S-0-0046](#), Velocity data scaling exponent
- [S-0-0045](#), Velocity data scaling factor



Any change in the parameter setting has an effect on the scaling. Such a change therefore has an effect on the display and processing of velocity, position or acceleration data in the drive.



If preferred scaling is selected in "[S-0-0044](#), Velocity data scaling type", the values in "[S-0-0045](#)" and "[S-0-0046](#)" are automatically set by the drive.

Standard parameters

See also Functional Description Scaling of physical data					
S-0-0046 - Attributes	Function: Par	Editable:	SUBD:CM	Data length:	2Byte
	Memory: PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_MV
	Unit: --	Extr. val. ch.:	+	Decim. pl.:	0
	Cycl. tra.: --	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: -10 / 0		Default value: ---	

4.1.37 S-0-0047, Position command value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function		
 The contents and the significance of " S-0-0047 " varies for reading and writing access.		
Write access In mode "Position control", the cyclic position command values are written to the drive by the control system according to its interpolation cycle time by means of " S-0-0047 ". If required, the position command values received directly from the control system can be read out via " P-0-0047 , Position command value control".		
 The interpolation cycle time of the control system (S-0-1050.x.10) can be a multiple of the communication cycle time (S-0-1002) to ensure updating of " P-0-0047 " in the same time base.		

Read access

When reading "[S-0-0047](#)", the effective position command value received at the input of the position controller is displayed. The value can also be displayed by means of "[P-0-0434](#), Position command value of controller". The effective position command values in operation mode "position control" are the jerk-limited position command values of the control system fine-interpolated by the drive and potentially filtered. This way, updating of "[S-0-0047](#)" is realized in the time base of the controller cycle time (125µs).

 However, "[S-0-0047](#)" is only updated in cyclic position control mode and "[P-0-0434](#)" in all modes with a closed position control loop in the drive.

S-0-0047 - Attributes	Function: Par	Editable:	ALWAYS	Data length:	4Byte
	Memory: --	Validity ch.:	--	Format:	DEC_MV
	Unit: S-0-0076	Extr. val. ch.:	--	Decim. pl.:	--
	Cycl. tra.: AT + MDT	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: s. Text / s. Text		Default value: ---	

4.1.38 S-0-0049, Positive position limit value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function		
The allowed travel range of an axis can be defined by position limit values. In this parameter, the maximum admissible position feedback value (positive travel direction) is entered. If besides encoder 1, an encoder 2 is used, the position limit values either refer • to the encoder in reference - or, if both encoders are in reference, - • to the encoder selected by bit 3 of " S-0-0147 , Homing parameter".		

Use Activation

The position limit value monitor is only active if the actual position values of encoder 1 are referred to the axis zero point, i.e., when an encoder has been homed (bit 1 or bit 2 in parameter "[S-0-0403](#), Position feedback value status" must be 1).

The position limit value monitor is only active if the actual position values of encoder 1 or, if available, encoder 2 are referred to the axis zero point, i.e., when an encoder has been homed. (Bit 1 or bit 2 in parameter "[S-0-0403](#), Position feedback value status" must be 1)

Via bit 4 in "[S-0-0055](#), Position polarities", the position limit value monitor can be switched off.

Warning

If a "[S-0-0258](#), Target position" beyond the positive position limit value is preset for the drive, it sets the warning bit 13 in "[S-0-0012](#), Class 2 diagnostics" and generates the warning E2053 Target position out of travel range.

If the positive position limit value is exceeded, the drive sets the error bit 13 in "[S-0-0011](#), Class 1 diagnostics".

S-0-0049 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	+	Decim. pl.:	--
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: s. Text / s. Text Default value: 0

4.1.39 S-0-0050, Negative position limit value

Allocation Hardware --
Funct. package(s):
Device parameter:

Function The allowed travel range of an axis can be defined by position limit values. The lowest allowed actual position value (negative travel direction) is entered in this parameter.

If besides encoder 1, an encoder 2 is used, the position limit values either refer • to the encoder in reference - or, if both encoders are in reference, - • to the encoder selected by bit 3 of "[S-0-0147](#), Homing parameter". See also Functional Description "Position limit values (software limit switches)"

Use Activation

The position limit value monitor is only active if the actual position values of encoder 1 are referred to the axis zero point, i.e., when an encoder has been homed (bit 1 or bit 2 in parameter "[S-0-0403](#), Position feedback value status" must be 1).

The position limit value monitor is only active if the actual position values of encoder 1 or, if available, encoder 2 are referred to the axis zero point, i.e., when an encoder has been homed. (Bit 1 or bit 2 in parameter "[S-0-0403](#), Position feedback value status" must be 1)

Via bit 4 in parameter "[S-0-0055](#), Position polarities", the position limit value monitor can be switched off.

Warning

If a "[S-0-0258](#), Target position" beyond the negative position limit value is preset for the drive, it sets the warning bit 13 in "[S-0-0012](#), Class 2 diagnostics" and generates the warning E2053 Target position out of travel range.

Standard parameters

If the negative position limit value is exceeded, the drive sets the error bit 13 in "[S-0-0011](#), Class 1 diagnostics".

S-0-0050 - Attributes	Function: Par	Editable:	ALWAYS	Data length:	4Byte
	Memory: PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
	Unit: S-0-0076	Extr. val. ch.:	+	Decim. pl.:	
	Cycl. tra.: --	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: s. Text / s. Text		Default value: 0	

4.1.40 S-0-0051, Position feedback value of encoder 1

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	The position feedback value of encoder 1 shows the current position of encoder 1. During the switching process from configuration mode (CM) to parameter mode (PM) it is set to a relative or absolute initial value.				
See also Functional Description "Measuring systems"					
S-0-0051 - Attributes	Function: Par	Editable:	--	Data length:	4Byte
	Memory: --	Validity ch.:	--	Format:	DEC_MV
	Unit: S-0-0076	Extr. val. ch.:	--	Decim. pl.:	
	Cycl. tra.: AT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---			
		Default value: ---			

4.1.41 S-0-0052, Reference distance of encoder 1

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	If the position data reference of an axis is established via encoder 1, the required position feedback value for a specific axis position (reference position) must be entered in " S-0-0052 ". By means of commands " S-0-0148 , C0600 Drive-controlled homing procedure command" or " S-0-0447 , C0300 Set absolute position procedure command", the value entered in parameter " S-0-0052 " becomes effective as "position feedback value" at the reference position. This way, a defined position reference system can be established for an axis or an existing reference system can be changed to a new one.	
See also Functional Description "Establishing the position data reference"		
Use	Incremental measuring systems	
In incremental measuring systems, the "drive-controlled homing procedure command" is applied to establish the reference of the position feedback values to the axis zero position at a mechanically defined reference position of the axis (reference point). "Position feedback value 1" at the reference point corresponds to the value of parameter " S-0-0052 ". after homing. It is the distance of this dedicated point to the axis zero point.		

Absolute measuring systems

For absolute measuring systems, the command "set absolute position procedure command" switches the previously used reference system of the position feedback value to a new one on a reference position of the axis. The "Position feedback value of encoder 1" at this reference position is then the value of "[S-0-0052](#)".



The reference position can have a defined distance to the axis zero point and be specified as position feedback value of the previous reference system (before reference system switching).

S-0-0052 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0076 Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: Set-depend.: Grp. 3
AXS:	min./max.: s. Text / s. Text		Default value: 0

4.1.42 S-0-0053, Position feedback value of encoder 2

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The "position feedback value of encoder 2" shows the current position of encoder 2. After the drive is switched on, the actual position value is initialized, i.e. set to an initial value, by the command " S-0-0128 , C5200 Operational transition check" during the communication phase sequence.	
	See also Functional Description "Measuring systems"	
Use	If encoder 2 is an absolute measuring system, the value in " S-0-0053 " displays:	
	<ul style="list-style-type: none"> the position referring to the machine zero point, if the command "S-0-0447, Set absolute position procedure command" was executed once for encoder 2 during initial commissioning. <p>depending on encoder 1 evaluation or encoder 2 evaluation</p> <ul style="list-style-type: none"> the non-homed position feedback value (encoder raw value), if no absolute encoder 1 is available the position feedback value of encoder 1, if an absolute encoder 1 is available 	
	If encoder 2 is an incremental measuring system, the value in " S-0-0053 " displays:	
	<ul style="list-style-type: none"> initially the non-homed position feedback value. It refers to the value of "P-0-0019, Initial position value", if no absolute encoder 1 is available. The initial position value is then assigned to the initial encoder position (default value of P-0-0019 is zero). the position referring to the machine zero point, if the command "S-0-0148, C0600 Drive-controlled homing procedure command" was executed after drive enable had been set, and if, at the same time, the encoder 2 been selected with bit 3 in "S-0-0147, Homing parameter". 	

S-0-0053 - Attributes	Function: Par Memory: -- Unit: S-0-0076 Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.1.43 S-0-0054, Reference distance of encoder 2

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	If the position data reference of an axis is established via encoder 2, the required position feedback value for a specific axis position (dedicated position) has to be entered in " S-0-0054 ". Via the command " S-0-0148 , C0600 Drive-controlled homing procedure command" or " S-0-0447 , C0300 Set absolute position procedure command", the value entered in parameter " S-0-0054 " becomes effective as the "position feedback value" at the dedicated position. This way, a defined position reference system can be	

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established for an axis or an existing reference system can be changed to a new one.

See also Functional Description "Establishing the position data reference"

Use **Incremental measuring systems**

In the case of incremental measuring systems, the "drive-controlled homing procedure" command establishes the reference of the position feedback values to the axis zero point at a mechanically defined dedicated position of the axis (reference point). After the homing procedure, the "position feedback value 1" at the reference point corresponds to the value of parameter "**S-0-0054**". It is the distance of this dedicated point to the axis zero point.

Absolute measuring systems

In the case of absolute measuring systems, the command "set absolute position procedure command" switches the previous reference system of the position feedback values to a new one at a dedicated position of the axis. The "position feedback value of encoder 1" at this dedicated position then is the value of "**S-0-0054**".



The reference position can have a defined distance to the axis zero point and be specified as position feedback value of the previous reference system (before reference system switching).

S-0-0054 - Attributes	Function: Par	Editable: ALWAYS	Data length: 4Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_MV
	Unit: S-0-0076	Extr. val. ch.: +	Decim. pl.: --
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 0

4.1.44 S-0-0055, Position polarities

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	With this parameter, the polarities of the specified position data can be inverted. The polarities are switched outside of the controlled system, i.e. at the input and output of the controlled system.	
	The position polarity has to be defined at initial commissioning of an axis before the machine zero point reference for the measuring systems is established, as different position feedback values result if the polarity is changed.	

This applies to rotary (rotating) motors:

Clockwise motion of the motor output shaft at positive position feedback value difference and positive polarity.

This applies to linear motors:

Motion of primary part in the direction of the cable connection side at positive position feedback value difference and positive polarity.

With bit 4, the software position limit values are activated or deactivated.

Structure	Bit	Designation/function	Comment
	0	Position command value 0: Positive polarity 1: Negative polarity	
	1	Additive position command value 0: Positive polarity 1: Negative polarity	
	2	Position feedback value 1 0: Positive polarity 1: Negative polarity	
	3	Position feedback value 2 0: Positive polarity 1: Negative polarity	
	4	Position limit values 0: Not active 1: Active	

Tab. 4-11: S-0-0055, Position polarities



Bits 1, 2 and 3 are copies from bit 0. Only changes in bit 0 become effective. Different settings for the individual bits are not possible.

S-0-0055 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: 0x0 / 0x1F			Default value: 0x0

4.1.45 S-0-0057, Position window

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	If an operation mode with internal position control is activated in the drive, several status messages are generated with regard to the positioning behavior of the drive.	
Use	<p>See also Functional Description "Positioning block mode"</p> <p>For this purpose, the parameter "S-0-0057, Position window", among others, is used as a "window" for the following status messages and functionalities:</p> <ul style="list-style-type: none"> • In position: "S-0-0336, message in position" and "S-0-0013, Class 3 diagnostics"; bit 6 = 1 Following distance (S-0-0189) < Position window (S-0-0057) • IN_TARGET POSITION S-0-0437, positioning status; bit 1 (S-0-0258 - S-0-0386) < S-0-0057 • IZP: "S-0-0338, message in target position" and "S-0-0437, positioning status"; bit 2 (S-0-0430 - S-0-0386) < S-0-0057 && in position (S-0-0036) 	

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`&& n_feedback = 0 (S-0-0331)`

- During execution of the command "S-0-0148, C0600 Drive-controlled homing procedure command", the drive signals completion of the command, when the internal position command value generator has reached its target value and the difference between this final value and the actual position value is smaller than the position window.
- As hysteresis window for position limit value monitoring. This means that, if the drive has passed the position limit value, the travel range is additionally limited by the position window.
- If the position limit values are active, positioning to the position limit value position windows is implemented in the "jog" mode.
- For the "position spindle" command in order to show that the spindle is in position.

S-0-0057 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0076 Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: Set-depend.: Grp. 1
	AXS:	min./max.: s. Text / s. Text	Default value: 10000

4.1.46 S-0-0058, Reversal clearance

Allocation	Hardware Funct. package(s): Device parameter:
Function	With reference to the position data, the reversal clearance describes the absolute value of the backlash between drive and load in case the direction changes.

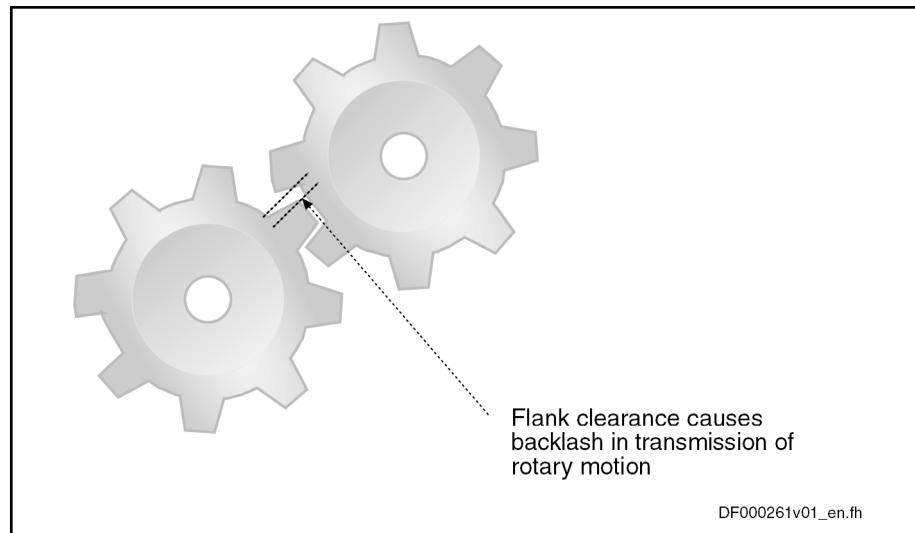


Fig. 4-1: Graphical representation of the reversal clearance in case the direction changes



This parameter is only available upon enabling (enabled package: axis error correction, temperature error correction and reversal clearance compensation).

See also Functional Description "Axis error correction"

Use Observe the following aspects when using the function:

- With the help of reversal clearance compensation, a backlash in the axis mechanics can be easily corrected.

- The function is activated by inputting the backlash in "S-0-0058, Reversal clearance".
- The processing of the reversal clearance depends on:
 - Direction of motion in position-controlled operation modes
 - Velocity command value ([S-0-0036](#)) and standstill window ([S-0-0124](#)) in velocity control

S-0-0058 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	+	Decim. pl.:	
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: s. Text / s. Text

Default value: 0

4.1.47 S-0-0076, Position data scaling type

Allocation	Hardware Funct. package(s): Device parameter:
Function	The scaling type of the position data determines the format and the relation in which the position data are exchanged between the drive and the control or user interface. The values of position data parameters (S-0-0051 , Position feedback value of encoder 1) are displayed by the drive with set scaling. The setting of the scaling is specified by the control.



Any change in the parameter setting has an effect on the scaling. Such a change therefore has an effect on the display and processing of velocity, position or acceleration data in the drive.

See also Functional Description "Scaling of physical data"

Structure

Bit	Designation/function	Comment
2-0	Scaling type 0 0 1: linear scaling 0 1 0: rotary scaling 0 0 0: incremental scaling (see P-0-0559)	
3	0: Preferred scaling 1: Parameter scaling	
4	Unit for linear scaling 0: Meter [m] 1: Inch [in] Unit for rotary scaling 0: Angular degree 1: Reserved	
5	Reserved	
6	Data reference 0: At motor shaft 1: At load	

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Bit	Designation/function	Comment
7	Processing format 0: Absolute format 1: Modulo format	
15-8	Reserved	

Tab. 4-12: S-0-0076, Position data scaling type

Use With preferred scaling (bit 3 = 0), the following parameters are predefined and cannot be changed:

- [S-0-0077](#), Linear position data scaling factor
- [S-0-0078](#), Linear position data scaling exponent
- [S-0-0079](#), Rotational position resolution

In the case of parameter scaling (bit 3 = 1), the scaling is set by entering the desired values in the mentioned parameters.

 See also example for "[S-0-0077](#), Linear position data scaling factor"

S-0-0076 - Attributes	Function: Par	Editable: SUBD:CM	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: SUBD:CM->PM	Format: BIN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: +	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: 0x2

4.1.48 S-0-0077, Linear position data scaling factor

Allocation Hardware
Funct. package(s): --
Device parameter:

Function With this parameter and with "[S-0-0078](#), Linear position data scaling exponent" at linear parameter scaling ([S-0-0076](#)), this parameter is used to define the scaling factor and decimal format (decimal place) of the position data parameters.

If preferred scaling is selected in "[S-0-0076](#), Position data scaling type", the values in "[S-0-0077](#)" and "[S-0-0078](#)" are automatically set by the drive.

 Any change in the parameter setting has an effect on the scaling.
Such a change therefore has an effect on the display and processing of velocity, position or acceleration data in the drive.

See also Functional Description "Scaling of physical data"

Use Example for representation of position data with linear scaling:

Physical position feedback value of encoder 1 is 0.12 m (meters).

A) Selected scaling = Linear preferred scaling

([S-0-0077](#) = 1, [S-0-0078](#) = -7). This results in the numerical value 1200000 for "[S-0-0051](#)" (with unit mm and 4 decimal places).

B) Selected scaling = Linear parameter scaling

([S-0-0077](#) = 3, [S-0-0078](#) = -7). This results in the numerical value 400000 for "[S-0-0051](#)" (with unit mm and 4 decimal places).

S-0-0077 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
------------------------------	---	--	--

AXS: min./max.: s. Text / s. Text Default value: 1

4.1.49 S-0-0078, Linear position data scaling exponent

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	With this parameter and with "S-0-0077, Linear position data scaling " at linear parameter scaling (S-0-0076), this parameter is used to define the scaling factor and decimal format (decimal place) of the position data parameters.	

 Any change in the parameter setting has an effect on the scaling. Such a change therefore has an effect on the display and processing of velocity, position or acceleration data in the drive.

See also Functional Description "Scaling of physical data"

 If preferred scaling is selected in "S-0-0076, Position data scaling type", the values in "S-0-0077" and "S-0-0078" are automatically set by the drive.

 See also example for "S-0-0077, Linear position data scaling factor"

S-0-0078 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
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AXS: min./max.: -10 / 0 Default value: ---

4.1.50 S-0-0079, Rotational position resolution

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The smallest angular value for the rotary position data parameter is defined for the rotary parameter scaling (S-0-0076) with this parameter.	

$$\text{smallest angle} = \frac{360 \text{ deg}}{\text{Rotational position resolution}}$$

Fig. 4-2: Smallest angular value for the rotary position data parameters

See also Functional Description Scaling of physical data

Use The smallest angular value can refer to the motor or the load (S-0-0076). If rotational is set for preferred scaling, (S-0-0076), the value in "S-0-0079, Rotational position resolution" is fixed at 3.600.000. This way, the smallest angular value is defined to 0.0001 for all rotary position data.

S-0-0079 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
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Standard parameters

AXS:	min./max.: 1 / s. Text	Default value: 3600000
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4.1.51 S-0-0080, Torque/force command value

Allocation	Hardware Funct. package(s): Device parameter: --
Function	In operation mode "torque/force control", the command value is directly generated by the control and entered in this parameter. For all other modes, the torque/force command value is generated by the velocity controller and potentially torque/force feedforward.

 The torque/force command value generated by the higher-level control loop can be found in parameter "[P-0-0049](#), Effective torque/force command value" and can be cyclically transmitted to the control for diagnostic and process purpose and/or visualized via analog output.

See also Functional Description "Torque/force control"

Use To the torque/force command value ([S-0-0080](#)), another value ([S-0-0081](#), additive torque/force command value) can be added. Multiple limit values have an effect on the sum of both values ([P-0-0049](#)) before it is transmitted to the current controller.

The resulting limit values can be queried via the following parameters:

- [P-0-0442](#), Actual value torque limit positive (stationary)
- [P-0-0443](#), Actual value torque limit negative (stationary)
- [P-0-0444](#), Actual value peak torque limit

The unit of the parameter depends on the settings in the parameters "[S-0-0086](#), Torque/force data scaling type" and "[P-0-0640](#), Cooling type".

S-0-0080 - Attributes	<table style="width: 100%; border-collapse: collapse;"> <tr> <td>Function:</td><td>Par</td><td>Editable:</td><td>ALWAYS</td><td>Data length:</td><td>2Byte</td></tr> <tr> <td>Memory:</td><td>--</td><td>Validity ch.:</td><td>--</td><td>Format:</td><td>DEC_MV</td></tr> <tr> <td>Unit:</td><td>S-0-0086</td><td>Extr. val. ch.:</td><td>+</td><td>Decim. pl.:</td><td></td></tr> <tr> <td>Cycl. tra.:</td><td>MDT</td><td>Comb. check:</td><td>--</td><td>Set-depend.:</td><td>--</td></tr> </table>	Function:	Par	Editable:	ALWAYS	Data length:	2Byte	Memory:	--	Validity ch.:	--	Format:	DEC_MV	Unit:	S-0-0086	Extr. val. ch.:	+	Decim. pl.:		Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--
Function:	Par	Editable:	ALWAYS	Data length:	2Byte																				
Memory:	--	Validity ch.:	--	Format:	DEC_MV																				
Unit:	S-0-0086	Extr. val. ch.:	+	Decim. pl.:																					
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--																				

AXS:	min./max.: s. Text / s. Text	Default value: ---
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4.1.52 S-0-0081, Additive torque/force command value

Allocation	Hardware Funct. package(s): Device parameter: --
Function	By means of this parameter, the master can have a torque/force feedforward value added in the controller, depending on the process.
See also Functional Description "Torque/force control"	
Use	Multiple limit values have an effect on the sum of both values (P-0-0049) before it is transmitted to the current controller. The resulting limit values can be queried via the following parameters:

- [P-0-0442](#), Actual value torque limit positive (stationary)
- [P-0-0443](#), Actual value torque limit negative (stationary)
- [P-0-0444](#), Actual value peak torque limit

The unit of the parameter depends on the settings in the parameters "[S-0-0086](#), Torque/force data scaling type" and "[P-0-0640](#), Cooling type".

 To prevent incorrect error reaction, the additive command values [S-0-0037](#), [S-0-0081](#) and [P-0-0059](#) are not used for drive-internal error reaction.

 In the "torque/force control" mode, it generally does not make sense to use this parameter, because the control unit should only preset one command value ([S-0-0080](#), Torque/force command value)! Feedforward values should already be contained in the value of "[S-0-0080](#)", if required.

S-0-0081 - Attributes	Function:	Par	Editable:	ALWAYS	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_MV
	Unit:	S-0-0086	Extr. val. ch.:	+	Decim. pl.:	
	Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: s. Text / s. Text			Default value: ---		

4.1.53 [S-0-0082](#), Torque/force limit value positive

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter allows a torque or force limit value to be determined for positive torque/force command values. This limit value only takes effect with regard to the torque command value of the velocity controller (P-0-0049) and not with regard to the command values from the acceleration feedforward parameters (S-0-0348 , P-0-1126).	

 During an error reaction, the Torque/force limit value positive ([S-0-0082](#)) does not take effect. The effective torque/force limit value is only generated via the peak torque/force limitation ([P-0-0109](#)).

Positive torque takes effect in the case of:

- Motive operation with positive velocity
- Regenerative operation with negative velocity

See also Functional Description "Torque/force limitation"

Use	The unit for the values of this parameter depends on the scaling that has been set (S-0-0086 , Torque/force data scaling type).
-----	--

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- This limit value does not take any effect during drive-controlled deceleration. During drive-controlled deceleration, the system switches to parameter "P-0-0109, Torque/force peak limit".
- This limit value has a unipolar effect. There are also the limit values with bipolar effect, "S-0-0092, Bipolar torque/force limit value" and "P-0-0109, Torque/force peak limit". The lowest value in the above parameters is the active limit value.
- The effective positive limit value is displayed in parameter "P-0-0442, Actual value torque limit positive (stationary)" (including load-dependent limitations by motor and controller).
- If the torque or force available to the drive for acceleration processes is to be higher than in stationary operation (constant velocity command value), this can be achieved by setting a higher value in "S-0-0092" than in "S-0-0082", provided acceleration feedforward has been activated. "S-0-0082" then limits to the maximum positive load torque/maximum load force and "S-0-0092" to the sum of acceleration torque and load torque/load force.
- Torque limit values set in "S-0-0082" have an effect on the total torque (S-0-0092), if this is configured in bit 14 of "P-0-0556".

S-0-0082 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0086	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	Grp. 1

AXS:	min./max.: s. Text / s. Text	Default value: s. Text
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4.1.54 S-0-0083, Torque/force limit value negative**Allocation**

Hardware
Funct. package(s): --
Device parameter:

Function

This parameter allows a torque or force limit value to be determined for negative torque/force command values. This limit value only takes effect with regard to the torque command value of the velocity controller (P-0-0049) and not with regard to the command values from the acceleration feedforward parameters ([S-0-0348](#), [P-0-1126](#)).



During an error reaction, the Torque/force limit value negative ([S-0-0083](#)) does not take effect. The effective torque/force limit value is only generated via the peak torque/force limitation ([P-0-0109](#)).

Negative torque takes effect in case of:

- Motive operation with negative velocity
- Regenerative operation with positive velocity

See also Functional Description "Current and torque/force limitation"

Use

The unit for the values of this parameter depends on the scaling that has been set ([S-0-0086](#), Torque/force data scaling type).



- This limit value does not take any effect during drive-controlled deceleration. During drive-controlled deceleration, the system switches to parameter "P-0-0109, Torque/force peak limit".
- This limit value has a unipolar effect. There are also the limit values with bipolar effect, "S-0-0092, Bipolar torque/force limit value" and "P-0-0109, Torque/force peak limit". The lowest value in the above parameters is the active limit value.
- The effective negative limit value is displayed in parameter "P-0-0443, Actual value torque limit negative (stationary)" (including load-dependent limitations by motor and controller).
- If the torque or force available to the drive for acceleration processes is to be higher than in stationary operation (constant velocity command value), this can be achieved by setting a higher value in "S-0-0092" than in "S-0-0083", provided acceleration feedforward has been activated. "S-0-0083" then limits to the maximum negative load torque/maximum load force and "S-0-0092" to the sum of acceleration torque and load torque/load force.
- Torque limit values set in "S-0-0083" have an effect on the total torque (S-0-0092), if this is configured in bit 14 of "P-0-0556".

S-0-0083 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0086	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	Grp. 1

AXS: min./max.: s. Text / s. Text Default value: s. Text

4.1.55 S-0-0084, Torque/force feedback value

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

Parameter displaying the currently effective actual torque/force value.

Calculation of the actual torque/force value

$$\text{torque / force feedback value} = P - 0 - 0043 \times \text{torque factor}$$

Fig. 4-3: Relation for calculation of the torque/force feedback value



The value shown in "S-0-0084" is only an approximation of the actually generated torque or force of the motor!

See also Functional Description "Current and torque/force limitation"

Use

Torque factor

The torque factor mentioned in the calculation formula depends on the functional principle of the motor and the motor type:

- Synchronous motor: The torque factor corresponds to the torque/force constant (P-0-0051) irrespective of whether or not the motor is in field weakening mode.
- Asynchronous motor: In the basic speed range, the torque factor corresponds to the torque/force constant (P-0-0051); in the field

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weakening range, it is calculated in the firmware based on "P-0-0051" and depending on the speed.

The unit for the values of this parameter depends on the scaling that has been set ([S-0-0086](#), Torque/force data scaling type).

S-0-0084 - Attributes	Function: Par Memory: -- Unit: S-0-0086 Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.1.56 S-0-0085, Torque/force polarity parameter

Allocation	Hardware Funct. package(s): Device parameter:	--												
Function	In this parameter, the polarity of specified torque/force data can be inverted for the application. The polarities are switched outside of the controlled system, i.e. at the input and output of the controlled system.													
	This applies to rotary (rotating) motors: Rotation of the motor output shaft at positive torque and positive polarity.													
	This applies to linear motors: Motion of primary part in the direction of the cable connection side at positive force and positive polarity.													
Structure	See also Functional Description "Scaling of physical data"													
	<table border="1"> <thead> <tr> <th>Bit</th><th>Designation/function</th><th>Comment</th></tr> </thead> <tbody> <tr> <td>0</td><td>Torque command value 0: Positive polarity 1: Negative polarity</td><td></td></tr> <tr> <td>1</td><td>Additive torque command value 0: Positive polarity 1: Negative polarity</td><td></td></tr> <tr> <td>2</td><td>Bit 2: Actual torque value 0: Positive polarity 1: Negative polarity</td><td></td></tr> </tbody> </table>		Bit	Designation/function	Comment	0	Torque command value 0: Positive polarity 1: Negative polarity		1	Additive torque command value 0: Positive polarity 1: Negative polarity		2	Bit 2: Actual torque value 0: Positive polarity 1: Negative polarity	
Bit	Designation/function	Comment												
0	Torque command value 0: Positive polarity 1: Negative polarity													
1	Additive torque command value 0: Positive polarity 1: Negative polarity													
2	Bit 2: Actual torque value 0: Positive polarity 1: Negative polarity													

Tab. 4-13: S-0-0085, Torque/force polarity parameter



Bit 1 and bit 2 are copies from bit 0. Only changes in bit 0 become effective. Different settings for the individual bits are not possible!

S-0-0085 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: 0x0 / 0x7		Default value: 0x0

4.1.57 S-0-0086, Torque/force data scaling type

Allocation	Hardware Funct. package(s): Device parameter:	--
------------	---	----

Function The unit and reference of the torque/force data of a drive are set in this parameter.



Any change in the parameter setting has an effect on the scaling. Thus, changing the setting has an effect on how torque/force data are displayed and processed in the drive.

See also Functional Description "Scaling of physical data"

Structure

Bit	Designation/function	Comment
2-0	Scaling type 000: Percentage-based scaling (% of reference value) 001: Linear scaling (force in N, lbf) 010: Rotary scaling (torque in Nm, inlbf)	
3	0: Preferred scaling 1: Parameter scaling	
4	Unit for force 0: newton [N] 1: pound-force [lbf] Unit for torque 0: newton meter [Nm] 1: inch pound-force [inlbf]	
6	Data reference 0: At motor shaft 1: At load	
15-7	Reserved	

Tab. 4-14: S-0-0086, Torque/force data scaling type

The following settings can be made:

With preferred scaling (bit 3 = 0), the following parameters are predefined and cannot be changed:

- [S-0-0093](#), Torque/force data scaling factor
- [S-0-0094](#), Torque/force data scaling exponent

In the case of parameter scaling, the scaling is set by inputting the desired parameter values. Parameter scaling is not allowed with percentage-based scaling.

Calculating the reference value

Percentage-based scaling requires a reference value (100% value) for torque/force data. The torque/force reference value has the following dependence:

- Motor range, if the motor parameter values are loaded from the encoder data memory or the ctrlX Drive Engineering database (motors without encoder memory) (after "load basic parameters").

Standard parameters

Motor range	Torque/force reference value for percentage-based scaling (100%)
MSK (indep. of the encoder memory version)	S-0-0533 = P-0-0051 x S-0-0111 x CF(P-0-0640)
MS2	S-0-0533 (from encoder memory)
MBT	S-0-0533 = P-0-0051 x S-0-0111
MBS	S-0-0533 (from database)
MLF, MCL	S-0-0533 = P-0-0051 x S-0-0111
1MB, MAD, MAF	S-0-0533 = P-0-0051 x S-0-0111
MSM	S-0-0533 (from encoder memory)

S-0-0533 Nominal torque/force of motor**CF(P-0-0640)** Cooling type factor depending on value in "[P-0-0640](#), Cooling type"Tab. 4-15: *Torque/force reference values, dep. on motor ranges*

- Value in [S-0-0533](#), if encoder data memory not available:
 - If [S-0-0533](#) was equal to "0": 100% torque/force = [P-0-0051 x S-0-0111 = S-0-0533](#) (visible after "PM" -> "OM")
 - If [S-0-0533](#) was not equal to "0": 100% torque/force = [S-0-0533](#) (remains unchanged)

S-0-0086 - Attributes	Function: Par	Editable:	SUBD:CM	Data length:	2Byte
	Memory: PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	BIN
	Unit: --	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.: --	Comb. check:	+	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: 0x0
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4.1.58 S-0-0091, Bipolar velocity limit value

Allocation	Hardware	--
	Funct. package(s):	
	Device parameter:	

Function	Value for the maximum allowed velocity command value of the motor independent of the direction of rotation and depending on the application.
	The maximum value for " S-0-0091 " is derived from the value " S-0-0113 , Maximum motor speed" (110 %). It is limited to 590 Hz for versions with unrestricted export (not for linear motors). This value is also the maximum value for all other velocity parameters.

 The input value is not monitored for the maximum value. The internal velocity limit value, however, is set accordingly.

The maximum velocity limit can be adjusted depending on the direction of rotation via the parameters "[S-0-0038](#), Positive velocity limit value" and "[S-0-0039](#), Negative velocity limit value". These parameters have the default value of "0" and are thus deactivated. Only "[S-0-0091](#)" takes effect.

See also Functional Description "Velocity limitation"

S-0-0091 - Attributes	Function: Par	Editable:	ALWAYS	Data length:	4Byte
	Memory: PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
	Unit: S-0-0044	Extr. val. ch.:	--	Decim. pl.:	
	Cycl. tra.: MDT	Comb. check:	--	Set-depend.:	Grp. 1

AXS:	min./max.: s. Text / s. Text	Default value: 100000000
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4.1.59 S-0-0092, Bipolar torque/force limit value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter can be used to limit the process torque.	
		During an error reaction, the Torque/force limit value bipolar (S-0-0092) does not take effect. The effective torque/force limit value is only generated via the peak torque/force limitation (P-0-0109).
	See also Functional Description "Torque/force control"	
Use	The parameter has a bipolar effect, i.e., positive and negative command values are limited to the value that has been input. The limitation acts on the sum of all torque command values, i.e., on the sum of the command value components of the velocity controller output and the command value components from acceleration-dependent feedforwards (S-0-0348, Acceleration feedforward gain, P-0-1126, Velocity control loop: Acceleration feedforward). The unit of "S-0-0092" depends on the scaling that has been set.	
		<ul style="list-style-type: none"> • The effective limit value is displayed in "P-0-0444, Actual value peak torque limit". As compared to "S-0-0092", this value may be limited for the following reasons: <ul style="list-style-type: none"> – Smaller value in "P-0-0109, Torque/force peak limit" – Current limitation by corresponding load of amplifier or motor • If the torque available to the drive in stationary operation (constant velocity) is to be lower than during acceleration processes, this can be achieved by setting the appropriate values in "S-0-0082, Torque/force limit value positive" and "S-0-0083, Torque/force limit value negative" in conjunction with acceleration feedforward (S-0-0348 or P-0-1126).

See also parameter description "S-0-0086, Torque/force data scaling type"

S-0-0092 - Attributes	Function: Par	Editable: ALWAYS	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_OV
	Unit: S-0-0086	Extr. val. ch.: --	Decim. pl.:
	Cycl. tra.: MDT	Comb. check: --	Set-depend.: Grp. 1

AXS:	min./max.: s. Text / s. Text	Default value: s. Text
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4.1.60 S-0-0093, Torque/force data scaling factor

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter and parameter "S-0-0094, Torque/force data scaling exponent" are used to define the scaling factor and the decimal format (decimal place) of the torque/force data parameters in the drive when parameter scaling is used (S-0-0086).	

Standard parameters



Any change in the parameter setting has an effect on the scaling. Thus, changing the setting has an effect on how torque/force data are displayed and processed in the drive.

If preferred scaling is selected in "S-0-0086, Torque/force data scaling type", the drive automatically sets the values in "S-0-0093" and "S-0-0094".

See also Functional Description "Scaling of physical data"

S-0-0093 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: s. Text / s. Text

Default value: 1

4.1.61 S-0-0094, Torque/force data scaling exponent

Allocation Hardware
 Funct. package(s):
 Device parameter: --

Function In the case of parameter scaling (S-0-0086), this parameter and parameter "S-0-0093, Torque/force data scaling factor" are used to define the scaling factor and the decimal format (decimal place) of the torque/force data in the parameter.



Any change in the parameter setting has an effect on the scaling. Thus, changing the setting has an effect on how torque/force data are displayed and processed in the drive.



If preferred scaling is selected in "S-0-0086, Torque/force data scaling type", the drive automatically sets the values in "S-0-0093" and "S-0-0094".

See also Functional Description "Scaling of physical data"

S-0-0094 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_MV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0

Cycl. tra.:

Comb. check: --

Set-depend.: --

AXS: min./max.: -15 / 6 Default value: ---

4.1.62 S-0-0095, Diagnostics

Allocation Hardware
 Funct. package(s):
 Device parameter: --

Function This text parameter contains the currently relevant operating state of the drive. Preceding the text is the respective content of parameter "S-0-0390, Diagnostic message number".

Example: A0010 Drive Halt

See also Functional Description "Coded diagnostic messages of the drive"

S-0-0095 - Attributes

Function:	Par	Editable:	--	Data length:	1Byte var.
Memory:	--	Validity ch.:	--	Format:	ASCII
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: ---

4.1.63 S-0-0097, Mask class 2 diagnostics

Allocation	Hardware Funct. package(s): Device parameter:	--																								
Function	With this parameter, the change bit of class 2 diagnostics in drive status can be adapted to the requirements of the machine control. By the default setting in parameter S-0-0097 (all bits are "1"), each bit change in parameter " S-0-0012 , Class 2 diagnostics" is displayed by the change bit of class 2 diagnostics in the drive status word.																									
	 Parameter " S-0-0012 " is a message parameter displaying various switchoff warnings of a drive by means of individual bits.																									
	See also Functional Description "Status classes, status displays, control parameters"																									
Use	If the control-side change of specific switchoff warnings of the drive is to be requested via the change bit for class 2 diagnostics of the drive status word, S-0-0097 can be used to suppress (hide) the display of non-relevant warning changes. Not relevant bits of parameter " S-0-0012 , Class 2 diagnostics" are hidden by the value of "0" at the same position of the bit list of this parameter (S-0-0097).																									
S-0-0097 - Attributes	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Function:</td><td>Par</td> <td>Editable:</td><td>ALWAYS</td> <td>Data length:</td><td>2Byte</td> </tr> <tr> <td>Memory:</td><td>PARAM_SP</td> <td>Validity ch.:</td><td>FKM:PO->SOP</td> <td>Format:</td><td>BIN</td> </tr> <tr> <td>Unit:</td><td>--</td> <td>Extr. val. ch.:</td><td>--</td> <td>Decim. pl.:</td><td>0</td> </tr> <tr> <td>Cycl. tra.:</td><td>--</td> <td>Comb. check:</td><td>--</td> <td>Set-depend.:</td><td>--</td> </tr> </table>	Function:	Par	Editable:	ALWAYS	Data length:	2Byte	Memory:	PARAM_SP	Validity ch.:	FKM:PO->SOP	Format:	BIN	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--	
Function:	Par	Editable:	ALWAYS	Data length:	2Byte																					
Memory:	PARAM_SP	Validity ch.:	FKM:PO->SOP	Format:	BIN																					
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																					
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																					
	AXS: min./max.: --- / ---	Default value: 0xFFFF																								

4.1.64 S-0-0098, Mask class 3 diagnostics

Allocation	Hardware Funct. package(s): Device parameter:	--																								
Function	With this parameter, the change bit of class 3 diagnostics in drive status can be adapted to the requirements of the machine control. By the default setting in " S-0-0098 " (all bits are "1"), each bit change in parameter " S-0-0013 , Class 3 diagnostics" is displayed by the change bit of class 3 diagnostics in the drive status word.																									
	 " S-0-0013 " is a message parameter displaying various operating states of a drive by means of individual bits.																									
	See also Functional Description "Status classes, status displays, control parameters"																									
Use	If the control-side change of specific operating states of the drive is to be requested via the change bit for class 3 diagnostics of the drive status word, " S-0-0098 " can be used to suppress (hide) the display of non-relevant changes in operating state. Not relevant bits of parameter " S-0-0013 , Class 3 diagnostics" are hidden by the value of "0" at the same position of the bit list of this parameter (S-0-0098).																									
S-0-0098 - Attributes	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Function:</td><td>Par</td> <td>Editable:</td><td>ALWAYS</td> <td>Data length:</td><td>2Byte</td> </tr> <tr> <td>Memory:</td><td>PARAM_SP</td> <td>Validity ch.:</td><td>FKM:PO->SOP</td> <td>Format:</td><td>BIN</td> </tr> <tr> <td>Unit:</td><td>--</td> <td>Extr. val. ch.:</td><td>--</td> <td>Decim. pl.:</td><td>0</td> </tr> <tr> <td>Cycl. tra.:</td><td>--</td> <td>Comb. check:</td><td>--</td> <td>Set-depend.:</td><td>--</td> </tr> </table>	Function:	Par	Editable:	ALWAYS	Data length:	2Byte	Memory:	PARAM_SP	Validity ch.:	FKM:PO->SOP	Format:	BIN	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--	
Function:	Par	Editable:	ALWAYS	Data length:	2Byte																					
Memory:	PARAM_SP	Validity ch.:	FKM:PO->SOP	Format:	BIN																					
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																					
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																					

Standard parameters

AXS:	min./max.: --- / ---	Default value: 0xFFFF
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4.2 S-0-0100 to S-0-0200 Standard parameters

4.2.1 S-0-0100, Velocity controller proportional gain

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The velocity controller calculates the torque/force command value (P-0-0049) from the difference between the velocity command value and the velocity feedback value (S-0-0347 , Velocity error). See also Functional Description "Control loop structure" See also Functional Description "Velocity control"	
Use	This torque/force command value consists of: <ul style="list-style-type: none"> • a proportional term 	

$$K_p = S - 0 - 0100$$

$$K_p\text{Anteil} = S - 0 - 0100 \times S - 0 - 0347$$

Fig. 4-4: Torque/force command value (proportional term)

- an integral term

$$K_i = S - 0 - 0100 / S - 0 - 0101$$

$$K_i\text{Anteil} = t \cdot \frac{S - 0 - 0100}{S - 0 - 0101} \cdot S - 0 - 0347$$

Fig. 4-5: Torque/force command value (integral term)

This results in the following transfer function for the PI controller:

$$P - 0 - 0049(t) = S - 0 - 0100 \cdot \left[1 + \frac{t}{S - 0 - 0101} \right] \cdot S - 0 - 0347(t)$$

Fig. 4-6: Transfer function for the PI loop



Parameter "[S-0-0100](#)" contains the value for the proportional gain of the velocity controller. The output value at the velocity controller is scaled to newton (N) or newton meter (Nm).

Unit, decimal places

The drive firmware automatically adjusts the unit and decimal places to the type of construction of the motor (rotary or linear) entered in "[P-0-4014](#), Type of construction of motor":

Unit for type of constr. of motor (P-0-4014)		Decimal places for type of constr. of motor (P-0-4014)	
Rotary	Linear	Rotary	Linear
Nm/(rad/s)	N/(mm/min)	3	3

Tab. 4-16: Unit and decimal places of S-0-0100, depending on P-0-4014

Input values are calculated as follows:

Rotary motors:

$$S - 0 - 0100_{Indractive} = S - 0 - 0100_{Eco_DIAX} \times P - 0 - 0051_{Eco_DIAX}$$

Fig. 4-7: New input values for S-0-0100

Linear motors:

$$S - 0 - 0100_{Indractive} = (S - 0 - 0100_{Eco_DIAX} g P - 0 - 0051_{Eco_DIAX}) / (10^3 \text{mm/m})$$

Fig. 4-8: New input values for S-0-0100

The "C0700 Load defaults procedure (motor-specific controller values)" command allows a default value to be loaded for this parameter, if a motor with encoder data memory is available ([P-0-4014](#), Type of construction of motor).

S-0-0100 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	Nm/(rad/s)	Extr. val. ch.:	+	Decim. pl.:	3
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	Grp. 2

AXS: min./max.: s. Text / s. Text Default value: 0,050

4.2.2 S-0-0101, Velocity loop integral action time

Allocation	Hardware -- Funct. package(s): Device parameter:
Function	The velocity controller calculates the " P-0-0049 , Torque/force command value" from the difference between the velocity command value and the velocity feedback value (S-0-0347 , Velocity error).
Use	This torque/force command value consists of:

$$K_p = S - 0 - 0100$$

$$K_p\text{Anteil} = S - 0 - 0100 \times S - 0 - 0347$$

Fig. 4-9: Torque/force command value (proportional term)

$$K_i = S - 0 - 0100 / S - 0 - 0101$$

$$K_i\text{Anteil} = t \cdot \frac{S - 0 - 0100}{S - 0 - 0101} \cdot S - 0 - 0347$$

Fig. 4-10: Torque/force command value (integral term)

This results in the following transfer function for the PI controller:

$$P - 0 - 0049(t) = S - 0 - 0100 \cdot \left[1 + \frac{t}{S - 0 - 0101} \right] \cdot S - 0 - 0347(t)$$

Fig. 4-11: Transfer function for the PI loop

See also Functional Description "Velocity control"

Defining the integral action time

Standard parameters



The value on a time axis with an integral term equal to the proportional term is referred to as "[S-0-0101](#), Integral action time". It means the time a purely integral controller would need until the controller output variable y equals the output variable of a proportional controller when time $t = 0$.

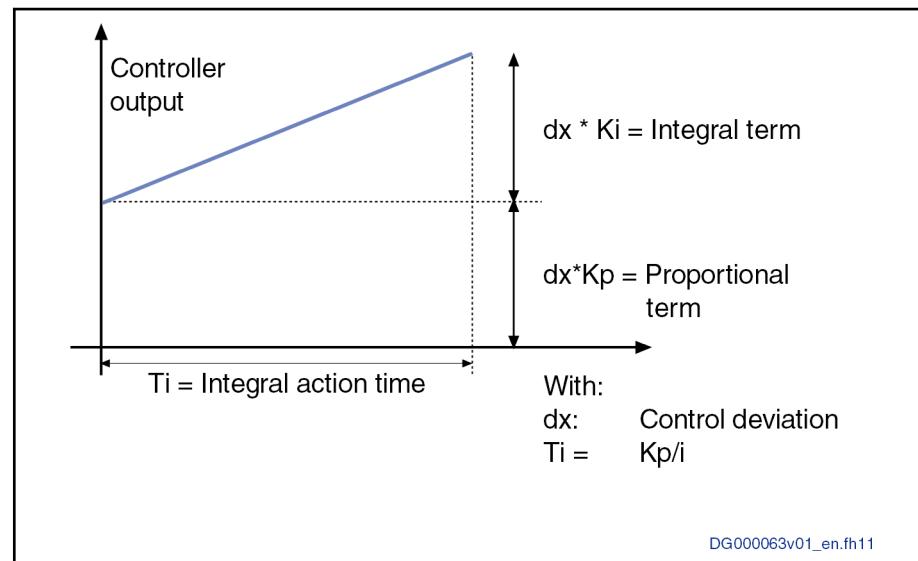


Fig. 4-12: Explanation of integral action time (T_i) and proportional gain K_p with PI controller



The input value "[S-0-0101](#) = 0 ms" switches off the integral term.

S-0-0101 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	ms	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	Grp. 2

AXS:	min./max.: s. Text / s. Text	Default value: 100,0
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4.2.3 S-0-0103, Modulo value

Allocation Hardware
Funct. package(s):
Device parameter:

Function At modulo scaling of the position data (definition via "[S-0-0076](#), Position data scaling type", bit 7), the modulo value parameterized in "[S-0-0103](#)" defines the numerical value at which the position data is set to "0".



The parameterized value in "[S-0-0103](#)" has to be lower than the value of "[S-0-0278](#), Maximum travel range".

S-0-0103 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	S-0-0076	Extr. val. ch.:	+	Decim. pl.:	--
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: 36000000
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4.2.4 S-0-0104, Position controller Kv-factor

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The drive controller has a cascade structure, i.e., the velocity controller is superimposed on the current controller, and the position controller is superimposed on the velocity controller. Parameter "S-0-0104" contains the value for the proportional gain of the position controller. See also Functional Description "Closed-loop axis control (closed-loop operation)"	
Use	 The unit of "S-0-0104, Position loop Kv-factor" is "1000 rpm".	

Example conversion

$$S-0-0104 = 1,0 \frac{1000}{\text{min}} = 1,0 \cdot \frac{1000}{60} \frac{1}{\text{s}} = 16,67 \frac{1}{\text{s}}$$

Fig. 4-13: S-0-0104, Position loop Kv-factor

-  Writing the correct value to this parameter:
- Automatically on initial commissioning of Rexroth motors with encoder data memory, or by executing command "C0700 Load defaults procedure command (motor-spec. controller values)".
 - For Rexroth motors without encoder data memory, by loading the motor parameters with the commissioning tool
 - In the case of other motors: Default value or manual input.

S-0-0104 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	1000/min	Extr. val. ch.:	+	Decim. pl.:	2
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	Grp. 2
AXS:		min./max.: s. Text / s. Text		Default value: 1,00	

4.2.5 S-0-0105, Position controller integral action time

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Parameter "S-0-0105" defines the value of the I factor of the PI position controller. The drive controller has a cascade structure, i.e., the velocity controller is superimposed on the current controller, and the position controller is superimposed on the velocity controller. The I factor is defined by the reciprocal value of the integral action time referred to the position controller cycle time. For the I controller output, the I factor is applied on the P controller output and summed up.	
 The PI controller is only to be used in special cases. In normal operation, the integral action time is set to zero.		

Standard parameters

See also Functional Description "Closed-loop axis control (closed-loop operation)"

S-0-0105 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: Grp. 2
AXS:	min./max.: s. Text / s. Text		Default value: 0,0

4.2.6 S-0-0106, Current loop proportional gain 1

- Allocation** **Hardware** --
Funct. package(s):
Device parameter:
- Function** This parameter defines the proportional gain for the current controller (I_d and I_q control loop). Parameterization of the current loop proportional gain depends on the controller performance (current loop cycle $T_{A,i}$) and the switching frequency selected ([P-0-0001](#)).
- Use** **Notes on the use of BRC motors**
The value for "[S-0-0106](#)" is provided for each Rexroth motor in relation to "[P-0-0001](#), Switching frequency of the power output stage" = 4 kHz.
- In case of encoder with data memory in the encoder (MSK, MHD, MKD, MKE and, if applicable, MAD, MAF), this is achieved via the value of "[P-0-2106](#), Current loop proportional gain 1", type plate which is stored there.
 - In the case of motors without encoder data memory (2AD, ADF, if applicable MAD and MAF, as well as kit motors 1MB, MBS, MBT, LSF, MLF), this is achieved via the commissioning software or the Intranet edition of the manufacturer's "DriveBase" database.
- The value of "[S-0-0106](#)" is adjusted to the selected PWM frequency "[P-0-0001](#), Switching frequency of the power output stage" and performance "[P-0-0556](#), Config word of axis controller" as follows:
- In case of motors with encoder data memory (see above), automatically on "loading controller parameters" (C0700 Load defaults procedure command (motor-spec. controller values)) provided switching frequency and controller performance have already been set.
 - In the case of motors without encoder data memory (see above), manually by commissioning staff.
 - In the case of third-party motors, automatically by starting a command or manually by commissioning staff (see below).

When manually adjusting the value of "[S-0-0106](#)" to the switching frequency ([P-0-0001](#)) and performance ([P-0-0556](#)) that have been set, the value relating to [P-0-0001](#) = 4 kHz has to be converted as follows:

$$\begin{aligned} S-0-0106_{(2 \text{ kHz})} &= 0,5 * S-0-0106_{(4 \text{ kHz})} \\ S-0-0106_{(8 \text{ kHz, bas})} &= 1,5 * S-0-0106_{(4 \text{ kHz})} \text{ BASIC Perf.} \\ S-0-0106_{(8 \text{ kHz, adv})} &= 2,0 * S-0-0106_{(4 \text{ kHz})} \text{ ADVANCED Perf.} \\ S-0-0106_{(12 \text{ kHz})} &= 2,25 * S-0-0106_{(4 \text{ kHz})} \\ S-0-0106_{(16 \text{ kHz})} &= 3,0 * S-0-0106_{(4 \text{ kHz})} \end{aligned}$$

S-0-0106 (4 kHz): Value of current controller P gain 1 with **P-0-0001** = 4 kHz

Fig. 4-14: Determining the Value of S-0-0106 in Relation to P-0001, Switching frequency of the power output stage

Notes on the use of third-party motors

In the case of third-party motors, the value for "S-0-0106" (matching the PWM frequency and performance that have been set) is automatically determined as follows:

- In case of asynchronous motors, by commands C3200 and C3600
- In case of synchronous motors, by command C4600

The value of **S-0-0106**_(4 kHz) can also be calculated manually:

$$S-0-0106_{(4 \text{ kHz})} = k_{\text{Winding}_4 \text{ kHz}} * (L_{12} + 2 * L_{Dr})$$

S-0-0106 (4 kHz): Current controller proportional gain 1, in relation to

P-0-0001 = 4 kHz

k_Winding_4kHz: Factor for winding type and winding body material, in relation to **P-0-0001** = 4 kHz, see below

L₁₂: Winding inductance between motor terminals in mH

L_{Dr}: Inductance of a three-phase reactor in motor feed wire in mH

Fig. 4-15: Calculating the Value for S-0-0106 (in Relation to 4 kHz) for Third-Party Motors

Motor functional principle	Winding design	Winding form material	k_winding_4kHz	Exemplary motor types
Synchronous motor	Toothed winding	Ironless	1.33	--
		With iron	1.67	(MBT; MBSxx2; MLF)
	Distributed winding	Ironless	1.87	Trilogy110; 210; 310
		With iron	1.76	(LSF, MBS)
Asynchronous motor	Distributed winding	With iron	1.33	(1MB)

Tab. 4-17: k_winding_4kHz, depending on functional principle of motor, winding design and winding form material



If necessary, saturation effects of the material at maximum allowed current have to be taken into account in the value for the winding inductance between the motor terminals (L_{12})!

Standard parameters

 In the case of motors without encoder memory or third-party motors, no other values than the values recommended should be set for "S-0-0106".

S-0-0106 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	V/A	Extr. val. ch.:	+	Decim. pl.:	2
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS:	min./max.: s. Text / s. Text	Default value: 8,00
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4.2.7 S-0-0107, Current loop integral action time 1

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The value for "Current controller integral action time 1" is motor-specific and is defined for each individual motor type.	 The correct value is written to this parameter as follows: <ul style="list-style-type: none"> For Rexroth motors with encoder data memory: Automatic when controller is switched on. In the case of Rexroth motors without encoder data memory: By loading the motor parameters with the "ctrlX DRIVE Engineering" commissioning software. In the case of other motors: By manual input according to the manufacturer's specification.
Use	 The factory-set values of the current controller should not be changed!	

In the case of third-party motors:

Where third-party motors are concerned, the value for "S-0-0107" is determined automatically, by the

- commands C3200 and C3600 in the case of asynchronous motors.
- command C4600 in the case of synchronous motors.

The value of "S-0-0107" can be calculated as follows:

$$S-0-0107 = k_{Tn_Winding} \cdot \frac{(L_{12} + 2 \cdot L_{Dr})}{(R_{12} + 2 \cdot R_{Dr})}$$

k_{Tn_Winding}: Factor for winding type and winding body material for integral action time calculation

L₁₂: Winding inductance between motor terminals in mH

L_{Dr}: Inductance of a three-phase choke in motor feed wire in mH

R₁₂: Winding resistance between motor terminals in ohm

R_{Dr}: Resistance of a three-phase choke in motor feed wire in ohm

Fig. 4-16: Calculating S-0-0107

Factor **k_{Tn_winding}** for calculating the integral action time depends on the winding type and the winding form material.

Motor principle	Winding type	Winding form material	$k_{Tn-Windings}$	Exemplary motors
Synchronous motor	Toothed winding	Ironless	1.0	--
		Iron	1.25	(MBT; MBSxx2; MLF)
	Distributed winding	Ironless	1.4	Trilogy110; 210; 310
		Iron	1.33	(LSF, MBS)
Asynchronous motor	Distributed winding	Iron	1.0	(1MB)

Tab. 4-18: $k_{Tn-Windings}$ 

If necessary, saturation effects of the material at maximum allowed current have to be taken into account in the value for the winding inductance between the motor terminals (L_{12})!

S-0-0107 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	ms	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS: min./max.: s. Text / s. Text Default value: 2,0

4.2.8 S-0-0108, Feedrate override

Allocation **Hardware** --
Funct. package(s):
Device parameter:

Function Parameter "[S-0-0108](#)" is used for variable adjustment of a predefined command velocity.

For this purpose, the effective command velocity "[S-0-0041](#), Homing velocity" is generated by multiplication with the value of "[S-0-0108](#), Feedrate Override".

- [S-0-0259](#), Positioning velocity
- [P-0-4007](#), Positioning block velocity

See also Functional Description "Positioning block mode"

See also Functional Description "Drive-controlled positioning"

Use The feedrate override is effective in all interpolating operation modes and/or commands, such as:

- Drive-internal interpolation
- Drive-controlled positioning (jog)
- Commands initiating interpolating movements of the drive ([S-0-0148](#), C0600 Drive-controlled homing procedure command)
- Positioning block mode



Parameter "[S-0-0108](#)" can be configured cyclically and also be assigned to an analog input so that it can be perfectly used for what is called setting-up mode.

Standard parameters

S-0-0108 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: --
AXS:	min./max.: s. Text / 600,00		Default value: 100,00

4.2.9 S-0-0109, Motor peak current

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Maximum allowed current that may temporarily flow in the motor. See also functional description "Limitations"	



The correct value is written to this parameter as follows:

- For Rexroth motors with encoder data memory:
Automatic when controller is switched on.
- In the case of Rexroth motors without encoder data memory:
By loading the motor parameters with the "ctrlX DRIVE Engineering" commissioning software.
- In the case of other motors:
By manual input according to the manufacturer's specification.

S-0-0109 - Attributes	Function: Par Memory: PARAM_SP Unit: A Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: Grp. 4
AXS:	min./max.: s. Text / 20000,000		Default value: 5,000

4.2.10 S-0-0110, Amplifier peak current

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The parameter displays the peak current of the controller. The value is calculated by the device itself. This current is only available temporarily. See also functional description "Limitations"		
S-0-0110 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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4.2.11 S-0-0111, Motor current at standstill

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The value of this parameter is the torque-/force-generating component of the continuous motor current when the motor is loaded with the least allowed cooling type, with the continuous torque ensured at standstill or with the ensured continuous force (see motor data sheet). See also Functional Description "Rexroth motors"	

Use

The correct value is written to this parameter as follows:

- For Rexroth motors with encoder data memory:
Automatic when controller is switched on.
- In the case of Rexroth motors without encoder data memory:
By loading the motor parameters with the "ctrlX DRIVE Engineering" commissioning software.
- In the case of other motors:
By manual input according to the manufacturer's specification.



If percentage-based scaling has been set in parameter "[S-0-0086](#), Torque/force data scaling type", this parameter is included in the calculation of the reference value (100% value).

S-0-0111 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	A	Extr. val. ch.:	+	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS: min./max.: s. Text / 20000,000 **Default value:** 1,000

4.2.12 S-0-0112, Amplifier nominal current

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

The parameter displays the maximum possible continuous current of the controller.



At rotary field frequencies below approx. 3 Hz, the possible continuous amplifier current is reduced by means of a temperature model (see technical specifications in hardware project planning).

See also functional description "Limitations"

S-0-0112 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	A	Extr. val. ch.:	--	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- **Default value:** ---

4.2.13 S-0-0113, Maximum motor speed

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

Value for the maximum allowed velocity command value of the motor. The velocity feedback value may be a maximum of 12.5% higher than the value of "[S-0-0113](#)". With higher actual values, the drive reacts with torque disable and generates error message F8079.

See also functional description "Limitations"

Standard parameters

Use	 <p>The correct value is written to this parameter as follows:</p> <ul style="list-style-type: none"> For Rexroth motors with encoder data memory: Automatic when controller is switched on. In the case of Rexroth motors without encoder data memory: By loading the motor parameters with the "ctrlX DRIVE Engineering" commissioning software. In the case of other motors: By manual input according to the manufacturer's specification.
-----	--

Unit, decimal places

The drive firmware automatically adjusts the unit and decimal places to the type of construction of the motor (rotary or linear) entered in "[P-0-4014, Type of construction of motor](#)":

Type of constr. of motor (P-0-4014)		Decimal places for type of constr. of motor (P-0-4014)	
Rotary	Linear	Rotary	Linear
min ⁻¹	mm/min	4	2

Tab. 4-19: Type of construction of motor and decimal places of S-0-0113, depending on P-0-4014

S-0-0113 - Attributes	Function: Par Memory: PARAM_SP Unit: s. text Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: Set-depend.: Grp. 4
	AXS:	min./max.: s. Text / s. Text	Default value: 300000000

4.2.14 S-0-0115, Encoder 2, type of position encoder

Allocation	Hardware Funct. package(s): Device parameter:	--																		
Function	This parameter defines the essential properties of encoder 2. See also Functional Description "Measuring systems"																			
Structure	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; padding: 2px;">Bit</th> <th style="text-align: left; padding: 2px;">Designation/function</th> <th style="text-align: left; padding: 2px;">Comment</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; padding: 2px;">0</td> <td style="text-align: left; padding: 2px;">Encoder type 0: Rotary 1: Linear</td> <td style="text-align: left; padding: 2px;"></td> </tr> <tr> <td style="text-align: center; padding: 2px;">1</td> <td style="text-align: left; padding: 2px;">Distance-coded measuring system 0: No distance-coded reference marks 1: distance-coded reference marks</td> <td style="text-align: left; padding: 2px;">from FW AXS-V-0304</td> </tr> <tr> <td style="text-align: center; padding: 2px;">2</td> <td style="text-align: left; padding: 2px;">Reserved</td> <td style="text-align: left; padding: 2px;"></td> </tr> <tr> <td style="text-align: center; padding: 2px;">3</td> <td style="text-align: left; padding: 2px;">Rotational direction 0: Not inverted 1: Inverted</td> <td style="text-align: left; padding: 2px;"></td> </tr> <tr> <td style="text-align: center; padding: 2px;">5/4</td> <td style="text-align: left; padding: 2px;">Reserved</td> <td style="text-align: left; padding: 2px;"></td> </tr> </tbody> </table>		Bit	Designation/function	Comment	0	Encoder type 0: Rotary 1: Linear		1	Distance-coded measuring system 0: No distance-coded reference marks 1: distance-coded reference marks	from FW AXS-V-0304	2	Reserved		3	Rotational direction 0: Not inverted 1: Inverted		5/4	Reserved	
Bit	Designation/function	Comment																		
0	Encoder type 0: Rotary 1: Linear																			
1	Distance-coded measuring system 0: No distance-coded reference marks 1: distance-coded reference marks	from FW AXS-V-0304																		
2	Reserved																			
3	Rotational direction 0: Not inverted 1: Inverted																			
5/4	Reserved																			

Bit	Designation/function	Comment
6	Absolute evaluation (display bit) 0: Not possible (relative measuring system) 1: Possible (absolute measuring system) See also " S-0-0379 , Absolute encoder range of optional encoder"	
8/7	Absolute evaluation configuration Bit 6 = 0: 0x: Relative evaluation of the relative measuring system. The measuring system has to be homed again on each restart. 1x: Absolute evaluation of the relative measuring system is forced (only possible with single- and multi-turn encoders). Bit 6 = 1: x0: Absolute evaluation of the absolute measuring system (standard). x1: Relative evaluation of the absolute measuring system.	Not defined in Sercos
15-9	Reserved	

Tab. 4-20: *S-0-0115, Position feedback 2 type***Use**

- For Rexroth housing motors (MSK, MKE, 2AD, ADF, MAD, MAF), bits 0, 1, 3 are set to the value "0"!
- If the connected encoder is a linear encoder, bit 0 is set to "1".
- Depending on the absolute encoder range and the maximum travel range or modulo value, bit 6 is either set or cleared.
- If absolute evaluation is possible (bit 6 =1), absolute evaluation is automatically activated. However, the user can deactivate it by setting bit 7.
- Even if absolute evaluation is impossible (bit 6 = 0), the user can "force" (activate) it via bit 8.

NOTICE

Property damage, if control on the master side takes place with regard to incorrect actual position values!

The user has to ensure that, if absolute position feedback values are "forced" manually (bit 8), the powered off axis is never shifted by more than half the absolute encoder range in relation to the power-off position. Otherwise, collisions with machine parts and workpiece rejects may occur when the axis is powered on again.

S-0-0115 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: 0x0
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Standard parameters

4.2.15 S-0-0121, Input revolutions of load gear

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	If a mechanical transmission is installed between the motor and load, the gear ratio is entered by means of "S-0-0121" and "S-0-0122". In "S-0-0121", the number (integer) of motor revolutions (drive input) leading to an integer number of output revolutions of load gear (S-0-0122).	
Use	The gear ratio is as follows:	

S-0-0121, Input revolutions of load gear
 S-0-0122, Output revolutions of load gear

Fig. 4-17: Calculating the gear ratio

Example:

5 motor revolutions result in 2 gear output revolutions

→ S-0-0121 : 5

→ S-0-0122 : 2

S-0-0121 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	U	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 3
AXS:		min./max.: s. Text / s. Text		Default value: 1	

4.2.16 S-0-0122, Output revolutions of load gear

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	If a mechanical transmission is installed between the motor and load, the gear ratio is entered by means of "S-0-0121" and "S-0-0122". In "S-0-0122", the number (integer) of the output revolutions of load gear have to be entered in compliance with an integer number of motor revolutions or input revolutions of load gear (S-0-0121).	
Use	The gear ratio is as follows:	

S-0-0121, Input revolutions of load gear
 S-0-0122, Output revolutions of load gear

Fig. 4-18: Calculating the gear ratio

Example:

5 motor revolutions result in 2 gear output revolutions

→ S-0-0121 : 5

→ S-0-0122 : 2

S-0-0122 - Attributes	Function: Par Memory: PARAM_SP Unit: U Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: Grp. 3
AXS:	min./max.: s. Text / s. Text		Default value: 1

4.2.17 S-0-0123, Feed constant

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is only relevant for linear axes. The feed constant is the distance covered by the axis, when the gear output shaft or motor shaft performs one rotation.	
Use	Determination of the feed constant at various mechanical transmission elements:	

Ball screw	Rack + pinion
Feed constant = Spindle lead (typ. vale 10.00 mm)	Feed constant = Effective diameter of the pinion $\times \pi$ = effective circumference of the pinion

Tab. 4-21: Determination of the feed constant

S-0-0123 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0076 Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: -- Set-depend.: --
AXS:	min./max.: 1 / s. Text		Default value: 1000000

4.2.18 S-0-0124, Standstill window

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	To recognize the standstill of the motor or axis, a threshold value for the velocity can be entered in this parameter. If the actual velocity value falls below this threshold, standstill is recognized by the controller. In case of standstill, bit 1 of " S-0-0013 , Class 3 diagnostics" and message " S-0-0331 , Status "n_feedback = 0"" are set.	
Use	See also Functional Description "Drive Halt" The standstill window is also "effective" at:	<ul style="list-style-type: none"> • Cancellation or interruption of a drive control command. Cancellation of interruption are acknowledged if the drive is at a standstill. • Drive-controlled homing. The actual and command values are not switched before the drive is at a standstill. • Command value processing. Command value processing is initialized on switchover of operating modes to velocity = 0 if the drive is at a standstill. • "C1300 Positive stop drive procedure command". The value of "S-0-0124" is a criterion for acknowledging "C1300". • Axis error correction. The value serves as criterion for recognizing the positive or negative direction of motion of the axis.

Standard parameters

S-0-0124 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0044 Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: Set-depend.: Grp. 1
AXS:	min./max.: s. Text / s. Text		Default value: 2000000

4.2.19 S-0-0125, Velocity threshold nx

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	If the value of "S-0-0040, Velocity feedback value" falls below the value of "S-0-0125, Velocity threshold nx":		
	<ul style="list-style-type: none"> the message "S-0-0332, Status "n_feedback < nx"" is returned by the drive and a bit is set in "S-0-0013, Class 3 diagnostics" 		
S-0-0125 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0044 Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: Set-depend.: Grp. 1
AXS:	min./max.: s. Text / s. Text		Default value: 100000000

4.2.20 S-0-0126, Torque threshold Tx

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The torque/force message threshold is entered in this parameter. At torque load above this threshold, the message Status "T >= Tx" (S-0-0333) is generated by the controller.		
	See also Parameter Description "S-0-0013, Class 3 diagnostics"		
S-0-0126 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0086 Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: Set-depend.: Grp. 1
AXS:	min./max.: s. Text / s. Text		Default value: 10000

4.2.21 S-0-0127, C0100 Safe-Operational transition check

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	When command "S-0-0127" is executed, all interface parameters are checked for validity.		
	See also Functional Description "Sercos"		
Use	If there are invalid interface parameters, the drive will		
	<ul style="list-style-type: none"> terminate the command with an error message enter the invalid parameters in "S-0-0021, Invalid operation data Safe-Operational transition check". display a C01xx diagnostic message 		
S-0-0127 - Attributes	Function: Cmd Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.2.22 S-0-0128, C5200 Operational transition check

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	When command " S-0-0128 , C5200 Operational transition check" is executed, all parameters are checked for validity.		
	See also Functional Description "Sercos"		
Use	If there are invalid interface parameters, the drive will		
	<ul style="list-style-type: none"> • terminate the command with an error message • enter the invalid parameters in "S-0-0022, Invalid operation data Operational transition check". • display a C52xx diagnostic message 		
S-0-0128 - Attributes	Function: Cmd Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

4.2.23 S-0-0130, Probe value 1 positive edge

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	In the case of a positive edge of the probe 1 input signal, the drive saves the current value of the selected parameter (S-0-0426 , Signal selection probe 1) in the parameter " S-0-0130 ".		
	See also Functional Description "Probe function"		
Use	Requirement for processing the content:		
	<ul style="list-style-type: none"> • "S-0-0170, Probing cycle procedure command" must have been set and be executed. • Probe 1 must have been enabled (S-0-0405, Probe 1 enable). 		
S-0-0130 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 4 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---



The switching state of the probe 1 input signal is displayed in "[S-0-0401](#), Probe 1" as long as the probing cycle procedure command is active!

4.2.24 S-0-0131, Probe value 1 negative edge

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In the case of a negative edge of the probe 1 input signal, the drive saves the current value of the selected parameter (S-0-0426 , Signal selection probe 1) in the parameter " S-0-0131 ".	
	See also Functional Description "Probe function"	
Use	Requirement for processing the content:	

Standard parameters

- "S-0-0170, Probing cycle procedure command" must have been set and be executed.
- Probe 1 must have been enabled (S-0-0405, Probe 1 enable).

 The switching state of the probe 1 input signal is displayed in "S-0-0401, Probe 1" as long as the probing cycle procedure command is active!

S-0-0131 - Attributes	Function: Par	Editable: --	Data length: 4Byte
	Memory: --	Validity ch.: --	Format: DEC_MV
	Unit: --	Extr. val. ch.: --	Decim. pl.: 4
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.2.25 S-0-0132, Probe value 2 positive edge

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In the case of a positive edge of the probe 2 input signal, the drive saves the current value of the selected parameter (S-0-0427, Signal selection probe 2) in the parameter "S-0-0132".	
	See also Functional Description "Probe function"	
Use	Prerequisite:	
	<ul style="list-style-type: none"> • "S-0-0170, Probing cycle procedure command" must have been set and be executed. • Probe 2 must have been enabled (S-0-0406, Probe 2 enable). 	

 The switching state of the probe 2 input signal is displayed in "S-0-0402, Probe 2" as long as the probing cycle procedure command is active!

S-0-0132 - Attributes	Function: Par	Editable: --	Data length: 4Byte
	Memory: --	Validity ch.: --	Format: DEC_MV
	Unit: --	Extr. val. ch.: --	Decim. pl.: 3
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.2.26 S-0-0133, Probe value 2 negative edge

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In the case of a negative edge of the probe 2 input signal, the drive saves the current value of the selected parameter (S-0-0427, Signal selection probe 2) in the parameter "S-0-0133".	
	See also Functional Description "Probe function"	
Use	Prerequisite:	
	<ul style="list-style-type: none"> • "S-0-0170, Probing cycle procedure command" must have been set and be executed. • Probe 2 must have been enabled (S-0-0406, Probe 2 enable). 	

 The switching state of the probe 2 input signal is displayed in "S-0-0402, Probe 2" as long as the probing cycle procedure command is active!

S-0-0133 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.2.27 S-0-0134, Master control word

Allocation	Hardware Funct. package(s): Device parameter:	--																					
Function	At the selected application profile types (P-0-4084 = 0x0102) "FSP Drive" and (P-0-4084 = 0x0002), the master control word "ServoDrive" is active. The following control information is defined, e.g.,																						
	<ul style="list-style-type: none"> • Drive enable • Drive halt • Selection of command operation mode 																						
	The exact structure of the control word is illustrated below.																						
	See also Functional Description "Device control and state machine"																						
	See also Functional Description "Drive Halt"																						
Structure	ServoDrive:																						
	<table border="1"> <thead> <tr> <th>Bit</th> <th>Designation/function</th> <th>Comment</th> </tr> </thead> <tbody> <tr> <td>7/6</td> <td>Real-time control bits 1 and 2</td> <td></td> </tr> <tr> <td>11/9/8</td> <td>Command operation mode: 0x00: Primary operation mode 0x01: Secondary operation mode 1, etc. 1x11: Secondary operation mode 7</td> <td></td> </tr> <tr> <td>10</td> <td>IPOSYNC, interpolator clock, toggles when new command values are to be transmitted</td> <td></td> </tr> <tr> <td>13</td> <td>Drive halt: 1-0 change: Deceleration of drive while maintaining maximum acceleration (S-0-0138 only possible if bits 14 and 15 = 1)</td> <td></td> </tr> <tr> <td>14</td> <td>Drive enable: 1-0 change: Torque disable without delay (independent of bit 15 or 13)</td> <td>for profile type 0xF002 always "1"</td> </tr> <tr> <td>15</td> <td>Drive On: 1-0 change: Best possible deceleration (only possible if bit 14 = 1)</td> <td></td> </tr> </tbody> </table>	Bit	Designation/function	Comment	7/6	Real-time control bits 1 and 2		11/9/8	Command operation mode: 0x00: Primary operation mode 0x01: Secondary operation mode 1, etc. 1x11: Secondary operation mode 7		10	IPOSYNC, interpolator clock, toggles when new command values are to be transmitted		13	Drive halt: 1-0 change: Deceleration of drive while maintaining maximum acceleration (S-0-0138 only possible if bits 14 and 15 = 1)		14	Drive enable: 1-0 change: Torque disable without delay (independent of bit 15 or 13)	for profile type 0xF002 always "1"	15	Drive On: 1-0 change: Best possible deceleration (only possible if bit 14 = 1)		
Bit	Designation/function	Comment																					
7/6	Real-time control bits 1 and 2																						
11/9/8	Command operation mode: 0x00: Primary operation mode 0x01: Secondary operation mode 1, etc. 1x11: Secondary operation mode 7																						
10	IPOSYNC, interpolator clock, toggles when new command values are to be transmitted																						
13	Drive halt: 1-0 change: Deceleration of drive while maintaining maximum acceleration (S-0-0138 only possible if bits 14 and 15 = 1)																						
14	Drive enable: 1-0 change: Torque disable without delay (independent of bit 15 or 13)	for profile type 0xF002 always "1"																					
15	Drive On: 1-0 change: Best possible deceleration (only possible if bit 14 = 1)																						

Tab. 4-22: Structure of the master control word at profile type "ServoDrive" ([S-0-0134](#))

FSP drive

Standard parameters

Bit	Designation/function	Comment
10-8	Command operation mode: 000: Primary operation mode 001: Secondary operation mode 1, etc. 111: Secondary operation mode 7	
13	Drive halt: 1-0 change: Deceleration of drive while maintaining maximum acceleration (S-0-0138 - only possible if bits 14 and 15 = 1)	
14	Drive enable: 1-0 change: Torque disable without delay (independent of bit 15 or 13)	for profile type 0xF102 always "1"
15	Drive On: 1-0 change: Best possible deceleration (only possible if bit 14 = 1)	

Tab. 4-23: Structure of the master control word at profile type "FSP drive" ([S-0-0134](#))

 With Sercos, the real-time control bits can be found in the control word of the connection ([S-0-1050.x.8](#)).

S-0-0134 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.2.28 S-0-0135, Drive status

Allocation Hardware
Funct. package(s):
Device parameter: --

Function At the selected application profile types ([P-0-4084](#) = 0x0102) FSP Drive and ([P-0-4084](#) = 0x0002), the drive status word "ServoDrive" is active. There is important status information contained in the drive status word, for example:

- Readiness for operation of control and power sections
- Drive error
- Change bits class 2 and 3 diagnostics
- Current operation mode

See also Functional Description "Device control and state machine"

See also Functional Description "Drive Halt"

Structure **ServoDrive:**

Bit	Designation/function	Comment
3	Status of command value processing	
5	Command change bit 1: Changed command status 0: Unchanged command status	

Bit	Designation/function	Comment
7/6	Real-time status bits 1 and 2	
10-8	Actual operation mode 000: Primary operation mode active 001: Secondary operation mode 1 active 010: Secondary operation mode 2, etc.	
11	Class 3 diagnostics warning (S-0-0013) The bit is set if a class 3 diagnostics message is present.	
12	Class 2 diagnostics warning (S-0-0012) The bit is set if a class 2 diagnostics warning is present.	
13	Class 1 diagnostics drive error (S-0-0011) The bit is set if a class 1 diagnostics error is present (drive lock-out).	
15/14	Ready for operation (P-0-0116; bit 15/14) 00: Not ready for power on (e.g., P2) 01: Ready for power on (bb) 10: Control section and power section ready for op. (Ab) 11: In operation, with torque (e.g. AF)	

Tab. 4-24: Structure of the drive status word for profile type "ServoDrive"

FSP drive:

Bit	Designation/function	Comment
3	Status of command value processing 0: Drive ignores command value input 1: Drive follows command value input	
4	"Drive halt" status 0: Not active, bit 13 in "S-0-0134" is 1 1: Active, bit 13 in "S-0-0134" was set to 0, actual velocity within "S-0-0124, Standstill window"	
5	Position feedback value status (S-0-0403)	
7	Hardware enable (emergency stop) 0: Not active (bits 15 and 14 of "S-0-0134" are ignored, emergency stop is active) 1: Active	
10-8	Actual operation mode 000: Primary operation mode active 001: Secondary operation mode 1 active 010: Secondary operation mode 2, etc.	
12	Class 2 diagnostics warning (S-0-0012) The bit is set if a class 2 diagnostics warning is present.	

Standard parameters

Bit	Designation/function	Comment
13	Class 1 diagnostics drive error (S-0-0011) The bit is set if a class 1 diagnostics error is present (drive lock-out).	
15/14	Ready for operation (P-0-0116; bit 15/14) 00: Not ready for power on (e.g., P2) 01: Ready for power on (bb) 10: Control section and power section ready for op. (Ab) 11: In operation, with torque (e.g. AF)	

Tab. 4-25: Structure of the drive status word at profile type "FSP drive" (S-0-0135)

 With Sercos, the real-time status bits can be found in the control word of the connection (S-0-1050.x.8).

 The command change bit and the bit for displaying the subdevice status are specified in S-0-1045, Device Status (S-Dev).

S-0-0135 - Attributes	Function:	Par	Editable:	--	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	BIN
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---			Default value: ---	

4.2.29 S-0-0138, Bipolar acceleration limit value

Allocation Hardware
Funct. package(s):
Device parameter: --

Function The parameter limits the acceleration and deceleration of position or velocity command value profiles are generated drive-internally. The parameter has to be parameterized according to the machine limits.

"S-0-0138" limits the following parameters:

- S-0-0042, Homing acceleration
- S-0-0260, Positioning acceleration
- S-0-0359, Positioning deceleration
- S-0-0372, Deceleration, quick stop
- S-0-0429, Emergency stop deceleration
- P-0-1201, Acceleration ramp 1
- P-0-1203, Acceleration ramp 2
- P-0-1211, Deceleration ramp 1
- P-0-1213, Deceleration ramp 2
- P-0-1461, PLC/setting-up mode acceleration ramp
- P-0-1463, PLC/setting-up mode Deceleration ramp

 With "S-0-0138" equal "0", acceleration limitation does not take place.

 In the following deceleration types of the Best deceleration possible, "[S-0-0138](#)" takes effect as deceleration limit value:

- Emergency stop, velocity command value reset with ramp
- Quick stop, velocity command value reset with ramp

 In the reaction "Emergency stop: Velocity command value reset" "[P-0-0119](#), Best possible deceleration" bit 0-3 = "0" or Bit 4-7 = "0"), the value set in "[S-0-0138](#)" is not considered.

See also Functional Description "Velocity control"

See also Functional Description "Drive-controlled positioning"

See also Functional Description "Drive-internal interpolation"

See also Functional Description "Positioning block mode"

See also Functional Description "Drive Halt"

See also Functional Description "Best possible deceleration"

S-0-0138 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	S-0-0160	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 1

AXS: min./max.: s. Text / s. Text Default value: 0

4.2.30 S-0-0139, C1600 Parking axis procedure command

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	By starting this command the drive is brought to the "parking axis" state. The active "parking axis" state is shown by the "PA" on the display. See also Functional Description "Parking axis"	
Use	Starting the command The command can only be activated in the parameter mode. As long as the command is active, this is what happens when the parameterization level is exited (S-0-0422 , C0200 Activate operation mode procedure command): <ul style="list-style-type: none">• The encoder supply is switched off.• Encoder monitoring functions of the axis-related encoders are not activated.• No axis-specific calculations/checks/initializations are carried out.• Reference bits of axis-related encoders in "position feedback value status" remain at zero.• Motor temperature monitoring remains switched off.• Drive enable cannot be set in the operating mode.• In the operating mode, only those commands can be activated which can also be executed in the parameter mode.	

S-0-0139 - Attributes

Function:	Cmd	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

Standard parameters

4.2.31 S-0-0139.0.150, C1700 Disable Parking axis procedure command

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1742
Function	The command disables the "parking axis", and the axis functions are initialized. The axis functions that are initialized depend on the state of the device management. If the device management is in the configuration mode (CM) , the following axis functions are initialized: <ul style="list-style-type: none">• the encoder supply is switched on• the communication with the encoder(s) is established If the device management is in the parameterization mode (PM) , the following axis functions are initialized: <ul style="list-style-type: none">• the encoder supply is switched on• the communication with the encoder is established• any motor data available in the encoder are read out• the position initialization is carried out• the basic initialization of axis and motor control is carried out If the device management is in the operating mode (OM) , the following axis functions are initialized: <ul style="list-style-type: none">• the initialization of the axis is completed• all monitoring functions are activated	
	 If initialization errors occur when the parking axis is disabled, the command error C1701 or C1702 is output, according to the state of the device management. In the case of error, the parameters causing conflicts are listed in S-0-0139.0.151 .	
	Detailed error numbers and detailed diagnostics: Terminate the command and afterwards switch the device management from the configuration mode (CM) to the parameterization mode (PM) or the operating mode (OM). The same initializations will be carried out as when disabling the parking axis.	

[S-0-0139.0.150 - Attributes](#)

Function:	Cmd	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.2.32 S-0-0139.0.151, Parking axis, list of invalid parameters

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1743
Function	During the execution of the command for disabling the "parking axis" state [C1700 (S-0-0139.0.150)], axis control has to be completely reinitialized. If an error occurs while this is done, the parameters that caused the command to be aborted are listed here.	

S-0-0139.0.151 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: IDN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.2.33 S-0-0139.0.152, Axis initialization status

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1744	--	
Function	The initialization status of the axis functions is shown here		
	<ul style="list-style-type: none"> • 0: Ready for operation • 1: Configuration mode • 2: Parameter mode • 3: Parked axis 		
S-0-0139.0.152 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.2.34 S-0-0139.0.153, Configuration permanently parked axis

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1768	--						
Function Structure	This parameter is used to configure the permanently parked axis.							
	<table border="1"> <thead> <tr> <th>Bit</th><th>Designation/function</th><th>Comment</th></tr> </thead> <tbody> <tr> <td>0</td><td> Axis configuration 0: No action 1: Axis is parked during switching from CM to PM (command C1600 is started automatically). </td><td></td></tr> </tbody> </table>		Bit	Designation/function	Comment	0	Axis configuration 0: No action 1: Axis is parked during switching from CM to PM (command C1600 is started automatically).	
Bit	Designation/function	Comment						
0	Axis configuration 0: No action 1: Axis is parked during switching from CM to PM (command C1600 is started automatically).							

Tab. 4-26: Relevant bits S-0-0139.0.153

S-0-0139.0.153 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: 0x0

4.2.35 S-0-0140, Device Name

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1300.0.4" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).		
S-0-0140 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: s. Text
AXS:	min./max.: --- / ---		Default value: ---

Standard parameters

4.2.36 S-0-0141, Motor type

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The type designation of the motor is entered in this parameter. See also Functional Description "Drive mechanics and arrangement of measuring systems"	
Use	For motors with encoder data memory, the drive controller recognizes if the connected motor type has changed. For this purpose, the contents of the encoder memory (S-0-1300.20.4) are compared with this parameter. If a different connected motor is detected, the controller signals "F2008 RL The motor type has changed". If the controller default values are loaded from the motor (S-0-0262), the contents of " S-0-1300.20.4 " are copied to " S-0-0141 ". See also Functional Description "Rexroth motors"	



The correct value is written to this parameter as follows:

- For Rexroth motors with encoder data memory:
Automatic when controller is switched on.
- In the case of Rexroth motors without encoder data memory:
By loading the motor parameters with the "ctrlX DRIVE Engineering" commissioning software.
- In the case of other motors:
By manual input according to the manufacturer's specification.

S-0-0141 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	1Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	ASCII
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS:	min./max.: --- / ---	Default value: s. Text
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4.2.37 S-0-0142, Application type

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	" S-0-1302.0.3 " replacement parameter for compatible access and for communication interfaces which do not support any 32-bit ident numbers (EIDN). A descriptive name (text) for the drive and/or the axis (e.g. swivel axis) can be stored in this parameter.	



It has no impact on functionality.

The following applies:

- The UTF-8 character set can be written to this parameter.
- Size in number of bytes: 40
- A UTF-8 character can have a size of 1 to 3 bytes.
- The number of characters that can be entered may be less, depending on the UTF-8 characters used.

- After loading of default values, the parameter value is set to "default".

S-0-0142 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	1Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	ASCII
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: s. Text

4.2.38 S-0-0144, Signal status word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	By means of the signal status word, it is possible to transmit signals in real time from the drive to the control unit.	



"S-0-0144" only receives current values if it is read out cyclically. The oscilloscope function does not read out the value but accesses the value that was read out last.

See also Functional Description "Configurable signal status word"

Use For this purpose, the signal status word must be configured as a cyclic data to the actual value telegram or a producer connection.

- [S-0-0016](#), Configuration list of AT
- [S-0-1050.x.6](#), SIII-Connection: Configuration list

The bits in the signal status word can be configured by means of the parameters

- [S-0-0026](#), Configuration list signal status word and
- [S-0-0328](#), Assign list signal status word

S-0-0144 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

4.2.39 S-0-0145, Signal control word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	By means of the signal control word, it is possible to transmit signals in real time from the control unit to the drive.	
	See also Functional Description "Configurable signal control word"	
Use	For this purpose, the signal control word must be configured as a cyclic data to the command value telegram or a consumer connection.	
	• S-0-0024 , Configuration list of MDT	
	• S-0-1050.x.6 , SIII-Connection: Configuration list	
	The bits in the signal control word can be configured by means of the parameters	
	• S-0-0027 , Configuration list for signal control word and	
	• S-0-0329 , Assign list signal control word	

Standard parameters

S-0-0145 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.2.40 S-0-0146, C4300 NC-controlled homing procedure command

Allocation	Hardware Funct. package(s): Device parameter:	--						
Function	The procedure in which the master uses the travel motion for searching the dedicated point to establish the position data reference is referred to as "NC-controlled homing". See also Functional Description "NC-controlled homing" See also Functional Description "Establishing position data reference for relative measuring systems"							
Structure	<table border="1"> <thead> <tr> <th>Bit</th> <th>Designation/function</th> <th>Comment</th> </tr> </thead> <tbody> <tr> <td>1/0</td> <td>00: Clear 11: Set 01: Interrupt</td> <td></td> </tr> </tbody> </table>	Bit	Designation/function	Comment	1/0	00: Clear 11: Set 01: Interrupt		
Bit	Designation/function	Comment						
1/0	00: Clear 11: Set 01: Interrupt							

Tab. 4-27: S-0-0146, C4300 NC-controlled homing procedure command

- Use** The entire procedure is supported by three sub-commands on the drive-side:
- NC-controlled homing procedure command ([S-0-0146](#))
 - Calculate displacement procedure command ([S-0-0171](#))
 - Displacement to referenced system procedure command ([S-0-0172](#))

After the master has started C4300, it has to input command values for searching the dedicated point. When the drive has identified the dedicated point, this is signaled in "[S-0-0408](#), Reference marker pulse registered" and the command execution is acknowledged. Thereupon, the master decelerates the axis and clears the command.

S-0-0146 - Attributes	Function: Cmd Memory: -- Unit: -- Cycl. tra.: --	Editable: SUBD:OM Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: 0x0 / 0x3		Default value: ---

4.2.41 S-0-0147, Homing parameter

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In this parameter, the settings are made for " S-0-0148 , C0600 Drive-controlled homing procedure command": See also Functional Description "Establishing position data reference for relative measuring systems"	

Structure	Bit	Designation/function	Comment
	0	Reference travel direction (*1) 0: Positive = motion in the direction of increasing actual position values (to positive travel range limit) 1: Negative = motion in the direction of decreasing actual position values (to negative travel range limit)	
	1	Home switch edge selection 0: Positive edge ("activated" at high signal) 1: Negative edge ("activated" at low signal)	
	2	Home switch (*2) 0: Connected to master (NC) 1: Connected to drive	
	3	Encoder selection 0: Encoder 1 1: Encoder 2	
	4	Evaluation in the drive (*2) 0: Home switch and homing enable (only when bit 2 = 1) 1: Only homing enable	
	5	Evaluation of home switch (*1) 0: Yes 1: No	
	6	Evaluation of reference mark 0: Yes 1: No	

Standard parameters

Bit	Designation/function	Comment
8/7	<p>Stop/positioning/run path - only drive-controlled homing</p> <p>00: Stop: Once C0600 has been started, the drive stops after the position data reference was established, if the measuring system is a relative one (if the measuring system is an absolute one, the drive stops after the position data reference was established and C0300 is inactive).</p> <p>01: Positioning: Once C0600 has been started, the drive moves to the reference point after the position data reference was established, if the measuring system is a relative one (if the measuring system is an absolute one, the drive moves to the position of "S-0-0052/54", provided C0300 is inactive).</p> <p>10: Run path - applies only for measuring systems with distance-coded reference marks: For drive-controlled establishing of the position data reference, the drive always moves over a distance that corresponds to the double reference mark distance. This supports the commissioning of Gantry axes!</p> <p>11: Not allowed</p> <p>Notice: If a positive stop is used as dedicated point, "Stop" is inappropriate for signaling completion of the homing command. → Select "Positioning".</p> <p>The reference point has to be within the travel range of the axis.</p>	
9	Evaluation travel range limit switch as home switch 0: No 1: Yes	
10	Evaluation axis blocking (positive stop) for homing 0: No 1: Yes	

Tab. 4-28: Relevant bits of S-0-0147, Homing parameter

[S-0-0147 - Attributes](#)

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: 0x24
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4.2.42 S-0-0148, C0600 Drive-controlled homing procedure command

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	When setting and enabling this command, drive enable must be present. The drive is then set to internal position control and accelerates with " S-0-0042 , Homing acceleration" to " S-0-0041 , Homing velocity". Afterwards, the drive searches for its reference according to the parameterization of " S-0-0147 " and switches the actual position value system of the selected encoder. In the special case "homing without drive enable", an incremental encoder is homed without motion. For this purpose, the control bits "homing without	

"home switch" and "homing without reference mark" must have been set in the homing parameter ([S-0-0147](#); bit 5/6). The reference then relates to the current actual position value.

See also Functional Description "Establishing position data reference for relative measuring systems"

Use The following steps are processed:

- In parameter "[S-0-0403](#), Position feedback value status", the bit of the encoder is set to zero.
- As long as the command is active, the cyclic command values of the controller are ignored.
- Upon correct execution of the command (drive has stopped and actual position value is related to axis zero point), the drive sets the corresponding bit in parameter "[S-0-0403](#), Position feedback value status" to "1".

In parameter "[S-0-0403](#), Position feedback value status", the bit of the corresponding encoder (encoder 1 or encoder 2, depending on bit 3 of "[S-0-0147](#), Homing parameter") is set to zero.



The sequence of the homing procedure is also set via "[S-0-0147](#)".



With regard to the respective encoder, the bit corresponds to the signal "in reference".

[S-0-0148 - Attributes](#)

Function:	Cmd	Editable:	SUBD:OM	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: 0x0 / 0x3				Default value: ---

4.2.43 [S-0-0149, C1300 Positive stop drive procedure command](#)

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

By setting and release of this command, all monitoring functions are deactivated that would otherwise lead to a class 1 diagnostics error message if the drive is blocked by a positive stop.

See also Functional Description "Positive stop drive procedure"

Structure

Bit	Designation/function	Comment
1/0	00: Delete 11: Set 01: Interrupt	

Tab. 4-29: [S-0-0149, C1300 Positive stop drive procedure command](#)

Use

The following error messages are intact if command C1300 is active:

- F2028 Excessive deviation
- F4037 Excessive position command difference; up to firmware AXS-V-0302 F2037
- F8078 Speed loop error
- E8260 Torque/force command value limit active
- E2059 Velocity command value limit active

Standard parameters

If the command is deleted, the monitoring functions are reset.					
S-0-0149 - Attributes	Function: Cmd	Editable:	SUBD:OM	Data length:	2Byte
	Memory: --	Validity ch.:	--	Format:	BIN
	Unit: --	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.: --	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: 0x0 / 0x3		Default value: ---	

4.2.44 S-0-0150, Reference offset of encoder 1

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The value of this parameter is the position difference between the dedicated point (first reference mark of encoder 1 after activation of the home switch) and the reference point defined on the axis-side.	

$$x_{\text{Reference point}} = x_{\text{Dedicated point}} + (\text{S-0-0150})$$

x_{Reference point}:	Position feedback value*) of the axis-side reference point
x_{Dedicated point}:	Position feedback value*) of the dedicated point defined by an encoder 1 reference mark
S-0-0150:	Reference offset 1 (with sign!)
*):	Both position feedback values require the same position data reference!

Fig. 4-19: Operating principle of S-0-0150, use

See also Functional Description "Establishing position data reference for relative measuring systems"

Use	With this parameter, the position difference between the encoder 1 reference mark depending on the mounting (dedicated point) and the position of the reference point defined by the axis can be compensated.
-----	---



In case of positive (alternative: negative) sign of "S-0-0150", the position feedback value of the reference point is more positive (alternative: more negative) than the dedicated point. The reference start-up direction does not have any influence.

S-0-0150 - Attributes	Function: Par	Editable:	ALWAYS	Data length:	4Byte
	Memory: PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
	Unit: S-0-0076	Extr. val. ch.:	+	Decim. pl.:	
	Cycl. tra.: --	Comb. check:	--	Set-depend.:	Grp. 3
	AXS:	min./max.: s. Text / s. Text		Default value: 0	

4.2.45 S-0-0151, Reference offset of encoder 2

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The value of this parameter is the position difference between the dedicated point (first reference mark of encoder 1 after activation of the home switch) and the reference point defined on the axis-side.	

$$x_{\text{Reference point}} = x_{\text{Dedicated point}} + (\text{S-0-0151})$$

X_{Reference point}	Position feedback value*) of the axis-side reference point
X_{Dedicated point}	Position feedback value*) of the dedicated point defined by an encoder 2 reference mark
S-0-0151	Reference offset of encoder 2 (signed)
*)	Both position feedback values require the same position data reference!

Fig. 4-20: Operating principle of S-0-0151

See also Functional Description "Establishing position data reference for relative measuring systems"

Use With this parameter, the position difference can be compensated between the encoder 2 reference mark depending on encoder arrangement (dedicated point) and the position of the reference point defined on the axis side.



In the case of a positive (alternative: negative) sign of "[S-0-0151](#)", the position feedback value of the reference point is more positive (alternative: more negative) than the one of the dedicated point. The homing direction does not have any influence.

S-0-0151 - Attributes	Function: Par	Editable: ALWAYS	Data length: 4Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_MV
	Unit: S-0-0076	Extr. val. ch.: +	Decim. pl.:
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:		min./max.: s. Text / s. Text	Default value: 0

4.2.46 S-0-0152, C0900 Position spindle command

Allocation	Hardware Funct. package(s): Device parameter: --
Function	Setting and enabling this command in the drive activates the "spindle positioning" function, if the drive is in drive enable. See also Functional Description "Spindle positioning"
Use	Here, we distinguish: <ul style="list-style-type: none"> • Absolute positioning: The drive travels to the target position entered in "S-0-0153, Spindle angle position". • Relative positioning: The travel distance entered in "S-0-0180, Spindle relative offset" is traveled. In both cases, the cyclic command values input by the control are ignored and the drive moves to the effective target position taking the parameters into account: <ul style="list-style-type: none"> • S-0-0372, Deceleration, quick stop • S-0-0154, Spindle positioning parameter • S-0-0222, Spindle positioning speed • S-0-0349, Bipolar jerk limit After the spindle positioning process is over, the " S-0-0336 , Status "In position"" message is set. In doing so, the command is not acknowledged as completed in the command acknowledgment.

Standard parameters

 If the drive is not in reference ([S-0-0403](#), Position feedback value status; bit 0 = 0), a homing procedure is automatically started before the positioning process.

S-0-0152 - Attributes

Function:	Cmd	Editable:	SUBD:OM	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: 0x0 / 0x3 Default value: ---

4.2.47 S-0-0153, Spindle angle position

Allocation Hardware
Funct. package(s):
Device parameter: --

Function This parameter contains the absolute target position (in the case of absolute positioning) for the command "[S-0-0152](#), C0900 Position spindle procedure command".

See also Functional Description "Spindle positioning"

See also description of parameter "[S-0-0180](#), Spindle relative offset"

S-0-0153 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	+	Decim. pl.:	
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: s. Text / s. Text Default value: 0

4.2.48 S-0-0154, Spindle positioning parameter

Allocation Hardware
Funct. package(s):
Device parameter: --

Function This parameter specifies the options of the "spindle positioning" function.

These can be selected:

- Spindle clockwise
- Spindle counter-clockwise
- Shortest distance
- Absolute positioning
- Relative positioning

Prerequisite: The position data format has to be "modulo" ([S-0-0076](#), Position data scaling type)!

See also Functional Description "Spindle positioning"

Structure

Bit	Designation/function	Comment
1/0	Spindle motion 00: Positive direction 01: Negative direction 10: Shortest distance	
2	Positioning 0: Absolute 1: Relative	

Tab. 4-30: Relevant bits in S-0-0154, Spindle positioning parameter

- Use**
- Using "[S-0-0417](#), Velocity threshold for positioning in modulo format", a threshold value can be set for the actual velocity. Above this threshold, the drive moves to a target position without a reversal of the direction of rotation, even if the setting in "[S-0-0154](#)" would have to cause a reversal of the direction of rotation! The value 0 deactivates "[S-0-0417](#)"; very low values might cause unpredictable drive behavior!
 - "[S-0-0418](#), Target position window in modulo format" can be used to define a symmetrical position range relative to the current position (target position window). Within this position range, the drive always moves to a target position over the shortest distance, even if only one direction of motion had been set for positioning in "[S-0-0154](#)"! The value 0 deactivates "[S-0-0418](#)".

S-0-0154 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	ALWAYS Format: BIN Decim. pl.: 0 Set-depend.: --	Data length: 2Byte
	AXS: min./max.: 0x0 / 0x7		Default value: 0x2	

4.2.49 S-0-0155, Friction compensation

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The content of " S-0-0155 " acts as additive torque/force command value and serves for compensation (feedforward) of potentially occurring static friction. See also functional description "Friction torque compensation"	
Use	<ul style="list-style-type: none"> The sign of the compensation value is defined by the sign of the velocity command value. The sign is only changed if the absolute of the velocity command value exceeds the velocity set in "S-0-0124, Standstill window". 	
 By activation of friction compensation, static friction can be compensated on acceleration from standstill and change of direction.		

S-0-0155 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0086 Cycl. tra.: MDT	Editable: Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	ALWAYS Format: DEC_OV Decim. pl.: -- Set-depend.: --	Data length: 2Byte
	AXS: min./max.: s. Text / s. Text		Default value: 0	

4.2.50 S-0-0156, Actual velocity value of encoder 2

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	" S-0-0156 " contains the velocity feedback value of encoder 2. It is generated in the velocity controller cycle. See also description of parameter " S-0-0053 , Position feedback value of encoder 2"			
S-0-0156 - Attributes	Function: Par Memory: -- Unit: S-0-0044 Cycl. tra.: AT	Editable: Validity ch.: -- Extr. val. ch.: -- Comb. check: --	ALWAYS Format: DEC_MV Decim. pl.: -- Set-depend.: --	Data length: 4Byte
	AXS: min./max.: --- / ---		Default value: ---	

Standard parameters

4.2.51 S-0-0157, Velocity window

Allocation	Hardware Funct. package(s): Device parameter:	--								
Function	The velocity window is an absolute threshold value. This value is the tolerance window or a part thereof, if the percentage-based threshold is also used at the same time.									
	<table border="1"> <thead> <tr> <th>Type of threshold</th> <th>Parameters</th> <th>Threshold value</th> <th>Explanation</th> </tr> </thead> <tbody> <tr> <td>Absolute threshold</td> <td>S-0-0157</td> <td>Absolute value of S-0-0157</td> <td>Fixed value</td> </tr> </tbody> </table>		Type of threshold	Parameters	Threshold value	Explanation	Absolute threshold	S-0-0157	Absolute value of S-0-0157	Fixed value
Type of threshold	Parameters	Threshold value	Explanation							
Absolute threshold	S-0-0157	Absolute value of S-0-0157	Fixed value							
S-0-0157 Velocity window										
<i>Tab. 4-31: Thresholds for "$n_{feedback} = n_{command}$" status</i>										

See also Functional Description "Status classes"

Use If the velocity feedback value is within the tolerance window determined by the firmware, the drive outputs status " $n_{feedback} = n_{command}$ ".

Message	Criterion	Firmware	Explanation
S-0-0330 = "1"	$n_{command,res}-n_{feedback} < \pm S-0-0157$		Absolute tolerance window
(Bit in S-0-0013)	$n_{command,res}-n_{feedback} < \pm (S-0-0157 + S-0-0036 + S-0-0037 + P-0-0690 * S-0-0272)$		Absolute plus command-value-percentage-based tolerance windows

S-0-0157 Velocity window
S-0-0272 Velocity window as percentage
S-0-0036 Velocity command value
S-0-0037 Additive velocity command value
S-0-0013 Class 3 diagnostics
 $n_{feedback}$ [S-0-0040](#), Velocity feedback value
 $n_{command,res}$ [S-0-0036](#) + [S-0-0037](#)

Tab. 4-32: Criteria for " $n_{feedback}=n_{command}$ " message

S-0-0157 - Attributes	Function: Par	Editable: ALWAYS	Data length: 4Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_OV
	Unit: S-0-0044	Extr. val. ch.: --	Decim. pl.:
	Cycl. tra.: MDT	Comb. check: --	Set-depend.: Grp. 1
AXS:		min./max.: s. Text / s. Text	Default value: 10000000

4.2.52 S-0-0158, Power threshold Px

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	The power message threshold is entered in this parameter. At a power work load above this threshold, the drive generates the message $P \geq Px$ (S-0-0337).			
See also Functional Description "Status classes"				
S-0-0158 - Attributes				
	Function: Par	Editable: ALWAYS		
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM		
	Unit: W	Extr. val. ch.: +		
	Cycl. tra.: MDT	Comb. check: --		
AXS:		min./max.: s. Text / s. Text		
		Default value: 0		

4.2.53 S-0-0159, Monitoring window of following distance

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	If an operation mode with internal position control is activated in the drive, the position control loop is monitored. For this purpose, an "actual position value for the model" is calculated and compared with the real position feedback value.		
	 The maximum deviation is always stored in parameter "P-0-0098, Max. Model deviation".		
See also diagnostics description F2028 Excessive deviation			
Use	With parameter "S-0-0159", the maximum tolerable deviation between the actual and the calculated "model position feedback value" can be set. If the position deviation exceeds the value set in "S-0-0159", the drive cannot follow the set point command value and error F2028 in class 1 is generated. Model monitoring is switched off with value "0" in the monitoring window.		
S-0-0159 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0076 Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: 10000000

4.2.54 S-0-0160, Acceleration data scaling type

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Various scaling types for acceleration data in the drive can be written and set as follows. The scaling type of the acceleration data determines the format and the relation in which the acceleration data is exchanged between the drive and the control or the interface. The values of the acceleration data parameters (e.g. S-0-0138, Bipolar acceleration) are displayed by the drive with the set scaling. The setting of the scaling is normally specified by the control.	
	 Any change in the parameter setting has an effect on the scaling. Thus, changing the setting has an effect on how velocity, position or acceleration data are displayed and processed in the drive.	
See also Functional Description "Scaling of physical data"		
Structure	Bit	Designation/function

Bit	Designation/function	Comment
2-0	Scaling type 001: Linear scaling 010: Rotary scaling 011: Ramp time	
3	0: Preferred scaling 1: Parameter scaling	

Standard parameters

Bit	Designation/function	Comment
4	Unit for linear scaling 0: Meter [m] 1: Inch [in] Unit for rotary scaling 0: Radian [rad] 1: Reserved	
5	Unit of time 0: Second [s ²] 1: Reserved	
6	Data reference 0: At motor shaft 1: At load	
15-7	Reserved	

Tab. 4-33: S-0-0160, Acceleration data scaling type

Use The following settings can be made:

With preferred scaling (bit 3 = 0), the following parameters are predefined and cannot be changed:

- [S-0-0161](#), Acceleration data scaling factor
- [S-0-0162](#), Acceleration data scaling exponent

In the case of parameter scaling, the scaling is set by inputting the desired parameter values.

S-0-0160 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--
AXS:		min./max.: --- / ---		Default value: 0x2	

4.2.55 S-0-0161, Acceleration data scaling type

Allocation Hardware
Funct. package(s):
Device parameter: --

Function This parameter and parameter "[S-0-0162](#), Acceleration data scaling exponent" are used to define the scaling factor and the decimal format (decimal place) of the acceleration data parameters in the drive when parameter scaling is used ([S-0-0160](#)).



Any change in the parameter setting has an effect on the scaling. Such a change therefore has an effect on the display and processing of velocity, position or acceleration data in the drive.



If preferred scaling is selected in "[S-0-0160](#)", the values in "[S-0-0161](#)" and "[S-0-0162](#)" are automatically set by the drive.

See also Functional Description "Scaling of physical data"

S-0-0161 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
------------------------------	---	--	--

AXS:	min./max.: s. Text / s. Text	Default value: 1
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4.2.56 S-0-0162, Acceleration data for scaling exponent

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter and parameter "S-0-0161, Acceleration data scaling factor" are used to define the scaling factor and the decimal format (decimal place) of the acceleration data parameters when parameter scaling is used (S-0-0160).	

 Any change in the parameter setting has an effect on the scaling. Such a change therefore has an effect on the display and processing of velocity, position or acceleration data in the drive.

 If preferred scaling is selected in "S-0-0160, Acceleration data scaling type", the values in "S-0-0161" and "S-0-0162" are automatically set by the drive.

See also Functional Description "Scaling of physical data"

S-0-0162 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
------------------------------	---	--	--

AXS:	min./max.: -10 / 0	Default value: ---
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4.2.57 S-0-0163, Weight counterbalance

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	For vertical axes, parameter "S-0-0163" can be used to avoid momentary dropping of vertical axes while drive enable is being set.	
Use	In parameter "S-0-0163", enter the torque / the force (S-0-0084) which the axis has to bring up to hold the load. For this purpose, read out the content of "S-0-0084" in controlled operation at axis standstill and transfer it to "S-0-0163".	
	Or use the automatic determination (activated in parameter "P-0-0556, Config word of axis controller", bit 12) of the load due to weight. In doing so, the drive measures the current torque when drive enable is switched off and transfers it to this parameter. The determined value is not stored in the flash! After the control voltage has been switched on and after switching to the operating mode, the value parameterized by the user is used rather than the one that is automatically determined.	

 In conjunction with the avoidance of dropping vertical axes the brake delay time is relevant, too!

S-0-0163 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0086 Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
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Standard parameters

AXS:	min./max.: s. Text / s. Text	Default value: 0
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4.2.58 S-0-0164, Actual acceleration value encoder 1

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In "S-0-0164" the acceleration feedback value of encoder 1 is displayed. "S-0-0164" is a velocity feedback value of encoder 1 that is differentiated and filtered during 4 ms.	
S-0-0164 - Attributes	Function: Par Memory: -- Unit: S-0-0160 Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --

AXS:	min./max.: s. Text / s. Text	Default value: ---
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4.2.59 S-0-0165, Distance-coded reference offset A

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	When using a distance-coded incremental encoder, the higher distance (division period) of the distance-coded reference marks is displayed in this parameter.	
	See also Functional Description "Establishing the position data reference"	
S-0-0165 - Attributes	Function: Par Memory: PARAM_SP Unit: DP Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
		Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --

AXS:	min./max.: s. Text / s. Text	Default value: 1001
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4.2.60 S-0-0166, Distance-coded reference offset B

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	When using a distance-coded incremental encoder, the lower distance (division period) of the distance-coded reference marks is displayed in this parameter.	
	See also Functional Description "Establishing the position data reference"	
S-0-0166 - Attributes	Function: Par Memory: PARAM_SP Unit: DP Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
		Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --

AXS:	min./max.: s. Text / s. Text	Default value: 1000
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4.2.61 S-0-0169, Probe control parameter

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used to configure the features of the probe function specified in "Sercos interface".	

 Advanced probe functions can be configured using "[P-0-0226, Probe, extended control word](#)"!

See also Functional Description "Probe function"

Structure	Bit	Designation/function	Comment
	0	Activating pos. edge probe 1 0: Pos. edge is not evaluated 1: Pos. edge is evaluated	
	1	Activating neg. edge probe 1 0: Neg. edge is not evaluated 1: Neg. edge is evaluated	
	2	Activating pos. edge probe 2 0: Pos. edge is not evaluated 1: Pos. edge is evaluated	
	3	Activating neg. edge probe 2 0: Neg. edge is not evaluated 1: Neg. edge is evaluated	
	5	Enabling mode probe 1 0: Single measurement: After every measurement a new measurement has to be activated by a 0-1 change of the enable signal 1: Continuous measurement: The measurement is carried out as long as the enable signal remains at "1"	
	6	Enabling mode probe 2 0: Single measurement: After every measurement a new measurement has to be activated by a 0-1 change of the enable signal 1: Continuous measurement: The measurement is carried out as long as the enable signal remains at "1"	
	8	Activating the probe function 0: Auto-activation deactivated 1: Auto-activation activated	

Tab. 4-34: Relevant bits of S-0-0169, Probe control parameter

Use**Bit 1/0:** Activating edge probe 1From the operation mode (OM) on, these bits may only be set if a probe input ([P-0-0300](#), ...) has been assinged to "[S-0-0401](#), Probe 1".**Bit 3/2:** Activating edge probe 2From the operation mode (OM) on, these bits may only be set if a probe input ([P-0-0300](#), ...) has been assinged to "[S-0-0402](#), Probe 2".**Bit 8:** Activating the probe functionIf this bit has been set to "1", the command "[S-0-0170](#), Probing cycle procedure command" is automatically activated when changing from the parameter mode (PM, P2) to the operating mode (OM, P4, bb, Ab). After the change to the operating mode, this bit does not have any other significance (resetting and repeatedly setting the bit will not have any effect).However, the probe function can be deactivated and, if necessary, activated again via "[S-0-0170](#)".

Standard parameters

S-0-0169 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: +	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: 0x0

4.2.62 S-0-0170, Probing cycle procedure command

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	By setting and enabling the "probing cycle procedure" command the drive reacts to the following parameters.	
<ul style="list-style-type: none"> • S-0-0405, Probe 1 enable/S-0-0406, Probe 2 enable • S-0-0401, Probe 1/S-0-0402, Probe 2 <p>This may be set in "S-0-0169, Probe control parameter".</p>		



If bit 8 of the parameter "[S-0-0169](#), Probe control parameter" has been set, the probing cycle procedure command is set during the transition from the parameter mode (PM) to the operating mode (OM).

Structure See also Functional Description "Probe function"

Bit	Designation/function	Comment
0	Command in the drive 0: Clear 1: Set	
1	Command execution 0: Interrupt 1: Execute	

Tab. 4-35: *S-0-0170, Probing cycle procedure command*

Use During the active command, the control unit may perform multiple measurements. If no new measurements are desired, the control unit cancels the command.

S-0-0170 - Attributes	Function: Cmd Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: SUBD:OM Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: 0x0 / 0x3		Default value: ---

4.2.63 S-0-0171, C4400 Calculate displacement procedure command

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The procedure in which the master uses the travel motion for searching the dedicated point to establish the position data reference is referred to as "NC-controlled homing". The entire procedure is supported by three sub-commands on the drive-side:	
<ul style="list-style-type: none"> • NC-controlled homing procedure command (S-0-0146) • Calculate displacement procedure command (S-0-0171) • Displacement to referenced system procedure command (S-0-0172) 		

See also Functional Description "Establishing position data reference for relative measuring systems"

Structure

Bit	Designation/function	Comment
0	Command in the drive 0: Clear 1: Set	
1	Command execution 0: Interrupt 1: Execute	

Tab. 4-36: S-0-0171, C4400 Calculate displacement procedure command

Use

The master can start the command C4400 after the drive has successfully completed the command "C4300 NC-controlled homing procedure" for searching the dedicated point. Using C4400, the drive calculates the required position feedback value displacement to establish the axis zero point reference of the position feedback values.

The displacement value is displayed in

- [S-0-0175](#), Offset of position feedback value of encoder 1 or

the drive then acknowledges command execution. The master thereupon clears the command.

S-0-0171 - Attributes

Function:	Cmd	Editable:	SUBD:OM	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: 0x0 / 0x3			
Default value: ---					

4.2.64 S-0-0172, C4500 Displacement to referenced system procedure command

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

At the start of the command the drive switches to the referenced actual position value system, enters the referenced actual position value 1 ([S-0-0051](#)) and signals this in the parameter "[S-0-0403](#), Position feedback value status". To inform the master on the switching action in real time, the bit⁰ from "[S-0-0403](#)" can be assigned to a real-time status bit.

See also Functional Description "Establishing position data reference for relative measuring systems"

Structure

Bit	Designation/function	Comment
0	Command in the drive 0: Clear 1: Set	
1	Command execution 0: Interrupt 1: Execute	

Tab. 4-37: S-0-0172, C4500 Displacement to referenced system procedure command

Standard parameters

- Use**
- During the active command, the master switches to the referenced position command value system and signals this with "S-0-0404, Position command value status".
 - To inform the drive on the switching action in a manner chronologically consistent with the switching of the cyclic command values, the "bit 0" from "S-0-0404" must have been assigned to a real-time control bit.
 - The drive completes the command correctly if the bits "S-0-0403, Position feedback value status" and "S-0-0404" have been set.
 - The "position command value status" bit has to be set by the control independent of the operation mode.

S-0-0172 - Attributes	Function: Cmd	Editable:	SUBD:OM	Data length:	2Byte
	Memory: --	Validity ch.:	--	Format:	BIN
	Unit: --	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.: --	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: 0x0 / 0x3	Default value: ---
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4.2.65 S-0-0173, Marker position A

- Allocation** Hardware
Funct. package(s): --
Device parameter: --
- Function** For a drive with incremental measuring system during drive-controlled homing, the position feedback value of the reference mark (zero pulse) is stored in this parameter. This position feedback value still refers to the old coordinate system (before switchover of the coordinate system on execution of homing).
- Use** If the drive is fitted with an encoder 2, additionally to encoder 1, bit 3 defines from "S-0-0147, Homing parameter" in which encoder the position of the reference mark is stored!



For incremental encoders with distance-coded reference marks, the position feedback value of the reference mark first recognized during homing (C0600) is stored in this parameter! The position feedback value of the second reference mark is stored in "S-0-0174, Marker position B"!

S-0-0173 - Attributes	Function: Par	Editable:	--	Data length:	4Byte
	Memory: --	Validity ch.:	--	Format:	DEC_MV
	Unit: S-0-0076	Extr. val. ch.:	--	Decim. pl.:	--
	Cycl. tra.: AT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.2.66 S-0-0174, Marker position B

- Allocation** Hardware
Funct. package(s): --
Device parameter: --
- Function** For a drive with incremental measuring system with distance-coded reference marks during drive-controlled homing (C0600), the position feedback value of the reference mark recognized second is stored in this parameter. This position feedback value still refers to the old coordinate system (before switchover of the coordinate system on execution of homing).
- Use** If the drive is fitted with an encoder 2, additionally to encoder 1, bit 3 defines from "S-0-0147, Homing parameter" in which encoder the position of the reference mark is stored.



For incremental encoders with distance-coded reference marks, C1400 Command Get marker position is applied to store the position feedback value of the reference mark first recognized in parameter "S-0-0173, Marker position A". Afterwards, the command is reset. In this process, "S-0-0174" is not written.

S-0-0174 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

4.2.67 S-0-0175, Offset of position feedback value of encoder 1

Allocation Hardware --
Funct. package(s):
Device parameter:

Function Display parameters which shows the difference between the position reference system for encoder 1 before and after "referencing" or "setting the absolute position".

S-0-0175 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	--	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	+	Decim. pl.:	
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: s. Text / s. Text Default value: ---

4.2.68 S-0-0176, Offset of position feedback value of encoder 2

Allocation Hardware --
Funct. package(s):
Device parameter:

Function Display parameter which shows the difference between the position reference systems before and after homing or setting the absolute position for encoder 2.

S-0-0176 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	--	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	+	Decim. pl.:	
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: s. Text / s. Text Default value: ---

4.2.69 S-0-0177, Absolute offset encoder 1

Allocation Hardware --
Funct. package(s):
Device parameter:

Function This parameter is required for homing of a distance-coded encoder 1. It describes the offset between zero point of encoder 1 (position of 1st reference mark of encoder 1) and the machine zero point.

See also Functional Description "Establishing the position data reference"

Use The correct value for this parameter is determined in two steps:

- First the value "0" is entered in "[S-0-0177](#)" and the command "[S-0-0148](#) C0600 Drive-controlled homing procedure command" is executed. The actual position value 1 in "[S-0-0051](#)" then displays the current position with regard to the zero point of encoder 1.
- If the axis is then moved to the machine zero point by means of jogging, the value displayed in "[S-0-0051](#)" at the zero point has to be read and entered in "[S-0-0177](#)" with inverted sign.

Standard parameters

After the homing command has been carried out again, the value in "[S-0-0051](#)" then displays the position with regard to the machine zero point.

 If the drive is fitted with an encoder 2, additionally to encoder 1, bit 3 defines from "[S-0-0147](#), Homing parameter" the encoder to be homed.

S-0-0177 - Attributes	Function: Par	Editable: ALWAYS	Data length: 4Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_MV
	Unit: S-0-0076	Extr. val. ch.: +	Decim. pl.:
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 0

4.2.70 S-0-0178, Absolute offset encoder 2

Allocation Hardware
Funct. package(s):
Device parameter: --

Function This parameter is required for homing a distance-coded external encoder 2. It is the offset between the zero point of the encoder (position of the 1st reference mark of encoder 2) and the machine zero point.

See also Functional Description "Establishing the position data reference"

Use The correct value for this parameter is determined in two steps:

- First the value "0" is entered in "[S-0-0178](#)" and the command "[S-0-0148](#), C0600 Drive-controlled homing procedure command" is executed. The position feedback value 2 in "[S-0-0053](#)" then displays the current position with regard to the zero point of encoder 2.
- If the axis is then jogged to the machine zero point, the value displayed in "[S-0-0053](#)" at that point has to be read and entered in "[S-0-0178](#)" with inverted sign.

After the homing command has been carried out again, the value in "[S-0-0053](#)" then displays the position with regard to the machine zero point.

 If the drive has been equipped with an encoder 2 in addition to encoder 1, bit 3 of "[S-0-0147](#), Homing parameter" determines which encoder is homed!

S-0-0178 - Attributes	Function: Par	Editable: ALWAYS	Data length: 4Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_MV
	Unit: S-0-0076	Extr. val. ch.: +	Decim. pl.:
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 0

4.2.71 S-0-0179, Probe status

Allocation Hardware
Funct. package(s):
Device parameter: --

Function If the drive saves one or multiple measured values, it simultaneously sets the corresponding bit in the probe status.

 The probe evaluation must have been activated!

See also Functional Description "Probe function"

Structure	Bit	Designation/function	Comment
	0	Probe value 1 positive 0: not recorded 1: recorded	
	1	Probe value 1 negative 0: not recorded 1: recorded	
	2	Probe value 2 positive 0: not recorded 1: recorded	
	3	Probe value 2 negative 0: not recorded 1: recorded	
	4	Probe 1, marker failure status (P-0-0224 and P-0-0206) 0: Failures < max. value 1: Failures ≥ max. value	
	5	Probe 2, marker failure status (P-0-0225 and P-0-0207) 0: Failures < max. value 1: Failures ≥ max. value	
	15-6	Reserved	

Tab. 4-38: Probe status

Use Deleting the probe status bits:

- If the control deletes the enabling of probe 1 ([S-0-0405](#)), the drive deletes bit 0, bit 1 and bit 4 in the probe status.
- If the control deletes the enabling of probe 2 ([S-0-0406](#)), the drive deletes bit 2, bit 3 and bit 5 in the probe status.
- The drive deletes all bits if the probing cycle procedure command ([S-0-0170](#)) is deleted by the control, or if the bit for activating the probe evaluation is reset in "[P-0-0226](#), Probe, extended control word".

S-0-0179 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: ---

4.2.72 S-0-0180, Spindle relative offset

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter contains the travel distance (in the case of relative positioning) for the command "[S-0-0152](#), C0900 Position spindle procedure command".



"[S-0-0430](#), Effective target position" displays the effective absolute target position with the command "[S-0-0152](#), C0900 Position spindle procedure command" being active.

Standard parameters

	See also Functional Description "Spindle positioning"				
S-0-0180 - Attributes	Function: Par	Editable:	ALWAYS	Data length:	4Byte
	Memory: PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
	Unit: S-0-0076	Extr. val. ch.:	+	Decim. pl.:	
	Cycl. tra.: --	Comb. check:	--	Set-depend.:	--
	AXS:		min./max.: s. Text / s. Text	Default value: 0	

4.2.73 S-0-0185, Length of the configurable data record in the AT

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	The parameter contains the maximum length of data (in bytes) to be configured in the cycl. feedback values (AT). EtherCAT: Maximum length of cycl. data configured in " S-0-0016 ".				
See also Functional Description "EtherCAT"					
S-0-0185 - Attributes	Function: Par	Editable:	--	Data length:	2Byte
	Memory: --	Validity ch.:	--	Format:	DEC_OV
	Unit: Byte	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.: --	Comb. check:	--	Set-depend.:	--
	AXS:		min./max.: --- / ---	Default value: ---	

4.2.74 S-0-0186, Length of the configurable data record in the MDT

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	The parameter contains the maximum length of data (in bytes) to be configured in the cycl. command values (MDT). EtherCAT: Maximum length of cycl. data configured in " S-0-0024 ".				
See also Functional Description "EtherCAT"					
S-0-0186 - Attributes	Function: Par	Editable:	--	Data length:	2Byte
	Memory: --	Validity ch.:	--	Format:	DEC_OV
	Unit: Byte	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.: --	Comb. check:	--	Set-depend.:	--
	AXS:		min./max.: --- / ---	Default value: ---	

4.2.75 S-0-0187, List of configurable data in the AT

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	This list contains the IDNs of the parameters or operating data which can be configured in the actual value telegram. See also Functional Description "Basic functions of master communication" and "Master communication" See also parameter description " S-0-0016 , Configuration list of AT" and " S-0-1050.x.6 , SIII-Connection: Configuration list"				
S-0-0187 - Attributes	Function: Par	Editable:	--	Data length:	4Byte var.
	Memory: --	Validity ch.:	--	Format:	IDN
	Unit: --	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.: --	Comb. check:	--	Set-depend.:	--
	AXS:		min./max.: --- / ---	Default value: ---	

4.2.76 S-0-0188, List of configurable data in the MDT

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This list contains the IDNs of the parameters or operating data which can be configured in the command value telegram. See also Functional Description "Basic functions of master communication" and "Master communication" See also parameter description " S-0-0024, Configuration list of MDT " and " S-0-1050.x.6, SIII-Connection: Configuration list "		
S-0-0188 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: IDN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

4.2.77 S-0-0189, Following distance

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	If an operation mode with drive-internal position control is activated, the current difference between the position command value (P-0-0434) and the position feedback value (S-0-0051/S-0-0053) is displayed in parameter " S-0-0189, Following distance ". See also Functional Description "Position controller"		
S-0-0189 - Attributes	Function: Par Memory: -- Unit: S-0-0076 Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: DEC_MV Decim. pl.: -- Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

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Fig. 4-21: *S-0-0189, Position control loop control deviation (following distance)*

The content of "[S-0-0189, Following distance](#)" therefore corresponds to the control deviation of the position controller which is also used for many status messages. If position control is not active, the value of the parameter is set to "0".

S-0-0189 - Attributes	Function: Par Memory: -- Unit: S-0-0076 Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: DEC_MV Decim. pl.: -- Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

4.2.78 S-0-0190, C4200 Drive-controlled oscillation command

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter starts the "drive-controlled oscillation" function. The command is processed via the drive-internal speed control. The drive automatically generates the command value characteristic for the oscillating motion.	

Standard parameters

See also Functional Description "Drive-controlled oscillation"

See also Functional Description "Command processing"

S-0-0190 - Attributes	Function: Cmd	Editable: SUBD:OM	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: BIN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:	min./max.: 0x0 / 0x3		Default value: ---

4.2.79 S-0-0191, C1500 Cancel reference point procedure command

Allocation	Hardware Funct. package(s): Device parameter:	--									
Function	With setting and enabling the command "Cancel reference point procedure command", the reference of the encoder defined via " S-0-0147 , Homing parameter" is deleted. The position feedback value status (S-0-0403 ; Bit 0) is also deleted. In addition, "P-0-10x2 Absolute encoder offset" of the defined encoder and the related "P-0-017x encoder x absolute encoder buffer" are set to invalid.										
	See also Functional Description "Establishing position data reference for relative measuring systems"										
	See also Functional Description "Command processing"										
Structure											
	<table border="1"> <thead> <tr> <th>Bit</th><th>Designation/function</th><th>Comment</th></tr> </thead> <tbody> <tr> <td>0</td><td>Command in the drive 0: Clear 1: Set</td><td></td></tr> <tr> <td>1</td><td>Command execution 0: Interrupt 1: Execute</td><td></td></tr> </tbody> </table>	Bit	Designation/function	Comment	0	Command in the drive 0: Clear 1: Set		1	Command execution 0: Interrupt 1: Execute		
Bit	Designation/function	Comment									
0	Command in the drive 0: Clear 1: Set										
1	Command execution 0: Interrupt 1: Execute										

Tab. 4-39: Cancel reference point procedure command

The command is properly ended by the drive if the Position feedback value status bit is set to "0" and the position feedback value of the active measuring system is no longer related to the machine zero point (not homed).

S-0-0191 - Attributes	Function: Cmd	Editable: ALWAYS	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: BIN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:	min./max.: 0x0 / 0x3		Default value: ---

4.2.80 S-0-0192, IDN-list of all backup operation data

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In this list, the IDNs of those parameters are stored the values of which must be loaded for proper operation.	
	See also Functional Description "Parameters, general information"	
Use	Depending on the setting in " S-0-0269 , Storage mode", these parameters are also stored, continuously or in a command-controlled way, in the internal, non-volatile memory.	

	The control unit should use this parameter in order to make a backup copy of parameter.
---	---

S-0-0192 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	--	Validity ch.:	--	Format:	IDN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.2.81 S-0-0193, Positioning jerk**Allocation**

Hardware	--
Funct. package(s):	
Device parameter:	

Function

The acceleration change per time unit is limited by the positioning jerk in the following operating modes:

- Drive-internal interpolation and
- Drive-controlled positioning

	The value "0" deactivates the jerk filter.
---	--

See also Functional Description Drive-controlled positioning

S-0-0193 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0160	Extr. val. ch.:	+	Decim. pl.:	
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	Grp. 1

AXS:	min./max.: s. Text / s. Text	Default value: 0
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4.2.82 S-0-0195, Actual acceleration value encoder 2**Allocation**

Hardware	--
Funct. package(s):	
Device parameter:	

Function

The acceleration feedback value of encoder 2 is displayed in "[S-0-0195](#)". "[S-0-0195](#)" is a velocity feedback value of encoder 2 that is differentiated and filtered over 4 ms.

S-0-0195 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0160	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: ---
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4.2.83 S-0-0197, C3300 Set coordinate system procedure command**Allocation**

Hardware	--
Funct. package(s):	
Device parameter:	

Function

With "[S-0-0197](#), C3300 Set coordinate system procedure command" the drive is uncoupled from the control and set to drive-controlled standstill. Like in "drive halt", this is realized depending on the active operating mode by means of a position ramp or speed ramp. At standstill, "[S-0-0198](#), Initial coordinate value" is now entered into the display position system.

See also Functional Description "Command processing"

S-0-0197 - Attributes

Function:	Cmd	Editable:	SUBD:OM	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

Standard parameters

AXS:	min./max.: 0x0 / 0x3	Default value: ---
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4.2.84 S-0-0198, Initial coordinate value

Allocation Hardware
Funct. package(s):
Device parameter: --

Function At standstill, the initial coordinate value is now entered into the display position system.

S-0-0198 - Attributes	Function: Par	Editable: ALWAYS	Data length: 4Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_MV
	Unit: S-0-0076	Extr. val. ch.: +	Decim. pl.:
	Cycl. tra.: MDT	Comb. check: --	Set-depend.: --

AXS:	min./max.: s. Text / s. Text	Default value: 0
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4.3 S-0-0200 to S-0-0399 Standard parameters**4.3.1 S-0-0201, Motor warning temperature**

Allocation Hardware
Funct. package(s):
Device parameter: --

Function If the motor temperature exceeds the motor warning temperature, the drive sets bit 2 (motor overtemperature warning) in "[S-0-0012](#), Class 2 diagnostics" and the warning is returned.

See also Functional Description "Motor temperature monitoring"

S-0-0201 - Attributes	Function: Par	Editable: SUBD:CM+PM	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_MV
	Unit: S-0-0208	Extr. val. ch.: +	Decim. pl.:
	Cycl. tra.: --	Comb. check: --	Set-depend.: Grp. 4

AXS:	min./max.: s. Text / s. Text	Default value: 14500
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4.3.2 S-0-0204, Motor shutdown temperature

Allocation Hardware
Funct. package(s):
Device parameter: --

Function If the motor temperature exceeds the motor shutdown temperature, the drive sets bit 2 (motor overtemperature shutdown) in "[S-0-0011](#), Class 1 diagnostics" and error F2019 is generated.

See also Functional Description "Motor temperature monitoring"

S-0-0204 - Attributes	Function: Par	Editable: SUBD:CM	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_MV
	Unit: S-0-0208	Extr. val. ch.: +	Decim. pl.:
	Cycl. tra.: --	Comb. check: --	Set-depend.: Grp. 4

AXS:	min./max.: s. Text / s. Text	Default value: 15500
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4.3.3 S-0-0206, Drive On delay time

Allocation Hardware
Funct. package(s):
Device parameter: --

Function The parameter "[S-0-0206](#)" is used for the defined delay of the status message "drive follows command values" ([S-0-0135](#), Drive status bit 3 = 1), since a certain time passes between control and the moment the holding brake is actually released (inductive and mechanical behavior).

See also Functional Description "Motor holding brake"

Use The following aspects have to be observed for use:

To avoid movement against the applied brake while drive enable is switched on, take the release delay of the holding brake into account for command value input, too.



- For Rexroth motors with feedback data memory, the content of "S-0-0206" is automatically set when the controller default values are loaded.
- If the delay stored in the feedback is too short, it can be increased.

S-0-0206 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	ms	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 5

AXS: min./max.: s. Text / s. Text Default value: 0,0

4.3.4 S-0-0207, Drive Off delay time

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

The value of this parameter is the time distance between the control for applying the holding brake and torque/force disable of the motor (drive enable switched off internally).

See also Functional Description "Motor holding brake"

Use

The value should be at least as high as the clamping delay of the holding brake to ensure that unbalanced, vertical axes do not move down when drive enable is switched off.



For Rexroth motors with feedback data memory, the content of "S-0-0207" is automatically set by executing the "loading controller default values" command.

S-0-0207 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	ms	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 5

AXS: min./max.: s. Text / s. Text Default value: 0,0

4.3.5 S-0-0208, Temperature data scaling type

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter serves to define the unit of the temperature data of the drive. The values are displayed including the first decimal place.

Structure

Bit	Designation/function	Comment
0	Temperature data in 0: Degrees Celsius (°C) 1: Fahrenheit (F)	
15...1	Reserved	

Tab. 4-40: Settings for Temperature Data

Standard parameters

S-0-0208 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: +	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: 0x0

4.3.6 S-0-0209, Lower adaption limit

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The parameter is required for adapting the velocity controller (P-term, I-term). It defines the velocity at which the controller adaption is started.		
Use	The lower adaption limit and the upper adaption limit (S-0-0210) define the range for adjustment of the velocity controller.		
	<ul style="list-style-type: none"> Below the lower limit, constant adaption factors are effective. Between the limits, the adaption factor is decreased or increased depending on the velocity. Above the upper limit, the parameterized controller values are effective. The adaption factor is 100%. 		
S-0-0209 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0044 Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: -- Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: 0	

4.3.7 S-0-0210, Upper adaption limit

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The parameter is required for adapting the velocity controller (P-term, I-term). It defines the velocity at which the controller adaption is ended.		
Use	The lower adaption limit (S-0-0209) and the upper adaption limit define the range for adjusting the velocity controller.		
	<ul style="list-style-type: none"> Below the lower limit, constant adaption factors are effective. Between the limits, the adaption factor is decreased or increased depending on the velocity. Above the upper limit, the parameterized controller values are effective. The adaption factor is 100%. 		
S-0-0210 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0044 Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: -- Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: 10000000	

4.3.8 S-0-0211, Proportional gain adaption factor

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter is required for adapting the velocity controller (P-term). It specifies the factor for adjusting the proportional gain of the controller.	
Use	<ul style="list-style-type: none"> The P gain is increased/decreased by the percentage factor (100 % = inactive) 	

- Below the lower limit, the constant adaption factor is effective.
- Between the limits, the adaption factor is decreased or increased depending on the velocity.
- Above the upper limit, the parameterized controller values are effective. The adaption factor is 100%.

S-0-0211 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: 10,0 / 600,0		Default value: 100,0

4.3.9 S-0-0212, Integral action time adaption factor

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The parameter is required for adapting the velocity controller (I-term). It specifies the factor for adapting the I-gain of the controller.		
Use	<ul style="list-style-type: none"> • The I-gain is increased/decreased by the percentage factor (100% = inactive) • Below the lower limit, the constant adaption factor is effective. • Between the limits, the adaption factor is decreased or increased depending on the velocity. • Above the upper limit, the parameterized controller values are effective. The adaption factor is 100%. 		
S-0-0212 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: 10,0 / 600,0		Default value: 100,0

4.3.10 S-0-0213, Oscillation speed

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The oscillation speed is the amplitude of speed oscillation around the "S-0-0214, Oscillation offset speed".		
	See also Functional Description "Drive-controlled oscillation"		
S-0-0213 - Attributes	Function: Par Memory: PARAM_SP Unit: s_text Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: -- Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 800000

4.3.11 S-0-0214, Oscillation offset speed

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The oscillation offset speed is the average value of speed oscillation. See also Functional Description "Drive-controlled oscillation"	

Standard parameters

S-0-0214 - Attributes	Function: Par Memory: PARAM_SP Unit: s. text Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 100000

4.3.12 S-0-0215, Oscillation cycle time

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The oscillation cycle time is the periodic time of speed oscillation. See also Functional Description "Drive-controlled oscillation"	
S-0-0215 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: 400,0

4.3.13 S-0-0222, Spindle positioning speed

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In this parameter, the maximum speed is entered at which the spindle rotates upon the command " S-0-0152 , C0900 Position spindle procedure command". See also Functional Description "Command processing" See also Functional Description "Spindle positioning"	
Use	With " S-0-0372 , Deceleration, quick stop", the motor accelerates to this speed to move to the target position entered in " S-0-0153 , Spindle angle position" or to travel the travel distance entered in " S-0-0180 , Spindle relative offset".	
S-0-0222 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0044 Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: 0

4.3.14 S-0-0240, DC Bus Power Control

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In this parameter, the control shows the inverter that the DC bus voltage has charging capacity. The control now has to evaluate the readiness for power output of the supply module and transmit it to the inverter. If the DC bus voltage measured by the inverter is greater than " P-0-0114 " and bit 0 of " S-0-0240 " is one, " P-0-0115 , bit 15" or " S-0-0135 , bit 15" is set in the axis status word. The inverter is now "drive ready" (Ab).	
Structure	The bits of the parameter have the following significance:	

Bit	Designation/function	Comment
0	DC bus ready for power output 0: The DC bus is not ready for power supply (axis signals control section ready for operation "bb") 1: The DC bus is ready for power output and power consumption (axis signals drive ready "Ab")	

Tab. 4-41: Relevant bits of S-0-0240

S-0-0240 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.3.15 S-0-0258, Target position

Allocation Hardware --
 Funct. package(s):
 Device parameter:

Function Via this parameter, the control target position is set for a drive in "drive-internal interpolation" mode.
 The drive moves with internally generated position command value characteristic to target position ([S-0-0258](#)) and takes into account the positioning velocity ([S-0-0259](#)) as well as the maximum positioning acceleration ([S-0-0260](#)) or positioning deceleration ([S-0-0359](#)), the maximum positioning jerk ([S-0-0193](#)) and the feedrate override ([S-0-0108](#)).

S-0-0258 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	+	Decim. pl.:	
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: ---
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4.3.16 S-0-0259, Positioning velocity

Allocation Hardware --
 Funct. package(s):
 Device parameter:

Function With this parameter, the maximum velocity is set for the drive in "drive-internal interpolation" mode to move to target position ([S-0-0258](#), Target position).

S-0-0259 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	S-0-0044	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: 1000000
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4.3.17 S-0-0260, Positioning acceleration

Allocation Hardware --
 Funct. package(s):
 Device parameter:

Function With this parameter, the maximum acceleration is set for the drive in "drive-internal interpolation" and "drive-controlled positioning" mode to move to target position ([S-0-0258](#), Target position or [S-0-0282](#), Positioning command value).

See also Functional Description "Drive-controlled positioning"

Standard parameters

Use The drive-internally generated position command value characteristic takes into account the positioning acceleration ([S-0-0260](#)) or deceleration ([S-0-0359](#)) as well as the maximum positioning velocity ([S-0-0259](#)), the maximum positioning jerk ([S-0-0193](#)) and the feedrate override ([S-0-0108](#)).



The acceleration is limited to the value of "[S-0-0138](#), Bipolar acceleration limit value". With the value of "0", parameter "[S-0-0138](#)" becomes effective. The value of parameter "[S-0-0260](#), Positioning acceleration" should always be smaller than the value of the parameter "[S-0-0138](#), Bipolar acceleration limit value" because otherwise a lag error will build up due to internal control processes. If the value 0 is input for the parameter, the parameter "[S-0-0138](#)" takes effect.

S-0-0260 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0160	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: 10000000
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4.3.18 S-0-0261, Coarse position window

Allocation Hardware
Funct. package(s): --
Device parameter:

Function The parameter "[S-0-0261](#), Coarse position window" is used for the status message "In Position coarse" ([S-0-0013](#), Class 3 diagnostics, bit 11 = 1) |Lag error ([S-0-0189](#))| < position window ([S-0-0261](#)).

See also parameter description "Status classes, status displays, control parameters"

S-0-0261 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	+	Decim. pl.:	
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	Grp. 1

AXS:	min./max.: s. Text / s. Text	Default value: 50000
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4.3.19 S-0-0262, C07_x Load defaults procedure command

Allocation Hardware
Funct. package(s): --
Device parameter:

Function Parameter "C07_x Load defaults procedure command" can be used to load different default parameter values, depending on "[P-0-4090](#), Configuration for loading default values".

See also Functional Description "Loading, storing and saving parameters"

Use The following parameter values can be loaded:

- Motor-specific controller values:** The motor-specific control loop parameter values (adjustment of controller to motor, default setting of [P-0-4090](#)) stored in the encoder of the motor are loaded.

Possible in parameterization or operating mode.

Parameters which are protected by the customer password remain unchanged.

- Factory settings:** Default values stored in the firmware are loaded (firmware-specific default values for non-volatile parameters). "[P-0-4090](#)" can be used to mask selected parameter groups.

NOTICE

Damage to the internal memory (flash) caused by too many write accesses!

Execution of this parameter command requires writing to the internal memory (flash). Since each flash memory allows only a limited number of write accesses before its cells are destroyed, such write accesses should not be made too often.



When this command is executed, optimized axis-specific and/or safety-technology-specific parameter values might be overwritten!
⇒ Execute this command only on initial commissioning.

S-0-0262 - Attributes

Function:	Cmd	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---			
Default value: ---					

4.3.20 S-0-0263, C2300 Load working memory procedure command

Allocation

Hardware
Funct. package(s):
Device parameter:

Function

This command copies the application parameters from the active non-volatile memory to the volatile memory of the drive controller (RAM). The active non-volatile memory is the internal flash memory.

Application parameters are all parameters listed in "S-0-0192, IDN-list of all backup operation data".

See also Functional Description "Loading, storing and saving parameters"

S-0-0263 - Attributes

Function:	Cmd	Editable:	SUBD:CM+PM	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---			
Default value: ---					

4.3.21 S-0-0264, C2200 Backup working memory procedure command

Allocation

Hardware
Funct. package(s):
Device parameter:

Function

This command saves the application parameters from the volatile memory of the drive controller (RAM) in the active non-volatile memory. The active non-volatile memory is the internal flash memory.

Application parameters are all parameters listed in "S-0-0192, IDN-list of all backup operation data".

NOTICE

Damage to the internal memory (flash) caused by too many write accesses!

Execution of this parameter command requires writing to the internal memory (flash). Since each flash memory allows only a limited number of write accesses before its cells are destroyed, you should not make such write accesses too frequently.

See also Functional Description "Loading, storing and saving parameters"

Standard parameters

S-0-0264 - Attributes	Function: Cmd Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

4.3.22 S-0-0265, Language selection

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	All parameter names, units and diagnostic/error messages are stored in the device in several languages. This parameter defines the language of the text output.		
<ul style="list-style-type: none"> • 0: German • 1: English • 2: French • 3: Spanish • 4: Italian 			
 The language selection only takes effect for diagnostic texts. Parameter texts and parameter units are output in English.			
Function	See also Functional Description "Coded diagnostic messages of the drive"		
S-0-0265 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: 0

4.3.23 S-0-0267, Password

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter serves to enter and activate a customer password. By default, the password is 007. This allows writing of all parameters.	
<p>See also Functional Description "Using a password"</p>		
Use	The customer password protects the values of the parameters contained in "S-0-0279, IDN-list of password-protected operation data" against inadvertent or unauthorized changes.	
 The following parameters are always protected by the customer password irrespective of "S-0-0279":		
<ul style="list-style-type: none"> • "S-0-0279, IDN-list of password-protected operation data" • "P-0-1535, Setting of IP communication" (deactivation of IP service) • "P-0-4064.0.1, Password configuration" 		
 Bosch Rexroth reserves the right to the function of a master password. In this context, the parameter additionally serves to enable customer service functions (P-0-4064 , Password level).		

The customer password has to comply with the following conditions:

- At least 3 characters long
 - A maximum of 10 characters long
 - May only contain the characters a...z, A...Z and the numbers 0...9
- Display of the customer password ([S-0-0267](#)) depends on the password level ([P-0-4064](#)):
- 007 - No customer password set (password level = 0)
 - \$\$\$ - Customer password activated and device unlocked (password level = 1)
 - *** - Customer password activated and device locked (password level = 2)
 - XXX - Password entry locked after multiple incorrect attempts (password level < 0)

If password entry is locked, the negative value in "[P-0-4064](#)" indicates the remaining locking time in seconds. The locking time is activated after multiple incorrect attempts and then triggered at each additional incorrect attempt. After correct entry of the password or reboot, multiple incorrect attempts can be made again.

The first incorrect attempt after unlocking of an axis leads to repeated locking and is not counted as incorrect attempt.

S-0-0267 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: s. Text

4.3.24 S-0-0269, Storage mode

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter defines the mode for saving the parameter values. Depending on the setting, there is the following behavior (bit 0):	<ul style="list-style-type: none"> • 0: Changes in the parameter are maintained, even if 24-V voltage fails (non-volatile behavior). • 1: Changes in the parameter get lost after 24V have been switched off (volatile behavior).

See also Functional Description Loading, storing and saving parameters

Use



The number of writing cycles for the device memory is limited; therefore, set the storage mode to "1" for cyclic write accesses in order to avoid damage to the active flash memory!

Observe the following aspects for use:

- Parameter "[S-0-0269](#)" itself is not stored to the drive. After the control voltage has been switched off, the parameter is always reset to "0" (non-volatile storage). If necessary, it has to be specifically set to "1" (volatile storage) after run-up.
- To maintain the parameter settings in case voltage fails with storage mode "1", execute the "[S-0-0264](#), C2200 Backup working memory procedure command" beforehand.

Standard parameters

S-0-0269 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: 0x0 / 0x1		Default value: ---

4.3.25 S-0-0272, Velocity window as percentage

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	Based on the resulting velocity command value (S-0-0036 + S-0-0037 + P-0-0690), the "velocity window as percentage" defines a part of the active velocity window.		
Type of threshold			
Percentage-based threshold	S-0-0272	Absolute value of (S-0-0036 + S-0-0037 + P-0-690) × S-0-0272	
		Velocity command value percentage	
Use	<p>If the velocity feedback value is within the calculated velocity window, the drive sets bit 0 of "S-0-0013, Class 3 diagnostics" (status "n_feedback = n_command").</p> <p>See also Functional Description "Status classes, status displays, control parameters"</p>		
S-0-0272 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: Grp. 1
AXS:	min./max.: s. Text / 100,00		Default value: 0,00

4.3.26 S-0-0273, Maximum Drive Off delay time

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Input parameter for the maximum waiting time used by the drive before closing the brake. During commissioning, the time the drive needs to stop the axis from maximum velocity at maximum inertia or inertial mass with maximum allowed braking torque or braking force has to be determined.	
	The determined time including safety addition is entered in this parameter.	
	See also Functional Description "Motor holding brake"	
Use	If the drive has not been stopped after the time entered in this parameter has elapsed, the "F6024 Maximum braking time exceeded" error is output.	
	<p>If the velocity of the axis or spindle falls below 10 min^{-1} or 10 mm/min, respectively, before the time set in "S-0-0273" has elapsed, the brake will be applied. Drive enable is switched off after the delay set in "S-0-0207, Drive Off delay time".</p>	

S-0-0273 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
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AXS:	min./max.: 500,0 / 100000,0	Default value: 10000,0
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4.3.27 S-0-0275, Coordinate offset value

Allocation Hardware
Funct. package(s):
Device parameter: --

Function In this parameter, the difference by which the position feedback value display is changed (addition to current position feedback value) on execution of "S-0-0199, C3400 Shift coordinate system procedure command".
The unit of the value corresponds to the selected position scaling.

S-0-0275 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0076 Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
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AXS:	min./max.: s. Text / s. Text	Default value: 0
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4.3.28 S-0-0277, Encoder 1, type of position encoder

Allocation Hardware
Funct. package(s):
Device parameter: --

Function This parameter defines the essential properties of encoder 1.
See also Functional Description "Absolute measuring systems"

Structure

Bit	Designation/function	Comment
0	Encoder type 0: Rotary 1: Linear	
1	Distance-coded measuring system 0: No distance-coded reference marks 1: distance-coded reference marks	from FW AXS-V-0304
2	Reserved	
3	Rotational direction 0: Not inverted 1: Inverted	
5/4	Reserved	
6	Absolute evaluation (display bit) 0: Not possible (relative measuring system) 1: Possible (absolute measuring system) See also " S-0-0378 , Absolute encoder range, encoder 1"	

Standard parameters

Bit	Designation/function	Comment
8/7	Absolute evaluation configuration Bit 6 = 0: 0x: Relative evaluation of the relative measuring system. The measuring system has to be homed again on each restart. 1x: Absolute evaluation of the relative measuring system is forced (only possible with single- and multi-turn encoders). Bit 6 = 1: x0: Absolute evaluation of the absolute measuring system (standard). x1: Relative evaluation of the absolute measuring system.	Not defined in Sercos
15-9	Reserved	

Tab. 4-43: S-0-0277, Encoder 1, type of position encoder

Use

- If the connected encoder is a linear encoder, bit 0 is set to "1".
- Depending on the absolute encoder range and the maximum travel range or modulo value, bit 6 is either set or cleared.
- If absolute evaluation is possible (bit 6 =1), absolute evaluation is automatically activated. However, the user can deactivate it by setting bit 7.
- Even if absolute evaluation is impossible (bit 6 = 0), the user can "force" (activate) it via bit 8.

NOTICE

Property damage, if control on the master side takes place with regard to incorrect actual position values!

The user has to ensure that, if absolute position feedback values are "forced" manually (bit 8), the powered off axis is never shifted by more than half the absolute encoder range in relation to the power-off position. Otherwise, collisions with machine parts and workpiece rejects may occur when the axis is powered on again.

S-0-0277 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 5

AXS:

min./max.: --- / ---

Default value: 0x0

4.3.29 S-0-0278, Maximum travel range

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Parameter " S-0-0278 " defines the maximum mechanical travel distance of the machine.	
	See also Functional Description "Absolute measuring systems"	
Use	According to the set scaling, modulo format or absolute format (S-0-0076 , Position data scaling type), the input is a unipolar (modulo format) or bipolar value (absolute format).	

The value for the maximum travel range affects bit 6 of "[S-0-0277](#), Encoder 1, type of position encoder". This bit indicates the possibility of absolute evaluation of the encoder.

The value for the maximum travel range affects bit 6 of "[S-0-0277](#), Encoder 1, type of position encoder" or "[S-0-0115](#), Encoder 2, type of position encoder". This bit indicates the possibility of absolute evaluation of the encoder.

S-0-0278 - Attributes	Function: Par	Editable: SUBD:CM	Data length: 4Byte
	Memory: PARAM_SP	Validity ch.: SUBD:CM->PM	Format: DEC_MV
	Unit: S-0-0076	Extr. val. ch.: --	Decim. pl.: --
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:		min./max.: s. Text / s. Text	Default value: 3600000000

4.3.30 S-0-0282, Positioning command value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Via this parameter, the control target position (absolute position) or a relative travel distance is set by the controller for a drive in "drive-internal positioning" mode.	
 The effective target position for positioning of the drive can be read out from " S-0-0430 , Effective target position" at any time.		
See also Functional Description Drive-controlled positioning		
Use The drive moves to a change of the edge of bit 0 in " S-0-0346 , Positioning control word", guided by an internally generated position command value to an axis position in compliance with the positioning command value (S-0-0282).		
The drive takes the following additional positioning data into account:		
<ul style="list-style-type: none"> • S-0-0259, Positioning velocity • S-0-0260, Maximum positioning acceleration or S-0-0359, Positioning deceleration • S-0-0193, Maximum positioning jerk • S-0-0108, Feedrate override 		

S-0-0282 - Attributes	Function: Par	Editable: ALWAYS	Data length: 4Byte
	Memory: --	Validity ch.: --	Format: DEC_MV
	Unit: S-0-0076	Extr. val. ch.: +	Decim. pl.: --
	Cycl. tra.: AT + MDT	Comb. check: --	Set-depend.: --
AXS:		min./max.: s. Text / s. Text	Default value: ---

4.3.31 S-0-0283, Current coordinate offset

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In this parameters, the value for shifting the position feedback value from the actual position feedback value is displayed after " S-0-0197 , C3300 Set coordinate system procedure command" or " S-0-0199 , C3400 Shift coordinate system procedure command" have been executed.	
 The unit of the value corresponds to the selected position scaling.		

Standard parameters

S-0-0283 - Attributes	Function: Par Memory: -- Unit: S-0-0076 Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

4.3.32 S-0-0284, Secondary operation mode 4

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Using this input parameter, an operation mode can be preselected from the List of supported operation modes (S-0-0292). The operation modes are controlled in the various communication buses by using the respective control word.	
	<ul style="list-style-type: none"> • Sercos and EtherCAT: S-0-0134, Master control word • Easy Startup mode: P-0-0120, Control word easy startup <p>The operation mode determined in this parameter is activated in the drive if:</p> <ul style="list-style-type: none"> • the secondary operation mode 4 has been selected in the control word, and • control and power sections are ready for operation and • drive enable "RF" was set. <p>See also Functional Description "Selecting the operation mode"</p>	
Use	The operation mode is set by entering a binary value. Possible operation modes are:	
	<ul style="list-style-type: none"> • Velocity control • Torque control • Cyclic position control • Drive-internal interpolation • ... <p>For operation modes with position control, this parameter defines the following options:</p> <ul style="list-style-type: none"> • Lagless / with lag error • Activation of position control in interaction with/without parameter "S-0-0520" • Encoder 1/encoder 2 • hybrid position <p>The operation modes supported by the respective firmware are stored in parameter "S-0-0292, List of supported operation modes" and when being read are displayed in the form of a hexadecimal code.</p>	



The binary values assigned to the operation modes are listed in the "Overview of operation modes" table in the description of parameter "[S-0-0292](#)".

S-0-0284 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: +	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: 0x2

4.3.33 S-0-0285, Secondary operation mode 5

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Using this input parameter, an operation mode can be preselected from the List of supported operation modes (S-0-0292). The operation modes are controlled in the various communication buses by using the respective control word.	
	<ul style="list-style-type: none"> • Sercos and EtherCAT: S-0-0134, Master control word • Easy Startup mode: P-0-0120, Control word easy startup 	
	The operation mode determined in this parameter is activated in the drive if:	
	<ul style="list-style-type: none"> • the secondary operation mode 5 has been selected in the control word, and • control and power sections are ready for operation and • drive enable "RF" was set. 	
	See also Functional Description "Selecting the operation mode"	
Use	The operation mode is set by entering a binary value.	
	Possible operation modes are:	
	<ul style="list-style-type: none"> • Velocity control • Torque control • Cyclic position control • Drive-internal interpolation • ... 	
	For operation modes with position control, this parameter defines the following options:	
	<ul style="list-style-type: none"> • Lagless / with lag error • Activation of position control in interaction with/without parameter "S-0-0520" • Encoder 1/encoder 2 • hybrid position 	
	The operation modes supported by the respective firmware are stored in parameter " S-0-0292 , List of supported operation modes" and when being read are displayed in the form of a hexadecimal code.	



The binary values assigned to the operation modes are listed in the "Overview of operation modes" table in the description of parameter "[S-0-0292](#)".

S-0-0285 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--
AXS:		min./max.: --- / ---		Default value: 0x2	

4.3.34 S-0-0286, Secondary operation mode 6

Allocation	Hardware Funct. package(s): Device parameter:	--
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Standard parameters

Function	Using this input parameter, an operation mode can be preselected from the List of supported operation modes (S-0-0292). The operation modes are controlled in the various communication buses by using the respective control word.
	<ul style="list-style-type: none"> • Sercos and EtherCAT: S-0-0134, Master control word • Easy Startup mode: P-0-0120, Control word easy startup <p>The operation mode determined in this parameter is activated in the drive if:</p> <ul style="list-style-type: none"> • the secondary operation mode 6 has been selected in the control word, and • control and power sections are ready for operation and • drive enable "RF" was set.
	See also Functional Description "Selecting the operation mode"
Use	The operation mode is set by entering a binary value. Possible operation modes are:
	<ul style="list-style-type: none"> • Velocity control • Torque control • Cyclic position control • Drive-internal interpolation • ... <p>For operation modes with position control, this parameter defines the following options:</p> <ul style="list-style-type: none"> • Lagless / with lag error • Activation of position control in interaction with/without parameter "S-0-0520" • Encoder 1/encoder 2 • hybrid position <p>The operation modes supported by the respective firmware are stored in parameter "S-0-0292, List of supported operation modes" and when being read are displayed in the form of a hexadecimal code.</p>



The binary values assigned to the operation modes are listed in the "Overview of operation modes" table in the description of parameter "[S-0-0292](#)".

S-0-0286 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: 0x2

4.3.35 S-0-0287, Secondary operation mode 7

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Using this input parameter, an operation mode can be preselected from the List of supported operation modes (S-0-0292). The operation modes are controlled in the various communication buses by using the respective control word.	
	<ul style="list-style-type: none"> • Sercos and EtherCAT: S-0-0134, Master control word 	

- Easy Startup mode: [P-0-0120](#), Control word easy startup

The operation mode determined in this parameter is activated in the drive if:

- the secondary operation mode 7 has been selected in the control word, and
- control and power sections are ready for operation and
- drive enable "RF" was set.

See also Functional Description "Selecting the operation mode"

Use The operation mode is set by entering a binary value.

Possible operation modes are:

- Velocity control
- Torque control
- Cyclic position control
- Drive-internal interpolation
- ...

For operation modes with position control, this parameter defines the following options:

- Lagless / with lag error
- Activation of position control in interaction with/without parameter "[S-0-0520](#)"
- Encoder 1/encoder 2
- hybrid position

The operation modes supported by the respective firmware are stored in parameter "[S-0-0292](#), List of supported operation modes" and when being read are displayed in the form of a hexadecimal code.



The binary values assigned to the operation modes are listed in the "Overview of operation modes" table in the description of parameter "[S-0-0292](#)".

S-0-0287 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: 0x2
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4.3.36 S-0-0292, List of supported operation modes

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter lists all operation modes which are supported by the drive firmware used.

It displays the codes (hexadecimal) of the operation modes, which can be entered as binary values in parameters "[S-0-0032](#)"... "[S-0-0035](#)" and "[S-0-0284](#)"... "[S-0-0287](#)" (primary and secondary operation modes).

See also Functional Description "Operation modes"

Structure

The table below shows a reference list of all potential operation modes with allocated code.

Standard parameters

 Depending on the firmware, enabling package and hardware configuration used, list parameter "[S-0-0292](#)" contains only a part of the codes listed in this table.

Switchover of the control encoder and the position operation mode can be controlled via parameter "[S-0-0520](#)" in the operation modes provided to this end (with axis control word).

Operation mode	Coding
Torque control	0x0001
Velocity control	0x0002
Position control, encoder 1	0x0003
Position control lagless, encoder 1	0x000B
Position control drive-controlled, encoder 1	0x0103
Position control lagless, encoder 1 drive-controlled	0x010B
Pos. ctrl drive-controlled with ctrl word of axis controller	0x0305
Position control with control word of axis controller	0x0205
Drive-internal interpolation, encoder 1	0x0113
Drive-internal interpolation, lagless, encoder 1	0x011B
Drive-internal interpolat. with ctrl word of axis controller	0x0315
Drive-controlled positioning, encoder 1	0x0123
Drive-controlled positioning, encoder 1, lagless	0x012B
Drive-controlled posit. with ctrl word of axis controller	0x0325

Tab. 4-44: Overview of operation modes with coding

S-0-0292 - Attributes	Function: Par	Editable: --	Data length: 2Byte var.
	Memory: --	Validity ch.: --	Format: HEX
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

4.3.37 S-0-0298, Reference cam shift

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In this parameter displays the distance by which the home switch (reference cam) is to be shifted to implement the optimum distance between home switch and selected reference mark of the encoder. See also Functional Description "Establishing the position data reference"	
Use	When homing an axis, a reference mark of the encoder is assigned a position feedback value referenced to the axis zero point. If the encoder has several reference marks over the travel range of the axis, one specific and always the same reference mark has to be selected for clear axis zero reference. This is realized with a home switch at the end of the travel range. The switch is operated by the axis during the homing procedure. By the next reference mark of the encoder that is passed by the axis, the position reference to the axis zero point is established. The distance between home switch and reference mark should not fall below a minimum value. Otherwise, the next reference mark may be skipped and the reference mark after the next be recognized after the home switch signal. This way, it would not be possible to generate clearly reproducible zero point reference at the axis. For this	

reason, the distance between home switch and reference mark is monitored by the drive.

Monitoring

- The optimum distance between home switch and reference mark is displayed in "[S-0-0298](#), Reference cam shift".
- If the distance is not within the allowed range, command "[S-0-0148](#), C0600 Drive-controlled homing procedure command" is aborted with error "C0602 Distance home switch - reference mark erroneous".

Establishing the regular status

If the distance is outside the allowed range, the distance is displayed in this parameter ([S-0-0298](#)). The regular status may be established via parameters or mechanically:

- Enter the value displayed in "[S-0-0298](#)" in parameter "[S-0-0299](#), Home switch offset". Thereby, the effective home switch signal is shifted compared to the actual signal. Or:
- Shift the position of the home switch by the value displayed in "[S-0-0298](#)".

 The settings for home switch, reference mark, encoder and homing are made in "[S-0-0147](#), Homing parameter"!

S-0-0298 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

4.3.38 S-0-0299, Home switch offset

Allocation Hardware
Funct. package(s): --
Device parameter:

Function By means of this parameter, the home switch signal becoming effective can be virtually shifted by a distance from the actual switching point. The distance is entered in this parameter.

See also Functional Description "Establishing the position data reference"

Use The value for the distance is indicated in "[S-0-0298](#), Reference cam shift" if the "Drive-controlled homing procedure command" was ended with error "C0602 Distance home switch - reference mark erroneous".

 In this case, one reference mark is skipped after the home switch signal and the one after the next one is recognized. This way, a clearly reproducible zero point reference can be generated at the axis. Depending on the situation, this would not have been possible with the following reference mark!

S-0-0299 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	+	Decim. pl.:	
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 3

AXS: min./max.: s. Text / s. Text Default value: 0

Standard parameters

4.3.39 S-0-0301, Allocation of real-time control bit 1

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	By means of " S-0-0301 " and " S-0-0413 " one bit (real-time control bit 1) of a parameter in the drive can be written directly.	
	To directly write to the bit of a parameter as real-time control bit 1 in the drive, the ident number of the parameter containing the bit to be written must be entered in " S-0-0301 ". In " S-0-0413 ", the bit number of real-time control bit 1 must be entered.	
	 By means of " S-0-0303 " and " S-0-0414 " one additional bit (real-time control bit 2) of a parameter in the drive can be written directly.	
	 The ident numbers of the parameters that can be entered in " S-0-0301 " are listed in "S-0-0399, IDN-list of configurable data in signal control word". Command parameters are not possible.	
Use	The real-time control bits are part of the parameter " S-0-0134 , Master control word", at active application profile "ServoDrive" and are cyclically (in real time) sent to the drive, i.e. one bit of the assigned parameter can be written in the communication cycle.	
	 <ul style="list-style-type: none">• If the respective parameter is not available, the drive reacts with the service channel error message "Invalid data".• If the respective parameter is available but cannot be written to in "Operational", the drive reacts with the error message "Invalid data".	

S-0-0301 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	FKM:PO->SOP	Format:	IDN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: 0

4.3.40 S-0-0303, Allocation of real-time control bit 2

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	By means of " S-0-0303 " and " S-0-0414 " one bit (real-time control bit 2) of a parameter in the drive can be written directly.	
	To directly write to the bit of a parameter as real-time control bit 2 in the drive, the ident number of the parameter containing the bit to be written must be entered in " S-0-0303 ". In " S-0-0414 ", the bit number of real-time control bit 2 must be entered.	
	 By means of " S-0-0301 " and " S-0-0413 " one additional bit (real-time control bit 1) of a parameter in the drive can be written directly.	



The ident numbers of the parameters that can be entered in "[S-0-0303](#)" are listed in "S-0-0399, IDN-list of configurable data in signal control word". Command parameters are not possible!

Use

The real-time control bits are part of the parameter "[S-0-0134](#), Master control word", at active application profile "ServoDrive" and are cyclically (in real time) sent to the drive, i.e. one bit of the assigned parameter can be written in the communication cycle.



- If the respective parameter is not available, the drive reacts with the service channel error message "Invalid data".
- If the respective parameter is available but cannot be written to in "Operational", the drive reacts with the error message "Invalid data".

S-0-0303 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	FKM:PO->SOP	Format:	IDN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: 0
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4.3.41 S-0-0305, Allocation of real-time status bit 1

Allocation

Hardware
Funct. package(s): --
Device parameter:

Function

The real-time status bits 1 and 2 allow mapping one bit of a parameter to "[S-0-0135](#), Drive status word" for direct access by a control unit.

- The IDN of the parameter containing the bit to be read by the real-time status bit 1 is entered in parameter "[S-0-0305](#)".
- The bit number is entered in "[S-0-0415](#), Bit number allocation of real-time status bit 1".



The IDNs of the parameters that can be entered in "[S-0-0305](#)" are contained in "[S-0-0398](#), IDN-list of configurable data in signal status word".

Use

The real-time status bits are part of parameter "[S-0-0135](#), Drive status word" with active "ServoDrive" application profile and are cyclically (in real time) sent by the drive to the master, i.e. one bit of the assigned parameter can be evaluated in the master at the pulse frequency of Sercos communication.



- If the respective parameter is not available, the drive reacts with the service channel error message "Invalid data".
- If the respective parameter is available but cannot be written to in phase 4, the drive reacts with the error message "Invalid data".

S-0-0305 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	FKM:PO->SOP	Format:	IDN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: 0
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Standard parameters

4.3.42 S-0-0307, Allocation of real-time status bit 2

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The real-time status bits 1 and 2 allow mapping one bit of a parameter to "S-0-0135, Drive status word" for direct access by a control unit.		
	<ul style="list-style-type: none"> The IDN of the parameter containing the bit to be read by the real-time status bit 2 is entered in parameter "S-0-0307". The bit number is entered in "S-0-0416, Bit number allocation of real-time status bit 2". 		
Use			
	 The IDNs of the parameters that can be entered in "S-0-0307" are contained in "S-0-0398, IDN-list of configurable data in signal status word".		
The real-time status bits are part of parameter "S-0-0135, Drive status word" with active ServoDrive application profile and are cyclically (in real time) sent by the drive to the master, i.e. one bit of the assigned parameter can be evaluated in the master in the communication cycle.			
	 <ul style="list-style-type: none"> If the respective parameter is not available, the drive reacts with the service channel error message "Invalid data". If the respective parameter is available but cannot be written to in "Operational", the drive reacts with the error message "Invalid data". 		
S-0-0307 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: FKM:PO->SOP Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: IDN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: 0

4.3.43 S-0-0315, Positioning velocity > nLimit

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	If the positioning velocity has exceeded the limit value specified in "S-0-0091" with active positioning mode (interpolation, positioning, ...),		
	<ul style="list-style-type: none"> the ramp generator is limited to the value in "S-0-0091" and the message positioning velocity > n_{limit} is generated, i.e. bit 0 is set in "S-0-0315". 		
 For example, the message bit can also be configured in the signal control word or as real-time status bit!			
See also Functional Description "Drive-controlled positioning"			
See also Functional Description "Status classes, status displays, control parameters"			
See also Functional Description "Positioning block mode"			
S-0-0315 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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4.3.44 S-0-0323, Target position outside of travel range

Allocation	Hardware Funct. package(s): Device parameter: --
Function	<p>If a new target position is located outside the position limit values (S-0-0049/S-0-0050) if positioning mode is activated (interpolation, positioning, ...) and the drive is referenced,</p> <ul style="list-style-type: none"> • warning "E2053, Target position out of travel range" is returned by the drive and • the message "Target position out of position limit values" (i.e. bit 0 in S-0-0323) is generated.

 For example, the message bit can also be configured in the signal control word or as real-time status bit!

See also Functional Description "Drive-controlled positioning"

See also Functional Description "Status classes, status displays, control parameters"

See also Functional Description "Positioning block mode"

S-0-0323 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
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AXS:	min./max.: --- / ---	Default value: ---
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4.3.45 S-0-0328, Assignment list signal status word

Allocation	Hardware Funct. package(s): Device parameter: --
Function	<p>In this list parameter, the assignment is made as to which bit of the respective parameter entered in "S-0-0026, Configuration list for signal status word" is to be mapped to "S-0-144, Signal status word". The first line of the list contains the number of the bit of the first parameter from the list of "S-0-0026" that is mapped in the LSB of "S-0-0144". The other lines of the list correspond respectively with the other parameters from the list of "S-0-0026" and the more significant bits of "S-0-0144".</p>

See also Functional Description "Configurable signal status word"

S-0-0328 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 2Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --
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AXS:	min./max.: 0 / 31	Default value: s. Text
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4.3.46 S-0-0329, Assignment list signal control word

Allocation	Hardware Funct. package(s): Device parameter: --
Function	<p>In this list parameter, the assignment is made as to which bit of the respective parameter entered in "S-0-0027, Configuration list for signal control word" is written via the signal control word (S-0-0145).</p>

See also Functional Description "Configurable signal control word"

Standard parameters

	Use	The first line of the list contains the number of the bit of the first parameter from the list of "S-0-0027" that is written with the LSB of "S-0-0145". The other lines of the list correspond respectively with the other parameters from the list of "S-0-0027" and the more significant bits of "S-0-0145".
S-0-0329 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: -- Data length: 2Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: 0 / 31 Default value: s. Text

4.3.47 S-0-0330, Status $n_{\text{feedback}} = n_{\text{command}}$

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter displays whether the actual velocity value has reached the command value within a tolerance window ($n_{\text{feedback}} = n_{\text{command}}$). The tolerance window is defined by threshold values:	

Type of threshold	Parameter s	Threshold value	Explanation
Absolute threshold	S-0-0157	Absolute value of S-0-0157	Fixed value
Percentage-based threshold	S-0-0272	Absolute value of $(S-0-0036 + S-0-0037 + P-0-0690) \times S-0-0272$	Velocity command value percentage

S-0-0157 Velocity window
S-0-0272 Velocity window as percentage
S-0-0036 Velocity command value
S-0-0037 Additive velocity command value
P-0-0690 Additive velocity command value, process loop

Tab. 4-45: Thresholds for " $n_{\text{feedback}} = n_{\text{command}}$ " status

Use Bit 0 becomes "1" if the velocity feedback value n_{feedback} (S-0-0040) is within the tolerance window around the resulting velocity command value $n_{\text{command,res}}$ ($S-0-0036 + S-0-0037 + P-0-0690$):

Message	Criterion	Firmware	Explanation
S-0-0330 = "1" (Bit in S-0-0013)	$n_{\text{command,res}} - n_{\text{feedback}} < \pm S-0-0157$		Absolute tolerance window
	$n_{\text{command,res}} - n_{\text{feedback}} < \pm (S-0-0157 + S-0-0036 + S-0-0037 + P-0-0690 \times S-0-0272)$		Absolute plus command-value-percentage tolerance windows

S-0-0157 Velocity window
S-0-0272 Velocity window as percentage
S-0-0036 Velocity command value
S-0-0037 Additive velocity command value
S-0-0013 Class 3 diagnostics
 n_{feedback} S-0-0040, Velocity feedback value
 $n_{\text{command,res}}$ S-0-0036 + S-0-0037 + P-0-0690

Tab. 4-46: Criteria for Status " $n_{\text{feedback}} = n_{\text{command}}$ "

See also Functional Description "Status classes, status displays, control parameters"

S-0-0330 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
------------------------------	---	--

AXS:	min./max.: --- / ---	Default value: ---
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4.3.48 S-0-0331, Status "n_feedback = 0"

Allocation Hardware
Funct. package(s):
Device parameter: --

Function This parameter indicates whether the actual value of the velocity has fallen below an adjustable threshold value under which motor/axis standstill is recognized by the controller ($n_{feedback} = 0$).

Bit 0 of this parameter becomes "1" if the value of "[S-0-0040](#), Velocity command value" is below the value of "[S-0-0124](#), Standstill window". This message is also displayed in "[S-0-0013](#), Class 3 diagnostics".

See also Functional Description "Status classes, status displays, control parameters"

S-0-0331 - Attributes	Function: Par	Editable: --	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: BIN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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4.3.49 S-0-0332, Status "n_feedback < nx"

Allocation Hardware
Funct. package(s):
Device parameter: --

Function This parameter indicates whether the actual value of the velocity has fallen below an adjustable threshold value ($n_{feedback} = nx$). Bit 0 of this parameter becomes 1 if the value of "[S-0-0040](#), Velocity command value" is below the value of "[S-0-0125](#), Velocity threshold nx". This message is also displayed in "[S-0-0013](#), Class 3 diagnostics".

See also Functional Description "Status classes, status displays, control parameters"

S-0-0332 - Attributes	Function: Par	Editable: --	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: BIN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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4.3.50 S-0-0333, Status "T >= Tx"

Allocation Hardware
Funct. package(s):
Device parameter: --

Function This parameter indicates whether the actual value of the torque or the force has exceeded an adjustable threshold value ($T \geq Tx$).

Bit 0 of this parameter becomes 1 if the value of "[S-0-0084](#), Torque/force feedback value" exceeds the value of "[S-0-0126](#), Torque threshold Tx". This message is also displayed in "[S-0-0013](#), Class 3 diagnostics".

See also Functional Description "Status classes, status displays, control parameters"

S-0-0333 - Attributes	Function: Par	Editable: --	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: BIN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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Standard parameters

4.3.51 S-0-0334, Status "T >= Tlimit"

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter indicates whether the feedback value of the torque or force has reached the limit value ($T \geq T_{\text{limit}}$). The limit value is formed by the lowest value of: <ul style="list-style-type: none">• P-0-0109, Torque/force peak limit• S-0-0092, Bipolar torque/force limit value• S-0-0082, Torque/force limit value positive• S-0-0083, Torque/force limit value negative Load-dependent limitations by motor and controller See also Functional Description "Velocity limitation"	
Use	Bit 0 of this parameter becomes 1 if the value of "S-0-0084, Torque/force feedback value" is equal to or exceeds the specified limit value. The current limit values can be requested via <ul style="list-style-type: none">• P-0-0444, Actual value peak torque limit• P-0-0442, Actual value torque limit positive (stationary)• P-0-0443, Actual value torque limit negative (stationary)	
	* This message is also displayed in " S-0-0013 , Class 3 diagnostics"	
S-0-0334 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

4.3.52 S-0-0335, Status "n_command > n_limit"

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter indicates if the command value of the velocity exceeds the adjustable velocity limit value (Status "n_command > n_limit"). See also Functional Description "Velocity limitation"	
Use	Bit 0 of this parameter becomes 1 if the resulting velocity command value (S-0-0036 + S-0-0037) exceeds the value of " S-0-0091 , Bipolar velocity limit value". * This message is also displayed in " S-0-0013 , Class 3 diagnostics".	
S-0-0335 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

4.3.53 S-0-0336, Status "In position"

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	If an operation mode with drive-internal position control is activated in the drive, the parameter maps the "In position" status to a dedicated ident	

number (bit 0). This allows the status message to be assigned to a real-time status bit in "[S-0-0135](#), Drive status".

See also parameter description "Status classes, status displays, control parameters"

Use The "In Position" status ([S-0-0336](#); bit 0 = 1) is also defined as a bit in class 3 diagnostics ([S-0-0013](#); bit 6) and is set if the following distance ([S-0-0189](#)) is lower than the position window ([S-0-0057](#)).

 On execution of the "position spindle" command, the status is set if the spindle is in target position!

S-0-0336 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.3.54 S-0-0337, Status "P >= Px"

Allocation Hardware --

Funct. package(s):
Device parameter:

Function This parameter indicates whether the value of power feedback value has exceeded an adjustable threshold value (message $P \geq Px$). Bit 0 of this parameter becomes 1 if the value of "[S-0-0382](#), DC bus power" exceeds or is equal to the value of "[S-0-0158](#), Power threshold Px".



This message is also displayed in "[S-0-0013](#), Class 3 diagnostics".

S-0-0337 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.3.55 S-0-0338, Status "In target position"

Allocation Hardware --

Funct. package(s):
Device parameter:

Function When the drive is positioned at the active target position "[S-0-0430](#)", the message is generated if

- the position feedback value of the axis is within the positioning window around the active target position (\Rightarrow In position: [S-0-0336](#)) and
- the axis is at rest, i.e. the actual velocity is within "[S-0-0057](#), Position window" (\Rightarrow In standstill: [S-0-0331](#)).

(|[S-0-0430](#) - [S-0-0386](#), Active position feedback value | < [S-0-0057](#))
&&IN_POSITION ([S-0-0336](#)) && Nfeedback = 0 ([S-0-0331](#))



The message bit can be configured in the signal control word or as real-time status bit. The message is generated after initialization in every status, i.e. also if the operating mode is not active.

See also Functional Description "Drive-controlled positioning"

Standard parameters

	See also Functional Description "Positioning block mode"			
S-0-0338 - Attributes	Function: Par	Editable: --	Data length: 2Byte	
	Memory: --	Validity ch.: --	Format: BIN	
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0	
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --	
	AXS:	min./max.: --- / ---	Default value: ---	

4.3.56 S-0-0341, Status "In coarse position"

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	This parameter was introduced for the message "in position coarse" to enable assignment to a real-time status bit (S-0-0303). The message "In position coarse" (S-0-0341 ; bit 0 = 1) is defined as bit in class 3 diagnostics (S-0-0013 ; Bit 11) and is set if " S-0-0189 , following distance" is lower than " S-0-0261 , Coarse position window".			
See also Parameter Description "Control words and status words of master communication"				
S-0-0341 - Attributes	Function: Par	Editable: --	Data length: 2Byte	
	Memory: --	Validity ch.: --	Format: BIN	
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0	
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --	
	AXS:	min./max.: --- / ---	Default value: ---	

4.3.57 S-0-0342, Status "Target position attained"

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	This parameter indicates whether the drive-internally generated position command value has reached the target position. Bit 0 of this parameter is set to "1", if the command value of the interpolator (P-0-0434 , Position command value of controller) has reached the target position " S-0-0430 , Effective target position" during drive-controlled positioning. This message is also displayed in " S-0-0013 , Class 3 diagnostics".			
See also Functional Description "Drive-controlled positioning"				
S-0-0342 - Attributes	Function: Par	Editable: --	Data length: 2Byte	
	Memory: --	Validity ch.: --	Format: BIN	
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0	
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --	
	AXS:	min./max.: --- / ---	Default value: ---	

4.3.58 S-0-0343, Status "Interpolator halted"

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Message parameter displaying the following status of the interpolator (command value generator) in operating modes "drive-internal interpolation" and "drive-controlled positioning" with the value "1":	
<ul style="list-style-type: none"> • Velocity command value "P-0-0048" is zero and the • drive-internal position command value "P-0-0434" has not yet reached the target position (S-0-0258 or S-0-0430). 		



For example, this message indicates if "S-0-0259, Positioning velocity" was written with the value "0" during positioning.

See also Functional Description "Drive-controlled positioning"

S-0-0343 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: --- / ---			Default value:	---

4.3.59 S-0-0346, Positioning control word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used as control word in all drive-internal positioning modes to control the positioning operation. See also Functional Description "Drive-controlled positioning" See also Functional Description "Positioning block mode"	
Structure	The parameter has the following structure:	
<i>Tab. 4-47: Relevant Bits of S-0-0346, Positioning control word</i>		
	Bit	Designation/function
	0	Acceptance of positioning command value Applied by toggling
	2/1	Activation of positioning 00: Positioning active, started by toggling of bit 0 Positioning aborted by: 01: Infinite travel in positive direction (jog+) 10: Infinite travel in negative direction (jog-) 11: Stopping the axis (positioning stop)
	3	Type of positioning command value 0: Absolute 1: Relative (depending on bit 4)
	4	Dedicated point for positioning command values 0: Last effective target position (S-0-0430) 1: Active position feedback value (S-0-0386)
	5	Immediate block change 0: Drive moves to current target position, before positioning at new target position 1: Immediate block change, i.e., drive immediately moves to new target position
	7/6	Behavior for sequential block (bit 5=0) 00: Halt at target position of start block 01: Overrunning target position of start block (mode 1) 10: Overrunning target position of start block (mode 2)

Tab. 4-47: Relevant Bits of S-0-0346, Positioning control word

Use Bit 0: Command values or block applied by toggling

Standard parameters

- "S-0-0282, Positioning command value" during drive-controlled positioning (absolute position)

"P-0-4026, Positioning block selection" in positioning block mode, while actual application is initiated by 0 → 1 edge "P-0-4060: Bit 0".

 Thereafter, "S-0-0419, Positioning command acknowledge" confirms that the command value has been applied.

Bit 4: Dedicated point for positioning command values

- **Bit 4 = 0:** Incremental dimension reference is maintained
- Reference for positioning is the previous target position (S-0-0430). Any possibly existing residual path is taken into account in relative positioning (residual path of 20 mm + 100 mm relative target position result in a travel motion of 120 mm).
⇒ Incremental dimension is maintained in the case of successive positioning procedures
- **Bit 4 = 1:** Incremental dimension reference gets lost
Reference for positioning is the current position feedback value (S-0-0386), with the result that any possibly existing residual path is not traveled (e.g., residual path of 20 mm + 100 mm relative target position result in a travel motion of 100 mm).
⇒ Incremental dimension reference gets lost in case of successive rel. travel blocks!

 In the context of absolute positioning procedures, bit 4 only makes sense in connection with special cases, i.e., with command "positive stop drive procedure" or in "modulo mode", and only has to be taken into account in these cases!

Bit 7/6: Behavior in sequential block mode (S-0-0134, bit 5 = 0)

- **00: Intermediate stop** - Block transition with halt at target position of start block
- **01: Mode 1** - Block transition with velocity of start block (target position of the start block is overrun with the velocity of the start block).
- **10: Mode 2** - Block transition with velocity of sequential block (target position of the start block is overrun with the velocity of the sequential block). If required, changes in velocity are carried out as early as during the start block. Switching to the next target position does not occur until the previous target position is overrun.

S-0-0346 - Attributes	Function: Par	Editable: ALWAYS	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: BIN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: AT + MDT	Comb. check: +	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: ---

4.3.60 S-0-0347, Velocity error

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Parameter "S-0-0347" displays the difference between "P-0-0048, Effective velocity command value" and "S-0-0535, Active velocity feedback value" in the velocity control loop.	

Before the velocity error is fed into the PI controller, the latter can still be smoothed by "[P-0-0004](#), Velocity loop smoothing time constant".



If the velocity control with reference model in "[P-0-0556](#), Config word of axis controller" bit 7 is active, the velocity error for the I share is calculated in the velocity controller. In this case, "[S-0-0347](#)" is the velocity error effective for the P share of the controller.

See also Functional Description "Velocity controller"

[S-0-0347 - Attributes](#)

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0044	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: ---

4.3.61 [S-0-0348](#), Acceleration feedforward gain

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

The acceleration feedforward control reduces the lag error during acceleration in lagless operation.



The acceleration feedforward only takes effect in lagless operation.

The acceleration command value obtained from double differentiation of the position command value is multiplied with the content of "[S-0-0348](#)" and added to the torque/force command value at the velocity controller output.

See also Functional Description "Control loop structure"

See also Functional Description "Position controller"

Use



The acceleration feedforward control is activated by entering a value in "[S-0-0348](#)" that is greater than "0" ([S-0-0348](#) = 0 ⇒ switched off).

For optimum parameterization of the acceleration feedforward control, the following values have to be entered in "[S-0-0348](#)":

- Total mass (motor + load) in kg (linear motor)
- Total mass inertia (motor + load), in relation to the motor output shaft, in gm² (rotary motor)



Depending on the respective mechanical system, the input value of "[S-0-0348](#)" has to be adjusted on site.

The drive firmware automatically adjusts the unit and decimal places to the type of construction of the motor (rotary or linear) entered in "[P-0-4014](#), Type of construction of motor".

- rotary motor: mN*m / rad/s² ⇒ g*m²
- Linear motor: mN / mm/s² ⇒ kg

[S-0-0348 - Attributes](#)

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	mNm/(rad/s ²)	Extr. val. ch.:	+	Decim. pl.:	4
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 2

Standard parameters

AXS:	min./max.: s. Text / s. Text	Default value: 0,0000
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4.3.62 S-0-0349, Bipolar jerk limit

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The bipolar jerk limit value describes the maximum admissible acceleration adjustment per time (= jerk), symmetrically in both directions (acceleration and deceleration).	

 The bipolar jerk limit value limits the acceleration change per time at "drive stop", in case of error reaction "quick stop" (velocity command value reset with filter and ramp) and in case of commands that generate own command position values. The value "0" deactivates the jerk filter.

See also Functional Description "Establishing the position data reference (drive-controlled homing procedure)"

See also Functional Description "Drive Halt"

See also Functional Description "Spindle positioning"

S-0-0349 - Attributes	Function: Par	Editable: ALWAYS	Data length: 4Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_OV
	Unit: S-0-0160	Extr. val. ch.: --	Decim. pl.: --
	Cycl. tra.: --	Comb. check: --	Set-depend.: Grp. 1

AXS:	min./max.: s. Text / s. Text	Default value: 0
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4.3.63 S-0-0359, Positioning deceleration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	With this parameter, the maximum deceleration is set for the drive in "drive-internal interpolation" mode to move to target position (S-0-0258 , Target position).	
Use	The drive-internally generated position command value characteristic takes into account the positioning acceleration (" S-0-0260 ") or deceleration (" S-0-0359 ") as well as the maximum positioning velocity (" S-0-0259 "), the maximum positioning jerk (" S-0-0193 ") and the feedrate override (" S-0-0108 ").	

 The acceleration is limited to the value of "[S-0-0138](#), Bipolar acceleration limit value". The value of parameter "[S-0-359](#), Positioning deceleration" should always be smaller than the value of the parameter "[S-0-0138](#), Bipolar acceleration limit value" because otherwise a lag error will build up due to internal control processes. If the value 0 is input for the parameter, the parameter "[S-0-0138](#)" takes effect.

S-0-0359 - Attributes	Function: Par	Editable: ALWAYS	Data length: 4Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_MV
	Unit: S-0-0160	Extr. val. ch.: --	Decim. pl.: --

AXS:	min./max.: s. Text / s. Text	Default value: 10000000
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4.3.64 S-0-0360, Data container A: Command value 1

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In parameter "S-0-0360", the master transmits the data written in the drive to the target parameter which is addressed via "S-0-0368, Data container A: Addressing" from "S-0-0370, Configuration list command value 1". If a 2-byte target parameter is addressed with 2-byte data, only the low word of "S-0-0360" is used. In order to use the data container, parameter "S-0-0360" has to be entered in the list of cyclic command values.	
See also Functional Description Multiplex channel		
S-0-0360 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 4Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

4.3.65 S-0-0362, Data container A: List index command values

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Parameter "S-0-0362" contains the list index for access to individual list elements configured in "Data container A: Configuration list command value x". This enables control and writing of individual list elements via one index for multiplex channel. As required, parameter "S-0-0362" can be configured in the cyclic command value telegram or written via the non-cyclic data channel or another interface.	
 The parameter only becomes effective if a list parameter is addressed via "S-0-0368".		
See also Functional Description "Multiplex channel"		
S-0-0362 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

4.3.66 S-0-0364, Data container A: Feedback value 1

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	To parameter "S-0-0364", the drive copies the data of the source parameter which is addressed via "S-0-0368, Data container A: Addressing" from S-0-0371, Data container A: Configuration list feedback value 1". See also Functional Description "Multiplex channel"	
Use	If a 2-byte source parameter is addressed with 2-byte data, only the low word is copied to "S-0-0364, Data container A: Feedback value 1". In order to use the data container, parameter "S-0-0364" has to be entered in the list of cyclic feedback values.	

Standard parameters

S-0-0364 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.3.67 S-0-0366, Data container A: List index actual values

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Parameter "S-0-0366" contains the list index for access to individual list elements configured in "Data container A: Configuration list feedback value x".	
Use	This enables control and reading of individual list elements via one index for multiplex channel. As required, parameter "S-0-0366" can be configured in the cyclic command value telegram or written via the non-cyclic data channel or another interface.	
The parameter only becomes effective if a list parameter is addressed via "S-0-0368, Data container A: Addressing".		

S-0-0366 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.3.68 S-0-0368, Data container A: Addressing

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Parameter "S-0-0368, Data container A: Addressing" contains the indexes for access to parameter lists "Data container A: Configuration list command value x" and "Data container A: Configuration list feedback value x". This defines the contents of both "Data container A: Command value x" and "Data container A: Feedback value x". Only bits 0...4 (for command values) and bits 8...12 (for feedback values) are used for addressing; the other bits are cut-off.	
Structure	See also Functional Description "Multiplex channel"	

Bit	Designation/function	Comment
0-4	Addressing for command values	
12-8	Addressing for feedback values	

Tab. 4-48: S-0-0368, Data container A: Addressing

	If the specified index is higher than the index of the respective list elements, warning E4008 on invalid command value data container addressing or E4009 on invalid feedback value data container addressing is generated.
--	--

 Parameter "[S-0-0368](#), Data container A: Addressing" can be configured in the cyclic command value telegram or written via the non-cyclic data channel or another interface.

S-0-0368 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

4.3.69 S-0-0370, Data container A: Configuration list command value-1**Allocation**

Hardware --
Funct. package(s):
Device parameter:

Function

In parameter "[S-0-0370](#)", those IDNs are entered that, depending on the index in "[S-0-0368](#), Data container A: Addressing", low-byte, are transmitted in "[S-0-0360](#), Data container A: Command value 1". Writing "[S-0-0370](#)" is only possible in "PreOperational".

See also Functional Description "Multiplex channel"

Use

A check is run in the command "[S-0-0127](#), C0100 Safe-Operational transition check" to find out whether the IDNs contained in "[S-0-0370](#)" are contained in the lists "[S-0-0188](#), List of configurable data in the MDT". If this is not the case, the command error C0151 is generated.

 A maximum of 32 IDNs can be configured in "[S-0-0370](#)".

S-0-0370 - Attributes

Function:	Par	Editable:	FKM:PO	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	IDN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: s. Text

4.3.70 S-0-0371, Data container A: Configuration list actual value-1**Allocation**

Hardware --
Funct. package(s):
Device parameter:

Function

In parameter "[S-0-0371](#)", the ident numbers are entered for transfer dependent on the index in "[S-0-0368](#), Data container A: Addressing", high-byte, in "[S-0-0364](#), Data container A: Feedback value 1". Writing of "[S-0-0371](#)" is only possible in "PreOperational".

See also Functional Description Multiplex channel

Use

A check is run in the command "[S-0-0127](#), C0100 SaveOperational transition check" to find out whether the IDNs contained in "[S-0-0371](#)" are contained in the list "[S-0-0187](#), List of configurable data in the MDT. data in the AT".

If this is not the case, the command error "C0152 Config. IDNs for actual value data container not configurable" is generated.

 A maximum of 32 IDNs can be configured in "[S-0-0371](#)".

S-0-0371 - Attributes

Function:	Par	Editable:	FKM:PO	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	IDN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

Standard parameters

AXS:	min./max.: --- / ---	Default value: s. Text
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4.3.71 S-0-0372, Drive Halt acceleration bipolar

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	<p>In this parameter, the maximum deceleration for shut down of a drive at</p> <ul style="list-style-type: none"> • Velocity command value reset with ramp and filter (quick stop) • Drive Halt <p>is set.</p>	
	<p>See also Functional Description "Drive Halt"</p> <p>See also Functional Description "Best possible deceleration"</p>	

Use Additionally, the value of this parameter serves as maximum acceleration or deceleration for spindle positioning (C0900 Position spindle procedure command).



The acceleration is limited to the value of "[S-0-0138](#), Bipolar acceleration limit value". The value of parameter "[S-0-0372](#), Deceleration, quick stop" should always be smaller than the value of parameter "[S-0-0138](#)" as otherwise, a following distance will build up due to internal control processes.

If the value of the parameter is "0", the parameter "[S-0-0138](#)" becomes effective.

S-0-0372 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0160 Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: Set-depend.: Grp. 1
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AXS:	min./max.: s. Text / s. Text	Default value: 100000000
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4.3.72 S-0-0378, Absolute encoder range, encoder 1

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	<p>This parameter indicates the travel range that can be selected over the entire mechanics so that an absolute encoder 1 can be evaluated in absolute form.</p> <p>At absolute format, the travel range is defined by parameter "S-0-0278, Maximum travel range". In this process, it has to be taken into account that "S-0-0103, Modulo value", the maximum travel range has to be applied bipolar.</p> <p>The parameter defines the travel range in modulo format. It is to be valued as unipolar. If absolute evaluation is possible, this is indicated in parameter "S-0-0277, Encoder 1, type of position encoder" in bit 6 = "1". During absolute scaling the bipolar absolute encoder range is calculated and corresponds at rotary encoders to halve the "S-0-0611.1.16 Absolute encoder range, 64 Bit (input)" of the encoder. At linear encoders, it corresponds to "S-0-0611.1.16" and always for modulo scaling.</p>	
	<p>See also Functional Description "Absolute measuring systems"</p>	

S-0-0378 - Attributes	Function: Par Memory: -- Unit: S-0-0076 Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: Set-depend.: --
---------------------------------------	---	---	--

AXS:	min./max.: --- / ---	Default value: ---
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4.3.73 S-0-0379, Absolute encoder range, encoder 2

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter displays the " S-0-0278 , Maximum travel range" that can be selected so that an absolute (optional) encoder 2 can be evaluated in absolute form.	
Use	See also Functional Description "Absolute measuring systems" If the encoder position exceeds this maximum travel range, bit 6 in the position feedback type parameter "S-0-0117" is set to zero. The position feedback value displayed is no longer unequivocal and the reference of encoder 2 is cleared. The reference status of the position encoders connected to the drive is displayed in parameter " S-0-0403 ".	

S-0-0379 - Attributes	Function: Par Memory: -- Unit: S-0-0076 Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: -- Set-depend.: --
---------------------------------------	---	---	---

AXS:	min./max.: --- / ---	Default value: ---
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4.3.74 S-0-0380, DC bus voltage

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter indicates the currently measured DC bus voltage.	
S-0-0380 - Attributes	Function: Par Memory: -- Unit: V Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --

AXS:	min./max.: --- / ---	Default value: ---
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4.3.75 S-0-0381, DC bus current

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameters serves to display the currently measured electric current which the rectifier supplies into the DC bus.	
S-0-0381 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --

AXS:	min./max.: --- / ---	Default value: ---
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4.3.76 S-0-0382, DC bus power

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Via this parameter, the DC bus power currently required by the motor is indicated.	
S-0-0382 - Attributes	Function: Par Memory: -- Unit: W Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --

Standard parameters

AXS:	min./max.: --- / ---	Default value: ---
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4.3.77 S-0-0383, Motor temperature

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter indicates the measured value of the temperature in the winding of the motor, if the temperature sensor incorporated in the motor allows analog temperature evaluation.	
	"P-0-0512 Temperature sensor" contains the value "1", "4" or "6", the actual motor temperature cannot be deduced from the displayed value due to the temperature sensor characteristic (switching performance).	

See also Functional Description "Motor temperature monitoring"

S-0-0383 - Attributes	Function: Par	Editable: --	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: DEC_MV
	Unit: S-0-0208	Extr. val. ch.: --	Decim. pl.:
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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4.3.78 S-0-0384, Amplifier temperature, heat sink

Allocation	Hardware Funct. package(s): Device parameter:	--												
Function	Display parameters for measured temperature of the power output stage of the controller (e.g. heat sink temperature).													
	S-0-0384 - Attributes <table style="width: 100%; border-collapse: collapse;"> <tr> <td>Function: Par</td> <td>Editable: --</td> <td>Data length: 2Byte</td> </tr> <tr> <td>Memory: --</td> <td>Validity ch.: --</td> <td>Format: DEC_MV</td> </tr> <tr> <td>Unit: S-0-0208</td> <td>Extr. val. ch.: --</td> <td>Decim. pl.:</td> </tr> <tr> <td>Cycl. tra.: AT</td> <td>Comb. check: --</td> <td>Set-depend.: --</td> </tr> </table>		Function: Par	Editable: --	Data length: 2Byte	Memory: --	Validity ch.: --	Format: DEC_MV	Unit: S-0-0208	Extr. val. ch.: --	Decim. pl.:	Cycl. tra.: AT	Comb. check: --	Set-depend.: --
Function: Par	Editable: --	Data length: 2Byte												
Memory: --	Validity ch.: --	Format: DEC_MV												
Unit: S-0-0208	Extr. val. ch.: --	Decim. pl.:												
Cycl. tra.: AT	Comb. check: --	Set-depend.: --												

AXS:	min./max.: --- / ---	Default value: ---
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4.3.79 S-0-0385, Motor output

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter indicates the current power of the motor. The power is calculated from the mechanical data, "current torque/force" and "current speed/velocity".	
	In sensorless operation mode, the torque and speed are only model-based factors and are therefore inaccurate. The value of the torque/force of asynchronous motors is inaccurate especially in the field-weakening range. To achieve good results with synchronous motors, use must be made of the possibility of correcting the torque constants subject to temperature and overload.	

S-0-0385 - Attributes	Function: Par	Editable: --	Data length: 4Byte
	Memory: --	Validity ch.: --	Format: DEC_MV
	Unit: W	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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4.3.80 S-0-0386, Active position feedback value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The value of parameter "S-0-0386" always displays the current position of the encoder which is set in the currently active operation mode. Depending on the active operating mode and parameter "S-0-0520, Axis control word", the active position feedback value either corresponds to parameter "S-0-0051, Position feedback value of encoder 1" or parameter "S-0-0053, Position feedback value of encoder 2" or the hybrid position feedback value.	
S-0-0386 - Attributes	Function: Par Memory: -- Unit: S-0-0076 Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

4.3.81 S-0-0390, Diagnostic message number

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter shows the current diagnostic message number. This enables the control unit to generate its own diagnostic messages by means of this number (e.g., in languages in which the diagnostic message texts have not been stored in the drive). See also Functional Description "Coded diagnostic messages of the drive"	
Structure	The hexadecimal value of "S-0-0390" consists of the following components: <ul style="list-style-type: none">• Bits 31 and 30 indicate who has responsibility for the specification of the diagnostic message.• Bits 29 through 24 indicate the Sercos profile to which the diagnostic message belongs.• Bit 20 shows the diagnostic message status.<ul style="list-style-type: none">– Bit 20 = "0": Diagnostic message is "Fxxxx" (error) type: The error cannot be cleared, because its cause has not yet been removed. Diagnostic message is "Cxxxx" (command) type: The command is in process.– Bit 20 = "1": Diagnostic message is "Fxxxx" (error) type: The error can be cleared. Diagnostic message is "Cxxxx" (command) type: The command was terminated with error or completed without error.• Bits 19 through 16 indicate the diagnostic message class, and thus, its priority.• Bits 15 through 0 indicate the status code of the diagnostic message.	
S-0-0390 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 4Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

Standard parameters

4.3.82 S-0-0390.0.136, Detailed diagnostics

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-2729
Function	Parameter "S-0-0390.0.136" contains the reported detailed diagnostic message as hexadecimal for current diagnosis in parameter "S-0-0390 Diagnostic message number". User-relevant detailed diagnostic messages are described under main diagnostics in the description of diagnostic messages.	
S-0-0390.0.136 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

4.3.83 S-0-0391, Monitoring window feedback 2

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter defines the maximum allowed deviation of the position feedback values of encoder 1 and encoder 2 (S-0-0051, Position feedback value of encoder 1, S-0-0053, Position feedback value of encoder 2). If this value is exceeded, the error "F2036 Excessive position feedback difference" is generated. Monitoring may be deactivated by writing the value "0" to this parameter.	
See also Functional Description "Monitoring the measuring systems"		
S-0-0391 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0076 Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: -- Format: DEC_OV Decim. pl.: + Set-depend.: +
	AXS:	min./max.: s. Text / s. Text Default value: 0

4.3.84 S-0-0393, Command value mode

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter controls the positioning behavior of modulo axes and defines the command value reference for positioning.	
See also Functional Description "Drive-controlled positioning"		
See also Functional Description "Position control"		
See also Functional Description "Drive-internal interpolation"		
See also Functional Description "Positioning block mode"		

Structure	Bit	Designation/function	Comment
	1/0	<p>Mode</p> <p>00: Positive direction Only one direction (positive direction of rotation) is allowed for jogging and positioning (relative/absolute). (See also F6059 Incorrect command value direction when positioning)</p> <p>01: Negative direction Only one direction (negative direction of rotation) is allowed for jogging and positioning (relative/absolute). (See also F6059, Incorrect command value direction when positioning)</p> <p>10: Shortest distance Both positive and negative directions of rotation are allowed for jogging and positioning (relative/absolute).</p> <p>Please note: If a positioning mode is activated and the current travel direction or direction of rotation is opposed to the direction (positive/negative) parameterized in "S-0-0393, Command value mode", error F6059 is not generated. In this case, the axis decelerates with the parameterized deceleration.</p> <p>Notice: Bit 1/0 has an effect on the direction of rotation of "modulo-scaled axes" during homing.</p>	
	2	<p>Command value reference when operation mode activated</p> <p>0: Reference for positioning is current actual position</p> <p>1: Reference for positioning is the content of "S-0-0430, Effective target position" (residual path processing)</p>	

Tab. 4-49: Structure of parameter S-0-0393

Use**Used with "modulo axes" (bit 1/0)**

This parameter defines the direction of rotation of a "modulo axis" in the case of drive-controlled positioning processes.

See also Functional Description "Modulo processing"



The position data format must be "modulo" ([S-0-0076](#), Position data scaling type).

Residual path processing (bit 2)

The following sections describe some special cases regarding residual path processing:

- If residual path processing is active, the drive, after the operation mode has been activated, travels the residual path without repeated command value acceptance if "[S-0-0430](#)" is applicable and the axis has been homed.



When the control voltage is switched off, the content of "[S-0-0430](#)" is automatically saved and restored when the drive is switched back on.

- If drive-internal positioning is aborted by jogging or stopping the positioning process ([S-0-0346](#); bit 2/1 = 11), the new positioning

Standard parameters

command value, too, is not applied before bit 0 in "[S-0-0346](#)" is toggled the next time. Any possibly existing residual path from the previous positioning process is cleared. When jogging and stopping the positioning process, the current values of "[S-0-0259](#), Positioning velocity" and "[S-0-0260](#), Positioning acceleration" or "[S-0-0359](#), Positioning deceleration" are active.

- The remaining distance will only be processed in case of re-activation of the operation mode if bit 2 = 1 and the axis has been continuously referenced since the last positioning.

S-0-0393 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / 0x7		Default value: 0x2

4.3.85 S-0-0398, IDN-list of configurable data in signal status word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter contains the IDNs of those parameters that can be entered (configured) in " S-0-0026 , Configuration list signal status word" or " S-0-1050.x.20 , Connection: IDN allocation of real-time bits" and " P-0-0310 , Digital outputs, assignment list".	
	See also Functional Description "Digital inputs/outputs"	
Use	" S-0-0026 " is a list with a maximum of 16 parameter IDNs, one bit of each is to be mapped to " S-0-0144 , Signal status word". The assignment with regard to which bit of the respective parameter is mapped to " S-0-0144 " is made in " S-0-0328 , Assign list signal status word".	
	" S-0-1050.x.20 " is a list with a maximum of 2 parameter IDNs of which one bit each is to be mapped to the connection control (C-Con). The assignment with regard to which bit of the respective parameter is mapped to " S-0-1050.x.20 " is made in " S-0-1050.x.21 , Connection: Bit number allocation of real-time bits".	
	By means of " P-0-0310 ", IDN numbers (parameters) can be assigned to the digital outputs. The respective bit is configured via " P-0-0311 ". The status of the assigned parameters is transferred to the digital outputs.	

S-0-0398 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: IDN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.4 S-0-0400 to S-0-0999 Standard parameters

4.4.1 S-0-0400, Home switch

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The switching state of the home switch connected to the drive-controller is mapped to this parameter.	
	See also Functional Description "Establishing position data reference for relative measuring systems"	

Structure	Bit	Designation/function	Comment
	0	Home switch 0: Not activated (0V) 1: Activated (24V)	

Tab. 4-50: *Relevant bits for home switch*

- Via this parameter, the switching state of the home switch can be assigned to a real-time status bit, for example.
- For evaluation of the home switch, "[S-0-0400](#)" has to be assigned to the dedicated digital input in "-0-0300, Digital I/Os, assignment list" and "[P-0-0301](#), Digital I/Os, bit numbers" has to be set accordingly.

S-0-0400 - Attributes	Function:	Par	Editable:	--	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	BIN
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:			min./max.: --- / ---		Default value: ---	

4.4.2 S-0-0401, Probe 1

Allocation	Hardware	--	
	Funct. package(s):		
Device parameter:			
Function	This parameter displays the switching state of the probe 1 input signal.		
Prerequisite:			
<ul style="list-style-type: none"> "S-0-0170, Probing cycle procedure command" must have been set and be executed. 			
See also Functional Description "Probe function"			
Structure	Bit	Designation/function	Comment
	0	Probe input signal 0: 0 V 1: 24 V	If the input signal bounces, this causes the warning E2132

Tab. 4-51: *Relevant bits of S-0-0401, Probe 1*

S-0-0401 - Attributes	Function:	Par	Editable:	--	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	BIN
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:			min./max.: --- / ---		Default value: ---	

4.4.3 S-0-0402, Probe 2

Allocation	Hardware	--	
	Funct. package(s):		
Device parameter:			
Function	This parameter displays the switching state of the probe 2 input signal.		
Prerequisite:			
<ul style="list-style-type: none"> "S-0-0170, Probing cycle procedure command" must have been set and be executed. 			
See also Functional Description "Probe function"			

Standard parameters

Structure	Bit	Designation/function	Comment
	0	Probe input signal 0: 0 V 1: 24 V	If the input signal bounces, this causes the warning E2133

Tab. 4-52: Relevant bits of S-0-0402, Probe 2

S-0-0402 - Attributes	Function:	Par	Editable:	--	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	BIN
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---		Default value: ---		

4.4.4 S-0-0403, Actual position value status

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter displays the status messages of the position feedback values of the connected encoders. In bit 0, it additionally displays the position status of the encoder declared via bit 3 of " S-0-0147 , Homing parameter".	
See also Functional Description "Establishing the position data reference"		

Structure	Bit	Designation/function	Comment
	0	Status of actual position value reference encoder 0: Relative 1: Homed	
	1	Status of motor encoder S-0-0051 , Position feedback value 1 0: Relative 1: Homed	

Tab. 4-53: Relevant bits of S-0-0403

Bit	Designation/function	Comment
0	Status of position feedback value of reference encoder (encoder 1 or 2) 0: Relative 1: Homed	
1	Status of motor encoder S-0-0051 , Position feedback value 1 0: Relative 1: Homed	
2	Status of ext. Encoder S-0-0053 , Position feedback value 2 0: Relative 1: Homed	

Tab. 4-54: Relevant bits of S-0-0404

Use	If the drive reacts to commands " S-0-0148 , C0600 Drive-controlled homing procedure command" or " S-0-0447 , C0300 Set absolute position procedure
-----	---

"command", bit 0 is reset when these commands are started (value "0"). After the respective command reaction has been successfully completed, bit 0 is set again (value "1").

If devices are provided with a Sercos interface, the status message of the position feedback values can be allocated to a real-time status bit and therefore constantly reported to the NC in the drive status.

See also parameter description "[S-0-0305](#), Allocation of real-time status bit 1"

S-0-0403 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---		Default value: ---	

4.4.5 S-0-0404, Position command value status

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	When the position command value is switched to axis reference, the master sets the position command value status to "homed". This gives the drive the information that the master from this point in time refers all position command values to the axis zero point. Simultaneously, the master enters the new position command value in the cyclic data.	
Structure	See also Functional Description "Establishing position data reference for relative measuring systems"	

Tab. 4-55: Relevant bits

S-0-0404 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: 0x0 / 0x1		Default value: ---	

4.4.6 S-0-0405, Probe 1 enable

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter enables (activates) the measurement with probe 1. The enabling mode (single measurement or continuous measurement) is set in " S-0-0169 , Probe control parameter". The probe can be enabled by a real-time control bit of the master control word, for example.	
Structure	See also Functional Description "Probe function"	

Bit	Designation/function	Comment
0	Probe enable 0: no 1: yes	

Tab. 4-56: Relevant bits of S-0-0405, Probe 1 enable

Standard parameters

S-0-0405 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: SUBD:OM Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.4.7 S-0-0406, Probe 2 enable

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter enables (activates) the measurement with probe 2. The enabling mode (single measurement or continuous measurement) is set in " S-0-0169 , Probe control parameter". The probe can be enabled by a real-time control bit of the master control word, for example.	
Structure	See also Functional Description "Probe function"	

Bit	Designation/function	Comment
0	Probe enable 0: no 1: yes	

Tab. 4-57: Relevant bits of "[S-0-0406](#)"

S-0-0406 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: SUBD:OM Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.4.8 S-0-0407, Homing enable

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In the case of NC-controlled homing, the master-side homing enable signal is one of the prerequisites for starting the search for the dedicated point on the drive side. Via this parameter, the homing enable signal can be assigned to a real-time control bit. The drive only evaluates the homing enable signal with the command "C4300 NC-controlled homing procedure command" being active!	
Structure	See also Functional Description "Establishing position data reference for relative measuring systems"	

Bit	Designation/function	Comment
0	Homing enable signal set on the master-side? 0: no 1: yes	

Tab. 4-58: Relevant bits

S-0-0407 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: SUBD:OM Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: 0x0 / 0x1		Default value: ---

4.4.9 S-0-0408, Reference marker pulse registered

Allocation	Hardware Funct. package(s): Device parameter:	--						
Function	For non-distance-coded encoders							
	In this parameter, the drive only signals the detection of the dedicated point (reference mark) with NC-controlled homing if "S-0-0407, Homing enable" is available on the master side and a reference mark of the encoder was detected. At the same time, the drive stores the non-homed position feedback value of the detected mark in "S-0-0173, Marker position A" or "S-0-0174, Marker position B".							
Structure	For distance-coded encoders							
	In this parameter, the drive with NC-controlled homing signals the detection of both reference marks of the distance-coded encoder independently of "S-0-0407, Homing enable". The drive stores the non-homed position feedback values of both detected reference marks in "S-0-0173, Marker position A" (first detected reference mark) and "S-0-0174, Marker position B" (second detected reference mark).							
	<table border="1"> <thead> <tr> <th>Bit</th><th>Designation/function</th><th>Comment</th></tr> </thead> <tbody> <tr> <td>0</td><td>Reference marker pulse(s) registered? 0: no 1: yes</td><td></td></tr> </tbody> </table>	Bit	Designation/function	Comment	0	Reference marker pulse(s) registered? 0: no 1: yes		
Bit	Designation/function	Comment						
0	Reference marker pulse(s) registered? 0: no 1: yes							

Tab. 4-59: Relevant bits



The parameter is only valid while the command "C4300 NC-controlled homing procedure" is active. For drive-controlled homing (C0600), this message is not generated!

S-0-0408 - Attributes	Function: Par	Editable: --	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: BIN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: ---

4.4.10 S-0-0409, Probe 1 positive latched

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter displays the measured values that were generated due to positive edges of the probe 1 input signal.	
	Prerequisite:	
	<ul style="list-style-type: none"> The command "S-0-0170, Probing cycle procedure command" has to be active. Bit 0 must have been set in "S-0-0169, Probe control parameter". Probe 1 must have been enabled (S-0-0405). 	
	See also Functional Description "Probe function"	
Use	The corresponding measured value is saved in "S-0-0130, Probe value 1 positive edge". If "single measurement" has been set in "S-0-0169, Probe control parameter" for the enabling mode of probe 1, bit 0 of "S-0-0409" goes from "0" to "1" when a value is measured.	

Standard parameters

If "continuous measurement" has been set, the number of values measured so far since the command had been activated is displayed in binary form in "[S-0-0409](#)". Bit 0 toggles every time a new value is measured. The drive clears the count if:

- the control clears the command "[S-0-0170](#), Probing cycle procedure command" or
- sets "[S-0-0405](#), Probe 1 enable" from "1" to "0".

 By assignment to the real-time status bits, the values measured can be directly detected by the control!

[S-0-0409](#) - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

4.4.11 [S-0-0410](#), Probe 1 negative latched

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter displays the measured values that were generated due to negative edges of the probe 1 input signal.	
Prerequisite:		
	<ul style="list-style-type: none"> • "S-0-0170, Probing cycle procedure command" has to be active • Bit 1 must have been set in "S-0-0169, Probe control parameter" • "S-0-0405, Probe 1 enable" must have been set 	
	See also Functional Description "Probe function"	
Use	The corresponding measured value is saved in " S-0-0131 , Probe value 1 negative edge". If "single measurement" has been set in " S-0-0169 , Probe control parameter" for the enabling mode of probe 1, bit 0 of " S-0-0410 " goes from "0" to "1" when a value is measured.	
	If "continuous measurement" has been set, the number of values measured so far since the command had been activated is displayed in binary form in " S-0-0410 ". Bit 0 toggles every time a new value is measured.	
	The drive clears the count if the control clears " S-0-0170 , Probing cycle procedure command" or sets " S-0-0405 , Probe 1 enable" from "1" to "0".	

 By assignment to the real-time status bits, the values measured can be directly detected by the control!

[S-0-0410](#) - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

4.4.12 [S-0-0411](#), Probe 2 positive latched

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter displays the measured values that were generated due to positive edges of the probe 2 input signal.	

Prerequisite:

- The command "[S-0-0170](#), Probing cycle procedure command" has to be active.
- Bit 2 must have been set in "[S-0-0169](#), Probe control parameter".
- Probe 2 enable ([S-0-0406](#)) must have been set.

See also Functional Description "Probe function"

Use The corresponding measured value is saved in "[S-0-0132](#), Probe value 2 positive edge".

If "single measurement" has been set in "[S-0-0169](#)" for the enabling mode of probe 1, bit 0 of "[S-0-0411](#)" goes from "0" to "1" when a value is measured.

If "continuous measurement" has been set, the number of values measured so far since the command had been activated is displayed in binary form in "[S-0-0411](#)". Bit 0 toggles every time a new value is measured. The drive clears the count if:

- the control clears the command "[S-0-0170](#), Probing cycle procedure command" or
- sets "[S-0-0406](#), Probe 2 enable" from "1" to "0".

 By assignment to the real-time status bits, the values measured can be directly detected by the control!

S-0-0411 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---		Default value: ---	

4.4.13 S-0-0412, Probe 2 negative latched

Allocation

Hardware --
Funct. package(s): --
Device parameter: --

Function

This parameter displays the measured values that were generated due to negative edges of the probe 2 input signal.

Prerequisite:

- The command "[S-0-0170](#), Probing cycle procedure command" has to be active.
- Bit 3 must have been set in "[S-0-0169](#), Probe control parameter".
- Probe 2 enable ([S-0-0406](#)) must have been set.

See also Functional Description "Probe function"

Use

The corresponding measured value is saved in "[S-0-0133](#), Probe value 2 negative edge".

If "single measurement" has been set in "[S-0-0169](#)" for the enabling mode of probe 1, bit 0 of "[S-0-0412](#)" goes from "0" to "1" when a value is measured.

If "continuous measurement" has been set, the number of values measured so far since the command had been activated is displayed in binary form in "[S-0-0412](#)". Bit 0 toggles every time a new value is measured.

The drive clears the count if:

- the control clears the command "[S-0-0170](#), Probing cycle procedure command" or
- sets "[S-0-0406](#), Probe 2 enable" from "1" to "0".

Standard parameters

 By assignment to the real-time status bits, the values measured can be directly detected by the control!

S-0-0412 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

4.4.14 S-0-0413, Bit number allocation of real-time control bit 1

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The real-time control bits 1 and 2 can each be directly written to one bit of a parameter in the drive. See also Functional Description "Real-time control bit and real-time status bit"		
Use	The IDN of the parameter containing the bit to which the real-time control bit 1 is to be written is entered in " S-0-0301 , Allocation of real-time control bit 1". The bit number is entered in " S-0-0413 ". The real-time control bits are part of the parameter " S-0-0134 ", Master control word, at active application profile "ServoDrive" and are cyclically (in real time) sent to the drive, i.e. one bit of the assigned parameter can be written in the communication cycle.		
S-0-0413 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: FKM:PO->SOP Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: 0

4.4.15 S-0-0414, Bit number allocation of real-time control bit 2

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The real-time control bits 1 and 2 can each be directly written to one bit of a parameter in the drive. See also Functional Description "Real-time control bit and real-time status bit"		
Use	The IDN of the parameter containing the bit to which the real-time control bit 2 is to be written is entered in " S-0-0303 , Allocation of real-time control bit 2". The bit number is entered in " S-0-0414 ". The real-time control bits are part of the parameter " S-0-0134 ", Master control word, at active application profile "ServoDrive" and are cyclically (in real time) sent to the drive, i.e. one bit of the assigned parameter can be written in the communication cycle.		
S-0-0414 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: FKM:PO->SOP Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: 0

4.4.16 S-0-0415, Bit number allocation of real-time status bit 1

Allocation	Hardware Funct. package(s): Device parameter:	--
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Function By means of the real-time status bits 1 and 2, it is possible to map a parameter bit for direct access by a control unit. Via "[S-0-0415](#)", the bit number of the required bit of a parameter can be selected.



The respective ident number of the parameter is entered into parameter "[S-0-0305](#)".

See also Functional Description "Real-time control bit and real-time status bit"

S-0-0415 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	FKM:PO->SOP	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: s. Text / s. Text Default value: 0

4.4.17 S-0-0416, Bit number allocation of real-time status bit 2

Allocation Hardware --
Funct. package(s):
Device parameter:

Function By means of the real-time status bits 1 and 2, it is possible to map a parameter bit for direct access by a control unit. Via "[S-0-0416](#)", the bit number of the required bit of a parameter can be selected.



The respective ident number of the parameter is entered into parameter "[S-0-0307](#)".

See also Functional Description "Real-time control bit and real-time status bit"

S-0-0416 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	FKM:PO->SOP	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: s. Text / s. Text Default value: 0

4.4.18 S-0-0417, Positioning velocity threshold in modulo mode

Allocation Hardware --
Funct. package(s):
Device parameter:

Function The direction for positioning with modulo scaling is primarily defined by means of parameter "[S-0-0393](#)" or "[S-0-0154](#)" (position spindle command). Under specific boundary conditions, this requirement does not apply.

The behavior for positioning is defined by the following parameters:

- [S-0-0393](#), Command value mode or [S-0-0154](#), Spindle positioning parameter
- [S-0-0417](#), Positioning velocity threshold in modulo mode
- [S-0-0418](#), Target position window in modulo mode

By means of parameter "[S-0-0417](#)", maintaining the current motion direction can be forced. If the current positioning command velocity (V_{act}) upon start of the positioning process is above this value, the current travel direction is generally maintained, i.e. in all modes (Shortest distance, only pos. direction, only neg. direction).

The effective threshold for the "Positioning velocity threshold" is defined by the higher value of:

Standard parameters

- [S-0-0417](#), Positioning velocity threshold in modulo mode
- [S-0-0124](#), Standstill window
- Specific encoder standstill detection (smallest standstill threshold that can be detected by the encoder used)

Prerequisite: The position data format must be "modulo" ([S-0-0076](#), Position data scaling type).

 Special case for modulo "shortest distance": [S-0-0417](#) = "0"
The "Positioning velocity threshold" is not effective.

See also Functional Description "Drive-controlled positioning"

See also Functional Description "Positioning block mode"

See also Functional Description "Spindle positioning"

See also Functional Description "Modulo processing"

S-0-0417 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	S-0-0044	Extr. val. ch.:	--	Decim. pl.:	--
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: s. Text / s. Text Default value: 0

4.4.19 S-0-0418, Target position window in modulo mode

Allocation Hardware --
Funct. package(s):
Device parameter:

Function This parameter can be used to define a symmetrical position range relative to the current position (target position window). Within the symmetrical position range, it is always possible to move to a target position over the shortest distance even if only one direction of motion has been set for positioning in "[S-0-0393](#), Command value mode" or "[S-0-0154](#), Spindle positioning parameter".

Prerequisite: The position data format must be "modulo" ([S-0-0076](#), Position data scaling type).

 If the value "0" is entered, the target position window is deactivated, i.e., the drive always moves to the target position as defined in "[S-0-0393](#)" or in "[S-0-0154](#)".

See also Functional Description "Drive-controlled positioning"

See also Functional Description "Spindle positioning"

See also Functional Description "Drive-internal interpolation"

See also Functional Description "Modulo processing"

S-0-0418 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	S-0-0076	Extr. val. ch.:	+	Decim. pl.:	--
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: s. Text / s. Text Default value: 10000

4.4.20 S-0-0419, Positioning command acknowledge

Allocation Hardware --
Funct. package(s):
Device parameter:

Function In "drive-controlled positioning" mode, this parameter serves for acknowledgment of application of positioning command values.

See also Functional Description "Drive-controlled positioning"

See also Functional Description "Positioning block mode"

Use The acknowledgment of acceptance takes place when the new value of "[S-0-0282](#), Positioning command value" is written to parameter "[S-0-0430](#), Effective target position" and respectively into the positioning command value generator at the time of writing. In case of parameter "[S-0-0346](#), Positioning control word; bit 5 = 0", acknowledgment only takes place after the drive had moved to the previous target position and the "target position attained" message ([S-0-0437](#); bit 0) had been set.

S-0-0419 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.4.21 S-0-0420, C0400 Activate configuration mode procedure command

Allocation Hardware --

Funct. package(s):

Device parameter:

Function The command switches the axis to configuration mode (CM). The command can be executed in parameter mode (PM) as well as in operating mode (OM). To achieve this, the cyclically running axis functions (encoder evaluation, motor temperature monitoring, analog signal processing, etc.) are stopped. The reference of the axis-related position encoders is deleted.

See also Functional Description "Basic functions of master communication"

S-0-0420 - Attributes

Function:	Cmd	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.4.22 S-0-0422, C0200 Activate operating mode procedure command

Allocation Hardware --

Funct. package(s):

Device parameter:

Function The command switches the axis to operating mode (OM). The command can be executed in configuration mode (CM) as well as in parameterization mode (PM). The axis-specific parameter calculations, checks and initializations are realized.

See also Functional Description "Basic functions of master communication"

S-0-0422 - Attributes

Function:	Cmd	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.4.23 S-0-0423, IDN-list of invalid data

Allocation Hardware --

Funct. package(s):

Device parameter:

Standard parameters

Function During status switching of the sub-device state machine to operating mode, the drive parameters are checked and converted on each status transition. If an error occurs while this is done, the faulty parameters are entered in this list. Additionally, incorrect parameters from other sources can be entered into the list. For example from [S-0-0263](#), "C2300 Load working memory procedure command".

Status transitions:

1. The transition to configuration mode after switching on or reset. This transition is realized automatically.
2. The transition from configuration mode to parameterization mode ([P-0-0504](#), C1100 Activate parameterization mode procedure command).
3. The transition from configuration or parameterization mode into operating mode. ([S-0-0422](#), C0200 Activate operation mode procedure command).

See also Functional Description "Basic functions of master communication"

S-0-0423 - Attributes	Function:	Par	Editable:	--	Data length:	4Byte var.
	Memory:	--	Validity ch.:	--	Format:	IDN
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---		Default value: ---		

4.4.24 S-0-0424, Status parameterization mode

Allocation Hardware
Funct. package(s):
Device parameter:

Function Status parameter indicates the current status of the sub-device state machine:
0: Operating mode (OM)
1: Configuration mode (CM)
2: Parameter mode (PM)

See also Functional Description "Basic functions of master communication"

S-0-0424 - Attributes	Function:	Par	Editable:	--	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_OV
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---		Default value: ---		

4.4.25 S-0-0425, Sub-device state machine control

Allocation Hardware
Funct. package(s):
Device parameter:

Function The parameter specifies the functions and the behavior of the subdevice state machine.

Structure	Bit	Designation/function	Comment
0	SCoupling of subdevice state machine with the master communication state machine 0: Coupled - Status changes of master communication lead to a status change in the sub-device state machine. The type of coupling (coupled or directly coupled operation) is defined in parameter "P-0-4088 Master communication: Drive configuration". 1: decoupled - Switchover of the master communication state machine does not lead to a status change of the sub-device state machine.		With this bit, the subdevice state machine can be decoupled from the master communication state machine.

Tab. 4-60: S-0-0425, control word subdevice state machine

Use Consider the following cases when configuring the bits:

Bit 0: If bit 0 is set to 1, the switching of the sub-device state machine has to be realized by the master of master communication. On switchover of the master communication state machine, the sub-device remains in its current state.

S-0-0425 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: --- / ---		Default value: ---

4.4.26 S-0-0426, Signal selection probe 1

Allocation Hardware --
Funct. package(s):
Device parameter:

Function In this parameter, select the parameter the current value of which is to be saved when switching probe 1.

The IDNs of the parameters that can be selected are listed in "S-0-0428, Probe, IDN-list signal selection". It is only possible to select these parameters!

See also Functional Description "Probe function"

S-0-0426 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: IDN Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: --- / ---		Default value: 0

4.4.27 S-0-0427, Signal selection probe 2

Allocation Hardware --
Funct. package(s):
Device parameter:

Function In this parameter, select the parameter the current value of which is to be saved when switching probe 2.

The IDNs of the parameters that can be selected are listed in "S-0-0428, Probe, IDN-list signal selection". It is only possible to select these parameters!

See also Functional Description "Probe function"

Standard parameters

S-0-0427 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: IDN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: 0

4.4.28 S-0-0428, Probe, IDN list signal selection

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter contains a list of IDNs of those parameters the current status variable (measured value) of which can be recorded upon the switch signal of a probe. The measured value is stored in a parameter and is therefore available for the control unit of the machine or installation.	

IDN	Signal	Comment
S-0-0000	No signal	
S-0-0051	Position feedback value 1 (encoder 1)	
S-0-0053	Position feedback value 2 (encoder 2)	
S-0-1305.0.2	System fine time	

Tab. 4-61: IDN list with signal selection

See also Functional Description "Probe function"

S-0-0428 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: IDN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.4.29 S-0-0429, Emergency stop deceleration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is used to set the deceleration ramp during the drive-side error reaction. Depending on the settings in "P-0-0119, Best possible deceleration", the "Deceleration emergency stop" will be used as reaction to errors of category F2xxx, F3xxx and/or F6xxx, F7xxx.	
	See also Functional Description "Best possible deceleration"	



The deceleration is limited to the value of "S-0-138, Acceleration value bipolar". The value of parameter "S-0-0429, Deceleration, emergency stop" should always be smaller than the value of parameter "S-0-0138" as otherwise, a following distance will build up due to internal control processes. If the value "0" is input for the parameter, the parameter "S-0-0138" takes effect.

S-0-0429 - Attributes	Function: Par Memory: PARAM_SP Unit: S-0-0160 Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 0

4.4.30 S-0-0430, Effective target position

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In this parameter, the current target position (absolute position) in operating modes: <ul style="list-style-type: none">• Drive-controlled positioning• Drive-internal interpolation• Positioning block mode can be read out.	
	See also Functional Description "Drive-controlled positioning"	
Use At "drive-controlled positioning", depending on the modalities defined in "S-0-0346, Position command value acceptance" and after change of the edge of the positioning command value acceptance bit, the value in "S-0-0430" corresponds to: <ul style="list-style-type: none">• the value of "S-0-0282, Positioning command value" if it was defined as absolute target position,• the total from the previous value of "S-0-0430" and "S-0-0282" if the new target position refers to the previous target position (→ S-0-0346; bit 4 = 0),• the total of the actual position value "S-0-0051" and "S-0-0282" at the time of toggling if the target position refers to the current actual position value (→ S-0-0346; bit 4 = 1).		
 If residual path processing at repeated activation of operating mode "drive-controlled positioning" is possible, e.g. after reconnection of control voltage at axes with absolute measuring system, the effective target position is still specified in "S-0-0430" (non-volatile parameter).		

S-0-0430 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	RETAIN_KUNDE	Validity ch.:	--	Format:	DEC_MV
Unit:	S-0-0076	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS: min./max.: --- / ---				Default value: ---	

4.4.31 S-0-0437, Positioning status

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter contains status bits of the positioning generator that are generated in the operation modes with internal interpolator (target position generator) (e.g. drive-internal interpolation). Positioning block mode Drive-controlled positioning	
	 If the condition for the message is fulfilled, the respective bit changes from 0 to 1!	
See also Functional Description "Drive-controlled positioning" See also Functional Description "Drive-internal interpolation" See also Functional Description "Positioning block mode"		

Standard parameters

Structure	Bit	Function	Comment	
	0	Status "Target position attained" (S-0-0342) S-0-0430 = P-0-0434 Please note: Is only generated with active operation mode!		
	1	In target position (only valid for BA drive-internal interpolation) S-0-0258 Target position - S-0-0386 , Active position feedback value < S-0-0057 Please note: Is also generated with inactive operation mode!		
	2	In target position (S-0-0338) (S-0-0430 - S-0-0386 , Active position feedback value < S-0-0057) and In position (S-0-0336) and message Standstill (S-0-0331) Is also generated with inactive operation mode!		
	3	Interpolator halted (S-0-0343)		
	4	Constant command velocity		
	5	Drive accelerates		
	6	Drive decelerates		
	11...7	(Reserved)		
	12	Jog mode active (S-0-0346 , bit 1 and 2)		
	13	Positioning velocity > nlimit (S-0-0315)		
	14	Target position outside of travel range (S-0-0323)		
	15	(Reserved)		
S-0-0437 - Attributes	Function:	Par	Editable: --	Data length: 2Byte
	Memory:	--	Validity ch.: --	Format: BIN
	Unit:	--	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.:	AT	Comb. check: --	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: ---	
4.4.32 S-0-0446, Ramp reference velocity for acceleration data				
S-0-0446 - Attributes	Allocation	Hardware Funct. package(s): Device parameter:	--	
	Function	If " S-0-0160 , Acceleration data scaling type" is set to the "ramp time" scaling type, the value in this parameter and the ramp reference time serve as defining variables for the reference velocity ramp. The value of " S-0-0446 " is scaled according to the scaling type for velocity data set in " S-0-0044 , Velocity data scaling type".		
See also Functional Description "Scaling of physical data"				
	Function:	Par	Editable: SUBD:CM	Data length: 4Byte
	Memory:	PARAM_SP	Validity ch.: SUBD:CM->PM	Format: DEC_OV
	Unit:	S-0-0044	Extr. val. ch.: --	Decim. pl.: --
	Cycl. tra.:	--	Comb. check: --	Set-depend.: --
AXS:		min./max.: s. Text / s. Text	Default value: 300000000	

4.4.33 S-0-0447, C0300 Set absolute position procedure command

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	When commissioning an absolute measuring system, the actual position value of this system initially displays a non-defined value as long as the "Set absolute position procedure" command has not been executed yet. See also Functional Description "Establishing the position data reference (set absolute position)" See also Functional Description "Measuring encoder"	
Use	Encoder 1/encoder 2: By means of the command "set absolute position", the actual position value can be set to a desired new value at any position (new reference system). After the end of the command "set absolute position", the actual position value of the respective encoder refers to the new reference system. The reference bit of the encoder in the parameter " S-0-0403 , Position feedback value status" then is "1". Measuring encoder: By means of the command "set absolute position", the internal actual position value of the measuring encoder is set to the value 0 at any position.	



The display value of the measuring encoder "P-0-0052, Actual position value of measuring encoder" in additive form always contains the value of the parameter "P-0-0087, Actual position value offset of measuring encoder". This value is not taken into account for "setting absolute position". The display value of the measuring encoder after "set absolute position" is 0 incr. + "P-0-0087, Actual position value offset of measuring encoder".

The reference bit of the measuring encoder in parameter "P-0-0331, Status of measuring encoder" then is "1". After the end of the command "set absolute position", the actual position value of the respective encoder refers to the new reference system.



The command only acts on the connected absolute measuring system that has been selected in the parameter "[S-0-0448](#), Set absolute position control". It is only possible to select one measuring system at a time.

By means of a backup of all required data of the absolute measuring system in the feedback data memory or parameter data memory, all information will be available every time the machine is switched off and on again. The actual position value retains its reference to the machine zero point.

S-0-0447 - Attributes

Function:	Cmd	Editable:	SUBD:OM	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: 0x0 / 0x3			Default value: ---

4.4.34 S-0-0448, Control word Set absolute position

Allocation	Hardware Funct. package(s): Device parameter:	--
-------------------	--	----

Standard parameters

Function	In this parameter select the absolute encoder for which the position data reference is to be established. In addition, set whether "S-0-0148, C0600 Drive-controlled homing procedure command" is to be possible with an absolute measuring system in addition to "S-0-0447, C0300 Set absolute position procedure command".																								
Structure	<table border="1"> <thead> <tr> <th>Bit</th><th>Designation/function</th><th>Comment</th></tr> </thead> <tbody> <tr> <td>0</td><td>Set absolute position for encoder 1 0: No 1: Yes</td><td></td></tr> <tr> <td>1</td><td>Set absolute position for encoder 2 0: no 1: Yes</td><td></td></tr> <tr> <td>2</td><td>"S-0-0447, C0300 Set absolute position procedure command" allowed with drive enable ("AF") 0: No 1: yes</td><td></td></tr> <tr> <td>6-3</td><td>Reserved</td><td></td></tr> <tr> <td>7</td><td>C0600 Drive-controlled homing procedure command allowed for abs. measuring system (applies to encoder 1 and encoder 2) 0: No 1: Yes</td><td></td></tr> <tr> <td>8</td><td>Reserved</td><td></td></tr> <tr> <td>15-9</td><td>Reserved</td><td></td></tr> </tbody> </table>	Bit	Designation/function	Comment	0	Set absolute position for encoder 1 0: No 1: Yes		1	Set absolute position for encoder 2 0: no 1: Yes		2	"S-0-0447, C0300 Set absolute position procedure command" allowed with drive enable ("AF") 0: No 1: yes		6-3	Reserved		7	C0600 Drive-controlled homing procedure command allowed for abs. measuring system (applies to encoder 1 and encoder 2) 0: No 1: Yes		8	Reserved		15-9	Reserved	
Bit	Designation/function	Comment																							
0	Set absolute position for encoder 1 0: No 1: Yes																								
1	Set absolute position for encoder 2 0: no 1: Yes																								
2	"S-0-0447, C0300 Set absolute position procedure command" allowed with drive enable ("AF") 0: No 1: yes																								
6-3	Reserved																								
7	C0600 Drive-controlled homing procedure command allowed for abs. measuring system (applies to encoder 1 and encoder 2) 0: No 1: Yes																								
8	Reserved																								
15-9	Reserved																								

Tab. 4-62: Relevant bits of S-0-0448

S-0-0448 - Attributes	Function: Par	Editable: ALWAYS	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: BIN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: +	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: s. Text

4.4.35 S-0-0450, Data container A: Command value 2

Allocation	Hardware	--	
	Funct. package(s):		
	Device parameter:		
Function	Parameter "S-0-0450, Data container A: Command value 2", the master transmits the data written in the drive to the target parameter which is addressed via "S-0-0368, Data container A: Addressing" from "S-0-0490, Data container A: Configuration list command value 2".		
	See also Functional Description "Multiplex channel"		
Use	If a 2-byte target parameter is addressed with 2-byte data, only the low word of "S-0-0450" is used. In order to use the data container, parameter "S-0-0450" has to be entered in the list of cyclic command values.		
S-0-0450 - Attributes	Function: Par	Editable: --	Data length: 4Byte
	Memory: --	Validity ch.: --	Format: HEX
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: AT + MDT	Comb. check: --	Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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4.4.36 S-0-0451, Data container A: Command value 3

Allocation Function	Hardware Funct. package(s): Device parameter: Function In parameter "S-0-0451", the master transmits the data written in the drive to the target parameter which is addressed via "S-0-0368, Data container A: Addressing" from "S-0-0491, Data container A: Configuration list command value 3". Use If a 2-byte target parameter is addressed with 2-byte data, only the low word of "S-0-0451" is used. In order to use the data container, parameter "S-0-0451" has to be entered in the list of cyclic command values. S-0-0451 - Attributes <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Function:</td><td>Par</td><td style="width: 25%;">Editable:</td><td>--</td><td style="width: 25%;">Data length:</td><td>4Byte</td></tr> <tr> <td>Memory:</td><td>--</td><td>Validity ch.:</td><td>--</td><td>Format:</td><td>HEX</td></tr> <tr> <td>Unit:</td><td>--</td><td>Extr. val. ch.:</td><td>--</td><td>Decim. pl.:</td><td>0</td></tr> <tr> <td>Cycl. tra.:</td><td>AT + MDT</td><td>Comb. check:</td><td>--</td><td>Set-depend.:</td><td>--</td></tr> </table>	Function:	Par	Editable:	--	Data length:	4Byte	Memory:	--	Validity ch.:	--	Format:	HEX	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--			
Function:	Par	Editable:	--	Data length:	4Byte																							
Memory:	--	Validity ch.:	--	Format:	HEX																							
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																							
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--																							

AXS:	min./max.: --- / ---	Default value: ---
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4.4.37 S-0-0452, Data container A: Command value 4

Allocation Function	Hardware Funct. package(s): Device parameter: Function In parameter "S-0-0452", the master transmits the data written in the drive to the target parameter which is addressed via "S-0-0368, Data container A: Addressing" from "S-0-0492, Data container A: Configuration list command value 4". Use If a 2-byte target parameter is addressed with 2-byte data, only the low word of "S-0-0452" is used. In order to use the data container, parameter "S-0-0452" has to be entered in the list of cyclic command values. S-0-0452 - Attributes <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Function:</td><td>Par</td><td style="width: 25%;">Editable:</td><td>--</td><td style="width: 25%;">Data length:</td><td>4Byte</td></tr> <tr> <td>Memory:</td><td>--</td><td>Validity ch.:</td><td>--</td><td>Format:</td><td>HEX</td></tr> <tr> <td>Unit:</td><td>--</td><td>Extr. val. ch.:</td><td>--</td><td>Decim. pl.:</td><td>0</td></tr> <tr> <td>Cycl. tra.:</td><td>AT + MDT</td><td>Comb. check:</td><td>--</td><td>Set-depend.:</td><td>--</td></tr> </table>	Function:	Par	Editable:	--	Data length:	4Byte	Memory:	--	Validity ch.:	--	Format:	HEX	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--			
Function:	Par	Editable:	--	Data length:	4Byte																							
Memory:	--	Validity ch.:	--	Format:	HEX																							
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																							
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--																							

AXS:	min./max.: --- / ---	Default value: ---
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4.4.38 S-0-0453, Data container A: Command value 5

Allocation Function	Hardware Funct. package(s): Device parameter: Function In parameter "S-0-0453", the master transmits the data written in the drive to the target parameter which is addressed via "S-0-0368, Data container A: Addressing" from "S-0-0493, Data container A: Configuration list command value 5". Use If a 2-byte target parameter is addressed with 2-byte data, only the low word of "S-0-0453" is used. In order to use the data container, parameter "S-0-0453" has to be entered in the list of cyclic command values.
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Standard parameters

S-0-0453 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.4.39 S-0-0454, Data container A: Command value 6

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	In parameter " S-0-0454 ", the master transmits the data written in the drive to the target parameter which is addressed via " S-0-0368 , Data container A: Addressing" from " S-0-0494 , Data container A: Configuration list command value 6".		
	See also Functional Description "Multiplex channel"		
Use	If a 2-byte target parameter is addressed with 2-byte data, only the low word of " S-0-0454 " is used. In order to use the data container, parameter " S-0-0454 " has to be entered in the list of cyclic command values.		
S-0-0454 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.4.40 S-0-0455, Data container A: Command value 7

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	In parameter " S-0-0455 ", the master transmits the data written in the drive to the target parameter which is addressed via " S-0-0368 , Data container A: Addressing" from " S-0-0495 , Data container A: Configuration list command value 7".		
	See also Functional Description "Multiplex channel"		
Use	If a 2-byte target parameter is addressed with 2-byte data, only the low word of " S-0-0455 " is used. In order to use the data container, parameter " S-0-0455 " has to be entered in the list of cyclic command values.		
S-0-0455 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.4.41 S-0-0456, Data container A: Command value 8

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In parameter " S-0-0456 ", the master transmits the data written in the drive to the target parameter which is addressed via " S-0-0368 , Data container A: Addressing" from " S-0-0496 , Data container A: Configuration list command value 8".	
	If a 2-byte target parameter is addressed with 2-byte data, only the low word of " S-0-0456 " is used. In order to use the data container, parameter " S-0-0456 " has to be entered in the list of cyclic command values.	

See also Functional Description "Multiplex channel"

S-0-0456 - Attributes	Function: Par	Editable: --	Data length: 4Byte
	Memory: --	Validity ch.: --	Format: HEX
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: AT + MDT	Comb. check: --	Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.4.42 S-0-0478, Position/travel range limit status

Allocation	Hardware Funct. package(s): Device parameter:	--															
Function	This parameter displays the status of position limitation and travel range limit switch monitoring. The status of position limitation and travel range limit switch monitoring is displayed even if monitoring has been deactivated.																
Structure	<table border="1"> <thead> <tr> <th>Bit</th><th>Designation/function</th><th>Comment</th></tr> </thead> <tbody> <tr> <td>0</td><td>Positive position limit value 0: Not exceeded 1: Exceeded</td><td></td></tr> <tr> <td>1</td><td>Negative position limit value 0: Not exceeded 1: Exceeded</td><td></td></tr> <tr> <td>2</td><td>Positive travel range limit switch 0: Not exceeded 1: Exceeded</td><td></td></tr> <tr> <td>3</td><td>Negative travel range limit switch 0: Not exceeded 1: Exceeded</td><td></td></tr> </tbody> </table>	Bit	Designation/function	Comment	0	Positive position limit value 0: Not exceeded 1: Exceeded		1	Negative position limit value 0: Not exceeded 1: Exceeded		2	Positive travel range limit switch 0: Not exceeded 1: Exceeded		3	Negative travel range limit switch 0: Not exceeded 1: Exceeded		
Bit	Designation/function	Comment															
0	Positive position limit value 0: Not exceeded 1: Exceeded																
1	Negative position limit value 0: Not exceeded 1: Exceeded																
2	Positive travel range limit switch 0: Not exceeded 1: Exceeded																
3	Negative travel range limit switch 0: Not exceeded 1: Exceeded																

Tab. 4-63: Relevant bits of P-0-0091, Position/travel range limit status

S-0-0478 - Attributes	Function: Par	Editable: --	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: BIN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.4.43 S-0-0480, Data container A: Feedback value 2

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	To parameter "S-0-0480", the drive copies the data of the source parameter which is addressed via " S-0-0368, Data container A: Addressing " from " S-0-0500, Data container A: Configuration list feedback value 2 ".	
	If a 2-byte source parameter is addressed with 2-byte data, only the low word is copied to " S-0-0480 ". In order to use the data container, parameter " S-0-0480 " has to be entered in the list of cyclic feedback values.	
	See also Functional Description "Multiplex channel"	
S-0-0480 - Attributes	Function: Par	Editable: --
	Memory: --	Validity ch.: --
	Unit: --	Extr. val. ch.: --
	Cycl. tra.: AT	Comb. check: --
		Data length: 4Byte
		Format: HEX
		Decim. pl.: 0
		Set-depend.: --

Standard parameters

AXS:	min./max.: --- / ---	Default value: ---
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4.4.44 S-0-0481, Data container A: Feedback value 3

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	To parameter "S-0-0481", the drive copies the data of the source parameter which is addressed via "S-0-0368, Data container A: Addressing" from "S-0-0501, Data container A: Configuration list feedback value 3".	

If a 2-byte source parameter is addressed with 2-byte data, only the low word is copied to "S-0-0481". In order to use the data container, parameter "S-0-0481" has to be entered in the list of cyclic feedback values.

See also Functional Description "Multiplex channel"

S-0-0481 - Attributes	Function: Par	Editable: --	Data length: 4Byte
	Memory: --	Validity ch.: --	Format: HEX
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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4.4.45 S-0-0482, Data container A: Feedback value 4

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	To parameter "S-0-0482", the drive copies the data of the source parameter which is addressed via "S-0-0368, Data container A: Addressing" from "S-0-0502, Data container A: Configuration list feedback value 4".	

If a 2-byte source parameter is addressed with 2-byte data, only the low word is copied to "S-0-0482". In order to use the data container, parameter "S-0-0482" has to be entered in the list of cyclic feedback values.

See also Functional Description "Multiplex channel"

S-0-0482 - Attributes	Function: Par	Editable: --	Data length: 4Byte
	Memory: --	Validity ch.: --	Format: HEX
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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4.4.46 S-0-0483, Data container A: Feedback value 5

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	To parameter "S-0-0483", the drive copies the data of the source parameter which is addressed via "S-0-0368, Data container A: Addressing" from "S-0-0503, Data container A: Configuration list feedback value 5".	

If a 2-byte source parameter is addressed with 2-byte data, only the "low word" is copied to "S-0-0483". In order to use the data container, parameter "S-0-0483" has to be entered in the list of cyclic feedback values.

See also Functional Description "Multiplex channel"

S-0-0483 - Attributes	Function: Par	Editable: --	Data length: 4Byte
	Memory: --	Validity ch.: --	Format: HEX
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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4.4.47 S-0-0484, Data container A: Feedback value 6

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	To parameter "S-0-0484", the drive copies the data of the source parameter which is addressed via "S-0-0368, Data container A: Addressing" from "S-0-0504, Data container A: Configuration list feedback value 6". If a 2-byte source parameter is addressed with 2-byte data, only the "low word" is copied to "S-0-0484". In order to use the data container, parameter "S-0-0484" has to be entered in the list of cyclic feedback values. See also Functional Description "Multiplex channel"	
S-0-0484 - Attributes		
Function:	Par	Editable: --
Memory:	--	Format: HEX
Unit:	--	Decim. pl.: 0
Cycl. tra.:	AT	Comb. check: -- Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---

4.4.48 S-0-0485, Data container A: Feedback value 7

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	To parameter "S-0-0485", the drive copies the data of the source parameter which is addressed via "S-0-0368, Data container A: Addressing" from "S-0-0505, Data container A: Configuration list feedback value 7". If a 2-byte source parameter is addressed with 2-byte data, only the "low word" is copied to "S-0-0485". In order to use the data container, parameter "S-0-0485" has to be entered in the list of cyclic feedback values. See also Functional Description "Multiplex channel"	
S-0-0485 - Attributes		
Function:	Par	Editable: --
Memory:	--	Format: HEX
Unit:	--	Decim. pl.: 0
Cycl. tra.:	AT	Comb. check: -- Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---

4.4.49 S-0-0486, Data container A: Feedback value 8

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	To parameter "S-0-0486", the drive copies the data of the source parameter which is addressed via "S-0-0368, Data container A: Addressing" from "S-0-0506, Data container A: Configuration list feedback value 8". If a 2-byte source parameter is addressed with 2-byte data, only the "low word" is copied to "S-0-0486". In order to use the data container, parameter "S-0-0486" has to be entered in the list of cyclic feedback values. See also Functional Description "Multiplex channel"	
S-0-0486 - Attributes		
Function:	Par	Editable: --
Memory:	--	Format: HEX
Unit:	--	Decim. pl.: 0
Cycl. tra.:	AT	Comb. check: -- Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---

Standard parameters

4.4.50 S-0-0490, Data container A: Configuration list command value 2

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In parameter "S-0-0490", the ident numbers are entered for transfer dependent on the index in "S-0-0368, Data container A: Addressing", low-byte, in "S-0-0450, Data container A: Command value 2". Writing of "S-0-0490" is only possible in "PreOperational". In command "S-0-0127, C0100 Safe-operational transition check", it is checked whether the ident numbers in "S-0-0490" are included in the lists "S-0-0188, List of configurable data in the AT". If this is not the case, the command error C0151 is generated.	



A maximum of 32 IDNs can be configured in "S-0-0490".

S-0-0490 - Attributes	See also Functional Description "Multiplex channel"				
	Function: Par	Editable:	FKM:PO	Data length:	4Byte var.
	Memory: PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	IDN
	Unit: --	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.: --	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.:	--- / ---	Default value:	s. Text

4.4.51 S-0-0491, Data container A: Configuration list command value 3

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In parameter "S-0-0491", the ident numbers are entered for transfer dependent on the index in "S-0-0368, Data container A: Addressing", low-byte, in "S-0-0451, Data container A: Command value 3". Writing of "S-0-0491" is only possible in "PreOperational". In command "S-0-0127, C0100 Safe-operational transition check", it is checked whether the ident numbers in "S-0-0491" are included in the lists "S-0-0188, List of configurable data in the AT". If this is not the case, the command error C0151 is generated.	



A maximum of 32 IDNs can be configured in "S-0-0491".

S-0-0491 - Attributes	See also Functional Description "Multiplex channel"				
	Function: Par	Editable:	FKM:PO	Data length:	4Byte var.
	Memory: PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	IDN
	Unit: --	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.: --	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.:	--- / ---	Default value:	s. Text

4.4.52 S-0-0492, Data container A: Configuration list command value 4

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In parameter "S-0-0492", the ident numbers are entered for transfer dependent on the index in "S-0-0368, Data container A: Addressing", low-byte, in "S-0-0452, Data container A: Command value 4". Writing of "S-0-0492" is only possible in "PreOperational". In command "S-0-0127, C0100 Safe-operational transition check", it is checked whether	

the ident numbers in "S-0-0492" are included in the lists "S-0-0188, List of configurable data in the AT". If this is not the case, the command error C0151 is generated.



A maximum of 32 IDNs can be configured in "S-0-0492".

See also Functional Description "Multiplex channel"

S-0-0492 - Attributes

Function:	Par	Editable:	FKM:PO	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	IDN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: s. Text

4.4.53 S-0-0493, Data container A: Configuration list command value 5

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

In parameter "S-0-0493", the ident numbers are entered for transfer dependent on the index in "S-0-0368, Data container A: Addressing", low-byte, in "S-0-0453, Data container A: Command value 5". Writing of "S-0-0493" is only possible in "PreOperational". In command "S-0-0127, C0100 Safe-operational transition check", it is checked whether the ident numbers in "S-0-0493" are included in the lists "S-0-0188, List of configurable data in the AT". If this is not the case, the command error C0151 is generated.



A maximum of 32 IDNs can be configured in "S-0-0493".

See also Functional Description "Multiplex channel"

S-0-0493 - Attributes

Function:	Par	Editable:	FKM:PO	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	IDN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: s. Text

4.4.54 S-0-0494, Data container A: Configuration list command value 6

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

In parameter "S-0-0494", the ident numbers are entered for transfer dependent on the index in "S-0-0368, Data container A: Addressing", low-byte, in "S-0-0454, Data container A: Command value 6".

Writing of "S-0-0494" is only possible in "PreOperational". In command "S-0-0127, C0100 Safe-operational transition check", it is checked whether the ident numbers in "S-0-0494" are included in the lists "S-0-0188, List of configurable data in the AT". If this is not the case, the command error C0151 is generated.



A maximum of 32 IDNs can be configured in "S-0-0494".

See also Functional Description "Multiplex channel"

Standard parameters

S-0-0494 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: FKM:PO Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: IDN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

4.4.55 S-0-0495, Data container A: Configuration list command value 7

Allocation	Hardware Funct. package(s): Device parameter: --
Function	In parameter "S-0-0495", the ident numbers are entered for transfer dependent on the index in "S-0-0368, Data container A: Addressing", low-byte, in "S-0-0455, Data container A: Command value 7". Writing of "S-0-0495" is only possible in "PreOperational". In command "S-0-0127, C0100 Safe-operational transition check", it is checked whether the ident numbers in "S-0-0495" are included in the lists "S-0-0188, List of configurable data in the AT". If this is not the case, the command error C0151 is generated.



A maximum of 32 IDNs can be configured in "S-0-0495".

See also Functional Description "Multiplex channel"

S-0-0495 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: FKM:PO Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: IDN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

4.4.56 S-0-0496, Data container A: Configuration list command value 8

Allocation	Hardware Funct. package(s): Device parameter: --
Function	In parameter "S-0-0496", the ident numbers are entered for transfer dependent on the index in "S-0-0368, Data container A: Addressing", low-byte, in "S-0-0456, Data container A: Command value 8". Writing of "S-0-0496" is only possible in "PreOperational". In command "S-0-0127, C0100 Safe-operational transition check", it is checked whether the ident numbers in "S-0-0496" are included in the lists "S-0-0188, List of configurable data in the AT". If this is not the case, the command error C0151 is generated.



A maximum of 32 IDNs can be configured in "S-0-0496".

See also Functional Description "Multiplex channel"

S-0-0496 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: FKM:PO Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: IDN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

4.4.57 S-0-0500, Data container A: Configuration list actual value 2

Allocation	Hardware Funct. package(s): Device parameter: --
-------------------	--

Function In parameter "[S-0-0500](#)", the ident numbers are entered for transfer dependent on the index in "[S-0-0368](#), Data container A: Addressing", high-byte, in "[S-0-0480](#), Data container A: Feedback value 2".

Writing of "[S-0-0500](#)" is only possible in "PreOperational". In command "[S-0-0127](#), C0100 Safe-operational transition check", it is checked whether the ident numbers in "[S-0-0500](#)" are included in the lists "[S-0-0187](#), List of configurable data in the AT". If this is not the case, the command error C0152 is generated.



A maximum of 32 IDNs can be configured in "[S-0-0500](#)".

See also Functional Description "Multiplex channel"

S-0-0500 - Attributes

Function:	Par	Editable:	FKM:PO	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	IDN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---		Default value: s. Text	

4.4.58 S-0-0501, Data container A: Configuration list actual value 3

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

In parameter "[S-0-0501](#)", the ident numbers are entered for transfer dependent on the index in "[S-0-0368](#), Data container A: Addressing", high-byte, in "[S-0-0481](#), Data container A: Feedback value 3".

Writing of "[S-0-0501](#)" is only possible in "PreOperational". In command "[S-0-0127](#), C0100 Safe-operational transition check", it is checked whether the ident numbers in "[S-0-0501](#)" are included in the lists "[S-0-0187](#), List of configurable data in the AT". If this is not the case, the command error C0152 is generated.



A maximum of 32 IDNs can be configured in "[S-0-0501](#)".

See also Functional Description "Multiplex channel"

S-0-0501 - Attributes

Function:	Par	Editable:	FKM:PO	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	IDN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---		Default value: s. Text	

4.4.59 S-0-0502, Data container A: Configuration list actual value 4

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

In parameter "[S-0-0502](#)", the ident numbers are entered for transfer dependent on the index in "[S-0-0368](#), Data container A: Addressing", high-byte, in "[S-0-0482](#), Data container A: Feedback value 4". Writing of "[S-0-0502](#)" is only possible in "PreOperational".

In command "[S-0-0127](#), C0100 Safe-operational transition check", it is checked whether the ident numbers in "[S-0-0502](#)" are included in the lists "[S-0-0187](#), List of configurable data in the AT". If this is not the case, the command error C0152 is generated.

Standard parameters



A maximum of 32 IDNs can be configured in "[S-0-0502](#)".

See also Functional Description "Multiplex channel"

S-0-0502 - Attributes

Function:	Par	Editable:	FKM:PO	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	IDN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: s. Text

4.4.60 S-0-0503, Data container A: Configuration list actual value 5

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

In parameter "[S-0-0503](#)", the ident numbers are entered for transfer dependent on the index in "[S-0-0368](#), Data container A: Addressing", high-byte, in "[S-0-0483](#), Data container A: Feedback value 5". Writing of "[S-0-0503](#)" is only possible in "PreOperational".

In command "[S-0-0127](#), C0100 Safe-operational transition check", it is checked whether the ident numbers in "[S-0-0503](#)" are included in the lists "[S-0-0187](#), List of configurable data in the AT". If this is not the case, the command error C0152 is generated.



A maximum of 32 IDNs can be configured in "[S-0-0503](#)".

See also Functional Description "Multiplex channel"

S-0-0503 - Attributes

Function:	Par	Editable:	FKM:PO	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	IDN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: s. Text

4.4.61 S-0-0504, Data container A: Configuration list actual value 6

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

In parameter "[S-0-0504](#)", the ident numbers are entered for transfer dependent on the index in "[S-0-0368](#), Data container A: Addressing", high-byte, in "[S-0-0484](#), Data container A: Feedback value 6".

Writing of "[S-0-0504](#)" is only possible in "PreOperational". In command "[S-0-0127](#), C0100 Safe-operational transition check", it is checked whether the ident numbers in "[S-0-0504](#)" are included in the lists "[S-0-0187](#), List of configurable data in the AT". If this is not the case, the command error C0152 is generated.



A maximum of 32 IDNs can be configured in "[S-0-0504](#)".

See also Functional Description "Multiplex channel"

S-0-0504 - Attributes

Function:	Par	Editable:	FKM:PO	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	IDN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: s. Text

4.4.62 S-0-0505, Data container A: Configuration list actual value 7

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In parameter "S-0-0505", the ident numbers are entered for transfer dependent on the index in "S-0-0368, Data container A: Addressing", high-byte, in "S-0-0485, Data container A: Feedback value 7". Writing of "S-0-0505" is only possible in "PreOperational". In command "S-0-0127, C0100 Safe-operational transition check", it is checked whether the ident numbers in "S-0-0505" are included in the lists "S-0-0187, List of configurable data in the AT". If this is not the case, the command error C0152 is generated.	



A maximum of 32 IDNs can be configured in "S-0-0505".

See also Functional Description "Multiplex channel"

S-0-0505 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: FKM:PO Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: IDN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: s. Text

4.4.63 S-0-0506, Data container A: Configuration list actual value 8

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In parameter "S-0-0506", the ident numbers are entered for transfer dependent on the index in "S-0-0368, Data container A: Addressing", high-byte, in "S-0-0486, Data container A: Feedback value 8". Writing of "S-0-0506" is only possible in "PreOperational". In command "S-0-0127, C0100 Safe-operational transition check", it is checked whether the ident numbers in "S-0-0506" are included in the lists "S-0-0187, List of configurable data in the AT". If this is not the case, the command error C0152 is generated.	



A maximum of 32 IDNs can be configured in "S-0-0506".

See also Functional Description "Multiplex channel"

S-0-0506 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: FKM:PO Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: IDN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: s. Text

4.4.64 S-0-0520, Axis control word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Selecting the position feedback values for the following non-position-controlled operation modes:	

Standard parameters

Operation mode	Coding displayed in S-0-0292	Associated value of parameters S-0-0032... S-0-0035
Torque/force control	0x0001	0000.0000.0000.0001
Velocity control	0x0002	0000.0000.0000.0010

Tab. 4-64: *Operation modes in which the active position feedback value (S-0-0386) can be selected directly via S-0-0520*

See also Functional Description "Operation modes"

In torque/force control and velocity control, it can be defined whether "[S-0-0051](#), Position feedback value encoder 1" or the "[S-0-0053](#), Position feedback value encoder 2" is displayed in "[S-0-0386](#), Active position feedback value".

Bit	Designation/function	Comment
0	Selecting the position feedback value in non-position-controlled operation modes: 0: Encoder 1 1: Encoder 2	

Tab. 4-65: *Relevant bits of S-0-0520, Axis control word for non-position-controlled operation modes*

Selecting the position feedback values and the type of position control (lagless or with lag error) for the following position-controlled operation modes:

Operation mode	Coding displayed in S-0-0292	Associated value of parameters S-0-0032... S-0-0035
Pos. ctrl drive-controlled with ctrl word of axis controller	0x0305	0000.0011.0000.0101
Position control with control word of axis controller	0x0205	0000.0010.0000.0101
Drive-internal interpolat. with ctrl word of axis controller	0x0315	

Tab. 4-66: *Operation modes in which the position feedback value active in position control can be cyclically selected by the master communication via "S-0-0520"*

The position feedback value is selected in "[S-0-0520](#), Axis control word" while the acknowledgement of which position feedback value is in fact active in position control is set in "[S-0-0521](#), Axis status word".

Bit	Designation/function	Comment
1/0	The active position control encoder is 00: Encoder 1 10: Encoder 1 (corresponds to "00") 01: Encoder 2 11: Hybrid actual position value for hybrid position control Selecting the position feedback value if "measuring wheel encoder" is set in "P-0-0185": 00 or 10: Encoder 1 01 or 11: Hybrid actual position value for measuring wheel mode	Hybrid actual position value: Actual position value of encoder 1 and encoder 2
2	Type of position control 0: With lag error 1: Lagless	

Tab. 4-67: Relevant bits of S-0-0520, Axis control word

Additionally, encoder selection and selection of the position controller of the axis control word has an effect on the following commands:

- Brake check command
- Drive optimization command
- Oscillation command

S-0-0520 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT + MDT	Comb. check:	+	Set-depend.:	--

AXS: min./max.: --- / --- Default value: 0x4

4.4.65 S-0-0521, Axis status word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter displays current information about the active operation mode in all operation modes, if such information is relevant for position control.	
Structure	See also Functional Description "Operation modes"	

Bit	Designation/function	Comment
1/0	The active position control encoder is 00: Encoder 1 10: Encoder 1 (corresponds to "00")	
2	Type of position control 0: With lag error 1: Lagless	

Tab. 4-68: Relevant bits of axis status word

Standard parameters

Bit	Designation/function	Comment
1/0	The active position control encoder is 00: Encoder 1 01: Encoder 2 10: Encoder 1 (corresponds to "00") 11: Encoder 1 and encoder 2, hybrid actual position value for ...	
2	Type of position control 0: With lag error 1: Lagless	

Tab. 4-69: Relevant bits of axis status word

S-0-0521 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---			
					Default value: ---

4.4.66 S-0-0524, Dead time compensation, positive edge, probe 1

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	There is a small time difference, called "dead time", between the activation of a probe and the point of time at which the signal change this causes takes effect at the hardware input of the control section. Depending on the direction of the signal change (rising or falling signal edge), different dead times are to be expected.	
Use	This parameter is used to input the dead time to be expected with a rising edge of the probe signal and enables the firmware to compensate the measuring error caused by the dead time.	
 The drive generates the probe value at detection of the signal change which was triggered by the dead time earlier. The firmware corrects the recorded probe value by the measuring error caused by the dead time.		

S-0-0524 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	us	Extr. val. ch.:	+	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: 0,000 / 50000,000			
					Default value: 0,000

4.4.67 S-0-0525, Dead time compensation, negative edge, probe 1

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	There is a small time difference, called "dead time", between the activation of a probe and the point of time at which the signal change this causes takes	

effect at the hardware input of the control section. Depending on the direction of the signal change (rising or falling signal edge), different dead times are to be expected.

Use This parameter is used to input the dead time to be expected with a falling edge of the probe signal and enables the firmware to compensate the measuring error caused by the dead time.



The drive generates the probe value at detection of the signal change which was triggered by the dead time earlier. The firmware corrects the recorded probe value by the measuring error caused by the dead time.

S-0-0525 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	us	Extr. val. ch.:	+	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: 0,000 / 50000,000	Default value: 0,000
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4.4.68 S-0-0526, Dead time compensation, positive edge, probe 2

Allocation

Hardware
Funct. package(s):
Device parameter: --

Function

There is a small time difference, called "dead time", between the activation of a probe and the point of time at which the signal change this causes takes effect at the hardware input of the control section. Depending on the direction of the signal change (rising or falling signal edge), different dead times are to be expected.

Use

This parameter is used to input the dead time to be expected with a rising edge of the probe signal and enables the firmware to compensate the measuring error caused by the dead time.



The drive generates the probe value at detection of the signal change which was triggered by the dead time earlier. The firmware corrects the recorded probe value by the measuring error caused by the dead time.

S-0-0526 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	us	Extr. val. ch.:	+	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: 0,000 / 50000,000	Default value: 0,000
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4.4.69 S-0-0527, Dead time compensation, negative edge, probe 2

Allocation

Hardware
Funct. package(s):
Device parameter: --

Function

There is a small time difference, called "dead time", between the activation of a probe and the point of time at which the signal change this causes takes effect at the hardware input of the control section. Depending on the direction of the signal change (rising or falling signal edge), different dead times are to be expected.

Use

This parameter is used to input the dead time to be expected with a falling edge of the probe signal and enables the firmware to compensate the measuring error caused by the dead time.

Standard parameters

 The drive generates the probe value at detection of the signal change which was triggered by the dead time earlier. The firmware corrects the recorded probe value by the measuring error caused by the dead time.

S-0-0527 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	us	Extr. val. ch.:	+	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: 0,000 / 50000,000	Default value: 0,000
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4.4.70 S-0-0530, Clamping torque

Allocation Hardware
Funct. package(s):
Device parameter: --

Function This parameter can be used to additionally limit the torque/force command value at the stop drive procedure in order to protect mechanical components in the mechanical drive system.

Use The parameter has an effect on the active "Positive stop drive procedure command" ([S-0-0149](#)) and for homing at positive stop, additionally to "Bipolar torque/force limit value" ([S-0-0092](#)).

The parameter has a bipolar effect, i.e., positive and negative command values are limited to the value that has been input.

If the current torque/force limit value reaches this threshold, the "Positive stop drive procedure command" is acknowledged positively. On "drive-controlled homing", the stop drive procedure is recognized and the axis switches its travel direction.

S-0-0530 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	S-0-0086	Extr. val. ch.:	+	Decim. pl.:	--
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: 0
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4.4.71 S-0-0531, Checksum of backup operation data

Allocation Hardware
Funct. package(s):
Device parameter: --

Function When reading this parameter, the checksum is generated via all application parameters the ident numbers of which are listed in parameter "[S-0-0192](#), IDN-list of all backup operation data". Besides the parameter value, the status of validity of the parameter is taken into account for calculation.

 The checksum is generated via the parameter values saved in the active non-volatile memory. The checksum depends on the settings of "[S-0-0269](#), Storage mode" or execution of command "[S-0-0264](#), C2200 Backup working memory procedure command" or "[S-0-0293](#), C2400 Selectively backup working memory procedure command". The active non-volatile memory is the internal flash memory.

See also Functional Description "Parameters, general information"

S-0-0531 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.4.72 S-0-0532, Travel range limit parameter

Allocation Hardware Funct. package(s): Device parameter: --	Function This parameter is used to define the signal behavior of the travel range limit switch inputs and the behavior of the drive in case the travel range has been exceeded. Structure See also Functional Description "Digital inputs/outputs"													
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; padding: 2px;">Bit</th> <th style="text-align: left; padding: 2px;">Designation/function</th> <th style="text-align: left; padding: 2px;">Comment</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; padding: 2px;">0</td> <td style="padding: 2px;"> Signal behavior of travel range limit switch inputs 0: Not inverted, 24 V \Rightarrow travel range exceeded 1: Inverted, 0 V \Rightarrow travel range exceeded </td> <td style="text-align: left; padding: 2px;"></td> </tr> <tr> <td style="text-align: center; padding: 2px;">1</td> <td style="padding: 2px;"> Activation of travel range limit switches 0: No 1: Yes Digital inputs have to be assigned to bit 0 and bit 1 of parameter "P-0-0222". Otherwise, it is not possible to write the bit in operation mode. </td> <td style="text-align: left; padding: 2px;"></td> </tr> <tr> <td style="text-align: center; padding: 2px;">2</td> <td style="padding: 2px;"> Handling in case travel range has been exceeded 0: As an error (according to error reaction) 1: As a warning (deceleration) </td> <td style="text-align: left; padding: 2px;"></td> </tr> </tbody> </table>	Bit	Designation/function	Comment	0	Signal behavior of travel range limit switch inputs 0: Not inverted, 24 V \Rightarrow travel range exceeded 1: Inverted, 0 V \Rightarrow travel range exceeded		1	Activation of travel range limit switches 0: No 1: Yes Digital inputs have to be assigned to bit 0 and bit 1 of parameter " P-0-0222 ". Otherwise, it is not possible to write the bit in operation mode.		2	Handling in case travel range has been exceeded 0: As an error (according to error reaction) 1: As a warning (deceleration)		
Bit	Designation/function	Comment												
0	Signal behavior of travel range limit switch inputs 0: Not inverted, 24 V \Rightarrow travel range exceeded 1: Inverted, 0 V \Rightarrow travel range exceeded													
1	Activation of travel range limit switches 0: No 1: Yes Digital inputs have to be assigned to bit 0 and bit 1 of parameter " P-0-0222 ". Otherwise, it is not possible to write the bit in operation mode.													
2	Handling in case travel range has been exceeded 0: As an error (according to error reaction) 1: As a warning (deceleration)													

Tab. 4-70: Relevant bits of travel range limit parameter

S-0-0532 - Attributes	Function:	Par	Editable:	ALWAYS	Data length:	2Byte
	Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	BIN
	Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: 0x0 / 0x7	Default value: 0x0
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4.4.73 S-0-0533, Nominal torque/force of motor

Allocation Hardware Funct. package(s): Device parameter: --	Function Under defined ambient and operating conditions, the motor can permanently deliver the nominal torque or the nominal force. The value applies to the status of the motor at operating temperature and is entered as follows: <ul style="list-style-type: none"> • Rexroth housing motors MSK, MS2x, MSM: Automatically from encoder data memory • Rexroth housing motors MAD, MAF: Manual entry of the motor-specific value • Rexroth kit motors MSS (MBS): When loading the motor parameter values from the database of "ctrlX DRIVE Engineering" • Rexroth kit motors MST(MBT), MLP(MLF), MCP(MCL), 1MS(1MB) and third-party motors: Manual entry of the motor-specific value For Rexroth motors MS2x and MSM, the value serves as reference for percentage-based torque/force scaling.	
---	--	--

Standard parameters



For further information on the reference value for percentage-based torque/force data scaling, see parameter description "[S-0-0086, Torque/force data scaling type](#)".

"[S-0-0111, Motor current at standstill](#)" is related to this parameter. When the nominal torque or the nominal force is demanded from the motor at operating temperature, the motor current corresponds to the absolute value of "[S-0-0111](#)".

See also Functional Description "Torque/force limitation"

S-0-0533 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	Nm	Extr. val. ch.:	--	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS:	min./max.: --- / ---	Default value: 0,000
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4.4.74 S-0-0534, Maximum torque/force of motor**Allocation**

Hardware --
Funct. package(s):
Device parameter:

Function

This value is required for using the "correction of the torque/force constant". For Rexroth motors with motor data memory (MS2 motors MSK version 4.5), the parameter is set with a value from the encoder memory.

Due to saturation effects in the motor, the torque/force constant is reduced with increasing current. At maximum torque or maximum force, the motor current corresponds to the absolute value of "[S-0-0109, Motor peak current](#)". The quotient of "[S-0-0534, Maximum torque/force of motor](#)" and "[S-0-0109, Motor peak current](#)" corresponds to the torque/force constant at maximum current. Due to magnetic saturation effects, this value is lower than "[P-0-0051, Torque/force constant](#)".



With Rexroth motors, the value of "[S-0-0534, Maximum torque/force of motor](#)" refers to an ambient temperature of 20° C.

See also Functional Description "Torque/force limitation"

S-0-0534 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	Nm	Extr. val. ch.:	--	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	Grp. 4

AXS:	min./max.: --- / ---	Default value: 0,000
------	----------------------	----------------------

4.4.75 S-0-0535, Active velocity value**Allocation**

Hardware --
Funct. package(s):
Device parameter:

Function

The value of parameter "[S-0-0535](#)" always displays the current velocity of the encoder which is set in the active operation mode.

Depending on the operation mode that has been set, the active velocity feedback value can either correspond to parameter "[S-0-0040, Velocity feedback value](#)" or to parameter "[S-0-0156, Velocity feedback value 2](#)" or to a mixed value.

See also Functional Description "Velocity control"

S-0-0535 - Attributes	Function: Par Memory: -- Unit: S-0-0044 Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.4.76 S-0-0561, Power limit value: Withdrawal from DC bus

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The maximum possible power withdrawn by the axis from the DC bus is entered.		
S-0-0561 - Attributes	Function: Par Memory: PARAM_SP Unit: W Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 2147483647

4.4.77 S-0-0562, Power limit value: Supply to DC bus

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The maximum possible power supplied to the DC bus is entered.		
S-0-0562 - Attributes	Function: Par Memory: PARAM_SP Unit: W Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: ---

4.4.78 S-0-0563, DC bus current limit value, withdrawal

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The maximum admissible DC bus current is entered in this parameter, which can be withdrawn from the DC bus during motor operation of the axis.		
S-0-0563 - Attributes	Function: Par Memory: PARAM_SP Unit: A Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: s. Text

4.4.79 S-0-0564, DC bus current limit value, feeding

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The maximum admissible DC bus current is entered in this parameter, which can be withdrawn from the DC bus during generator operation of the axis.		
S-0-0564 - Attributes	Function: Par Memory: PARAM_SP Unit: A Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: s. Text

Standard parameters

4.4.80 S-0-0600.x.1, Encoder status

Allocation	Hardware -- Funct. package(s): Device parameter: Alias:	S-0-2300, S-0-2325, S-0-2350
Function Structure	The parameter contains the status information of the encoder.	
Bit	Designation/function	Comment
15/14	Ready for operation 11: Ready for operation 10: Reserved 01: Reserved 00: Not ready for operation	
13	Encoder error 1: Error 0: No error	
12	Encoder warning 1: Warning active 0: No warning active	
11	Reserved	
10	Mark detection 1: Reference mark detected 0: Reference mark not detected	Only mark detected, mark position not available yet
9	Reserved	
8	Mark recording 1: Active 0: Not active	
7	Mark signal 1: Reference mark detected and saved 0: Reference mark not detected	Mark was detected and mark position is valid. The associated mark position is entered in parameter S-0-0600.x. 23/24
6	Mark status 1: Reference mark position is valid 0: Reference mark position is invalid	
5	Position status (absolute position) 1: Correctly initialized 0: Not correctly initialized	
0-4	Reserved	

Tab. 4-71: S-0-0600.000.001, Encoder status

Use

The structure index is used to define the interface.

Structure index interface assignment:

Structure index	Significance
2	XG21
10	XG20 (preferred slot for encoder 1)

S-0-0600.x.1 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
------	----------------------	--------------------

4.4.81 S-0-0600.x.21, Position, 32 Bit, fine**Allocation**

Hardware --

Funct. package(s):

Device parameter:

Alias: S-0-2320, S-0-2345, S-0-2370

Function

This parameter contains the position (unscaled) of the encoder, with the resolution defined in "S-0-0601.x.21". The position is provided as a 64-bit value. This parameter displays the lower 32 bits of the position.

Use

The structure index is used to define the interface.

Structure index	Significance
2	XG21
10	XG20 (preferred slot for encoder 1)

S-0-0600.x.21 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	incr	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
------	----------------------	--------------------

4.4.82 S-0-0600.x.22, Position, 32 Bit, coarse**Allocation**

Hardware --

Funct. package(s):

Device parameter:

Alias: S-0-2321, S-0-2346, S-0-2371

Function

This parameter contains the position (unscaled) of the encoder, with the resolution defined in "S-0-0601.x.21". The position is provided as a 64-bit value. This parameter displays the upper 32 bits of the position.

Use

The structure index is used to define the interface.

Structure index	Significance
2	XG21
10	XG20 (preferred slot for encoder 1)

Standard parameters

S-0-0600.x.22 - Attributes	Function: Par Memory: -- Unit: incr Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.4.83 S-0-0600.x.23, Marker position, 32 bit fine

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2322, S-0-2372	--
Function	The parameter contains the position of the encoder saved at the reference mark in increments (unscaled), with the resolution defined in "S-0-0601.x.21". The position is provided as a 64-bit value. This parameter displays the lower 32 bits of the position.	
S-0-0600.x.23 - Attributes	Function: Par Memory: -- Unit: incr Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

4.4.84 S-0-0600.x.24, Marker position, 32 bit coarse

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2323, S-0-2373	--
Function	The parameter contains the position of the encoder saved at the reference mark in increments (unscaled), with the resolution defined in "S-0-0601.x.21". The position is provided as a 64-bit value. This parameter displays the upper 32 bits of the position.	
S-0-0600.x.24 - Attributes	Function: Par Memory: -- Unit: incr Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

4.4.85 S-0-0600.x.140, Encoder buffer error class 2 (static)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	 This parameter is only relevant to the development staff! It is irrelevant for the application!	
S-0-0600.x.140 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.:	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: s. Text

4.4.86 S-0-0601.x.1, Encoder data out configuration

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2400, S-0-2425, S-0-2450	--
Function	The parameter specifies the following properties of the encoder output data:	

- Type of design of encoder
- Position resolution format
- Rotational direction

The type of design and the position resolution format are automatically specified by evaluating the parameter "[S-0-0602.x.2](#), Phys. encoder properties". The rotational direction of the encoder position provided by the Encoder-Basic evaluation can be inverted by setting bit 3.

Structure

Bit	Designation/function	Comment
0	Reserved	
1	Type of design 0: Rotary 1: Linear	AXS-V-0204 and above
2	Position resolution format 0: Digital encoder • S-0-0601.x.21 : rotary encoder [incr/rev] • S-0-0601.x.21 : linear encoder [nm/incr] 1: Analog encoder/combined encoder • S-0-0601.x.21 : rotary encoder [incr/rev] • S-0-0601.x.21 : linear encoder [incr/DP] • S-0-0601.x.24 : linear encoder [nm/DP]	AXS-V-0204 and above
3	Rotational direction 0: Not inverted 1: Inverted	
15-4	Reserved	

Tab. 4-72: *S-0-0601.000.001, Encoder data out configuration***Use**

The structure index is used to define the interface.

Structure index	Significance
2	XG21
10	XG20 (preferred slot for encoder 1)

S-0-0601.x.1 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: --- / ---				Default value: 0x0

4.4.87 S-0-0601.x.12, Encoder refresh time data out**Allocation**

Hardware --

Funct. package(s):

Device parameter:

Alias: [S-0-2411](#), [S-0-2461](#)

Function

The parameter displays the cycle time of encoder evaluation in microseconds (μ s). The encoder evaluation generates a new position value in this interval.

Standard parameters

Use  The structure index is used to define the interface.																																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; padding: 2px;">Structure index</th> <th style="text-align: left; padding: 2px;">Significance</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; padding: 2px;">2</td> <td style="text-align: left; padding: 2px;">XG21</td> </tr> <tr> <td style="text-align: center; padding: 2px;">10</td> <td style="text-align: left; padding: 2px;">XG20 (preferred slot for encoder 1)</td> </tr> </tbody> </table>	Structure index	Significance	2	XG21	10	XG20 (preferred slot for encoder 1)																														
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S-0-0601.x.12 - Attributes																																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Function:</td> <td>Par</td> <td>Editable:</td> <td>SUBD:CM</td> <td>Data length:</td> <td>4Byte</td> </tr> <tr> <td>Memory:</td> <td>PARAM_SP</td> <td>Validity ch.:</td> <td>SUBD:CM->PM</td> <td>Format:</td> <td>DEC_OV</td> </tr> <tr> <td>Unit:</td> <td>us</td> <td>Extr. val. ch.:</td> <td>--</td> <td>Decim. pl.:</td> <td>3</td> </tr> <tr> <td>Cycl. tra.:</td> <td>--</td> <td>Comb. check:</td> <td>--</td> <td>Set-depend.:</td> <td>--</td> </tr> <tr> <td style="height: 10px;"></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>AXS:</td> <td></td> <td>min./max.:</td> <td>--- / ---</td> <td colspan="2">Default value: 0,000</td> </tr> </table>	Function:	Par	Editable:	SUBD:CM	Data length:	4Byte	Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV	Unit:	us	Extr. val. ch.:	--	Decim. pl.:	3	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--							AXS:		min./max.:	--- / ---	Default value: 0,000	
Function:	Par	Editable:	SUBD:CM	Data length:	4Byte																															
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV																															
Unit:	us	Extr. val. ch.:	--	Decim. pl.:	3																															
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																															
AXS:		min./max.:	--- / ---	Default value: 0,000																																

4.4.88 S-0-0601.x.21, Resolution of position

Allocation Hardware Funct. package(s): Device parameter: Alias: S-0-2420 , S-0-2445 , S-0-2470																																				
Function This parameter specifies the resolution of the position of the Basic encoder evaluation. The resolution is specified according to the type of design and encoder class (see S-0-0601.x.1): <ul style="list-style-type: none"> • in incr./rev. for rotary measuring systems • in nanometers/incr. for linear digital measuring systems • in increments/division period for linear analog/combined measuring systems 																																				
 The parameter is a 64-byte value. <ul style="list-style-type: none"> • The lower 32 bits are displayed in element 0. • The upper 32 bits are displayed in element 1. 																																				
Use  The structure index is used to define the interface.																																				
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S-0-0601.x.21 - Attributes																																				
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Function:	Par	Editable:	SUBD:CM	Data length:	4Byte var.																															
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV																															
Unit:	incr	Extr. val. ch.:	--	Decim. pl.:	0																															
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																															
AXS:		min./max.:	--- / ---	Default value: s. Text																																

4.4.89 S-0-0601.x.22, Position overflow threshold

Allocation Hardware Funct. package(s): Device parameter: Alias: S-0-2421 , S-0-2446 , S-0-2471
Function This parameter specifies the value in increments, at which the position of the Basic encoder evaluation jumps to 0. The value is determined and set by firmware.



The parameter is a 64-byte value.

- The lower 32 bits are displayed in element 0.
- The upper 32 bits are displayed in element 1.

Use



The structure index is used to define the interface.

Structure index	Significance
2	XG21
10	XG20 (preferred slot for encoder 1)

S-0-0601.x.22 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	incr	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: s. Text

4.4.90 S-0-0601.x.23, Absolute position range

Allocation

Hardware --

Funct. package(s):

Device parameter:

Alias: S-0-2422, S-0-2447, S-0-2472

Function

This parameter specifies the maximum absolutely evaluable travel range which is supported by encoder evaluation (Basic).

The travel range is specified:

- in revolutions for rotary measuring systems
- in millimeters for linear measuring systems



The parameter is a 64-byte value.

- The lower 32 bits are displayed in element 0.
- The upper 32 bits are displayed in element 1.

Use



The structure index is used to define the interface.

Structure index	Significance
2	XG21
10	XG20 (preferred slot for encoder 1)

S-0-0601.x.23 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: s. Text

4.4.91 S-0-0601.x.24, Extended position resolution (analog)

Allocation

Hardware --

Funct. package(s):

Device parameter:

Alias: S-0-2423, S-0-2448

Function

The extended position resolution (analog) is only required for linear analog/combined encoders to convert the position in the ENCB format (2^{18}

Standard parameters

increments/DP) to the Sercos position scaling format in the case of linear scaling. The parameter defines the path length of a division period (unit: [nm/division period]).



The structure index is used to define the interface.

Structure index	Significance
2	XG21
10	XG20 (preferred slot for encoder 1)

S-0-0601.x.24 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	nm	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: s. Text
------	----------------------	------------------------

4.4.92 S-0-0601.x.136, Serial number of encoder

Allocation	Hardware	--
	Funct. package(s):	
	Device parameter:	
	Alias:	P-0-3866, P-0-3868, P-0-3870

Function	In this parameter, the serial number of the encoder is entered if the encoder features an encoder type plate with serial number.
----------	--

Use

The structure index is used to define the interface.

Structure index interface assignment:

Structure index	Significance
2	XG21
10	XG20 (preferred slot for encoder 1)

S-0-0601.x.136 - Attributes

Function:	Par	Editable:	--	Data length:	1Byte var.
Memory:	PARAM_SP	Validity ch.:	--	Format:	ASCII
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: s. Text
------	----------------------	------------------------

4.4.93 S-0-0601.x.158, Absolute position range internal

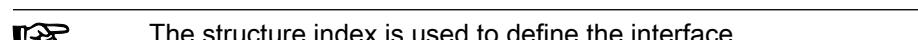
Allocation	Hardware	--
	Funct. package(s):	
	Device parameter:	
	Alias:	P-0-3867, P-0-3869, P-0-3871

Function	This parameter specifies the absolute position range within which the Encoder Basic position is initialized at activation of Basic encoder evaluation. The priority is defined by the resolution of the position (S-0-0601.x.21).
----------	---



The parameter is a 64-byte value.

- The lower 32 bits are displayed in element 0.
- The upper 32 bits are displayed in element 1.

Use

The structure index is used to define the interface.

Structure index		Significance			
2		XG21			
10		XG20 (preferred slot for encoder 1)			
S-0-0601.x.158 - Attributes		Function: Par	Editable:	SUBD:CM	Data length: 4Byte var.
		Memory: PARAM_SP	Validity ch.:	SUBD:CM->PM	Format: DEC_OV
		Unit: --	Extr. val. ch.:	--	Decim. pl.: 0
		Cycl. tra.: --	Comb. check:	--	Set-depend.: --
		AXS:	min./max.:	--- / ---	Default value: s. Text

4.4.94 S-0-0602.x.1, Phys. encoder type

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-2500, S-0-2525, S-0-2550
Function Structure	In this input parameter, the encoder type of the physical encoder is selected.	
	 The assignment is not specified in Sercos.	

Value	Encoder type	Comment
0	No encoder (sensorless operation)	Encoder evaluation deactivated
4	Encoder with sine signals and HIPERFACE interface (SICK STEGMANN) (1Vpp, 12V supply)	Analog and digital signals
10	Resolver encoder (5Vpp, 10Vpp supply / 8kHz)	Analog signals
105	Encoder with ACURO®link interface (Hengstler) (10 MHz, 12V supply)	Digital signals
106	Encoder with EnDat 2.2 interface (Heidenhain) (8 MHz, 12V supply - battery-buffered multi-turn property not available)	Digital signals from FW AXS-V-0304
107	Encoder with SSI interface (SSI interface configurable)	Digital signals
112	Encoders with ctrlX SENSE ^{motor} interface	Digital signals from FW AXS-V-0304
65535	Encoder scan active	from FW AXS-V-0304

Tab. 4-73: S-0-0602.0.1, Phys. Encoder type

Encoder scan

If "Encoder scan active" has been configured, the drive tries to identify the connected position encoder during initialization phases:

- After the 24V control voltage (booting of the drive) has been switched on
- After switching from CM to PM
- Reset of C1600 Parking axis procedure command

Standard parameters

In this way, changes in the connected encoder type are automatically detected (e.g. after re-activation of parked axes).

The control unit moreover offers "Plug & Play" comfort in the initial commissioning of motors.

This is supported by the following motor encoders:

- Encoders with sine signals and HIPERFACE interface (SICK| STEGMANN)
- Encoder with ACURO®link interface (Hengstler)
- Encoder with EnDat 2.2 interface (Heidenhain)
- Encoders with ctrlX SENSE^{motor} interface

Use

The structure index is used to define the interface.

Structure index	Significance
2	XG21
10	XG20 (preferred slot for encoder 1)

S-0-0602.x.1 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: 65535
------	----------------------	----------------------

4.4.95 S-0-0602.x.2, Phys. encoder properties

Allocation	Hardware --
Funct. package(s):	--
Device parameter:	--
Alias:	S-0-2501 , S-0-2526 , S-0-2551

Function Structure	This parameter specifies the properties of the physical encoder.
--------------------	--

The bit assignment is not specified in Sercos.

Bit	Designation/function	Comment
0	Type of design: 0: Rotary 1: Linear	
3-1	Reserved	
4	Mark definition 0: Simple marks 1: distance-coded marks	from FW AXS-V-0304
13-5	Reserved	
15-14	Encoder class 00: Not defined 01: Analog 10: Digital 11: Combined	

Tab. 4-74: S-0-0602.0.2, Phy. Encoder properties

Use

The structure index is used to define the interface.

Structure index interface assignment:

Structure index	Significance
2	XG21
10	XG20 (preferred slot for encoder 1)

S-0-0602.x.2 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--

AXS: min./max.: s. Text / s. Text Default value: 0x0

4.4.96 S-0-0602.x.5, Phys. distance-coded reference offset A**Allocation**

Hardware --

Funct. package(s):

Device parameter:

Alias: S-0-2504

Function

If a distance-coded incremental encoder is used, the larger distance (division period) of the distance-coded reference marks is entered in this parameter.

S-0-0602.x.5 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: 0

4.4.97 S-0-0602.x.6, Phys. distance-coded reference offset B**Allocation**

Hardware --

Funct. package(s):

Device parameter:

Alias: S-0-2505

Function

If a distance-coded incremental encoder is used, the smaller distance (division period) of the distance-coded reference marks is entered in this parameter.

S-0-0602.x.6 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: 0

4.4.98 S-0-0602.x.7, Phys. encoder protocol configuration**Allocation**

Hardware --

Funct. package(s):

Device parameter:

Alias: S-0-2506, S-0-2556

Function

This parameter is used to configure the encoder interface (transmission protocol) between the control section and the physical encoder.

Structure

The assignment is not specified in Sercos.

The assignment is defined in an interface-specific way depending on "S-0-0602.0.1, Phys. encoder type".

SSI interface: The user has to configure the protocol for SSI encoders.

Standard parameters

Bit	Designation/function	Comment
31-28	Number of padding bits¹⁾ 1111: 15 bits 0001: 1 bit 0000: 0 bits	Padding bits (zero bits, are not evaluated)
27	Reserved	
26-24	Baud rate¹⁾ 101: Reserved 100: 1000 kHz 011: 400 kHz 010: 300 kHz 001: 200 kHz 000: 100 kHz	
23-22	Telegram structure²⁾ 00: Telegram type 1 01: Telegram type 2 10: Reserved 11: Reserved	
21	Reserved	
20	Position coding 1: Binary code 0: Gray code	Specifies whether the position of the encoder is binary-coded or Gray-coded
19	Reserved	
18-16	Number of padding bits 2¹⁾ 111: 7 bits ... 001: 1 bit 000: 0 bits	Padding bits (zero bits, are not evaluated)
15	Reserved	
14-12	Number of status bits¹⁾ 111: 7 bits ... 001: 1 bit 000: 0 bits	With active status bit (1), the position is evaluated as invalid. Causes encoder error in the case of the second invalid successive telegram.

Bit	Designation/function	Comment
11-8	Number of position bits multi-turn 1111: 15 bits ... 1100: 12 bits ... 0001: 1 bit 0000: 0 bits	With rotary encoders only
7	Reserved	
6-0	Number of position bits¹⁾ ... 0110000: 48 bits ... 0100000: 32 bits ... 0000001: 1 bit 0000000: 0 bits Rotary measuring systems: Number of position bits multi-turn plus number of position bits single-turn Linear measuring systems: Number of position bits	A maximum of 48 position bits is possible

¹⁾ Every 125 µs the SSI evaluation generates a new position. Therefore, the baud rate limits the maximum possible telegram length. The telegram length corresponds to the entire telegram with position bits, status bits and all padding bits. With regard to the specific encoder, an interval time might be required between the telegrams; this time limits the maximum telegram length for the particular baud rate.

- Baud rate 1000 kHz: maximum telegram length 64 bits
- Baud rate 400 kHz: maximum telegram length 48 bits
- Baud rate 300 kHz: maximum telegram length 36 bits
- Baud rate 200 kHz: maximum telegram length 24 bits
- Baud rate 100 kHz: maximum telegram length 12 bits

²⁾ The telegram structure specifies the order of the individual telegram parts in the SSI telegram.

- Telegram type 1: padding bits, position bits, status bits, padding bits 2
- Telegram type 2: padding bits 2, status bits, padding bits, position bits

Tab. 4-75: S-0-0602.x.7, Phys. Encoder protocol configuration

Use

The structure index is used to define the interface.

Structure index	Significance
2	XG21
10	XG20 (preferred slot for encoder 1)

Standard parameters

S-0-0602.x.7 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: 0x0

4.4.99 S-0-0602.x.8, Phys. max. initialization speed

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-2507, S-0-2532, S-0-2557
Function	The maximum initialization speed is specified in this parameter. The initialization speed is specified in accordance with the type of design (S-0-0602.x.2):	
Use	• in revolutions for rotary measuring systems	

 The structure index is used to define the interface.

Structure index	Significance
2	XG21
10	XG20 (preferred slot for encoder 1)

S-0-0602.x.8 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: 0

4.4.100 S-0-0602.x.21, Phys. encoder resolution (analog)

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-2520, S-0-2545, S-0-2570
Function	This parameter specifies the encoder resolution for analog encoders.	

- **Rotary encoder:** Number of division periods per shaft revolution (DP/rev)

- **Linear encoder:** Resolution in nm (nm/line count)

 For combined encoders, the resolution of the sin/cos track is entered here.

For resolver encoders, the number of pole pairs is entered here.

For digital encoders, this parameter is irrelevant.

 The parameter is a 64-byte value.

- The lower 32 bits are displayed in element 0.
- The upper 32 bits are displayed in element 1.

Use  The structure index is used to define the interface.

Structure index	Significance
2	XG21
10	XG20 (preferred slot for encoder 1)

S-0-0602.x.21 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: s. Text

4.4.101 S-0-0602.x.22, Phys. encoder resolution (digital)

Allocation

Hardware --
Funct. package(s):
Device parameter:
Alias: [S-0-2521](#), [S-0-2546](#), [S-0-2571](#)

Function

This parameter specifies the encoder resolution (digital). For analog encoders, nothing is entered. For combined encoders, the resolution of the absolute position is entered.

The resolution is specified as follows:

- **Rotary encoder:** Number of increments per shaft revolution (incr/rev)
- **Linear encoder:** Resolution in nm (nm/incr)



The parameter is a 64-byte value.

- The lower 32 bits are displayed in element 0.
- The upper 32 bits are displayed in element 1.

Use

The structure index is used to define the interface.

Structure index	Significance
2	XG21
10	XG20 (preferred slot for encoder 1)

S-0-0602.x.22 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: s. Text

4.4.102 S-0-0602.x.136, Phys. encoder evaluation configuration

Allocation

Hardware --
Funct. package(s):
Device parameter:
Alias: [P-0-3872](#), [P-0-3876](#), [P-0-3880](#)

Function

The parameter is used to control initialization and evaluation functions. It allows various initialization and monitoring functions to be activated/deactivated in accordance with the encoder type.

Structure

Bit	Designation/function	Comment
0	Reserved	
1	Reserved	

Standard parameters

Bit	Designation/function	Comment
2	Reserved	
3	Real reference marks supported Is used to define which reference mark evaluation can be used. 0: Encoder system cannot generate real reference marks, generation of virtual reference marks is preset 1: Encoder system can generate real reference marks, generation of real reference marks is preset	
5/4	Reserved	
7/6	Reserved	
8	Control of position initialization 0: Incremental and digital tracks are used for initialization 1: Only the digital track is used for initialization	
10/9	Reserved	
11	Reserved	
15-12	Reserved	

Tab. 4-76: Configuration of the phys. Encoder evaluation

Use



The structure index is used to define the interface.

S-0-0602.x.136 - Attributes

Structure index	Significance
2	XG21
10	XG20 (preferred slot for encoder 1)

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: 0x0
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4.4.103 S-0-0602.x.137, Phys. encoder software version

Allocation

Hardware

--

Funct. package(s):

Device parameter:

Alias: P-0-3873, P-0-3877, P-0-3881

Function

In this parameter, the software version of the encoder is entered if the encoder features an encoder type plate in which the software version has been stored.

Use



The structure index is used to define the interface.

Structure index interface assignment:

Structure index	Significance
2	XG21
10	XG20 (preferred slot for encoder 1)

S-0-0602.x.137 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

4.4.104 S-0-0602.x.138, Phys. encoder software version build date

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-3874, P-0-3878, P-0-3882
Function	In this parameter, the date of creation of the encoder's software version is entered if the encoder features an encoder type plate in which the date of creation of the software version has been stored.	
Use	 The structure index is used to define the interface.	

Structure index interface assignment:

Structure index	Significance
2	XG21
10	XG20 (preferred slot for encoder 1)

S-0-0602.x.138 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

4.4.105 S-0-0602.x.139, Phys. encoder designation

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-3875, P-0-3879, P-0-3883
Function	In this parameter, the designation of the encoder is entered if the encoder features an encoder type plate in which the encoder designation has been stored.	
Use	 The structure index is used to define the interface.	

Structure index interface assignment:

Structure index	Significance
2	XG21
10	XG20 (preferred slot for encoder 1)

S-0-0602.x.139 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

Standard parameters

4.4.106 S-0-0610.x.1, Encoder status (input)

Allocation **Hardware** --
Funct. package(s):
Device parameter:
Alias: [S-0-2700, S-0-2725](#)

Function Structure The parameter contains the status information of the encoder.

Bit	Designation/function	Comment
15/14	Ready for operation 11: Ready for operation 10: Reserved 01: Reserved 00: Not ready for operation	
13	Encoder error 1: Error 0: No error	
12	Encoder warning 1: Warning active 0: No warning active	
11	Reserved	
10	Mark detection 1: Reference mark detected 0: Reference mark not detected Only mark detected, mark position not available yet	
9	Reserved	
8	Mark recording 1: Active 0: Not active	
7	Mark signal 1: Reference mark detected and saved 0: Reference mark not detected Mark was detected and mark position is valid. The associated mark position is entered in parameter S-0-0610.x.23/24	
6	Mark status 1: Reference mark position is valid 0: Reference mark position is invalid	
5	Position status (absolute position) 1: Correctly initialized 0: Not correctly initialized	
0-4	Reserved	

Tab. 4-77: [S-0-0610.000.001, Encoder status](#)

Use

The structure index is used to define the encoder function.

Structure index	Significance
1	Encoder 1
2	Encoder 2

Tab. 4-78: Defining the structure index

S-0-0610.x.1 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.:	--- / ---	Default value:	---

4.4.107 S-0-0610.x.21, Position, 32 bit (input), fine

Allocation

Hardware	--
Funct. package(s):	
Device parameter:	
Alias:	S-0-2720, S-0-2745

Function

This parameter contains the position (unscaled) of the encoder, with the resolution defined in "S-0-0611.x.21". The position is provided as a 64-bit value. This parameter displays the lower 32 bits of the position.

Use

The structure index is used to define the encoder function.

Structure index	Meaning
1	Encoder 1
2	Encoder 2
3	Measuring encoder
4	Motor encoder

Tab. 4-79: Structure index determination

S-0-0610.x.21 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	incr	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.:	--- / ---	Default value:	---

4.4.108 S-0-0610.x.22, Position, 32 bit (input), coarse

Allocation

Hardware	--
Funct. package(s):	
Device parameter:	
Alias:	S-0-2721, S-0-2746

Function

This parameter contains the position (unscaled) of the encoder, with the resolution defined in "S-0-0601.x.21". The position is provided as a 64-bit value. This parameter displays the upper 32 bits of the position.

Use

The structure index is used to define the encoder function.

Standard parameters

Structure index	Meaning
1	Encoder 1
2	Encoder 2
3	Measuring encoder
4	Motor encoder

Tab. 4-80: Structure index determination

S-0-0610.x.22 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	incr	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

4.4.109 S-0-0610.x.23, Marker position, 32 bit (input), fine

Allocation Hardware --
 Funct. package(s):
 Device parameter:
 Alias: [S-0-2722, S-0-2747](#)

Function The parameter contains the position of the encoder saved at the reference mark in increments (unscaled), with the resolution defined in "[S-0-0601.x.21](#)". The position is provided as a 64-bit value. This parameter displays the lower 32 bits of the position.

S-0-0610.x.23 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	incr	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

4.4.110 S-0-0610.x.24, Marker position, 32 bit (input), coarse

Allocation Hardware --
 Funct. package(s):
 Device parameter:
 Alias: [S-0-2723, S-0-2748](#)

Function The parameter contains the position of the encoder saved at the reference mark in increments (unscaled), with the resolution defined in "[S-0-0601.x.21](#)". The position is provided as a 64-bit value. This parameter displays the upper 32 bits of the position.

S-0-0610.x.24 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	incr	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

4.4.111 S-0-0611.x.1, Encoder data out configuration (input)

Allocation Hardware --
 Funct. package(s):
 Device parameter:
 Alias: [S-0-2800, S-0-2825](#)

Function The parameter specifies the following properties of the encoder output data:
 • Type of design of encoder
 • Position resolution format
 • Rotational direction

The type of design and the position resolution format are automatically specified by evaluating the parameter "S-0-0602.x.2, Phys. encoder properties". The rotational direction of the encoder position provided by the Encoder-Basic evaluation can be inverted by setting bit 3.

Structure

Bit	Designation/function	Comment
0	Reserved	
1	Type of design 0: Rotary 1: Linear	
2	Position resolution format 0: Digital encoder • S-0-0601.x.21: rotary encoder [incr/rev] • S-0-0601.x.21: linear encoder [nm/incr] 1: Analog encoder/combined encoder • S-0-0601.x.21: rotary encoder [incr/rev] • S-0-0601.x.21: linear encoder [incr/DP] • S-0-0601.x.24: linear encoder [nm/DP]	
3	Rotational direction 0: Not inverted 1: Inverted	
15-4	Reserved	

Tab. 4-81: S-0-0611.000.001, Encoder data out configuration (input)

Use

The structure index is used to define the encoder function.

Structure index	Significance
1	Encoder 1
2	Encoder 2

Tab. 4-82: Defining the structure index

S-0-0611.x.1 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: 0x0

4.4.112 S-0-0611.x.12, Encoder refresh time data out (input)

Allocation

Hardware --

Funct. package(s):

Device parameter:

Alias:

S-0-2811, S-0-2836

Function

This parameter specifies the time interval in microseconds which elapses until the encoder provides new encoder output data.

Use

The structure index is used to define the encoder function.

Standard parameters

Structure index	Significance
1	Encoder 1
2	Encoder 2

Tab. 4-83: Defining the structure index

S-0-0611.x.12 - Attributes	Function: Par Memory: PARAM_SP Unit: us Cycl. tra.: --	Editable: SUBD:CM Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: 0,000

4.4.113 S-0-0611.x.21, Resolution of position, (input)

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2820, S-0-2845	--
Function	This parameter specifies the resolution of the position of the Basic encoder evaluation. The resolution is specified according to the type of design and encoder class (S-0-0601.x.1): <ul style="list-style-type: none">• in incr./rev. for rotary measuring systems• in nanometers/incr. for linear digital measuring systems• in increments/division period for linear analog/combined measuring systems	



The parameter is a 64-byte value.

- The lower 32 bits are displayed in element 0.
- The upper 32 bits are displayed in element 1.

Structure index	Significance
1	Encoder 1
2	Encoder 2

Tab. 4-84: Defining the structure index

S-0-0611.x.21 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: s. Text

4.4.114 S-0-0611.x.22, Position overflow threshold, (input)

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2821, S-0-2846	--
Function	This parameter specifies the value in increments, at which the position of the Basic encoder evaluation jumps to 0. The value is determined and set by firmware.	



The parameter is a 64-byte value.

- The lower 32 bits are displayed in element 0.
- The upper 32 bits are displayed in element 1.

Use


The structure index is used to define the encoder function.

Structure index	Significance
1	Encoder 1
2	Encoder 2

Tab. 4-85: Defining the structure index

S-0-0611.x.22 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV
Unit:	incr	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: s. Text

4.4.115 S-0-0611.x.23, Absolute position range, (input)

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2822, S-0-2847	--
Function	This parameter specifies the maximum absolutely evaluable travel range which is supported by encoder evaluation (Basic). The travel range is specified: <ul style="list-style-type: none"> • in revolutions for rotary measuring systems • in millimeters for linear measuring systems 	



The parameter is a 64-byte value.

- The lower 32 bits are displayed in element 0.
- The upper 32 bits are displayed in element 1.

Use


The structure index is used to define the encoder function.

Structure index	Significance
1	Encoder 1
2	Encoder 2

Tab. 4-86: Defining the structure index

S-0-0611.x.23 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: s. Text

4.4.116 S-0-0611.x.24, Extended position resolution (analog) (input)

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2823, S-0-2848	--
------------	--	----

Standard parameters

Function The extended position resolution (analog) is only required for linear analog/combined encoders to convert the position in the ENCB format (2^{18} increments/DP) to the Sercos position scaling format in the case of linear scaling. The parameter defines the path length of a division period (unit: [nm/division period]).



The parameter is a 64-byte value.

- The lower 32 bits are displayed in element 0.
- The upper 32 bits are displayed in element 1.

Structure index	Significance
1	Encoder 1
2	Encoder 2

Tab. 4-87: Defining the structure index

S-0-0611.x.24 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	nm	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: s. Text
------	----------------------	------------------------

4.4.117 S-0-0611.x.136, Serial number of encoder

Allocation Hardware --
Funct. package(s):
Device parameter:
Alias: P-0-3884, P-0-3886

Function In this parameter, the serial number of the encoder is entered if the encoder features an encoder type plate with serial number. The serial number is used for encoder change recognition.

Structure index	Significance
1	Encoder 1
2	Encoder 2

Tab. 4-88: Defining the structure index

S-0-0611.x.136 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	1Byte var.
Memory:	PARAM_SP	Validity ch.:	--	Format:	ASCII
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: s. Text
------	----------------------	------------------------

4.4.118 S-0-0611.x.158, Absolute position range internal, (input)

Allocation Hardware --
Funct. package(s):
Device parameter:
Alias: P-0-3885, P-0-3887

Function This parameter specifies the absolute position range within which the Encoder Basic position is initialized at activation of Basic encoder evaluation. The priority is defined by the resolution of the position ([S-0-0611.x.21](#)).



The parameter is a 64-byte value.

- The lower 32 bits are displayed in element 0.
- The upper 32 bits are displayed in element 1.

Use

The structure index is used to define the interface.

Structure index	Significance
1	Encoder 1
2	Encoder 2

Tab. 4-89: Defining the structure index

S-0-0611.x.158 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte var.
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV
Unit:	incr	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: s. Text
------	----------------------	------------------------

4.4.119 S-0-0613.x.156, Absolute encoder offset, encoder memory

Allocation

Hardware	--
Funct. package(s):	
Device parameter:	
Alias:	P-0-3888, P-0-3890

Function

This parameter displays the absolute encoder offset from the encoder memory.

S-0-0613.x.156 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte var.
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.4.120 S-0-0800, Pressure command value

Allocation

Hardware	--
Funct. package(s):	
Device parameter:	

Function

In the "pressure control" operation mode the command value is generated directly by the control and entered in this parameter.

Use

To the pressure command value (S-0-0800), another value (S-0-0801, Pressure command value additive) can be added. In addition, several limit values act on the sum of the two values, before it is fed to the pressure controller. The unit of the parameter depends on the settings in parameter "S-0-0806, Pressure data scaling type".

S-0-0800 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	ERROR	Extr. val. ch.:	+	Decim. pl.:	
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: ---
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4.4.121 S-0-0801, Pressure command value additive

Allocation

Hardware	--
Funct. package(s):	
Device parameter:	

Function

By means of this parameter, the master can have a pressure value added in the controller depending on the process.

Use

In addition, several limit values act on the sum of the two values, before it is fed to the pressure controller. The unit of the parameter depends on the settings in parameter „S-0-0806, Pressure data scaling type“.

Standard parameters

S-0-0801 - Attributes	Function: Par Memory: -- Unit: ERROR Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: ---

4.4.122 S-0-0802, Bipolar pressure limit value

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter can be used to limit the pressure command value to allowed maximum values.		
Use	The parameter has a bipolar effect, i.e., positive and negative command values are limited to the value that has been entered. The limitation acts on the sum of all pressure command values. The unit of „S-0-0802“ depends on the scaling that has been set.		
S-0-0802 - Attributes	Function: Par Memory: PARAM_SP Unit: ERROR Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: Set-depend.: Grp. 1
AXS:	min./max.: s. Text / s. Text		Default value: s. Text

4.4.123 S-0-0803, Actual pressure value A

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter contains the current actual pressure value of chamber A. The unit for the values of this parameter depends on the scaling that has been set in "S-0-0806, Pressure data scaling type".		
S-0-0803 - Attributes	Function: Par Memory: -- Unit: ERROR Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.4.124 S-0-0804, Actual pressure value B

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter contains the current actual pressure value of chamber B. The unit for the values of this parameter depends on the scaling that has been set in "S-0-0806, Pressure data scaling type".		
S-0-0804 - Attributes	Function: Par Memory: -- Unit: ERROR Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.4.125 S-0-0805, Pressure polarity parameter

Allocation	Hardware Funct. package(s): Device parameter:	--
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Function This parameter can be used to invert the polarities of the specified pressure data. The polarities are switched outside of the controlled system, i.e. at the input and output of the controlled system.



The polarity of pressure must be determined during initial commissioning of an axis.

See also Functional Description "Scaling of physical data"

Structure

Bit	Designation/function	Comment
0	Pressure command value 0: Positive polarity 1: Negative polarity	
1	Additive pressure command value 0: Positive polarity 1: Negative polarity	
2	Pressure feedback value 0: Positive polarity 1: Negative polarity	

Tab. 4-90: S-0-0805, Pressure polarities



Bits 1 and 2 are copies of bit 0. Only changes in bit 0 are effective. Different settings for the individual bits are not possible!



Switching of the polarity does not affect the pressure parameters with absolute reference such as S-0-0803, S-0-0804, S-0-0813, S-0-0814, S-0-0831, S-0-0832.

S-0-0805 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	BIN
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: 0x0 / 0x7

Default value: 0x0

4.4.126 S-0-0806, Pressure data scaling type

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

This parameter can be used to set the unit and the reference of the pressure data of a drive.

- Preferred scaling [bar, psi]
- Parameter scaling

Standard parameters

Structure	Bit	Description / function	Comment
	2-0	Scaling type 0 0 0: In percent 0 0 1: Pressure scaling	
	3	Scaling type 0: Preferred scaling 1: Parameter scaling	
	4	Unit for pressure data 0: bar 1: psi (pound force square inch)	
	15 - 5	Reserved	

Tab. 4-91: Structure

Use If preferred scaling is selected (bit 3 = 0), the following parameters are predefined and cannot be changed:

- [S-0-0807](#), Pressure data scaling factor
- [S-0-0808](#), Pressure data scaling exponent

In the case of parameter scaling, the scaling is set by inputting the desired parameter values. The maximum allowed input value for parameters with pressure scaling is determined via the maximum pressure "[P-0-2875.0.4](#)".

S-0-0806 - Attributes	Function: Par	Editable: SUBD:CM	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: SUBD:CM->PM	Format: BIN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: +	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: 0x41

4.4.127 S-0-0807, Pressure data scaling factor

Allocation Hardware
Funct. package(s):
Device parameter: --

Function This parameter and parameter "[S-0-0808](#), Pressure data scaling exponent" are used to define the scaling factor and the decimal format (decimal place) of the pressure parameters when parameter scaling is used ([S-0-0806](#)).

If preferred scaling is selected in "[S-0-0806](#), Pressure data scaling type", the drive automatically sets the values in "[S-0-0807](#)" and "[S-0-0808](#)".

See also Functional Description "Scaling of physical data"

Use The following settings are valid for preferred scaling:

- 1. Unit [bar] of preferred scaling = $1 \cdot 10^{-3}$ bar
[S-0-0807](#) = 1
[S-0-0808](#) = -3
- 2. Unit [psi] of preferred scaling = $1 \cdot 10^{-2}$ psi
[S-0-0807](#) = 1
[S-0-0808](#) = -2

S-0-0807 - Attributes	Function: Par	Editable: SUBD:CM	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: SUBD:CM->PM	Format: DEC_OV
	Unit: --	Extr. val. ch.: +	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --

AXS:	min./max.: s. Text / s. Text	Default value: 1
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4.4.128 S-0-0808, Pressure data scaling exponent

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter and parameter "S-0-0807, Pressure data scaling factor" are used to define the scaling factor and the decimal format (decimal place) of the pressure data parameters when parameter scaling is used (S-0-0806). See also Functional Description "Scaling of physical data"	
Use	If preferred scaling is selected in "S-0-0806, Pressure data scaling type", the drive automatically sets the values in "S-0-0807" and "S-0-0808".	
	<ul style="list-style-type: none"> • 1. Unit [bar] of preferred scaling = $1 * 10^{-3}$ bar S-0-0807 = 1 S-0-0808 = -3 • 2. Unit [psi] of preferred scaling = $1 * 10^{-2}$ psi S-0-0807 = 1 S-0-0808 = -2 	

S-0-0808 - Attributes	Function: Par	Editable: SUBD:CM	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: SUBD:CM->PM	Format: DEC_MV
	Unit: --	Extr. val. ch.: +	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --

AXS:	min./max.: -6 / 0	Default value: ---
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4.4.129 S-0-0809, Actual pressure value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Parameter displaying the currently effective pressure feedback value. The pressure feedback value is calculated from actual pressure value A and B. If pressure feedback value B is the reference, the pressure feedback value (S-0-0809) has a negative sign.	

The unit for the values of this parameter depends on the scaling that has been set (S-0-0806, Pressure data scaling type).

S-0-0809 - Attributes	Function: Par	Editable: ALWAYS	Data length: 4Byte
	Memory: --	Validity ch.: --	Format: DEC_MV
	Unit: ERROR	Extr. val. ch.: --	Decim. pl.:
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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4.4.130 S-0-0810, Pressure ramp time

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The pressure ramp time is the reference time for the pressure ramp. In the "pressure control" operation mode this parameter defines a slope for the pressure command value.	

The ramp time can be entered in steps of 0.1 ms.

S-0-0810 - Attributes	Function: Par	Editable: ALWAYS	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_OV
	Unit: ms	Extr. val. ch.: --	Decim. pl.: 1
	Cycl. tra.: --	Comb. check: --	Set-depend.: Grp. 1

Standard parameters

AXS: min./max.: --- / --- Default value: 0,0

4.4.131 S-0-0811, Pressure ramp reference

Allocation Hardware --
Funct. package(s):
Device parameter:

Function In the "pressure control" mode, the value of this parameter and the pressure ramp time (S-0-0810) are used to calculate the ramp for the pressure command value. The value of "S-0-0811" is scaled according to the scaling type for pressure data set in "S-0-0806, Pressure data scaling type".

S-0-0811 - Attributes	Function: Par	Editable: ALWAYS	Data length: 4Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_OV
	Unit: ERROR	Extr. val. ch.: +	Decim. pl.:
	Cycl. tra.: --	Comb. check: --	Set-depend.: Grp. 1

AXS: min./max.: 1 / s. Text Default value: 100000

4.4.132 S-0-0822, Torque/force ramp

Allocation Hardware --
Funct. package(s):
Device parameter:

Function With the torque/force ramp time (S-0-0823), the torque/force ramp defines a gradient for the torque/force command value (S-0-0080) in the torque/force control mode.

See also Functional Description "Torque/force control"

Use The following diagram shows the operating principle and function of S-0-0822:

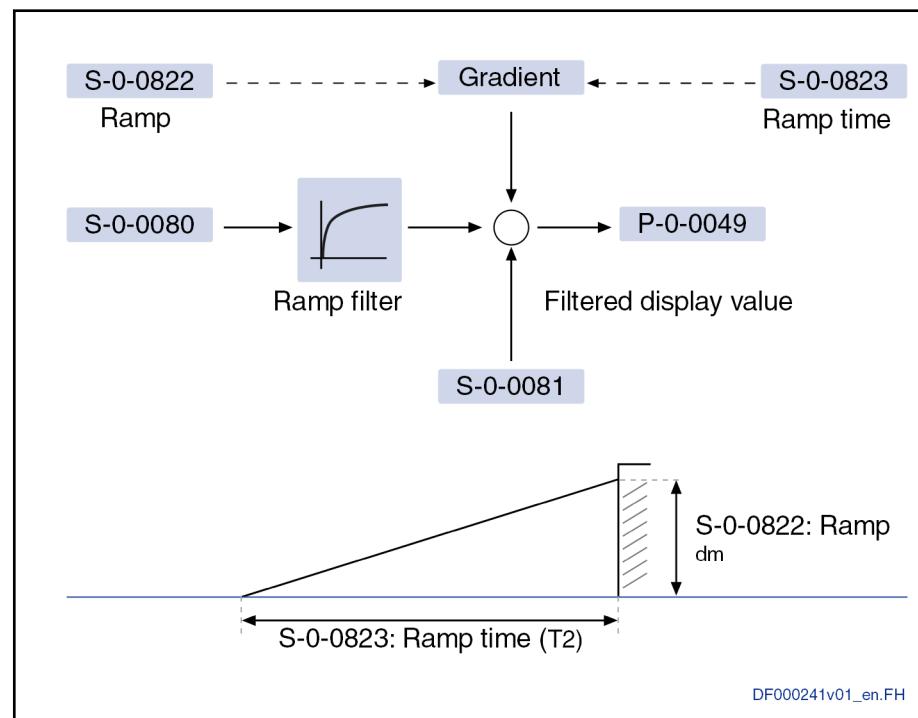


Fig. 4-22: Effect of S-0-0822 and S-0-0823



The filter effect is therefore achieved by defining a maximum permissible torque increase (dM/dt).

Parameterization

Observe the following during parameterization:

- The maximum change in the command value per cycle of the master communication is defined with the two values. A larger specification leads to a delay of the internal force command value to the specified value.
- The value in "S-0-0822" defines the torque/force difference that can be achieved within the ramp time.

S-0-0822 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	S-0-0086	Extr. val. ch.:	--	Decim. pl.:	
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	Grp. 1

AXS:	min./max.: s. Text / s. Text	Default value: 0
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4.4.133 S-0-0823, Torque/force ramp time

- Allocation** **Hardware** --
Funct. package(s):
Device parameter:
- Function** The torque/force ramp time (S-0-0823) is the reference time for the torque/force ramp. The parameter "S-0-0823" together with the torque/force ramp (S-0-0822) defines a gradient for the torque/force command value (S-0-0080) in the torque/force control mode.
- See also** Functional Description "Torque/force control"
- Use** The following diagram illustrates the operating principle and function of S-0-0823:

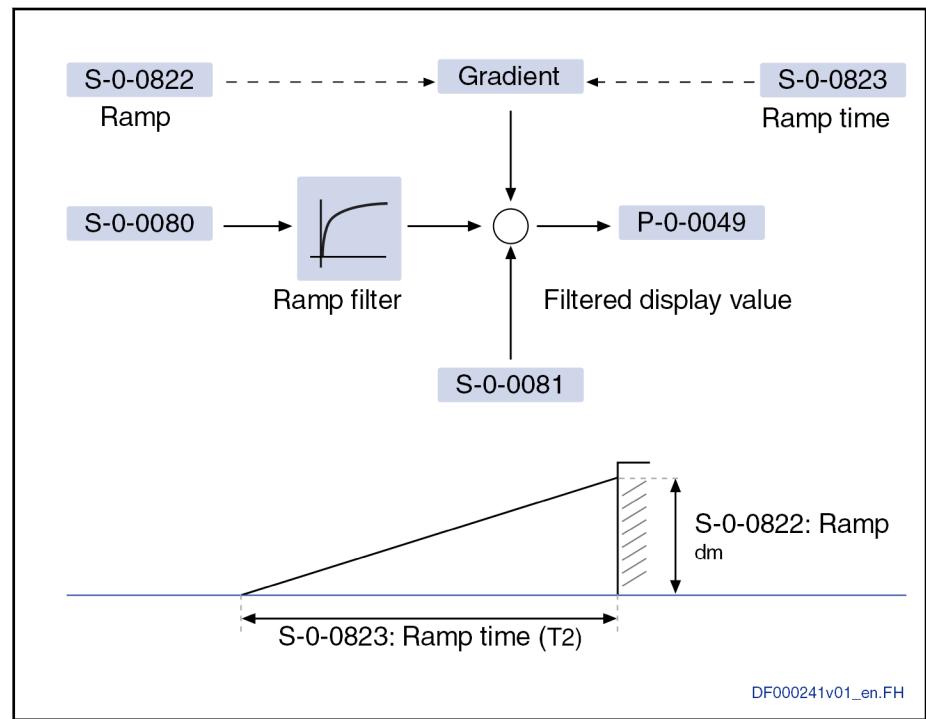


Fig. 4-23: Effect of S-0-0822 and S-0-0823



The filter effect is therefore achieved by defining a maximum permissible torque increase (dM/dt).

Observe the following during parameterization:

Standard parameters

- The maximum change in the command value per cycle of the master communication is defined with the two values ([S-0-0823](#), [S-0-0822](#)).
- The ramp time can be entered in steps of 0.1 ms.
- A larger specification leads to a delay of the internal force command value to the specified value.

S-0-0823 - Attributes	Function: Par	Editable: ALWAYS	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_OV
	Unit: ms	Extr. val. ch.: --	Decim. pl.: 1
	Cycl. tra.: MDT	Comb. check: --	Set-depend.: Grp. 1
AXS:	min./max.: s. Text / s. Text		Default value: 0,0

4.4.134 S-0-0824, Status "Torque/force command value attained"

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The message " S-0-0824 , Status "Torque/force command value attained"" indicates that the actual torque/force value is within a window (S-0-0826) around the torque/force command value (S-0-0080 + S-0-0081). The message is required in the torque/force control mode, but is output in all other operation modes, too.	
	See also Functional Description "Operation modes"	

Structure The parameter has the following structure:

Bit	Designation/function	Comment
0	Status "Torque/force command value attained" S-0-0080 + S-0-0081 - S-0-0084 < S-0-0826 0: $T_{act} \neq T_{cmd}$ 1: $T_{act} = T_{cmd}$	

S-0-0824 - Attributes	Function: Par	Editable: --	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: BIN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.4.135 S-0-0826, Torque/force window

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In this parameter the torque/force window is entered. The value of the window refers to the torque/force command value (S-0-0080). If the torque/force feedback value (S-0-0084) is in this window around the command value (S-0-0080 + S-0-0081), the message torque/force command value reached (S-0-0824) is returned.	

S-0-0826 - Attributes	Function: Par	Editable: ALWAYS	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Format: DEC_OV
	Unit: S-0-0086	Extr. val. ch.: +	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: Grp. 2
AXS:	min./max.: s. Text / s. Text		Default value: 0

4.4.136 S-0-0827, Pressure control deviation

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter „ S-0-0827 “ specifies the difference between pressure command value and pressure feedback value in the pressure control loop. The unit of the parameter depends on the settings in parameter " S-0-0806 , Pressure data scaling type".	
S-0-0827 - Attributes	Function: Par Memory: -- Unit: ERROR Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

4.4.137 S-0-0828, Positive pressure limit value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter allows determining a pressure limit value for positive pressure command values of the pressure controller.	
Use	The unit for the values of this parameter depends on the scaling that has been set (S-0-0806 , Pressure data scaling type).	
	<ul style="list-style-type: none"> This limit value has a unipolar effect. Additionally, there is the limit value "S-0-0802, Bipolar pressure limit value" with bipolar effect. The lowest value in the above parameters is the active limit value. If S-0-0828 = 0, only the bipolar limit value (S-0-0802) takes effect as the positive limit value. 	
S-0-0828 - Attributes	Function: Par Memory: PARAM_SP Unit: ERROR Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: Grp. 1
	AXS:	min./max.: s. Text / s. Text Default value: 0

4.4.138 S-0-0829, Negative pressure limit value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter allows determining a pressure limit value for negative command values of the pressure controller.	
Use	The unit for the values of this parameter depends on the scaling that has been set (S-0-0806 , Pressure data scaling type).	
	<ul style="list-style-type: none"> This limit value has a unipolar effect. Additionally, there is the limit value "S-0-0802, Bipolar pressure limit value" with bipolar effect. The lowest value in the above parameters is the active limit value. If S-0-0829 = 0, only the bipolar limit value (S-0-0802) takes effect as the negative limit value. 	
S-0-0829 - Attributes	Function: Par Memory: PARAM_SP Unit: ERROR Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: Grp. 1
	AXS:	min./max.: s. Text / s. Text Default value: 0

Standard parameters

4.4.139 S-0-0832, Pressure window

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In this parameter the pressure window is entered. The absolute value of the window refers to the pressure command value (S-0-0800).	
S-0-0832 - Attributes	Function: Par Memory: PARAM_SP Unit: ERROR Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
		Data length: 4Byte Format: DEC_OV Decim. pl.: Set-depend.: Grp. 1

AXS:	min./max.: s. Text / s. Text	Default value: 0
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4.4.140 S-0-0840, Flow command value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In the "flow control" operation mode the command value is generated directly by the control and entered in this parameter.	
Use	To the flow command value (S-0-0840), another value (S-0-0841 , Flow command value additive) can be added. In addition, several limit values act on the sum of the two values, before it is fed to the flow controller. The unit of the parameter depends on the settings in parameter " S-0-0845 , Flow data scaling type".	
S-0-0840 - Attributes	Function: Par Memory: -- Unit: ERROR Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --

AXS:	min./max.: s. Text / s. Text	Default value: ---
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4.4.141 S-0-0841, Flow command value additive

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter can be used to add a flow value in the controller in dependence upon the process. In addition, several limit values act on the sum of the two values, before it is fed to the flow controller. The unit of the parameter depends on the settings in parameter " S-0-0845 , Flow data scaling type".	
S-0-0841 - Attributes	Function: Par Memory: -- Unit: ERROR Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --

AXS:	min./max.: s. Text / s. Text	Default value: ---
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4.4.142 S-0-0842, Actual flow value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	Parameter displaying the currently effective flow feedback value. The unit for the values of this parameter depends on the scaling that has been set (S-0-0845 , Flow data scaling type).	

S-0-0842 - Attributes	Function: Par Memory: -- Unit: ERROR Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: -- Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.4.143 S-0-0843, Flow control deviation

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter "S-0-0843" specifies the difference between the flow command value and the flow feedback value in the flow control loop. The unit of the parameter depends on the settings in parameter "S-0-0845, Flow data scaling type".	
S-0-0843 - Attributes	Function: Par Memory: -- Unit: ERROR Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

4.4.144 S-0-0845, Flow data scaling type

Allocation	Hardware Funct. package(s): Device parameter:	--																		
Function	This parameter can be used to set the unit and the reference of the flow data of a drive.																			
Structure	<ul style="list-style-type: none"> • Percentage-based scaling (% of reference value, see below) • Preferred scaling [l/min, gal/min, l/s, gal/s) • Parameter scaling 																			
	<table border="1"> <thead> <tr> <th>Bit</th><th>Description / function</th><th>Comment</th></tr> </thead> <tbody> <tr> <td>2-0</td><td> Scaling type 0 0 0: Percentage-based scaling 0 0 1: Flow scaling </td><td></td></tr> <tr> <td>3</td><td> Scaling type 0: Preferred scaling 1: Parameter scaling </td><td></td></tr> <tr> <td>4</td><td> Unit for flow 0: Liters (l) 1: Gallons (gal) </td><td></td></tr> <tr> <td>5</td><td> Unit for time basis 0: Minutes (min) 1: Seconds (s) </td><td></td></tr> <tr> <td>15-6</td><td>Reserved</td><td></td></tr> </tbody> </table>	Bit	Description / function	Comment	2-0	Scaling type 0 0 0: Percentage-based scaling 0 0 1: Flow scaling		3	Scaling type 0: Preferred scaling 1: Parameter scaling		4	Unit for flow 0: Liters (l) 1: Gallons (gal)		5	Unit for time basis 0: Minutes (min) 1: Seconds (s)		15-6	Reserved		
Bit	Description / function	Comment																		
2-0	Scaling type 0 0 0: Percentage-based scaling 0 0 1: Flow scaling																			
3	Scaling type 0: Preferred scaling 1: Parameter scaling																			
4	Unit for flow 0: Liters (l) 1: Gallons (gal)																			
5	Unit for time basis 0: Minutes (min) 1: Seconds (s)																			
15-6	Reserved																			

Tab. 4-92: Structure

- Use** If preferred scaling is selected (bit 3 = 0), the following parameters are predefined and cannot be changed:
- [S-0-0846](#), Flow data scaling factor
 - [S-0-0847](#), Flow data scaling exponent

In the case of parameter scaling, the scaling is set by inputting the desired parameter values.

Standard parameters

If percentage-based scaling is selected, a reference value (100 % value) is required for flow data. With a hydraulic drive, the reference value corresponds to parameter "[P-0-2875.0.3](#), Maximum flow".

S-0-0845 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--

AXS: min./max.: --- / --- Default value: 0x1

4.4.145 S-0-0846, Flow data scaling factor

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter and parameter " S-0-0847 , Flow data scaling exponent" are used to define the scaling factor and the decimal format (decimal place) of the flow data parameters when parameter scaling is used (S-0-0845).	

If preferred scaling is selected in "[S-0-0845](#), Flow data scaling type", the drive automatically sets the values in "[S-0-0846](#)" and "[S-0-0847](#)".

See also Functional Description "Scaling of physical data"

Use	Example of flow data display: Physical flow equal to 50 l/min (liters/minute). 1. Selected scaling = preferred scaling (S-0-0846 = 1, S-0-0847 = -3). This results in a numerical value of 50000 for " S-0-0842 , Flow feedback value" (with unit l/min and 3 decimal places). 2. Selected scaling = parameter scaling (S-0-0846 = 2, S-0-0847 = -3). This results in a numerical value of 25000 for " S-0-0842 , Flow feedback value" (with unit l/min and 3 decimal places).
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The following settings are valid for preferred scaling:

- 1. Unit [l/min] or [l/s] preferred scaling= $1 \cdot 10^{-3}$ l/min or l/s, respectively
[S-0-0846](#) = 1
[S-0-0847](#) = -3
- 2. Unit [gal/min] or [gal/s] preferred scaling = $1 \cdot 10^{-2}$ gal/min or gal/s, respectively
[S-0-0846](#) = 1
[S-0-0847](#) = -4

S-0-0846 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0

Cycl. tra.: Comb. check: -- Set-depend.: --

AXS: min./max.: s. Text / s. Text Default value: 1

4.4.146 S-0-0847, Flow data scaling exponent

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter and parameter " S-0-0846 , Flow data scaling factor" are used to define the scaling factor and the decimal format (decimal place) of the flow data parameters when parameter scaling is used (see S-0-0845).	

See also Functional Description "Scaling of physical data"

Use	If preferred scaling is selected in " S-0-0845 , Flow data scaling type", the drive automatically sets the values in " S-0-0846 " and " S-0-0847 ".
-----	---

See also example for "[S-0-0846](#), Flow data scaling factor".

The following settings are valid for preferred scaling:

- 1. Unit [l/min] or [l/s] preferred scaling= $1 * 10^{-3}$ l/min or l/s, respectively
[S-0-0846](#) = 1
[S-0-0847](#) = -3
- 2. Unit [gal/min] or [gal/s] preferred scaling = $1 * 10^{-4}$ gal/min or gal/s, respectively
[S-0-0846](#) = 1
[S-0-0847](#) = -4

S-0-0847 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: -9 / 0	Default value: ---

4.4.147 [S-0-0848](#), Flow polarities

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter can be used to invert the polarities of the specified flow data in accordance with the application. The polarities are switched outside of the controlled system, i.e. at the input and output of the controlled system.	See also functional description "Scaling of physical data"

Bit	Description / function	Comment
0	Flow command value 0: Positive polarity 1: Negative polarity	S-0-0840
1	Additive flow command value 0: Positive polarity 1: Negative polarity	S-0-0841
2	Flow feedback value 0: Positive polarity 1: Negative polarity	S-0-0842
15–3	Reserved	

Tab. 4-93: Structure

S-0-0848 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: 0x0 / 0x7	Default value: 0x0

4.4.148 [S-0-0850](#), Bipolar flow limit value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter can be used to limit the flow command value to allowed maximum values.	

Standard parameters

Use	The parameter has a bipolar effect, i.e., positive and negative command values are limited to the entered value. The limitation acts on the sum of all pressure command values. The unit of "S-0-0850" depends on the scaling that has been set.				
S-0-0850 - Attributes	Function: Par Editable: ALWAYS Data length: 4Byte Memory: PARAM_SP Validity ch.: SUBD:PM->OM Format: DEC_OV Unit: ERROR Extr. val. ch.: + Decim. pl.: Cycl. tra.: -- Comb. check: -- Set-depend.: Grp. 1				
AXS:	min./max.: s. Text / s. Text		Default value: s. Text		

4.4.149 S-0-0851, Positive flow limit value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter allows determining a flow limit value for positive flow command values of the flow controller.	
Use	The unit for the values of this parameter depends on the scaling that has been set (S-0-0845, Flow data scaling type). This limit value has a unipolar effect. Additionally, there is the limit value "S-0-0850, Bipolar flow limit value" with bipolar effect.	
	<ul style="list-style-type: none"> • The lowest value in the above parameters is the active limit value. • If "S-0-0851" = 0, only the bipolar limit value (S-0-0850) takes effect as the positive limit value. 	
S-0-0851 - Attributes	Function: Par Editable: ALWAYS Data length: 4Byte Memory: PARAM_SP Validity ch.: SUBD:PM->OM Format: DEC_MV Unit: ERROR Extr. val. ch.: + Decim. pl.: Cycl. tra.: -- Comb. check: -- Set-depend.: Grp. 1	
AXS:	min./max.: s. Text / s. Text	Default value: 0

4.4.150 S-0-0852, Negative flow limit value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter allows determining a flow limit value for negative flow command values.	
Use	The unit for the values of this parameter depends on the scaling that has been set (S-0-0845, Flow data scaling type). This limit value has a unipolar effect. Additionally, there is the limit value "S-0-0850, Bipolar flow limit value" with bipolar effect.	
	<ul style="list-style-type: none"> • If this value is less than "S-0-0852, Negative flow limit value" with regard to the absolute value, the limit value from "S-0-0850" takes effect. • If "S-0-0852" = 0, only the bipolar limit value (S-0-0850) takes effect as the negative limit value. 	
S-0-0852 - Attributes	Function: Par Editable: ALWAYS Data length: 4Byte Memory: PARAM_SP Validity ch.: -- Format: DEC_MV Unit: ERROR Extr. val. ch.: + Decim. pl.: Cycl. tra.: -- Comb. check: -- Set-depend.: Grp. 1	
AXS:	min./max.: s. Text / s. Text	Default value: 0

4.4.151 S-0-0855, Flow ramp reference

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	In the "flow control" mode, the value of this parameter and the flow ramp time (S-0-0856) are used to calculate the ramp for the flow command value. The value of " S-0-0855 " is scaled according to the flow data scaling type set in " S-0-0845 , Flow data scaling type".		
S-0-0855 - Attributes	Function: Par Memory: PARAM_SP Unit: ERROR Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: Set-depend.: Grp. 1
	AXS:	min./max.: s. Text / s. Text	Default value: 10

4.4.152 S-0-0856, Flow ramp time

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	The flow ramp time is the reference time for the flow ramp. In the "flow control" operation mode this parameter defines a slope for the flow command value.		
S-0-0856 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: Grp. 1
	AXS:	min./max.: s. Text / s. Text	Default value: 0,1

4.4.153 S-0-0882, Actual swivel angle value

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	In the "pump control" mode, the display parameter " S-0-0882 " displays the currently valid actual swivel angle value.		
S-0-0882 - Attributes	Function: Par Memory: -- Unit: ERROR Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

4.4.154 S-0-0900, Dynamic alias mapping 1, number

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	For communication interfaces which do not support any 32-bit IDNs (EIDN), the dynamic alias mapping enables access to any parameter with 32-bit EIDN. The IDN to be addressed is entered in " S-0-0900 " as a 32-bit hex number. The parameter " S-0-0901 " corresponding with " S-0-0900 " then takes the properties of the selected parameter. Any access to " S-0-0901 " is redirected (mapped) to the selected parameter. The parameters S-0-0900/S-0-0901 are intended to be used with the control. The control has to exclude simultaneous accesses.	

Standard parameters

S-0-0900 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.4.155 S-0-0901, Dynamic alias mapping 1, content

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	For communication interfaces which do not support any 32-bit IDNs (EIDN), the dynamic alias mapping enables access to any parameter with 32-bit EIDN.		
	The IDN to be addressed is entered in " S-0-0900 " as a 32-bit hex number.		
	The parameter " S-0-0901 " corresponding with " S-0-0900 " then takes the properties of the selected parameter. Any access to " S-0-0901 " is redirected (mapped) to the selected parameter.		
	The parameters S-0-0900/S-0-0901 are intended to be used with the control. The control has to exclude simultaneous accesses.		
S-0-0901 - Attributes	Function: Par Memory: COMPONENT_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.4.156 S-0-0902, Dynamic alias mapping 2, number

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	For communication interfaces which do not support any 32-bit IDNs (EIDN), the dynamic alias mapping enables access to any parameter with 32-bit EIDN.		
	The IDN to be addressed is entered in " S-0-0902 " as a 32-bit hex number.		
	The parameter " S-0-0903 " corresponding with " S-0-0902 " then takes the properties of the selected parameter. Any access to " S-0-0903 " is redirected (mapped) to the selected parameter.		
	The parameters S-0-0902/S-0-0903 are intended to be used with the control. The control has to exclude simultaneous accesses.		
S-0-0902 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.4.157 S-0-0903, Dynamic alias mapping 2, content

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	For communication interfaces which do not support any 32-bit IDNs (EIDN), the dynamic alias mapping enables access to any parameter with 32-bit EIDN.	
	The IDN to be addressed is entered in " S-0-0902 " as a 32-bit hex number.	

The parameter "[S-0-0903](#)" corresponding with "[S-0-0902](#)" then takes the properties of the selected parameter. Any access to "[S-0-0903](#)" is redirected (mapped) to the selected parameter.

The parameters [S-0-0902/S-0-0903](#) are intended to be used with the control. The control has to exclude simultaneous accesses.

S-0-0903 - Attributes

Function:	Par	Editable:	--	Data length:	1Byte var.
Memory:	COMPONENT_SP	Validity ch.:	--	Format:	ASCII
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- **Default value:** ---

4.4.158 S-0-0904, Dynamic alias mapping for Engineering, number

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

For communication interfaces which do not support any 32-bit IDNs (EIDN), the dynamic alias mapping enables access to any parameter with 32-bit EIDN.

The IDN to be addressed is entered in "[S-0-0904](#)" as a 32-bit hex number.

The parameter "[S-0-0905](#)" corresponding with "[S-0-0904](#)" then takes the properties of the selected parameter. Any access to "[S-0-0905](#)" is redirected (mapped) to the selected parameter.

The parameters [S-0-0904/S-0-0905](#) are intended to be used with the Engineering tool and should not be used for communication with the control.

S-0-0904 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- **Default value:** ---

4.4.159 S-0-0905, Dynamic alias mapping for Engineering, content

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

For communication interfaces which do not support any 32-bit IDNs (EIDN), the dynamic alias mapping enables access to any parameter with 32-bit EIDN.

The IDN to be addressed is entered in "[S-0-0904](#)" as a 32-bit hex number.

The parameter "[S-0-0905](#)" corresponding with "[S-0-0904](#)" then takes the properties of the selected parameter. Any access to "[S-0-0905](#)" is redirected (mapped) to the selected parameter.

The parameters [S-0-0904/S-0-0905](#) are intended to be used with the Engineering tool and should not be used for communication with the control.

S-0-0905 - Attributes

Function:	Par	Editable:	--	Data length:	1Byte var.
Memory:	COMPONENT_SP	Validity ch.:	--	Format:	ASCII
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- **Default value:** ---

4.4.160 S-0-0915, Telegram type parameter FSofE

Allocation

Hardware --
Funct. package(s):
Device parameter:

Standard parameters

	Function	In EtherCAT FSoE, the parameters contains the telegram type written by the master. Use only for EtherCAT FSoE for diagnostic purposes. The parameter content is not evaluated in the drive.
S-0-0915 - Attributes	Function: Memory: Unit: Cycl. tra.:	Par PARAM_SP -- -- Editable: Validity ch.: Extr. val. ch.: Comb. check: FKM:PO FKM:PO->SOP -- -- Data length: Format: Decim. pl.: Set-depend.: 2Byte BIN 0 --
	AXS:	min./max.: --- / --- Default value: 0x0

4.4.161 S-0-0916, Connection: Configuration list SoE

	Allocation	Hardware Funct. package(s): Device parameter:
	Function	"S-0-1050.2.202" replacement parameter for communication interfaces which do not support any 32-bit ident numbers (EIDN).
S-0-0916 - Attributes	Function: Memory: Unit: Cycl. tra.:	Par PARAM_SP -- -- Editable: Validity ch.: Extr. val. ch.: Comb. check: FKM:PO FKM:PO->SOP -- -- Data length: Format: Decim. pl.: Set-depend.: 4Byte var. IDN 0 --
	AXS:	min./max.: --- / --- Default value: s. Text

4.4.162 S-0-0924, Connection: Configuration list SoE

	Allocation	Hardware Funct. package(s): Device parameter:
	Function	"S-0-1050.3.202" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).
S-0-0924 - Attributes	Function: Memory: Unit: Cycl. tra.:	Par PARAM_SP -- -- Editable: Validity ch.: Extr. val. ch.: Comb. check: FKM:PO FKM:PO->SOP -- -- Data length: Format: Decim. pl.: Set-depend.: 4Byte var. IDN 0 --
	AXS:	min./max.: --- / --- Default value: s. Text

4.5 S-0-1000 to S-0-1699 Standard parameters**4.5.1 S-0-1000, Communication classes & versions**

	Allocation	Hardware Funct. package(s): Device parameter:
	Function	The identification of a bus slave takes place via this parameter. The parameter consists of a 16-bit list, with each element of the list indicating a package and its version. See also Functional Description "Sercos"

Structure	Bit	Designation/function	Comment
	3-0	Version: 0: Unstandardized version >=1: Standardized version	
	4-7	Functional package/classes: 0x00: Reserved 0x01: SCP_FixCFG 0x02: SCP_VarCFG 0x03: SCP_Sync 0x04: SCP_WD 0x05: SCP_Diag 0x06: SCP_RTB 0x07: SCP_HP 0x08: SCP_SMP 0x09: SCP_MUX 0x0A: SCP_NRT 0x0B: SCP_SIG 0x0D: SCP_SIP 0x0E: SCP_TFTP 0x0F: SCP_Cap 0x10: SCP_ExtMuX 0x13: SCP_SysTime 0x14: SCP_RTBWordProd 0x15: SCP_RTBWordCons 0x16: SCP_SafetyCon 0x18: SCP_NRTPC 0x1B: SCP_NRTPC	

Tab. 4-94: S-0-1000.0.0, Parameter structure

S-0-1000 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte var.
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.5.2 S-0-1002, Communication Cycle time (tScyc)**Allocation**

Hardware
Funct. package(s): --
Device parameter:

Function

The communication cycle time of a bus describes a recurring (cyclic) bus transmission behavior. The value serve as the basis and reference point for other timing parameters.



Sercos: The input is defined at 125 µs, 250 µs, 500 µs, from 1 ms, 2 ms, ... to 65 ms in steps of 1 ms (can be written in "Pre-Operational" state).

Standard parameters

See also Functional Description "Sercos"					
S-0-1002 - Attributes	Function: Par	Editable:	FKM:PO	Data length:	4Byte
	Memory: PARAM_SP	Validity ch.:	FKM:PO->SOP	Format:	DEC_OV
	Unit: us	Extr. val. ch.:	+	Decim. pl.:	3
	Cycl. tra.: --	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: 250,000 / 65000,000		Default value: 2000,000	

4.5.3 S-0-1003, Allowed synchronization losses

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	For operation without errors, application-synchronized buses require synchronization signals within defined intervals. With Sercos, the MST telegram transmitted in every bus cycle is used for this purpose. The parameter describes the number of allowed MST failures that may occur directly one after the other in states "Safe-Operational" (phase 3) and "Operational" (phase 4) before error F4001 is triggered by the drive and a phase return is carried out.				
 Can only be written in "Pre-Operational" state					
See also Functional Description "Sercos"					
S-0-1003 - Attributes	Function: Par	Editable:	FKM:PO	Data length:	4Byte
	Memory: PARAM_SP	Validity ch.:	--	Format:	DEC_OV
	Unit: --	Extr. val. ch.:	+	Decim. pl.:	0
	Cycl. tra.: --	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: s. Text / s. Text		Default value: s. Text	

4.5.4 S-0-1005, Minimum feedback processing time (t5)

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	The parameter describes the maximum required time in the slave between the beginning of actual value acquisition (S-0-1007 , Feedback acquisition capture point (TSync)) and the first time of transmission in a telegram.				
See also Functional Description "Sercos"					
See also Functional Description "Sercos"					
S-0-1005 - Attributes	Function: Par	Editable:	--	Data length:	4Byte
	Memory: --	Validity ch.:	--	Format:	DEC_OV
	Unit: us	Extr. val. ch.:	--	Decim. pl.:	3
	Cycl. tra.: --	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: --- / ---		Default value: ---	

4.5.5 S-0-1006, AT transmission starting time (t1)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter defines the proportional gain for the current controller (I_d and I_q control loop). Parameterization of the current loop proportional gain depends on the controller performance (current loop cycle $T_{A,i}$) and the switching frequency selected (P-0-0001).	
Use	Notes on the use of BRC motors	

The value for "S-0-0106" is provided for each Rexroth motor in relation to "P-0-0001, Switching frequency of the power output stage" = 4 kHz.

- In the case of motors with a data memory in the encoder (MSK, MHD, MKD, MKE and, if applicable, MAD, MAF), this is achieved via the value of "P-0-2106, Current loop proportional gain 1, encoder memory" which is stored there.
- In the case of motors without encoder data memory (2AD, ADF, if applicable MAD and MAF, as well as kit motors 1MB, MBS, MBT, LSF, MLF), this is achieved via the commissioning software or the Intranet edition of the manufacturer's "DriveBase" database.

The value of "S-0-0106" is adjusted to the selected PWM frequency "P-0-0001, Switching frequency of the power output stage" and performance "P-0-0556, Config word of axis controller" as follows:

- In the case of motors with encoder data memory (see above), automatically on "loading controller parameters" (C0700 Load defaults procedure command (motor-spec. controller values)) provided switching frequency and controller performance have already been set.
- In the case of motors without encoder data memory (see above), manually by commissioning staff.
- In the case of third-party motors, automatically by starting a command or manually by commissioning staff (see below).

When manually adjusting the value of "S-0-0106" to the switching frequency (P-0-0001) and performance (P-0-0556) that have been set, the value relating to P-0-0001 = 4 kHz has to be converted as follows:

$$S-0-0106_{(2 \text{ kHz})} = 0,5 * S-0-0106_{(4 \text{ kHz})}$$

$$S-0-0106_{(8 \text{ kHz, bas})} = 1,5 * S-0-0106_{(4 \text{ kHz})} \text{ BASIC Perf.}$$

$$S-0-0106_{(8 \text{ kHz, adv})} = 2,0 * S-0-0106_{(4 \text{ kHz})} \text{ ADVANCED Perf.}$$

$$S-0-0106_{(12 \text{ kHz})} = 2,25 * S-0-0106_{(4 \text{ kHz})}$$

$$S-0-0106_{(16 \text{ kHz})} = 3,0 * S-0-0106_{(4 \text{ kHz})}$$

S-0-0106 (4 kHz): Value of current controller P gain 1 with P-0-0001 = 4 kHz

Fig. 4-24: Determining the Value of S-0-0106 in Relation to P-0001, Switching frequency of the power output stage

Notes on the use of third-party motors

In the case of third-party motors, the value for "S-0-0106" (matching the PWM frequency and performance that have been set) is automatically determined as follows:

- In the case of asynchronous motors, by commands C3200 and C3600
- In the case of synchronous motors, by command C4600

The value of S-0-0106_(4 kHz) can also be calculated manually:

Standard parameters

$$S-0-0106_{(4\text{kHz})} = k_{\text{Winding}_4\text{kHz}} * (L_{12} + 2 * L_{Dr})$$

S-0-0106 (4 kHz):	Current controller proportional gain 1, in relation to P-0-0001 = 4 kHz
k_Winding_4kHz:	Factor for winding type and winding body material, in relation to P-0-0001 = 4 kHz, see below
L₁₂:	Winding inductance between motor terminals in mH
L_{Dr}:	Inductance of a three-phase reactor in motor feed wire in mH

Fig. 4-25: Calculating the Value for S-0-0106 (in Relation to 4 kHz) for Third-Party Motors

Motor functional principle	Winding design	Winding form material	k_winding_4kHz	Exemplary motor types
Synchronous motor	Toothed winding	Ironless	1.33	--
		With iron	1.67	(MBT; MBSxx2; MLF)
	Distributed winding	Ironless	1.87	Trilogy110; 210; 310
		With iron	1.76	(LSF, MBS)
Asynchronous motor	Distributed winding	With iron	1.33	(1MB)

Tab. 4-95: k_winding_4kHz, depending on functional principle of motor, winding design and winding form material

 If necessary, saturation effects of the material at maximum allowed current have to be taken into account in the value for the winding inductance between the motor terminals (L_{12})!

 In the case of motors without encoder memory or third-party motors, no other values than the values recommended should be set for "S-0-0106".

S-0-1006 - Attributes

Function:	Par	Editable:	FKM:PO	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	FKM:PO->SOP	Format:	DEC_OV
Unit:	us	Extr. val. ch.:	+	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: 0,000 / 65000,000 Default value: 100,000

4.5.6 S-0-1007, Feedback acquisition capture point (TSync)

Allocation	Hardware -- Funct. package(s): Device parameter:
Function	Feedback acquisition capture point in the "Operational" state (phase 4) preset by the master. Reference point is the end of the master synchronization telegram. The master can therefore set the same feedback acquisition capture point for all drives that operate in a co-ordinate mode. This way, synchronization of feedback value acquisition is ensured for the respective drives.



Can only be written in "Pre-Operational" state.

S-0-1007 - Attributes

Function:	Par	Editable:	FKM:PO	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	FKM:PO->SOP	Format:	DEC_OV
Unit:	us	Extr. val. ch.:	--	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: 500,000
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4.5.7 S-0-1008, Command value valid time (t3)

Allocation

Hardware	--
Funct. package(s):	
Device parameter:	

Function

The "command value valid" time indicates the time after which the drive may access the new command values after the end of the master synchronization telegram. The master can therefore set the same "command value valid" time for all drives that operate in a co-ordinate mode.



For reasons of compatibility, this parameter still exists, but ctrlX DRIVE no longer uses and evaluates it.

See also Functional Description "Sercos"

S-0-1008 - Attributes

Function:	Par	Editable:	FKM:PO	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	us	Extr. val. ch.:	--	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.5.8 S-0-1009, Device control (C-Dev) telegram assignment

Allocation

Hardware	--
Funct. package(s):	
Device parameter:	

Function

The telegram assignment defines at which position (telegram offset) and in which MDT (telegram number) the Device Control (C-Dev) is.



Can only be written in "Pre-Operational" state.

Structure

Bit	Designation/function	Comment
11-0	Telegram offset in bytes	
13-12	MDT telegram number 00: MDT0 01: MDT1 10: MDT2 11: MDT3	

Tab. 4-96: S-0-1009.0.0, Parameter structure

S-0-1009 - Attributes

Function:	Par	Editable:	FKM:PO	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

Standard parameters

AXS:	min./max.: --- / ---	Default value: 0x0
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4.5.9 S-0-1010, Lengths of MDTs

- Allocation** Hardware --
 Funct. package(s):
 Device parameter:
- Function** This list parameter contains the MDT lengths of all four possible master data telegrams.
 See also Functional Description "Sercos"
- Structure** The list parameter has the following structure:

S-0-1010, SERCOS III: Lengths of MDTs		
1400	-----→	MDT0: Length = 1400 bytes
500	-----→	MDT1: Length = 500 bytes
0	-----→	MDT2: Not existing
0	-----→	MDT3: Not existing

DS000001v01_en.FH

Fig. 4-26: Table S-0-1010.0.0: Parameter structure

S-0-1010 - Attributes

Function:	Par	Editable:	FKM:PO	Data length:	2Byte var.
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV
Unit:	Byte	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: s. Text
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4.5.10 S-0-1011, Device status (S-Dev) telegram assignment

- Allocation** Hardware --
 Funct. package(s):
 Device parameter:
- Function** Telegram assignment defines at which position (telegram offset) and in which AT telegram (telegram number) the device status word (S-Dev) is.
- Structure** See also Functional Description "Sercos"

Bit	Designation/function	Comment
11-0	Telegram offset in bytes	
13-12	AT number 00: AT0 01: AT1 10: AT2 11: AT3	

Tab. 4-97: S-0-1011.0.0, Parameter structure

S-0-1011 - Attributes

Function:	Par	Editable:	FKM:PO	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: 0x0
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4.5.11 S-0-1012, Lengths of ATs

- Allocation** **Hardware** --
Funct. package(s):
Device parameter:
- Function** This parameter contains the AT lengths of all four possible drive telegrams.
 See also Functional Description "Sercos"
- Structure** The list parameter has the following structure:

S-0-1012, SERCOS III: Length of ATs		
1400	----->	AT0: Length = 1400 bytes
500	----->	AT1: Length = 500 bytes
0	----->	AT2: Not existing
0	----->	AT3: Not existing

DS000002v01_en.FH

Fig. 4-27: S-0-1012.0.0, Parameter structure

S-0-1012 - Attributes	Function: Par	Editable: FKM:PO	Data length: 2Byte var.
	Memory: PARAM_SP	Validity ch.: --	Format: DEC_OV
	Unit: Byte	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: s. Text

4.5.12 S-0-1013, SVC offset in MDT

- Allocation** **Hardware** --
Funct. package(s):
Device parameter:
- Function** The SVC offset in MDT indicates at which position and in which master data telegram the service channel for the drive is transmitted.
- Structure** See also Functional Description "Sercos"

Bit	Designation/function	Comment
11-0	MDT SVC offset in bytes	
13-12	MDT telegram number 00: MDT0 01: MDT1 10: MDT2 11: MDT3	

Tab. 4-98: SVC offset in MDT

S-0-1013 - Attributes	Function: Par	Editable: FKM:PO	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: --	Format: HEX
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: 0x8

Standard parameters

4.5.13 S-0-1014, SVC offset in AT

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The SVC offset in AT indicates at which position and in which drive telegram (AT) the service channel for the drive is transmitted.	
Structure	See also Functional Description "Sercos"	

Bit	Designation/function	Comment
11-0	AT SVC offset in bytes	
13-12	AT number 00: AT0 01: AT1 10: AT2 11: AT3	

Tab. 4-99: SVC offset in AT

S-0-1014 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: FKM:PO Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: 0x8

4.5.14 S-0-1015, Ring delay

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	In phase 2 the master determines the ring delay time (S-0-1015) and transmits it to the slaves. With this delay, the slaves can determine their sync times for the P- and S-channels using their delay counters. For this purpose, the master has to execute command " S-0-1024 , C5300 Sercos: SYNC delay measuring procedure command".		
Structure	See also Functional Description "Sercos"		
S-0-1015 - Attributes	Function: Par Memory: -- Unit: us Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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4.5.15 S-0-1016, Slave delay (P/S)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	After the master has transmitted the complete ring delay (S-0-1015) to the slaves, the slaves can determine the SYNCNT-P/S. With these two delay times (P in first and S in second element), the master determines the physical order of the slaves in the ring or line.	
Structure	See also Functional Description "Sercos"	

S-0-1016 - Attributes	Function: Par Memory: -- Unit: us Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: DEC_OV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.5.16 S-0-1017, UC transmission time

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter contains two list elements t6 (start of UC channel) and t7 (end of UC channel).	



t6 = 0 indicates that there is no UC channel.

See also Functional Description "Sercos"

S-0-1017 - Attributes	Function: Par Memory: PARAM_SP Unit: us Cycl. tra.: --	Editable: FKM:PO Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: DEC_OV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

4.5.17 S-0-1019.x.0, MAC address

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1752
Function	The parameter "S-0-1019.x.0" contains the MAC address for Engineering over IP required within the scope of Ethernet communication. The MAC address (Media Access Control) is used for unequivocal identification in the network.	



The MAC address has been permanently assigned to the hardware and cannot be modified.

See also Functional Description "Sercos"

Structure The MAC address is a list parameter with the following structure:

Standard parameters

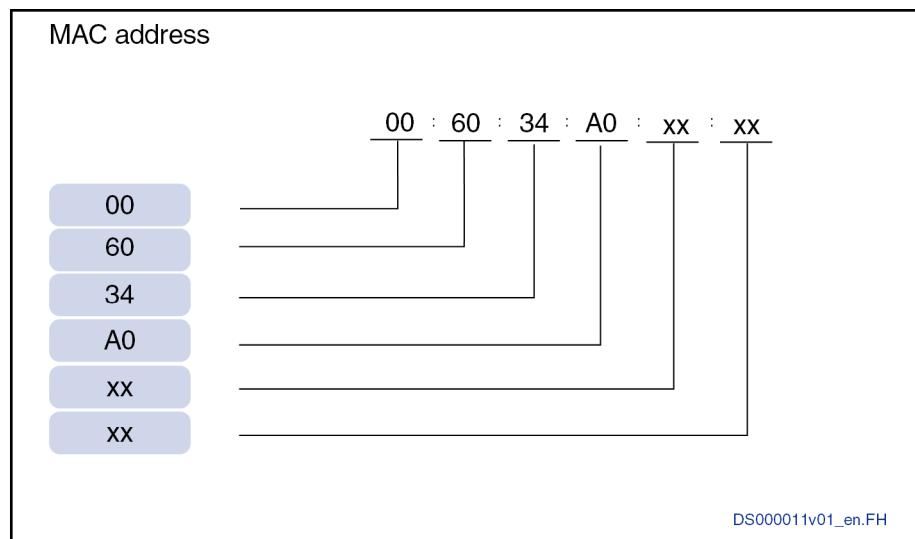


Fig. 4-28: S-0-1019.x.0, MAC address

Use

The structure index is used to define the communication interface.

Structure index	Significance
0	Engineering via master communication
10	Engineering via Panel

Tab. 4-100: Structure index interface assignment

S-0-1019.x.0 - Attributes

Function:	Par	Editable:	--	Data length:	1Byte var.
Memory:	COMPONENT_SP	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.5.18 S-0-1019.x.140, Component Name

Allocation Hardware --

Funct. package(s):

Device parameter:

Alias: P-0-1751, P-0-1753

Function The parameter "S-0-1019.x.140" shows the component name of the Engineering component selected via the structure index.

Use

The structure index is used to define the communication interface.

Structure index	Significance
0	Engineering via master communication
10	Engineering via Panel

Tab. 4-101: Structure index interface assignment

S-0-1019.x.140 - Attributes

Function:	Par	Editable:	--	Data length:	1Byte var.
Memory:	--	Validity ch.:	--	Format:	ASCII
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.5.19 S-0-1020.x.0, IP address

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-2321
Function	The parameter "S-0-1020.x.0" contains the IP address for Engineering over IP. This address is required to ensure that the device in the network can be reached via IP communication.	

 Parameter changes only become effective by executing drive command "C6100 Command Activate IP settings". The effective IP address is displayed in parameter [S-0-1020.x.1](#), Current IP address.

Structure See also Functional Description "Sercos"
The IP address is a list parameter with the following structure:

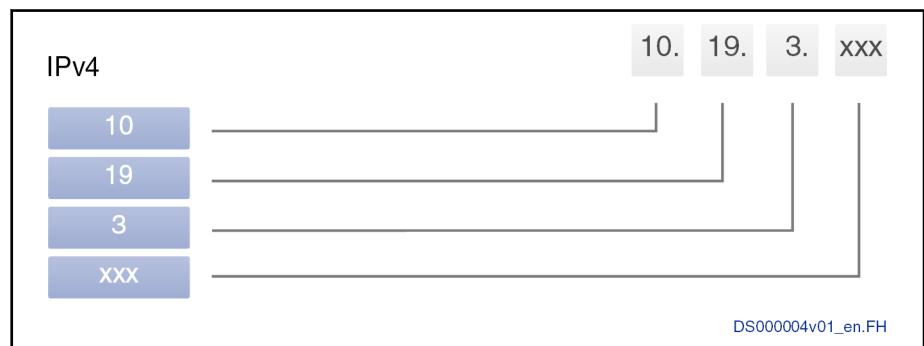


Fig. 4-29: S-0-1020, IP address

Use

 The structure index is used to define the communication interface.

Structure index	Significance
0	Engineering via master communication
10	Engineering via Panel

Tab. 4-102: Structure index interface assignment

 The IP address has to be set with regard to the specific application. It can be set via all communication interfaces.

See also [S-0-1021.x.0](#); [S-0-1022.x.0](#); [S-0-1048.x.0](#)

S-0-1020.x.0 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	1Byte var.
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

4.5.20 S-0-1020.x.1, Active IP address

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-1410, P-0-1754
Function	The parameter "S-0-1020.x.1" contains the effective IP address for Engineering over IP.	

Standard parameters



The parameter displays the effective IP address and cannot be changed. The IP address can be changed via the parameter "S-0-1020.x.0" and by executing the drive command "C6100 Command Activate IP settings".

See also Functional Description "Sercos"

Structure

The IP address is a list parameter with the following structure:

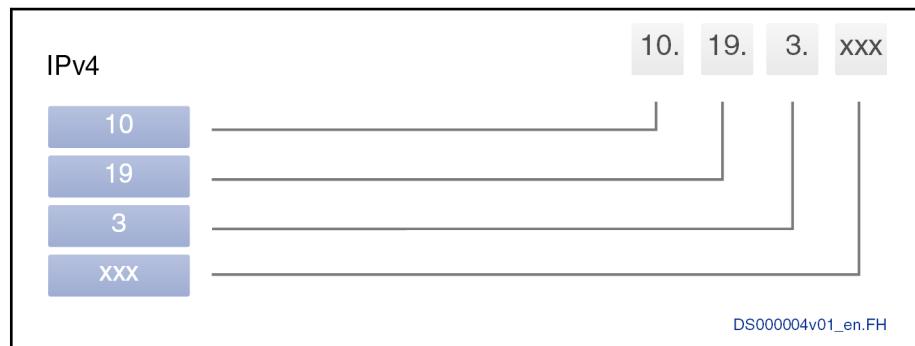


Fig. 4-30: S-0-1020.x.1, Current IP address



The IP address has to be set with regard to the specific application. It can be set via all communication interfaces.

Use

Hand icon The structure index is used to define the communication interface.

Structure index	Significance
0	Engineering via master communication
10	Engineering via Panel

Tab. 4-103: Structure index interface assignment

S-0-1020.x.1 - Attributes

Function:	Par	Editable:	--	Data length:	1Byte var.
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: --- / ---				Default value: s. Text

4.5.21 S-0-1021.x.0, Network mask**Allocation**

Hardware --
Funct. package(s):
Device parameter:
Alias: P-0-2325

Function

Parameter "S-0-1021.x.0" contains the network mask for Engineering over IP required within the scope of IP communication. Each IP address (Internet Protocol) consists of a network part and a device part. The network mask is used to distinguish between network and device parts.



Parameter changes only become effective by executing drive command "C6100 Command Activate IP settings". The effective IP address is displayed in parameter "S-0-1021.x.1 Current network mask".

See also Functional Description "Sercos"

Structure

The network mask is a list parameter with the following structure:

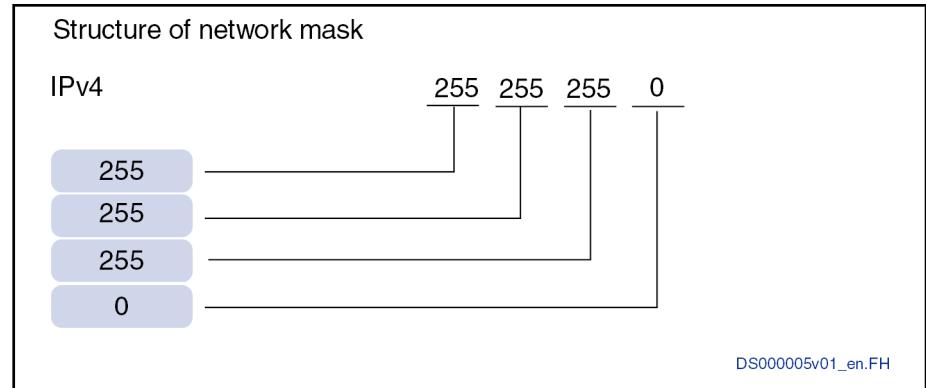


Fig. 4-31: S-0-1021.x.0, IP: Network mask

Use

The structure index is used to define the communication interface.

Structure index	Significance
0	Engineering via master communication
10	Engineering via Panel

Tab. 4-104: Structure index interface assignment

The network mask has to be set with regard to the specific application. It can be set via all communication interfaces.

See also [S-0-1020.x.0](#); [S-0-1022.x.0](#); [S-0-1048.x.0](#)**S-0-1021.x.0 - Attributes**

Function:	Par	Editable:	ALWAYS	Data length:	1Byte var.
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.5.22 S-0-1021.x.1, Active network mask**Allocation**

Hardware --

Funct. package(s): --

Device parameter: --

Alias: S-0-1411, P-0-1755

Function

The parameter "S-0-1021.x.1" contains the effective network mask for Engineering over IP.



The parameter displays the effective network mask and cannot be changed. The network mask can be changed via the parameter "S-0-1021.x.0, Network mask" and by executing the drive command "C6100 Command Activate IP settings".

See also Functional Description "Sercos"

Structure

The network mask is a list parameter with the following structure:

Standard parameters

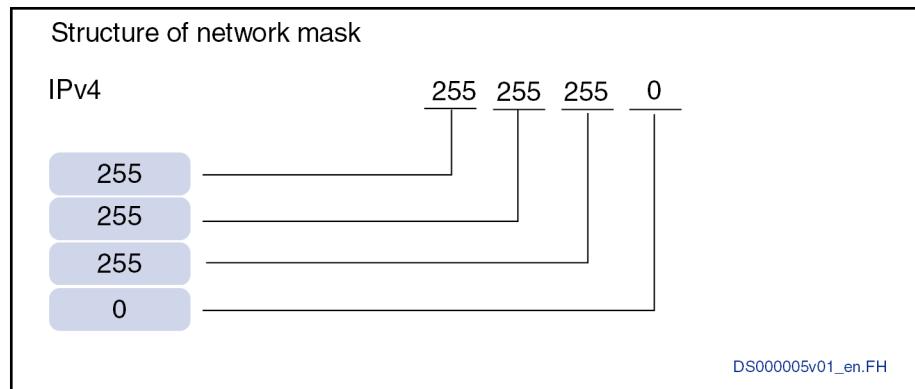


Fig. 4-32: S-0-1021.x.1, Current network mask

Use

The structure index is used to define the communication interface.

Structure index	Significance
0	Engineering via master communication
10	Engineering via Panel

Tab. 4-105: Structure index interface assignment

S-0-1021.x.1 - Attributes

Function:	Par	Editable:	--	Data length:	1Byte var.
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: s. Text
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4.5.23 S-0-1022.x.0, Gateway address

Allocation Hardware
 Funct. package(s):
 Device parameter:
 Alias: P-0-2327

Function The parameter "S-0-1022.x.0" contains the gateway address of the IP node for Engineering over IP which is required within the scope of IP communication.

If the communication node wants to transmit an IP package (Internet Protocol), the network parts of the source IP address and the target IP address are compared. If they do not match, the IP package is transmitted to the gateway IP address.

Parameter changes only become effective by executing drive command "C6100 Command Activate IP settings". The effective IP address is displayed in parameter "S-0-1022.x.1, Current gateway address".

See also Functional Description "Sercos"

Structure The gateway address is a list parameter with the following structure:

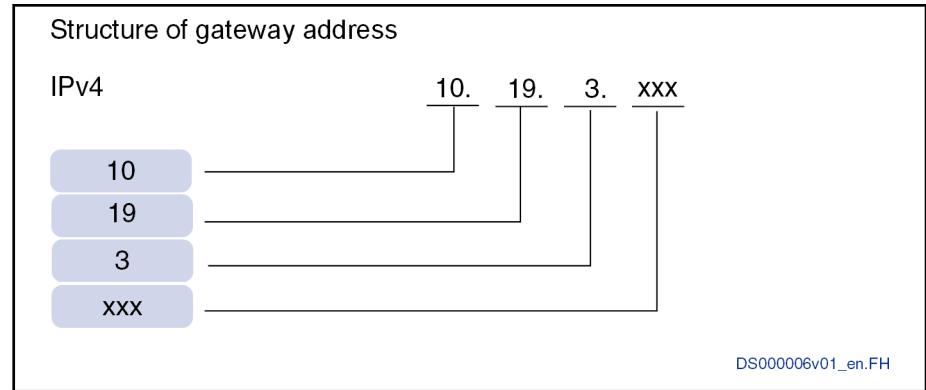


Fig. 4-33: S-0-1022, Master comm. engineering over IP: Gateway address

Use

The structure index is used to define the communication interface.

Structure index	Significance
0	Engineering via master communication
10	Engineering via Panel

Tab. 4-106: Structure index interface assignment

The gateway address has to be set with regard to the specific application. It can be set via all communication interfaces.

See also [S-0-1020.x.0; S-0-1021.x.0; S-0-1048.x.0](#)**S-0-1022.x.0 - Attributes**

Function:	Par	Editable:	ALWAYS	Data length:	1Byte var.
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.5.24 S-0-1022.x.1, Active gateway address**Allocation**

Hardware --

Funct. package(s):

Device parameter:

Alias: [S-0-1412, P-0-1756](#)**Function**

The parameter "S-0-1022.x.1" contains the effective gateway address of the IP node for Engineering over IP.



The parameter displays the effective IP address and cannot be changed. The IP address can be changed via the parameter "S-0-1022.x.0, Gateway address" and by executing the drive command "C6100 Command Activate IP settings".

See also Functional Description "Sercos"

Structure

The gateway address is a list parameter with the following structure:

Standard parameters

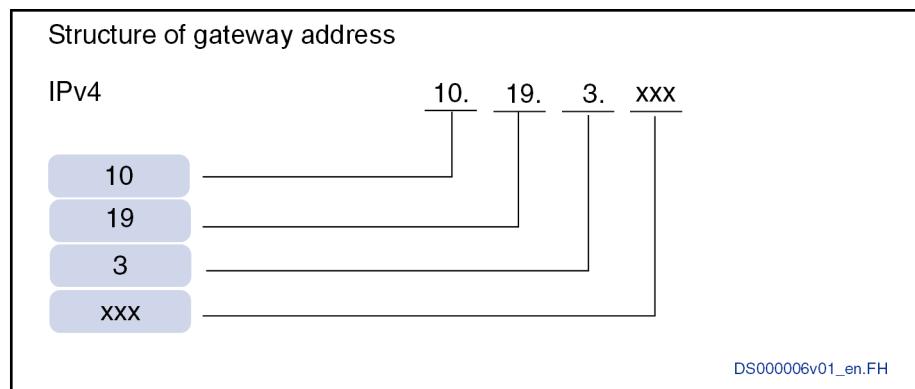


Fig. 4-34: S-0-1022.x.1, Gateway address

Use

The structure index is used to define the communication interface.

Structure index	Significance
0	Engineering via master communication
10	Engineering via Panel

Tab. 4-107: Structure index interface assignment

S-0-1022.x.1 - Attributes

Function:	Par	Editable:	--	Data length:	1Byte var.
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: s. Text
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4.5.25 S-0-1023, Maximum synchronization jitter

Allocation Hardware
Funct. package(s):
Device parameter:

Function With this parameter, the bus master informs the slaves on the maximum jitter that its synchronization telegram has. All synchronization telegrams outside this time window are regarded as failures and are displayed in parameters "S-0-1003.0.0" and "S-0-1028.0.0". The parameter affects the PPL settings of communication application synchronization.

See also Functional Description "Sercos"

S-0-1023 - Attributes

Function:	Par	Editable:	FKM:PO	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV
Unit:	us	Extr. val. ch.:	+	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: 0,200 / 50,000	Default value: 1,000
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4.5.26 S-0-1023.0.140, EtherCAT: Sync0 Jitter

Allocation Hardware
Funct. package(s):
Device parameter:

Function With EtherCAT master communication: Displays the deviation (jitter) of the current Sync0 cycle from the value (in nsec) preset in "S-0-0002, Sercos cycle time (TScyc)". If the deviation exceeds the range preset in "S-0-1023, Maximum synchronization jitter", the warning E4001 is generated in Phase Operational and the counter in the parameter "S-0-1028, Cumulated MST failures" is incremented.

	Use	Only with EtherCAT master communication, in the SafeOperational and Operational phases and in operation with distributed clocks (DC synchronous to Sync0).	
S-0-1023.0.140 - Attributes	Function: Par Memory: -- Unit: ns Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

4.5.27 S-0-1024, C5300 Sercos: SYNC delay measuring procedure command

	Allocation	Hardware Funct. package(s): Device parameter:	
	Function	This command is required for measuring the delays between the two ports. Before the start of the command, the slave needs an appropriate value for "S-0-1015, Ring delay". The delay measurement is required for synchronous operation in "Safe-Operational" (phase 3) and "Operational" (phase 4) and must be carried out before the transition command "S-0-0127, C0100 Safe-operational transition check".	
See also Functional Description "Sercos"			
S-0-1024 - Attributes	Function: Cmd Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

4.5.28 S-0-1026, Identifier of communication logicware

	Allocation	Hardware Funct. package(s): Device parameter:	
	Function	This parameter contains the bus-specific hardware identification for HW type, version and revision as text (ASCII format).	
See also Functional Description "Sercos"			
S-0-1026 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

4.5.29 S-0-1027.0.1, Requested MTU

	Allocation	Hardware Funct. package(s): Device parameter:
	Function	The parameter "S-0-1027.x.1" serves to define the MTU to be used by the slave. The Maximum Transmission Unit (MTU) describes the maximum package size in bytes that can be transmitted via a network without having to fragment the data package.
 Currently, the effective MTU in the drive is set to a defined value of 1500 bytes.		

Standard parameters

Use If a lower MTU is used, the last Ethernet transmission time can be moved closer to the end of the NRT channel. As a result, the NRT time window can be better utilized or, if Sercos cycle times are short, Ethernet communication be provided.

The currently effective MTU is displayed in the parameter "S-0-1027.x.2, Effective MTU".

Observe the following during parameterization:

- Due to protocol definitions, the minimum effective MTU is 576 bytes in communication phases up to phase 2.
- The lower the MTU is selected, the bigger the Ethernet protocol overhead as compared with the transmitted useful data.
- If the MTU is changed, Ethernet communication might be interrupted.

 If a requested MTU of less than 576 bytes is entered, the effective MTU has to be changed during phase progression.

As a result, an existing Ethernet communication connection might be interrupted. It might even be possible that it cannot be re-established at all.

In this case, all Ethernet connections have to be terminated prior to phase switching. They may only be re-established after a successful phase progression.

 The structure index is used to define the communication interface.

Structure index interface assignment:

Structure index	Significance
0	Engineering via master communication
10	Engineering via Panel

Tab. 4-108: Structure index interface assignment

S-0-1027.0.1 - Attributes

Function:	Par	Editable:	FKM:PO	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: 46 / 1500

Default value: 1500

4.5.30 S-0-1027.0.2, Effective MTU

Allocation

Hardware --
Funct. package(s):
Device parameter:

Function

The parameter "S-0-1027.x.2" displays the "Maximum Transmission Unit" MTU currently used in the drive.

The "MTU" describes the maximum package size in bytes that can be transmitted via a network without having to fragment the data package.

 Currently, the effective MTU in the drive is set to a defined value of 1500 bytes.

Use

 The structure index is used to define the communication interface.

Structure index	Significance
0	Engineering via master communication
10	Engineering via Panel

Tab. 4-109: Structure index interface assignment

S-0-1027.0.2 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: 46 / 1500		Default value: ---	

4.5.31 S-0-1028, Cumulated MST failures

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	All failed or invalid synchronization telegrams in states "Safe-Operational" (Sercos: phase 3) and "Operational" (Sercos: phase3) are counted by the error counter.	

 In case of strong transmission interferences the value 65535 is reached after some time.

Interpretation of the parameter content

Observe the following when interpreting the error counter:

- The error counter is incremented only once in each communication cycle, irrespective of the number of failed synchronization telegrams.
- The error counter is reset on the first synchronization telegram in "Safe-Operational" (Sercos phase 3).

See also Functional Description "Sercos"

S-0-1028 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---		Default value: ---	

4.5.32 S-0-1031, Communication logicware debug pin configuration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	With this parameter, different measuring signals can be assigned to the test pins of the Sercos FPGA. The parameter is only used for diagnostic purposes.	

See also Functional Description "Sercos"

S-0-1031 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---		Default value: ---	

Standard parameters

4.5.33 S-0-1032, Communication control

Allocation	Hardware Funct. package(s): Device parameter:	--									
Function	In this parameter, the master specifies or displays individual basic communication functions. See also Functional Description "Sercos"										
Structure	<table border="1"> <thead> <tr> <th>Bit</th><th>Designation/function</th><th>Comment</th></tr> </thead> <tbody> <tr> <td>3</td><td> SWC function 0: Sercos telegrams are transmitted at the inactive port as they are. 1: The transmission of Sercos telegrams at the inactive port is prevented (if the master activated this function in phase 0). </td><td></td></tr> <tr> <td>4</td><td> Soft master function 0: All default values apply 1: Settings and limits (e.g. maximum value of S-0-1023 "SYNC jitter") are adjusted for soft master mode. </td><td></td></tr> </tbody> </table>	Bit	Designation/function	Comment	3	SWC function 0: Sercos telegrams are transmitted at the inactive port as they are. 1: The transmission of Sercos telegrams at the inactive port is prevented (if the master activated this function in phase 0).		4	Soft master function 0: All default values apply 1: Settings and limits (e.g. maximum value of S-0-1023 "SYNC jitter") are adjusted for soft master mode.		
Bit	Designation/function	Comment									
3	SWC function 0: Sercos telegrams are transmitted at the inactive port as they are. 1: The transmission of Sercos telegrams at the inactive port is prevented (if the master activated this function in phase 0).										
4	Soft master function 0: All default values apply 1: Settings and limits (e.g. maximum value of S-0-1023 "SYNC jitter") are adjusted for soft master mode.										

Tab. 4-110: Communication control

S-0-1032 - Attributes	Function: Par	Editable: ALWAYS	Data length: 4Byte
	Memory: --	Validity ch.: --	Format: BIN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: ---

4.5.34 S-0-1034, PHY error counter Port1 and Port2

Allocation	Hardware Funct. package(s): Device parameter:	--									
Function	This parameter shows the PHY errors signaled in relation to the ports. See also Functional Description "Sercos"										
Structure	<table border="1"> <thead> <tr> <th>Bit</th><th>Designation/function</th><th>Comment</th></tr> </thead> <tbody> <tr> <td>0-15</td><td> Port 1: The parameter shows the "False Carrier" and "Data reception with errors" errors which the PHY signals at port 1 via the MII interface. </td><td></td></tr> <tr> <td>16-31</td><td> Port 2: The parameter shows the "False Carrier" and "Data reception with errors" errors which the PHY signals at port 2 via the MII interface. </td><td></td></tr> </tbody> </table>	Bit	Designation/function	Comment	0-15	Port 1: The parameter shows the "False Carrier" and "Data reception with errors" errors which the PHY signals at port 1 via the MII interface.		16-31	Port 2: The parameter shows the "False Carrier" and "Data reception with errors" errors which the PHY signals at port 2 via the MII interface.		
Bit	Designation/function	Comment									
0-15	Port 1: The parameter shows the "False Carrier" and "Data reception with errors" errors which the PHY signals at port 1 via the MII interface.										
16-31	Port 2: The parameter shows the "False Carrier" and "Data reception with errors" errors which the PHY signals at port 2 via the MII interface.										

Tab. 4-111: PHY error counter

S-0-1034 - Attributes	Function: Par	Editable: ALWAYS	Data length: 4Byte
	Memory: --	Validity ch.: --	Format: HEX
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: ---

4.5.35 S-0-1035, Error counter Port1 & Port2

Allocation	Hardware Funct. package(s): Device parameter:	--									
Function	This parameter is the image of a Sercos FPGA register "SercosErrorCount" in which all faulty telegrams (e.g., FCS error) are displayed in relation to the port. The error counters end with a maximum of 65535. The error register in the FPGA is not automatically cleared. This is achieved only by writing the parameter.										
Structure	See also Functional Description "Sercos"										
S-0-1035 - Attributes	<table border="1"> <thead> <tr> <th>Bit</th><th>Designation/function</th><th>Comment</th></tr> </thead> <tbody> <tr> <td>15-0</td><td>Error counter Port 1</td><td></td></tr> <tr> <td>31-16</td><td>Error counter Port 2</td><td></td></tr> </tbody> </table>		Bit	Designation/function	Comment	15-0	Error counter Port 1		31-16	Error counter Port 2	
Bit	Designation/function	Comment									
15-0	Error counter Port 1										
31-16	Error counter Port 2										
<i>Tab. 4-112: Error counter</i>											
	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --									
		Data length: 4Byte Format: HEX Decim. pl.: 0 Set-depend.: --									
	AXS:	min./max.: --- / ---									
		Default value: ---									

4.5.36 S-0-1035.0.1, Error counter P&S

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter is the image of a Sercos FPGA register "SercosErrorCount" in which all faulty telegrams (e.g., FCS error) are displayed in relation to the telegram type.	
Structure	The error counters end with a maximum of "65535". The error register in the FPGA is not automatically cleared. This is achieved only by writing the parameter.	
S-0-1035.0.1 - Attributes	See also Functional Description "Sercos"	
<i>Tab. 4-113: Error counter P&S</i>		
	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 4Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---
		Default value: ---

4.5.37 S-0-1036, Inter Frame Gap

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter is required by the master for determination of parameter "S-0-1036" and read by the master in phase 2. The value depends on HW and FPGA and is 40 ns for ctrlX DRIVE.	
	See also Functional Description "Sercos"	

Standard parameters

S-0-1036 - Attributes	Function: Par Memory: -- Unit: Byte Cycl. tra.: --	Editable: FKM:PO Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: 12 / 1000		Default value: ---

4.5.38 S-0-1037, Slave Jitter

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter is required by Sercos for determination of the end of telegram blocks by the slave. The master determines the value in phase 2 and transfers it to the slaves.		
	See also Functional Description "Sercos"		
S-0-1037 - Attributes	Function: Par Memory: -- Unit: ns Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.5.39 S-0-1039.x.0, Hostname

Allocation	Hardware Funct. package(s): Device parameter:	--						
Function	The parameter contains an unequivocal host name for a device. The device can be identified by this name. In the case of "Engineering over IP" and NRT, the host name is used for IP assignment over DHCP to identify the device unequivocally.							
	 Parameter changes only become effective by executing drive command "C6100 Command Activate IP settings". The effective IP address is displayed in parameter "S-0-1039.x.1, Active host name".							
Use	 The structure index is used to define the communication interface.							
	<table border="1"> <thead> <tr> <th>Structure index</th> <th>Significance</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Engineering via master communication</td> </tr> <tr> <td>10</td> <td>Engineering via Panel</td> </tr> </tbody> </table>	Structure index	Significance	0	Engineering via master communication	10	Engineering via Panel	
Structure index	Significance							
0	Engineering via master communication							
10	Engineering via Panel							

Tab. 4-114: Structure index interface assignment

See also description of parameter "S-0-1048.x.0, C6100 Command Activate IP settings"

S-0-1039.x.0 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.5.40 S-0-1039.x.1, Current Hostname

Allocation	Hardware Funct. package(s): Device parameter:	--
------------	---	----

Function The parameter "S-0-1039.x.1" contains the effective host name for Engineering over IP.



The parameter displays the effective host name and cannot be changed. The host name can be changed via parameter "S-0-1039.x.0 Hostname" and by executing the drive command "C6100 Command Activate IP settings".

Use

See also Functional Description "Sercos"



The structure index is used to define the communication interface.

Structure index	Significance
0	Engineering via master communication
10	Engineering via Panel

Tab. 4-115: Structure index interface assignment

S-0-1039.x.1 - Attributes

Function:	Par	Editable:	--	Data length:	1Byte var.
Memory:	PARAM_SP	Validity ch.:	--	Format:	ASCII
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: s. Text

4.5.41 S-0-1040, Drive address of the master communication

Allocation

Hardware --

Funct. package(s):

Device parameter:

Function

This parameter can be used to set the address for the master communication. The parameter can be set via the optional control panel or the master communication interface.



With Sercos: The entered address becomes effective immediately:

With EtherCAT: Use as "Device Identification Value".



With Sercos, the value 0 is not allowed (not supported special function).

See also Functional Description "Sercos"

S-0-1040 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: 0 / 250

Default value: s. Text

4.5.42 S-0-1041, AT Command value valid time (t9)

Allocation

Hardware --

Funct. package(s):

Device parameter:

Function

The "AT command value valid" time indicates the time after which the drive may access the new command values after the end of the master synchronization telegram. The master can therefore set the same "command value valid" time for all drives that operate in a co-ordinate mode.

Standard parameters



For reasons of compatibility, this parameter still exists, but ctrlX DRIVE no longer uses and evaluates it.

See also Functional Description "Sercos"

S-0-1041 - Attributes

Function:	Par	Editable:	FKM:PO	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	us	Extr. val. ch.:	--	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.5.43 S-0-1042, Topology index

Allocation Hardware
Funct. package(s):
Device parameter:

Function This parameter represents the topology index (position).

See also Functional Description "Sercos"

Structure

Bit	Designation/function	Comment
15 - 0	0x0000	
31 - 16	Topology index SEQCNT. Bit 0-15 from communication phase 0	

Tab. 4-116: Topology index

S-0-1042 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.5.44 S-0-1044, Device Control (C-Dev)

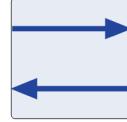
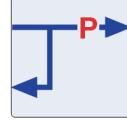
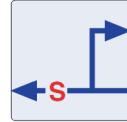
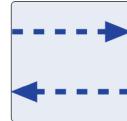
Allocation Hardware
Funct. package(s):
Device parameter:

Function This parameter displays the internal device control word. It is cyclically transferred by the master in Sercos phase 1 and higher phases and can be read for diagnostic purposes.

See also Functional Description "Sercos"

Structure

Bit	Designation/function	Comment
8	Master valid: 0: C-DEV is invalid and may not be evaluated by the slave 1: C-DEV is valid and has to be evaluated by the slave	
11	Status of physical topology (master view, for NRT function): 0: Physical ring interrupted 1: Physical ring closed	

Bit	Designation/function	Comment
13-12	Command topology: 00: Fast forward at both ports  01: Loopback and Forward for P-telegram  10: Loopback and Forward for S-telegram  11: Reserved (NRT) 	
		DK000295.fh
14	Topology handshake of the master: 0->1 or 1->0: Slave should apply new topology from bit 13-12.	
15	Identification bit: Slave indicates the status of this bit via LED or display. This function is used for remote address assignment.	

Tab. 4-117: Device Control (C-Dev)

S-0-1044 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

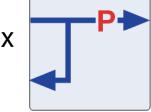
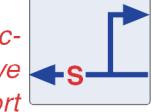
AXS:	min./max.: --- / ---	Default value: ---
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4.5.45 S-0-1045, Device Status (S-Dev)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter displays the internal device status word. It is cyclically transmitted by the slave in Sercos phase-1 and higher phases and can be read for diagnostic purposes.	
Structure	See also Functional Description "Sercos"	
Bit	Designation/function	Comment
1	Current error 0: Cannot be cleared 1: Can be cleared	
4	Parameterization level: 1: Parameterization level 1 active with sub-device	

Standard parameters

Bit	Designation/function	Comment
5	Change bit commands	
6	Sub-device/device warning (C2D): e.g.: power section warning temperature etc. The bit is reset automatically once the cause of the warning has been eliminated.	
7	Sub-device/device error (C1D): e.g.: switch-off due to power section overtemperature etc. <ul style="list-style-type: none"> • Slave remains in current phase • Connection data are continued to be copied • Service channel possible • Cleared via S-0-0099 	
8	Bit 8 Bus-Slave-Valid: 0: Data from Sercos telegrams are not processed by the slave 1: Data from Sercos telegrams are processed by the slave	
9	Err-Con (connection error): 1: Consumer signals an error in a connection	
11/10	Status at the inactive port (for hotplug/redundancy): Bit 13/12 = 01 or 10: 00: "Fast forward" at either port 01: "Loopback and forward" for P-telegram 10: "Loopback and forward" for S-telegram 11: NRT mode Bit 13/12 = 00 or 11: Always 00	

Bit	Designation/function	Comment
13/12	<p>Actual topology:</p> <p>00: Fast forward at both ports</p>  <p>01: Loopback and Forward for P-telegram</p>  <p>10: Loopback and Forward for S-telegram</p>  <p>11: NRT mode</p> 	
		DK000296.fh
14	<p>Topology handshake of the slave:</p> <p>0->1 or 1->0: Slave has applied command topology. Result of attempt to apply command topology is mapped in bit 13/12.</p>	
15	<p>Communication warning interface (Warn-IF):</p> <p>Number of allowed MST failures has exceeded value from "S-0-1003" by 50%.</p>	

Tab. 4-118: Device Status

S-0-1045 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:				Default value: ---	

4.5.46 S-0-1046, Slave addresses of the device**Allocation** **Hardware****Funct. package(s):**
Device parameter:**Function** This parameter shows all the addresses of a device from "S-0-1040, Drive address of master communication" in a list. Thus, a single-axis device has one list element with one address, a double-axis device has two list elements with two addresses.

See also Functional Description "Sercos"

S-0-1046 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte var.
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:				Default value: ---	

Standard parameters

4.5.47 S-0-1047, Maximum Consumer Activation Time

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter describes the maximum consumer data processing time. It describes the time having to elapse between the end of the command value telegram block and the activation time " S-0-1007 " in order to ensure that the values of the consumer connection are still processed in this cycle. The parameter is the counterpart of parameter " S-0-1005 , Minimum feedback processing time between t4 and t1 (t5)" which displays this for producer connections.		
See also Functional Description "Sercos"			
S-0-1047 - Attributes	Function: Par Memory: -- Unit: us Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

4.5.48 S-0-1048.x.0, C6100 Command Activate IP settings

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-2329						
Function	This command activates the IP settings made by the user (IP address, network mask, default gateway and host name).							
	 Even if the IP settings are changed, the settings made before these changes remain active until the command is started.							
Use	 The structure index is used to define the communication interface.							
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Structure index</th><th>Significance</th></tr> </thead> <tbody> <tr> <td>0</td><td>Engineering via master communication</td></tr> <tr> <td>10</td><td>Engineering via Panel</td></tr> </tbody> </table>	Structure index	Significance	0	Engineering via master communication	10	Engineering via Panel	
Structure index	Significance							
0	Engineering via master communication							
10	Engineering via Panel							
<i>Tab. 4-119: Structure index interface assignment</i>								
When the command is started, communication is aborted at the communication interface selected via the structure index. After successful completion of the command, the IP communication can be resumed with the new settings.								
See also description of parameters S-0-1020.x.0 , IP address; S-0-1021.x.0 , Network mask; S-0-1022.x.0 , Gateway address; S-0-1048.x.0 , C6100 Command Activate IP settings.								
S-0-1048.x.0 - Attributes	Function: Cmd Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --					
	AXS:	min./max.: --- / ---	Default value: ---					

4.5.49 S-0-1048.x.1, Configuration of IP options

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-1415, P-0-1757
Function	Via parameter "S-0-1048.x.1" various IP options can be configured bit by bit. These settings become effective with execution of command "C6100 Command Activate IP settings". The parameter is not saved and the value 0 is pre-assigned to it.	
Structure	The individual bits of the parameter have the following significances:	

Bit	Designation/function	Comment
31-8	Reserved	
7-4	DHCP settings 0: Not active 1: DHCP client active (option only available for Engineering via panel)	
3-1	Reserved	
0	IP settings 0: Do not save 1: Save	

Tab. 4-120: S-0-1048.x.1, Configuration of IP options

Use



The structure index is used to define the communication interface.

Structure index	Significance
0	Engineering via master communication
10	Engineering via Panel

Tab. 4-121: Structure index interface assignment

S-0-1048.x.1 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---		Default value: ---	

4.5.50 S-0-1048.x.2, Current IP options

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-1416, P-0-1758
Function	The parameter "S-0-1048.x.2" shows the configured IP settings at the last execution of the command "C6100 Command Activate IP settings".	
Structure	The individual bits of the parameter have the following significances:	

Standard parameters

Bit	Designation/function	Comment
31-8	Reserved	
7-4	DHCP settings 0: Not active 1: DHCP client active (option only available for Engineering via panel)	
3-1	Reserved	
0	IP settings 0: Do not save 1: Save	

Tab. 4-122: S-0-1048.x.2, Current IP options

Use

 The structure index is used to define the communication interface.

Structure index interface assignment:

Structure index	Significance
0	Engineering via master communication
10	Engineering via Panel

Tab. 4-123: Structure index interface assignment

S-0-1048.x.2 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: --- / ---				Default value: s. Text

4.5.51 S-0-1048.x.140, IP status

- Allocation** Hardware --
Funct. package(s):
Device parameter:
- Function** By means of this parameter, the status information of a communication interface is displayed.
- Structure** The individual bits of the parameter have the following significances:

Bit	Designation/function	Comment
31-3	Reserved	
2	Link 0: Not available 1: Available Using this information, you can check whether a plugged panel has been recognized.	

Bit	Designation/function	Comment
1	Driver 0: Deactivated 1: Activated With EtherCAT, the driver will only be activated after execution of EoE Init. This information allows you to determine whether the initialization was completed without errors.	
0	Hardware 0: Deactivated 1: Activated Due to the security requirements, the panel interface is, for example, deactivated via the hardware in case of devices with platform identifier "X3" in the type code (e.g. 02-N-X3-T0-EC-ET).	

Tab. 4-124: S-0-1048.x.140, IP status

Use

 The structure index is used to define the communication interface.

Structure index	Significance
0	Engineering via master communication
10	Engineering via Panel

Tab. 4-125: Structure index interface assignment

S-0-1048.x.140 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:		Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.5.52 S-0-1048.x.141, Configuration of the extended IP options

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter defines the extended settings for a communication interface. These settings become effective with execution of command "C6100 Command Activate IP settings". This parameter is not saved and is usually preassigned value 1. Devices with platform identifier "X3" in the type code (e.g. 02-N-X3-T0-EC-ET) are an exception. For them, the panel interface is preassigned the value "0" and the panel communication hardware is deactivated in this way. Using the control, this locking can be temporarily disabled again by setting this bit and executing the "C6100 Command Activate IP settings" command.	
Structure	The bits of the parameter have the following significance:	

Standard parameters

Bit	Designation/function	Comment
31-1	Reserved	
0	Hardware 0: deactivate 1: activate	

Use *Tab. 4-126: S-0-1048.x.141, Configuration of the extended IP settings*

Structure index	Significance
0	Engineering via master communication
10	Engineering via Panel

Tab. 4-127: Structure index interface assignment

S-0-1048.x.141 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

4.5.53 S-0-1048.x.142, Current extended IP options

Allocation Hardware
Funct. package(s):
Device parameter: --

Function The parameter "S-0-1048.x.142" shows the configured extended IP settings at the last execution of the command "C6100 Command Activate IP settings".

Structure

Bit	Designation/function	Comment
31-1	Reserved	
0	Hardware 0: Deactivated 1: Activated	

Use *Tab. 4-128: S-0-1048.x.142, Effective extended IP settings*

Use  The structure index is used to define the communication interface.

Structure index interface assignment:

Structure index	Significance
0	Engineering via master communication
10	Engineering via Panel

Tab. 4-129: Structure index interface assignment

S-0-1048.x.142 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

4.5.54 S-0-1050.x.1, Connection: Configuration

Allocation Hardware --
Funct. package(s):
Device parameter:

Function This parameter contains the configuration data of a connection.

See also Functional Description "Sercos"

Structure

Bit	Designation/function	Comment
1/0	Monitoring mechanism (consumer) 00: Synchronous operation 01: Asynchronous operation (with watchdog) 10: Asynchronous operation (without watchdog) 11: Reserved	only "00" possible
2	Reserved	
3	Reserved	
5/4	Configuration type: 00: Configuration list with EIDNs (SE-6 relevant) 01: Container without assigned contents (SE-5 relevant) 10: Telegram type parameter FSP-Drive (S-0-0015 relevant) 11: Reserved	only "00" and "10" possible
13/12	Configuration source: 00: Bus master 01: Not bus master 10: Not bus master 11: Not bus master	
14	Connection type: 0: Consumer 1: Producer	
15	Configuration activation: 0: Slave does not need to evaluate configuration 1: Slave has to evaluate the configuration	

Tab. 4-130: S-0-1050.x.1, SIII-Connection: Configuration

S-0-1050.x.1 - Attributes

Function:	Par	Editable:	FKM:PO	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: s. Text

4.5.55 S-0-1050.x.2, Connection: Connection number

Allocation Hardware --
Funct. package(s):
Device parameter:

Function This parameter is used to unequivocally identify a connection. A bus master requires this parameter to determine the telegram offset, for example.

See also Functional Description "Sercos"

Standard parameters

S-0-1050.x.2 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: FKM:PO Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
		AXS: min./max.: s. Text / 65535	Default value: 0

4.5.56 S-0-1050.x.3, Connection: Position

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The telegram assignment defines at which position (telegram offset) and in which telegram (MDT or AT, telegram number) the connection is. The telegram offset points to the connection control (C-Con) of this connection.	
Structure	See also Functional Description "Sercos"	

Bit	Designation/function	Comment
10-0	Telegram offset in bytes	
11	Telegram type: 0: AT 1: MDT	
15-12	Telegram number 0: MDT0/AT0 1: MDT1/AT1 2: MDT2/AT2 3: MDT3/AT3	With Sercos only

Tab. 4-131: *Telegram assignment*

S-0-1050.x.3 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: FKM:PO Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: HEX Decim. pl.: 0 Set-depend.: --
		AXS: min./max.: --- / ---	Default value: 0x0

4.5.57 S-0-1050.x.4, Connection: Max. length of connection

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	With this parameter, the slave shows the master how many bytes it allows for this connection. 2 bytes are included for the connection control C-Con.	
S-0-1050.x.4 - Attributes	See also Functional Description "Sercos"	

S-0-1050.x.4 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
		AXS: min./max.: --- / ---	Default value: ---

4.5.58 S-0-1050.x.5, Connection: Current length of connection

Allocation	Hardware Funct. package(s): Device parameter:	--
-------------------	---	----

Function With this parameter, the slave informs the master on the number of bytes required for this connection. 2 bytes are included for the connection control C-Con.

The data of this parameter is made available by the slave for all configuration types which can be set ([S-0-1050.x.1](#), Connection: Configuration) and is always updated after "[S-0-1050.x.6](#), Connection: Configuration list" has been written.

See also Functional Description "Sercos"

S-0-1050.x.5 - Attributes	Function: Par	Editable: --	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: DEC_OV
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: ---

4.5.59 S-0-1050.x.6, Connection: Configuration list

Allocation Hardware
Funct. package(s):
Device parameter: --

Function This parameter contains the IDNs (4 bytes) which are cyclically transmitted in this connection.

The content only takes effect in the following configuration type:

00: Configuration with EIDNs ([S-0-1050.x.1](#), SIII-Connection: Connection setup)

With this configuration type, the slave determines the parameter "[S-0-1050.x.5](#), SIII-Connection: Current length of connection" from the content of this parameter.

S-0-1050.x.6 - Attributes	Function: Par	Editable: FKM:PO	Data length: 4Byte var.
	Memory: PARAM_SP	Validity ch.: --	Format: IDN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: s. Text

4.5.60 S-0-1050.x.7, Connection: Connection class

Allocation Hardware
Funct. package(s):
Device parameter: --

Function This parameter is used to assign a connection type (S-0-1060) to a connection.

Observe the following aspects for parameterization:

- Assignment is achieved via the SI of parameter "S-0-1060.x.1".
- If the value of the parameter is "-1", there was no assignment and the default settings are applicable.
- When the value is written, parameters "[S-0-1050.x.1](#), SIII-Connection: Configuration" and "[S-0-1050.x.4](#), SIII-Connection: Max. length of connection" are adjusted to match the setting.
- When command "[S-0-0127](#), C0100 Communication phase 3 transition check" is executed, it is checked whether the value of "S-0-1060.x.3, SIII-Connection type: Max. quantity of this conn. capability" is exceeded when all connections are selected. If the value is exceeded, error code "C0174 Connection configuration not allowed" is output. The appropriate parameter "S-0-1060.x.3" is then executed in parameter "[S-0-0021](#), IDN-list of invalid operation data for CP2".

Standard parameters

S-0-1050.x.7 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: FKM:PO Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: -1 / -1		Default value: ---

4.5.61 S-0-1050.x.8, Connection: Connection control (C-Con)

Allocation	Hardware Funct. package(s): Device parameter:	--																		
Function	This parameter contains the image of the connection control (C-Con) of the connection. This applies to producer and consumer connections.																			
Structure	See also Functional Description "Sercos"																			
	<table border="1"> <thead> <tr> <th>Bit</th> <th>Designation/function</th> <th>Comment</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>ProducerReady: 0: Producer does not enter any valid process data yet. 1: Producer enters valid process data. Consumer can apply process data by toggling bit 1 or bit 12.</td> <td></td> </tr> <tr> <td>1</td> <td>NewData bit: Each toggling indicates that new process data are transmitted. In synchronous mode (S-0-1050.0.1; bit 1/0 = 00), the counter is incremented by 1 in every producer cycle (S-0-1050.0.10). Bit 12 and bit 1 are identical.</td> <td></td> </tr> <tr> <td>2</td> <td>CC-DataFieldDelay: 1: CC producer data have a Sercos cycle delay, because they were copied via the bus master. The consumer shall prefer taking the data of the port at which this bit has the value 0.</td> <td>with Sercos only</td> </tr> <tr> <td>4</td> <td>Flow control: 0: Producing and/or consuming are activated for this connection. Error monitoring is active. 1: Producing and/or consuming are deactivated for this connection. Errors are not monitored and do not cause any error reaction (e.g. F4002).</td> <td>with Sercos only</td> </tr> <tr> <td>6</td> <td>Real-time bit 1 Assigned via S-0-1050.0.20 and S-0-1050.0.21</td> <td>with Sercos only</td> </tr> </tbody> </table>	Bit	Designation/function	Comment	0	ProducerReady: 0: Producer does not enter any valid process data yet. 1: Producer enters valid process data. Consumer can apply process data by toggling bit 1 or bit 12.		1	NewData bit: Each toggling indicates that new process data are transmitted. In synchronous mode (S-0-1050.0.1 ; bit 1/0 = 00), the counter is incremented by 1 in every producer cycle (S-0-1050.0.10). Bit 12 and bit 1 are identical.		2	CC-DataFieldDelay: 1: CC producer data have a Sercos cycle delay, because they were copied via the bus master. The consumer shall prefer taking the data of the port at which this bit has the value 0.	with Sercos only	4	Flow control: 0: Producing and/or consuming are activated for this connection. Error monitoring is active. 1: Producing and/or consuming are deactivated for this connection. Errors are not monitored and do not cause any error reaction (e.g. F4002).	with Sercos only	6	Real-time bit 1 Assigned via S-0-1050.0.20 and S-0-1050.0.21	with Sercos only	
Bit	Designation/function	Comment																		
0	ProducerReady: 0: Producer does not enter any valid process data yet. 1: Producer enters valid process data. Consumer can apply process data by toggling bit 1 or bit 12.																			
1	NewData bit: Each toggling indicates that new process data are transmitted. In synchronous mode (S-0-1050.0.1 ; bit 1/0 = 00), the counter is incremented by 1 in every producer cycle (S-0-1050.0.10). Bit 12 and bit 1 are identical.																			
2	CC-DataFieldDelay: 1: CC producer data have a Sercos cycle delay, because they were copied via the bus master. The consumer shall prefer taking the data of the port at which this bit has the value 0.	with Sercos only																		
4	Flow control: 0: Producing and/or consuming are activated for this connection. Error monitoring is active. 1: Producing and/or consuming are deactivated for this connection. Errors are not monitored and do not cause any error reaction (e.g. F4002).	with Sercos only																		
6	Real-time bit 1 Assigned via S-0-1050.0.20 and S-0-1050.0.21	with Sercos only																		

Bit	Designation/function	Comment
7	Real-time bit 2 Assigned via S-0-1050.0.20 and S-0-1050.0.21	with Sercos only
15-12	Counter: Each toggling indicates that new process data are transmitted. In synchronous mode (S-0-1050.0.1 ; bit 1/0 = 00), the counter is incremented by 1 in every producer cycle (S-0-1050.0.10). Bit 12 and bit 1 are identical.	

Tab. 4-132: Table S-0-1050.x.8: Parameter structure

S-0-1050.x.8 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

4.5.62 S-0-1050.x.9, Connection: State

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter always displays the current status of each single connection. The displayed value (state) of the connection state machine depends on the connection type (producer, consumer).	
Structure	See also Functional Description "Sercos"	

Value	Designation	Comment
0	init	State is automatically reached on restart; connection error bit in S-Dev is deleted.
1	prepare	State of an active connection if the connection check in command " S-0-0127 " was without errors.
2	ready	Connection is started - ProducerReady is transmitted with 1 - NewData does not toggle yet Currently, the state cannot be detected in ctrlX DRIVE.
3	producing	NewData toggles according to specification - valid process data are transmitted.
4	stopping	Stop bit is set - state of remaining bits in C-Con and state of process data are as desired. Currently, this state is not implemented in ctrlX DRIVE.

Tab. 4-133: Parameter structure for producer connection

Value	Designation	Comment
0	init	State is automatically reached on restart; connection error bit in S-Dev is deleted.
1	prepare	State of an active connection if the connection check in command " S-0-0127 " was without errors.
2	waiting	Waiting for "NewData"; process data are not retrieved.

Standard parameters

Value	Designation	Comment
3	consuming	Process data are retrieved; connection monitoring is active.
4	stopped	Process data are not retrieved. Connection monitoring is not active. Currently, this state is not implemented in ctrlX DRIVE.
5	warning	Process data are not retrieved. Connection monitoring is active.
7	error	Process data are not retrieved. The connection error bit in S-Dev is set. The state remains as it is until command " "S-0-0127 , C0100 Communication phase 3 transition check" is re-executed.

Tab. 4-134: Connection: State

S-0-1050.x.9 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.5.63 S-0-1050.x.10, Connection: Producer cycle time

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter indicates the cycle time within which the producer updates the data of the cyclic connection. In addition, the NewData bit in the connection control word is toggled. The consumer of the connection uses the time as monitoring time to detect failures. The number of failures is displayed in " "S-0-1050.x.12 , SIII connection: Error counter data losses".	
 The producer cycle time must be equal to " "S-0-1002 , Communication cycle time (tScyc)". In case of the MS-MDT connection, a multiple of the communication cycle time ("S-0-1002) is also admissible.		

See also Functional Description "Sercos"

S-0-1050.x.10 - Attributes

Function:	Par	Editable:	FKM:PO	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV
Unit:	us	Extr. val. ch.:	--	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: 250,000 / 65000,000	Default value: 1000,000
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4.5.64 S-0-1050.x.11, Connection: Allowed data losses

Allocation	Hardware Funct. package(s): Device parameter: Alias:	--
Function	This parameter indicates the number of allowed losses of producer data, before a connection is considered to be broken, the consumer does not process data anymore and error code F4002 is returned.	
S-0-1050.x.11 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: FKM:PO Validity ch.: -- Extr. val. ch.: + Comb. check: --

AXS:	min./max.: 1 / 65535	Default value: 2
------	----------------------	------------------

4.5.65 S-0-1050.x.12, Connection: Error counter data losses

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter indicates the number of lost receptions recognized by the consumer. This counter is without overflow and ends with 65535.	

 Sercos: The counter will be reset through the positive edge of ProducerReady in the connection control (C-Con).

See also Functional Description "Sercos"

S-0-1050.x.12 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
-----------------------------------	---	---	--

AXS:	min./max.: --- / ---	Default value: ---
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4.5.66 S-0-1050.x.20, Connection: IDN allocation of real-time bits

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter contains the IDN assignment (4Byte) of the real-time bits in the connection control (C-Con). The list contains a maximum of 2 IDNs. The bits are assigned in parameter " S-0-1050.x.21 , Connection: Bit allocation of real-time bits".	

See also Functional Description "Sercos"

S-0-1050.x.20 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: IDN Decim. pl.: 0 Set-depend.: --
-----------------------------------	---	---	--

AXS:	min./max.: --- / ---	Default value: s. Text
------	----------------------	------------------------

4.5.67 S-0-1050.x.21, Connection: Bit allocation of real-time bits

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter contains the bit assignment of the real-time bits parameterized in " S-0-1050.x.20 , Connection: IDN allocation of real-time bits". The list can contain a maximum of 2 bit offsets.	

See also Functional Description "Sercos"

S-0-1050.x.21 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --
-----------------------------------	---	---	---

AXS:	min./max.: --- / ---	Default value: s. Text
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4.5.68 S-0-1050.x.140, Communication - Connection: Process Data Image

Allocation	Hardware Funct. package(s): Device parameter: Alias:	--
		P-0-3916, P-0-3917

Standard parameters

	Function	The functional principle of the parameter is documented only internally. Changes or evaluations are reserved to customer support.
S-0-1050.x.140 - Attributes	Function: Par Editable: -- Data length: 2Byte var. Memory: -- Validity ch.: -- Format: HEX Unit: -- Extr. val. ch.: -- Decim. pl.: 0 Cycl. tra.: -- Comb. check: -- Set-depend.: --	
	AXS: min./max.: --- / ---	Default value: ---

4.5.69 S-0-1050.0.141, EtherCAT: Frame To Sync0 Time

	Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1759
	Function	With EtherCAT master communication: Interval between the EtherCAT telegram and the Sync0 time in the drive (in µs).
S-0-1050.0.141 - Attributes	Function: Par Editable: -- Data length: 2Byte Memory: -- Validity ch.: -- Format: DEC_OV Unit: us Extr. val. ch.: -- Decim. pl.: 0 Cycl. tra.: -- Comb. check: -- Set-depend.: --	
	AXS: min./max.: --- / ---	Default value: ---

4.5.70 S-0-1050.x.202, Connection: Configuration list SoE

	Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-0916, S-0-0924
	Function	The parameter contains the configuration list of the cyclic connection for EtherCAT SoE. S-0-1050.2.202 / S-0-1050.3.202 contains the configuration of the cyclically transmitted data for EtherCAT FSoE.
S-0-1050.x.202 - Attributes	Function: Par Editable: FKM:PO Data length: 4Byte var. Memory: PARAM_SP Validity ch.: FKM:PO->SOP Format: IDN Unit: -- Extr. val. ch.: -- Decim. pl.: 0 Cycl. tra.: -- Comb. check: -- Set-depend.: --	
	AXS: min./max.: --- / ---	Default value: s. Text

4.5.71 S-0-1051, Connection: Image of connection setups

	Allocation	Hardware Funct. package(s): Device parameter:
	Function	This parameter contains the current setups of all connections. It consists of a list with " S-0-1050.x.1 , Connection: Configuration" of all connections in ascending order. This gives the bus master (or configurator) an overview of the number of possible connections (list length) and of the connections already assigned to the bus master or other configuration sources. See also Functional Description "Sercos"
S-0-1051 - Attributes	Function: Par Editable: -- Data length: 2Byte var. Memory: -- Validity ch.: -- Format: HEX Unit: -- Extr. val. ch.: -- Decim. pl.: 0 Cycl. tra.: -- Comb. check: -- Set-depend.: --	
	AXS: min./max.: --- / ---	Default value: ---

4.5.72 S-0-1061, Sercos: Maximum ScycCnt

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter indicates the maximum value of the counter in the MDT0 telegram with Sercos. The counter is evaluated by the HW and ensures that, if connections are synchronous, a synchronization time "S-0-1007, Feedback acquisition starting time (T4)" exceeding "S-0-1002, Communication cycle time (tScyc)" is possible.	
See also Functional Description "Sercos"		
S-0-1061 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: FKM:PO Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: 0 / 16383 Default value: 0

4.5.73 S-0-1099.0.1, Test IDN for conformity check - configuration

Allocation	Hardware Funct. package(s): Device parameter: Alias:	--
Function	The parameter is required for the conformity test and internal testing. See also Functional Description "Sercos"	
S-0-1099.0.1 - Attributes		
	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 2Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

4.5.74 S-0-1099.0.2, Test IDN for conformity check - container

Allocation	Hardware Funct. package(s): Device parameter: Alias:	--
Function	The parameter is required for the conformity test and internal testing. See also Functional Description "Sercos"	
S-0-1099.0.2 - Attributes		
	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 2Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

4.5.75 S-0-1099.0.140, Communication block patch - control word

Allocation	Hardware Funct. package(s): Device parameter: Alias:	--
Function	The parameter is required for the conformity test and internal testing. See also Functional Description "Sercos"	
S-0-1099.0.140 - Attributes		
	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 2Byte Format: HEX Decim. pl.: 0 Set-depend.: --

Standard parameters

AXS:	min./max.: --- / ---	Default value: ---
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4.5.76 S-0-1099.0.141, Communication block patch - container

Allocation Funct. package(s): Device parameter: Alias:	Hardware -- -- -- P-0-3843	Function	The parameter is required for the conformity test and internal testing. See also Functional Description "Sercos"		
S-0-1099.0.141 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --			Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: --- / --- Default value: ---				

4.5.77 S-0-1099.0.150, Test IDN for conformity check - 4bytes

Allocation Funct. package(s): Device parameter: Alias:	Hardware -- -- -- P-0-2767	Function	The functional principle of the parameter is documented only internally. Changes or evaluations are reserved to customer support.		
S-0-1099.0.150 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT			Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: --- / --- Default value: ---				

4.5.78 S-0-1300.x.1, Component Name

Allocation Funct. package(s): Device parameter: Alias:	Hardware -- -- -- S-0-3500, S-0-3515, S-0-3530	Function	This parameter serves to identify the respective component of the Sercos device, which is mapped in this instance of the electronic type plate. It shows a general type designation of the component. The name is given in English, irrespective of the language selection that has been set. Examples of contents are: <ul style="list-style-type: none"> • Control Unit • Power Unit • Motor 		
S-0-1300.x.1 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --			Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: s. Text
	AXS: min./max.: --- / --- Default value: ---				

4.5.79 S-0-1300.x.3, Vendor Code

Allocation Funct. package(s): Device parameter: Alias:	Hardware -- -- -- S-0-3502, S-0-3517, S-0-3532	Function			
---	--	----------	--	--	--

Function This parameter contains the Sercos-specific vendor code of the component that is assigned to the instance.



Bosch Rexroth components are identified by vendor code 100.

A Sercos component is identified via:

- Vendor Code ([S-0-1300.0.3](#))
- Vendor Device ID ([S-0-1300.0.5](#))

Use The vendor code is used while the system is running up to verify whether the offline configuration (made on the basis of a device description file) is "valid", i.e. based on the actual device properties.

S-0-1300.x.3 - Attributes	Function: Par	Editable: --	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: DEC_OV
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: s. Text
AXS:		min./max.: --- / ---	Default value: ---

4.5.80 S-0-1300.x.4, Device Name

Allocation	Hardware	--
	Funct. package(s):	
	Device parameter:	
	Alias:	S-0-0140, S-0-3518, S-0-3533

Function This parameter represents the component name according to the vendor-specific type code.

Example: "XMD1-W2010ANA-01NSRT0ECNN-S0103N1NNN4DNN"

The parameter serves to display the component name in the Engineering tool.

S-0-1300.x.4 - Attributes	Function: Par	Editable: --	Data length: 1Byte var.
	Memory: --	Validity ch.: --	Format: ASCII
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: s. Text
AXS:		min./max.: --- / ---	Default value: ---

4.5.81 S-0-1300.x.5, Vendor Device ID

Allocation	Hardware	--
	Funct. package(s):	
	Device parameter:	
	Alias:	S-0-3504, S-0-3519, S-0-3534

Function This parameter contains the Sercos-specific vendor device ID.

A Sercos component is identified via:

- Vendor Code ([S-0-1300.0.3](#))
- Vendor Device ID ([S-0-1300.0.5](#))

Structure The parameter describes the product range, to which the device belongs, in a general form.

Example:

XMD describes all double-axis devices of the ctrlX DRIVE product range.

Use The vendor device ID is used while the system is running up to verify whether the offline configuration made on the basis of a device description file is "valid", i.e. based on the actual device properties.

Standard parameters

S-0-1300.x.5 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: s. Text
AXS:	min./max.: --- / ---		Default value: ---

4.5.82 S-0-1300.x.8, Hardware version

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-3506, S-0-3521, S-0-3536	
Function	This parameter contains the hardware change index of the component, e.g., "AB1". It is used for display for diagnostic and service purposes.		
S-0-1300.x.8 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: s. Text
AXS:	min./max.: --- / ---		Default value: ---

4.5.83 S-0-1300.x.9, Software revision

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-0030, S-0-3522, S-0-3537	
Function	This parameter contains the version of the operating firmware of the drive, e.g., "FWA-XD1-AXS-V-0102N-NN". It is used for display for diagnostic and service purposes.		
S-0-1300.x.9 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: s. Text
AXS:	min./max.: --- / ---		Default value: ---

4.5.84 S-0-1300.x.11, Order Number

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-3508, S-0-3523, S-0-3538	
Function	This parameter is used to represent the material number of the component, e.g., "R911xxxxx". The material number is used for service purposes.		
S-0-1300.x.11 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: s. Text
AXS:	min./max.: --- / ---		Default value: ---

4.5.85 S-0-1300.x.12, Serial number

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-3509, S-0-3524, S-0-3539
Function	This parameter is used to represent the serial number of the component, e.g., "7260887123456". The serial number is used for diagnostic and service purposes.	

S-0-1300.x.12 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: s. Text
AXS:	min./max.: --- / ---		Default value: ---

4.5.86 S-0-1301, List of GDP classes

Allocation	Hardware Funct. package(s): Device parameter: --					
Function	This parameter indicates the implemented classes of the generic device functions of a Sercos device. This parameter serves to find the Sercos-defined functions that are available in the diagnosis, identification, initialization and parameter management areas.					
S-0-1301 - Attributes	<table border="1"> <tr> <td>Function: Par Memory: -- Unit: -- Cycl. tra.: --</td> <td>Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --</td> </tr> <tr> <td>AXS:</td><td>min./max.: --- / ---</td></tr> </table>		Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	AXS:	min./max.: --- / ---
Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --					
AXS:	min./max.: --- / ---					
	Default value: ---					

4.5.87 S-0-1302.x.1, FSP Type

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-1420, S-0-1425, S-0-1430					
Function	This parameter specified an instance for " S-0-1302.x.1 " for each resource in a sub-device. The instance indicates the FSP in which the resource is specified. At present, only I/O and Drive resources are specified in Sercos FSPs. Currently, the I/Os in the drive are not implemented according to FSP I/O. That means that only the "Drive" is available as a resource specified according to Sercos.					
S-0-1302.x.1 - Attributes	<table border="1"> <tr> <td>Function: Par Memory: -- Unit: -- Cycl. tra.: --</td> <td>Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --</td> </tr> <tr> <td>AXS:</td><td>min./max.: --- / ---</td></tr> </table>		Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	AXS:	min./max.: --- / ---
Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --					
AXS:	min./max.: --- / ---					
	Default value: ---					

4.5.88 S-0-1302.0.3, Application type

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-0142
Function	Replacement parameter " S-0-0142 " is to be used for communication interfaces which do not support any 32-bit ident numbers (EIDN). A descriptive name (text) for the drive and/or the axis (e.g. swivel axis) can be stored in this parameter.



It has no impact on functionality.

The following applies:

- The UTF-8 character set can be written to this parameter.
- Size in number of bytes: 40
- A UTF-8 character can have a size of 1 to 3 bytes.

Standard parameters

- The number of characters that can be entered may be less, depending on the UTF-8 characters used.

S-0-1302.0.3 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

4.5.89 S-0-1303.0.1, Diagnostic trace configuration

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-1400
Function	In this list parameter, those IDNs are entered whose data values are applied to the list parameters " S-0-1303.0.12 " to " S-0-1303.0.14 " in the case of a change in diagnostics. The contents of list parameter " S-0-1303.0.12 " corresponds to the list element 0 of parameter " S-0-1303.0.1 ". The contents of list parameter " S-0-1303.0.13 " corresponds to the "list element 1" of parameter " S-0-1303.0.1 " etc.
 For ctrlX DRIVE, this parameter is pre-configured with parameters " S-0-0390.0.136 ", " S-0-1305.0.2 " and " S-0-1305.0.3 " and cannot be changed.	

See also Functional Description "Diagnostic system"

S-0-1303.0.1 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: IDN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.5.90 S-0-1303.0.2, Diagnostic trace control

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-1401
Function	With this parameter, recording of the diagnostic trace can be controlled. Using the diagnostic threshold, the diagnostic class for start of recording can be set.
 For consistent read-out of the diagnostic trace data, recording has to be stopped.	
 This parameter is not saved, i.e. after switching on, the diagnostic trace starts and all diagnostic changes (diagnostic threshold = 0) are recorded.	

See also Functional Description "Diagnostic system"

Structure	Bit	Designation/function	Comment
	0	Recording: 0: Start 1: Stop	
	7-4	Diagnostic threshold as of which the diagnostic changes are recorded: A: Diagnostic status messages C: Diagnostic command messages E: Warnings F: Error	

Tab. 4-135: *Diagnostic trace control*

S-0-1303.0.2 - Attributes	Function: Par	Editable: ALWAYS	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: HEX
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: +	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: ---

4.5.91 S-0-1303.0.3, Diagnostic trace state

Allocation	Hardware -- Funct. package(s): Device parameter: Alias: S-0-1402
Function	This parameter shows the status information of the diagnostic trace. See also Functional Description "Diagnostic system"
Structure	
Bit	Designation/function
0	Recording 0: Running 1: Stopped
4	Status of internal temporary buffer 0: Not full 1: Full

Tab. 4-136: *Diagnostic trace state*

S-0-1303.0.3 - Attributes	Function: Par	Editable: --	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: HEX
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: ---

4.5.92 S-0-1303.0.10, Diagnostic trace main diagnostics

Allocation	Hardware -- Funct. package(s): Device parameter: Alias: S-0-1405
Function	In this ring memory, the main diagnostics is entered in case of diagnostic change in the format of " S-0-0390 ".
	 This parameter is saved in intervals of 30 minutes. In case of error (diagnostics = Fxxxx), it is saved after 10 seconds.

Standard parameters

See also Functional Description "Diagnostic system"

S-0-1303.0.10 - Attributes	Function: Par	Editable: --	Data length: 4Byte var.
	Memory: --	Validity ch.: --	Format: HEX
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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4.5.93 S-0-1303.0.11, Diagnostic trace system time

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	In this ring memory, the system time is entered in case of diagnostic change (S-0-1305.0.1).	

 This parameter is saved in intervals of 30 minutes. In case of error (diagnostics = Fxxxx), it is saved after 10 seconds.

See also Functional Description "Diagnostic system"

S-0-1303.0.11 - Attributes	Function: Par	Editable: --	Data length: 8Byte var.
	Memory: --	Validity ch.: --	Format: TIME
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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4.5.94 S-0-1303.0.12, Diagnostic trace detailed diagnostics

Allocation	Hardware Funct. package(s): Device parameter: Alias:	--
Function	In this ring memory, the detailed diagnostics is entered in case of diagnostic change (S-0-0390.0.136).	

 This parameter is saved in intervals of 30 minutes. In case of error (diagnostics = Fxxxx), it is saved after 10 seconds.

See also Functional Description "Diagnostic system"

S-0-1303.0.12 - Attributes	Function: Par	Editable: --	Data length: 4Byte var.
	Memory: --	Validity ch.: --	Format: HEX
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: --	Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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4.5.95 S-0-1303.0.13, Diagnostic trace system time fine

Allocation	Hardware Funct. package(s): Device parameter: Alias:	--
Function	In this ring memory, the "System fine time" is entered. During reading of the parameter, the system fine time is determined from the elements of parameter " S-0-1303.0.11 ".	

See also Functional Description "Diagnostic system"

S-0-1303.0.13 - Attributes	Function: Par	Editable: --	Data length: 4Byte var.
	Memory: --	Validity ch.: --	Format: DEC_OV
	Unit: us	Extr. val. ch.: --	Decim. pl.: 3
	Cycl. tra.: --	Comb. check: --	Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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4.5.96 S-0-1303.0.14, Diagnostic trace system time coarse

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-1404	
Function	In this ring memory, the "System coarse time" is entered. During reading of the parameter, the system coarse time is determined from the elements of parameter S-0-1303.0.11 .		
See also Functional Description "Diagnostic system"			
S-0-1303.0.14 - Attributes	Function: Par Memory: -- Unit: s Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS: min./max.: --- / --- Default value: ---			

4.5.97 S-0-1303.0.136, Diagnostic trace associated buffer

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter is used for advanced diagnostic purposes only and is irrelevant for customers.		
S-0-1303.0.136 - Attributes			
S-0-1303.0.136 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
AXS: min./max.: --- / --- Default value: s. Text			

4.5.98 S-0-1305.0.1, System time

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	<p>This 8-byte parameter contains the system time in IEC 61588 format. It is made up of individual 4-byte parameters "S-0-1305.0.2, System fine time" and "S-0-1305.0.3, System coarse time". The lower 4 bytes contain the nanosecond part (up to 999999999) and the top 4 bytes the second part of the system time as of 01/01/1970.</p> <p>The content of this parameter is updated on every position detection. This corresponds to updating in the velocity controller clock. When switching off the device, the system time is permanently saved. On restart, the switch-off time is continued. After restart, if it is detected that the system time in the retain data memory is invalid, the time is initialized with the date 01/01/2014 (= 1,388,534,400 seconds).</p> <p>The system time can be adjusted via this parameter. The time is applied on next position detection.</p> <p>The system time cannot be changed via this parameter if the system time is cyclically transmitted via Sercos master communication. In this case, the system time is cyclically compared with the time received by the master. A deviation of up to 5 µs is ignored. If this threshold is exceeded by the deviation, the time is corrected in the slave.</p> <p>In case of EtherCAT master communication, only the fine part of a cyclically transmitted system time can be received by the slave and applied for</p>		
AXS: min./max.: --- / --- Default value: ---			

Standard parameters

synchronization. Rough setting must be realized via the non-cyclic data channel.

If the system time in the slave is adjusted by more than 60 seconds, an entry is made in the diagnostic memory. This is indicated by the value 0x000D7FFF in the list "[S-0-1303.0.12](#), Diagnostic trace detailed diagnostics".

S-0-1305.0.1 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	8Byte
Memory:	--	Validity ch.:	--	Format:	TIME
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

4.5.99 S-0-1305.0.2, System fine time**Allocation**

Hardware --
Funct. package(s):
Device parameter:
Alias: [P-0-2755](#)

Function

The fine part of the system time in this parameter reaches up to one second. The LSB (least significant bit) is one nanosecond. The parameter maps the nanosecond hardware counter latched on each position detection.

Write access to this parameter leads to a change in system time. In this process, a value written to the parameter "[S-0-1305.0.3](#)" is also applied for the coarse part. It is applied on next position detection.

The content of the parameter is permanently saved on switching off. After restart, the switch-off time is continued.

S-0-1305.0.2 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	us	Extr. val. ch.:	--	Decim. pl.:	3
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

4.5.100 S-0-1305.0.3, System coarse time**Allocation**

Hardware --
Funct. package(s):
Device parameter:
Alias: [P-0-2756](#)

Function

The coarse part of the system time in this parameter contains the number of seconds as of 01/01/1970. The LSB (least significant bit) is 1 second.

The parameter maps the second hardware counter latched on each position detection. Write access to this parameter does not directly lead to a change in system time. A written value is applied on the fine part on following write access ([S-0-1305.0.2](#)).

The content of the parameter is permanently saved on switching off. After restart, the switch-off time is continued.

S-0-1305.0.3 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	s	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

4.5.101 S-0-1350, C6400 Reboot command**Allocation**

Hardware --
Funct. package(s):
Device parameter:

Function	The "Reboot" command activates a restart of the device. During the command, the following checks are carried out: <ul style="list-style-type: none">• Readiness of the axis (at which the command was started)• Readiness of other axes in the same multi-axis device The conditions for a restart are: <ul style="list-style-type: none">• Axis in standstill• Axis in CM• Drive not in control If both conditions are satisfied, the restart will be carried out after a delay of 2 seconds. The maximum duration from the command start is 4 seconds. See also Functional Description "Sercos interface"																														
Use	 Executing the command has the same effect as the switch-off and subsequent activation of the 24 Volt supply. This may cause errors in adjacent devices, e.g. in the master communication.																														
S-0-1350 - Attributes	<table border="1"> <tr> <td>Function:</td> <td>Cmd</td> <td>Editable:</td> <td>ALWAYS</td> <td>Data length:</td> <td>2Byte</td> </tr> <tr> <td>Memory:</td> <td>--</td> <td>Validity ch.:</td> <td>--</td> <td>Format:</td> <td>BIN</td> </tr> <tr> <td>Unit:</td> <td>--</td> <td>Extr. val. ch.:</td> <td>--</td> <td>Decim. pl.:</td> <td>0</td> </tr> <tr> <td>Cycl. tra.:</td> <td>--</td> <td>Comb. check:</td> <td>--</td> <td>Set-depend.:</td> <td>--</td> </tr> <tr> <td>AXS:</td> <td colspan="3">min./max.: 0x0 / 0x3</td> <td colspan="2">Default value: ---</td> </tr> </table>	Function:	Cmd	Editable:	ALWAYS	Data length:	2Byte	Memory:	--	Validity ch.:	--	Format:	BIN	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--	AXS:	min./max.: 0x0 / 0x3			Default value: ---	
Function:	Cmd	Editable:	ALWAYS	Data length:	2Byte																										
Memory:	--	Validity ch.:	--	Format:	BIN																										
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																										
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																										
AXS:	min./max.: 0x0 / 0x3			Default value: ---																											

4.5.102 S-0-1400, Diagnostic trace configuration

Allocation	Hardware Funct. package(s): Device parameter:	--																														
Function	"S-0-1303.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).																															
S-0-1400 - Attributes	<table border="1"> <tr> <td>Function:</td> <td>Par</td> <td>Editable:</td> <td>--</td> <td>Data length:</td> <td>4Byte var.</td> </tr> <tr> <td>Memory:</td> <td>--</td> <td>Validity ch.:</td> <td>--</td> <td>Format:</td> <td>IDN</td> </tr> <tr> <td>Unit:</td> <td>--</td> <td>Extr. val. ch.:</td> <td>--</td> <td>Decim. pl.:</td> <td>0</td> </tr> <tr> <td>Cycl. tra.:</td> <td>--</td> <td>Comb. check:</td> <td>--</td> <td>Set-depend.:</td> <td>--</td> </tr> <tr> <td>AXS:</td> <td colspan="3">min./max.: --- / ---</td> <td colspan="2">Default value: ---</td> </tr> </table>		Function:	Par	Editable:	--	Data length:	4Byte var.	Memory:	--	Validity ch.:	--	Format:	IDN	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--	AXS:	min./max.: --- / ---			Default value: ---	
Function:	Par	Editable:	--	Data length:	4Byte var.																											
Memory:	--	Validity ch.:	--	Format:	IDN																											
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																											
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--																											
AXS:	min./max.: --- / ---			Default value: ---																												

4.5.103 S-0-1401, Diagnostic trace control

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1303.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

Standard parameters

S-0-1401 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: +	Data length: 2Byte Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.5.104 S-0-1402, Diagnostic trace state

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1303.0.3" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-1402 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.5.105 S-0-1403, Diagnostic trace system time fine

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1303.0.13" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-1403 - Attributes	Function: Par Memory: -- Unit: us Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.5.106 S-0-1404, Diagnostic trace system time coarse

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1303.0.14" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-1404 - Attributes	Function: Par Memory: -- Unit: s Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.5.107 S-0-1405, Diagnostic trace main diagnostics

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1303.0.10" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-1405 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.5.108 S-0-1406, Diagnostic trace detailed diagnostics

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"S-0-1303.0.12" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			
S-0-1406 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --	
AXS:	min./max.: --- / ---		Default value: ---	

4.5.109 S-0-1410, Active IP address

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"S-0-1020.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			
S-0-1410 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --	
AXS:	min./max.: --- / ---		Default value: s. Text	

4.5.110 S-0-1411, Active network mask

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"S-0-1021.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			
S-0-1411 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --	
AXS:	min./max.: --- / ---		Default value: s. Text	

4.5.111 S-0-1412, Active gateway address

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"S-0-1022.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			
S-0-1412 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --	
AXS:	min./max.: --- / ---		Default value: s. Text	

4.5.112 S-0-1415, Configuration of IP options

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"S-0-1048.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			

Standard parameters

S-0-1415 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

4.5.113 S-0-1416, Current IP options

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1048.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
S-0-1416 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: s. Text

4.5.114 S-0-1420, FSP Type

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1302.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
S-0-1420 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

4.5.115 S-0-1425, FSP Type

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1302.1.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
S-0-1425 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

4.5.116 S-0-1430, FSP Type

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1302.2.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
S-0-1430 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

4.5.117 S-0-1601, List of FSP Drive classes

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter contains drive classes which the drive supports according to the functional package (open loop, closed loop). A drive class comprises a defined functionality with the associated parameters and bit combinations.	
S-0-1601 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

4.6 S-0-1700 to S-0-1799 Power supply parameters

4.6.1 S-0-1700.0.1, List of FSP Power Supply classes

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-2000
Function	This parameter contains the power supply classes that support a Sercos device. A power supply class comprises a defined functionality with the associated parameters and bit combinations. For the XCS device, class PSC basic is available.	
S-0-1700.0.1 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte var. Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

4.6.2 S-0-1700.0.2, List of supplied drives

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-2001
Function	The parameter serves for identification of the axis that are supplied with DC power from this supplier. Here, the Sercos addresses of the supplied inverters can be entered.	
S-0-1700.0.2 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: -- Data length: 2Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: s. Text

4.6.3 S-0-1701.0.1, Nominal current of power supply

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-2002
Function	The parameter displays the maximum possible continuous current of the power supply. See also Functional Description "Power supply limitations"	

Standard parameters

S-0-1701.0.1 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.6.4 S-0-1701.0.2, Amplifier peak current

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2003	--
Function	This parameter displays the peak current of the controller. The value is determined by the hardware used. This current is only available temporarily. See also Functional Description "Power supply limitations"	
S-0-1701.0.2 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.6.5 S-0-1702.0.1, Mains voltage actual value

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2008	--
Function	This parameter is used to display the current supply voltage peak value in volts.	
S-0-1702.0.1 - Attributes	Function: Par Memory: -- Unit: V Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.6.6 S-0-1702.0.2, Mains current

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2009	--
Function	Display parameter for the measured actual current value. The current (DC mains current) is measured in the mains rectifier in the current control cycle. The instantaneous value is displayed.	
S-0-1702.0.2 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.6.7 S-0-1702.0.3, Phase current L1

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2010	--
Function	This parameter displays the actual current value measured in the current controller clock ($T_{A_current}$) in mains phase L1.	

S-0-1702.0.3 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.6.8 S-0-1702.0.4, Phase current L2

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2011	--
Function	This parameter displays the actual current value measured in the current controller clock ($T_{A, \text{current}}$) in mains phase L2.	
S-0-1702.0.4 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

4.6.9 S-0-1702.0.5, Phase current L3

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2012	--
Function	This parameter displays the actual current value measured in the current controller clock ($T_{A, \text{current}}$) in mains phase L3.	
S-0-1702.0.5 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

4.6.10 S-0-1702.0.9, Mains voltage L1-L2

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2013	--
Function	This parameter displays the current L1-L2 phase-to-phase mains voltage value in volts.	
S-0-1702.0.9 - Attributes	Function: Par Memory: -- Unit: V Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

4.6.11 S-0-1702.0.10, Mains voltage L2-L3

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2014	--
Function	This parameter displays the current L2-L3 phase-to-phase mains voltage value in volts.	
S-0-1702.0.10 - Attributes	Function: Par Memory: -- Unit: V Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --

Standard parameters

AXS:	min./max.: --- / ---	Default value: ---
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4.6.12 S-0-1702.0.11, Mains voltage L3-L1

Allocation	Hardware Funct. package(s): Device parameter: Alias:	--	
Function	This parameter displays the current L3-L1 phase-to-phase mains voltage value in volts.		
S-0-1702.0.11 - Attributes			
Function:	Par	Editable:	--
Memory:	--	Validity ch.:	--
Unit:	V	Extr. val. ch.:	--
Cycl. tra.:	AT	Comb. check:	--
Data length:	2Byte	Format:	DEC_MV
Decim. pl.:	1	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.6.13 S-0-1702.0.12, Mains frequency

Allocation	Hardware Funct. package(s): Device parameter: Alias:	--	
Function	This parameter displays the current mains frequency in Hz with a sign:		
<ul style="list-style-type: none"> • Positive: Three-phase mains voltage with clockwise rotary field • Negative: Three-phase mains voltage with counter-clockwise rotary field 			
The sign of the mains frequency is always positive for a single-phase mains.			
See also Functional Description "Mains current control"			
See also Functional Description "Reactive power control"			
S-0-1702.0.12 - Attributes			
Function:	Par	Editable:	--
Memory:	--	Validity ch.:	--
Unit:	Hz	Extr. val. ch.:	--
Cycl. tra.:	--	Comb. check:	--
Data length:	2Byte	Format:	DEC_MV
Decim. pl.:	2	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.6.14 S-0-1702.0.13, Mains power

Allocation	Hardware Funct. package(s): Device parameter: Alias:	--	
Function	Shows the current power consumption from the mains. The display is averaged over 100 ms.		
In regenerative operation, the value becomes negative.			
S-0-1702.0.13 - Attributes			
Function:	Par	Editable:	--
Memory:	--	Validity ch.:	--
Unit:	W	Extr. val. ch.:	--
Cycl. tra.:	AT	Comb. check:	--
Data length:	4Byte	Format:	DEC_MV
Decim. pl.:	0	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.6.15 S-0-1702.0.14, Short-time mains energy counter

Allocation	Hardware Funct. package(s): Device parameter: Alias:	--	
S-0-1702.0.14 - Attributes			

	Function	Parameter "S-0-1702.0.14" is used to determine the energy consumption of a supply unit or converter in a production cycle. Application: Integrates the mains power across one processing cycle: If the value at the beginning of a production cycle is "0", the energy consumption over one production cycle can be determined for a specific system (all axes supplied by the power supply/converter) and then optimized.
S-0-1702.0.14 - Attributes	Function: Par Memory: -- Unit: Ws Cycl. tra.: AT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

4.6.16 S-0-1702.0.15, Energy counter of mains

	Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2019
	Function	This parameter displays the energy consumption of the converter since commissioning. Energy is calculated as the sum of mains power over operating time.
		 The energy consumption is only displayed for devices with existing mains supply with DC bus measurement.
S-0-1702.0.15 - Attributes	Function: Par Memory: RETAIN_KUNDE Unit: kWh Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: 2 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

4.6.17 S-0-1702.0.16, Power factor

	Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2020
	Function	In order to calculate the power factor, mains power and apparent power are smoothed across multiple mains periods (200 ms). Power factor = active mains power ÷ apparent mains power
S-0-1702.0.16 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: DEC_MV Decim. pl.: 2 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

4.6.18 S-0-1702.0.17, Mains voltage Phase to Phase L1-L2 RMS value

	Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2021
	Function	This parameter displays the RMS value of the L1-L2 phase-to-phase mains voltage. The rms value of the voltage is determined per mains frequency period. Integration begins at the zero point of the phase-to-phase mains voltage and ends after a supply frequency period:

Standard parameters

$$U_{rms} = \sqrt{\frac{1}{T} \int_{T_1}^{T_2} U_{12}^2(t) dt}$$

T: Supply frequency period for L1-L2 phase-to-phase mains voltage
 T₁: Time from zero point of L1-L2 phase-to-phase mains voltage to start of period
 T₂: Time from zero point of L1-L2 phase-to-phase mains voltage to end of period

S-0-1702.0.17 - Attributes	Function: Par	Editable: --	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: DEC_MV
	Unit: V	Extr. val. ch.: --	Decim. pl.: 1
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: ---

4.6.19 S-0-1702.0.18, Mains voltage Phase to Phase L2-L3 RMS value

Allocation	Hardware	--	
	Funct. package(s):		
	Device parameter:		
	Alias:	S-0-2022	
Function	This parameter displays the RMS value of the L2-L3 phase-to-phase mains voltage. The rms value of the voltage is determined per mains frequency period. Integration begins at the zero point of the phase-to-phase mains voltage and ends after a supply frequency period:		

$$U_{rms} = \sqrt{\frac{1}{T} \int_{T_1}^{T_2} U_{23}^2(t) dt}$$

T: Supply frequency period for L2-L3 phase-to-phase mains voltage
 T₁: Time from zero point of L2-L3 phase-to-phase mains voltage to start of period
 T₂: Time from zero point of L2-L3 phase-to-phase mains voltage to end of period

S-0-1702.0.18 - Attributes	Function: Par	Editable: --	Data length: 2Byte
	Memory: --	Validity ch.: --	Format: DEC_MV
	Unit: V	Extr. val. ch.: --	Decim. pl.: 1
	Cycl. tra.: AT	Comb. check: --	Set-depend.: --
AXS:		min./max.: --- / ---	Default value: ---

4.6.20 S-0-1702.0.19, Mains voltage Phase to Phase L3-L1 RMS value

Allocation	Hardware	--	
	Funct. package(s):		
	Device parameter:		
	Alias:	S-0-2023	
Function	This parameter displays the RMS value of the L3-L1 phase-to-phase mains voltage. The rms value of the voltage is determined per mains frequency period. Integration begins at the zero point of the phase-to-phase mains voltage and ends after a supply frequency period:		

$$U_{rms} = \sqrt{\frac{1}{T} \int_{T_1}^{T_2} U_{31}^2(t) dt}$$

T: Supply frequency period for L3-L1 phase-to-phase mains voltage
 T₁: Time from zero point of L3-L1 phase-to-phase mains voltage to start of period
 T₂: Time from zero point of L3-L1 phase-to-phase mains voltage to end of period

S-0-1702.0.19 - Attributes	Function: Par Memory: -- Unit: V Cycl. tra.: AT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --
	AXS: min./max.: --- / ---		Default value: ---

4.6.21 S-0-1702.0.140, Braking resistor energy counter

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-3816	--	
Function	This parameter records the energy consumption of the braking resistor.		
Use	This way, the energy consumption of the braking resistor can be determined, e.g. within a production cycle. If the value at the beginning of a production cycle is 0, the energy consumption over one production cycle can be determined and optimized.		
S-0-1702.0.140 - Attributes	Function: Par Memory: -- Unit: Ws Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: --- / ---		Default value: ---

4.6.22 S-0-1702.0.141, Braking resistor power

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-0849	--	
Function	The parameter displays the current power feedback value of the braking resistor. The power feedback value is filtered with a time constant of 8 ms. Depending on the application, the value can be interpreted as follows:		
	<ul style="list-style-type: none"> • Braking resistor: Current power that the braking resistor takes from the DC bus. • Heating element Active heating power for generating process heat. 		
S-0-1702.0.141 - Attributes	Function: Par Memory: -- Unit: W Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: --- / ---		Default value: ---

4.6.23 S-0-1702.0.142, Braking resistor power command value

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-3817	--
Function	The parameter defines the command value of the power that is to be converted to heat by the DC bus via the braking resistor. For the "generating process heat" application, if the braking resistor is replaced by a heating element, the heating power can be specified via the parameter.	

Standard parameters



If the braking power of the drive is below the power command value, the difference is compensated from mains supply. This leads to an additional load of the power supply and the DC bus capacitor.

The additionally supplied power leads to a reduction of the available drive power of the supplied axes.

S-0-1702.0.142 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_OV
Unit:	W	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: 0 / s. Text	Default value: ---
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4.6.24 S-0-1702.0.150, Mains angle**Allocation**

Hardware	--
Funct. package(s):	
Device parameter:	
Alias:	P-0-1771

Function

This parameter is used to display the current mains angle in degrees. The mains angle is related to voltage zero of the phase voltage U1.

Use

The parameter value changes from:

- 0° to 360° periodically rising, if the mains is single-phase.
- 0° to 360° periodically rising, if the three-phase mains has a clockwise rotary field.
- 360° to 0° periodically falling, if the three-phase mains has a counter-clockwise rotary field.

S-0-1702.0.150 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	degrees	Extr. val. ch.:	--	Decim. pl.:	1
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.6.25 S-0-1703.0.150, Mains synchronization proportional gain**Allocation**

Hardware	--
Funct. package(s):	
Device parameter:	
Alias:	P-0-1772

Function

Parameter for the mains synchronization proportional gain of the controller.

The proportional gain (K_p) can be determined by the following formula:

with $U(S)$: PID controller output

$E(S)$: PID controller input

K_p : Proportional gain

T_N : Integral action time

T_V : Derivative action time



This parameter is only relevant to the development staff! It is irrelevant for the application!

Changing the parameter is only possible with the master password.

S-0-1703.0.150 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

4.6.26 S-0-1703.0.151, Mains synchronization, integral action time

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1773
Function	<p>Parameter for the mains synchronization integral action time of the controller.</p> <p>The integral action time (T_N) can be determined by the following formula:</p> <p>with U(S): PID controller output</p> <p>E(S): PID controller input</p> <p>K_p: Proportional gain</p> <p>T_N: Integral action time</p> <p>T_V: Derivative action time</p>



This parameter is only relevant to the development staff! It is irrelevant for the application!

Changing the parameter is only possible with the master password.

S-0-1703.0.151 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

4.6.27 S-0-1703.0.152, Mains synchronization, derivative action time

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1774
Function	<p>Parameter for the mains synchronization derivative action time of the controller.</p> <p>The derivative action time (T_V) can be determined by the following formula:</p> <p>with U(S): PID controller output</p> <p>E(S): PID controller input</p> <p>K_p: Proportional gain</p> <p>T_N: Integral action time</p> <p>T_V: Derivative action time</p>



This parameter is only relevant to the development staff! It is irrelevant for the application!

Changing the parameter is only possible with the master password.

Standard parameters

S-0-1703.0.152 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

4.6.28 S-0-1703.0.153, Synchronization offset

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1775
Function	Parameter for the offset of the mains angle between the mains voltage and the mains current.

$$\theta_{\text{Commutation}} = \theta_{\text{Synchronization}} + \theta_{\text{Offset}}$$

with $\theta_{\text{Commutation}}$: commutation angle for current controller

$\theta_{\text{Synchronization}}$: mains angle that is synchronized to the mains frequency by the mains PLL

θ_{Offset} : offset value of this parameter that is entered

 This parameter is only relevant to the development staff! It is irrelevant for the application!
Changing the parameter is only possible with the master password.

S-0-1703.0.153 - Attributes	Function: Par Memory: PARAM_SP Unit: degrees Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: s. Text

4.6.29 S-0-1703.0.154, Mains angle tolerance

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1776		
Function	The maximum allowed angle deviation of the mains synchronization (degrees) is entered in this parameter.		
S-0-1703.0.154 - Attributes	Function: Par Memory: PARAM_SP Unit: degrees Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: s. Text

4.6.30 S-0-1705.0.1, List of operation modes

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2024
Function	This parameter lists all operating modes supported by the device used. It displays the codes (hexadecimal) of the operation modes, which can be entered as binary values in parameters "S-0-1709.0.1"..."S-0-1709.0.4" (primary and secondary operation modes).

With XCS, XCD and XVE, the operation mode cannot be selected. In the "S-0-1709.0.1" primary operation mode, only rectifier mode is possible.

Structure

Possible parameters settings:

Coding	Operation mode	Comment
0x0013	Voltage control	Most stable DC bus voltage possible with command value Only available for XVR.
0x0033	Voltage control, floating DC bus voltage	Lazy power supply Only available for XVR.
0x0037	Rectifier mode, load-dependent	Only available for XVR. Rectifier mode with command value as regenerative threshold or command value at high currents.
0x0037	Rectifier mode	With the devices XVE, XCS, and XCD with rectifier mode, without possible voltage control and power recovery.
0x0001	Current control	Mains current control with active and reactive current command values. Only available for XVR.
0x8107	Island grid mode, closed-loop controlled	Only available for XVR with enabling.
0x8100	Island grid mode, open-loop controlled	Only available for XVR with enabling.
0x8201	DC control	Only available for XMV.
0x8203	Direct voltage control	Only available for XMV.

Tab. 4-137: List of supported operation modes

S-0-1705.0.1 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte var.
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---		Default value: ---	

4.6.31 S-0-1706.0.1, DC bus voltage command value

Allocation

Hardware --

Funct. package(s):

Device parameter:

Alias: S-0-2025

Function

This parameter is used to specify the command value for the DC bus voltage. It can be specified cyclically or once.

Use

The value entered in the parameter is cyclically applied by the DC bus voltage control and filtered with the entered time constant ([S-0-1708.0.151](#)). The parameter takes effect in the "voltage control" and "rectifier mode, load-dependent" operation modes.

See also Functional Description "Voltage control, floating DC bus voltage"

Standard parameters

S-0-1706.0.1 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: s. Text

4.6.32 S-0-1706.0.11, Active-current generating component, command value

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2026
Function	Input parameter for the active current command value in the "current control" mode. The parameter can be cyclically input.
Use	The value entered in the parameter is cyclically applied by the current control, limited via " S-0-1708.0.13 " and filtered with the time constant entered in parameter " S-0-1708.0.150 ".



If an active-current generating command value is input, the supply unit generates a current that is in phase with the measured mains voltage. A positive active current flows from the supply unit to the mains.

This parameter is only effective in the "current control" mode.

S-0-1706.0.11 - Attributes	Function: Par Memory: PARAM_SP Unit: A Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: s. Text

4.6.33 S-0-1706.0.12, Reactive-current generating component, command value

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2027
Function	Input parameter for the reactive current command value in the "current control" mode and with active DC bus voltage control, if reactive power control is not active. The parameter can be cyclically input.
Use	The value entered in the parameter is cyclically applied by the current control and limited. With active limitation, active current takes priority over reactive current.



If a reactive-current generating command value is input, the supply unit generates a current that is displaced by 90° with regard to the measured mains voltage. A positive reactive current flows from the supply unit to the mains and causes a capacitive behavior.

The parameter takes effect in the "current control" mode and with active DC bus voltage control, if reactive power control is not active.

See also Functional Description "Current control"

See also Functional Description "Reactive power control"

S-0-1706.0.12 - Attributes	Function: Par Memory: PARAM_SP Unit: A Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: s. Text

4.6.34 S-0-1706.0.152, DC bus voltage command value supply

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-2702
Function	This parameter is used to specify the target command value for the infeeding mode in the "voltage control, floating DC bus voltage" mode. The parameter can be cyclically written.
Use	The value entered in the parameter is cyclically applied by the DC bus voltage control. However, the parameter is only taken into account in the "voltage control, floating DC bus voltage" mode. If the DC bus voltage drops below the actual value from "S-0-1708.0.152, Lower DC bus voltage threshold", DC bus voltage control is activated until the entered command value has been reached. Afterwards, DC bus voltage control is deactivated. Observe the following rule for entering the value: Internal lower limit < S-0-1708.0.152 < S-0-1706.0.152 < S-0-1706.0.153 < S-0-1708.0.153 < internal maximum value
See also Functional Description "Voltage control, floating DC bus voltage"	
S-0-1706.0.152 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --
AXS:	min./max.: s. Text / s. Text
Default value: s. Text	

4.6.35 S-0-1706.0.153, DC bus voltage command value recovery

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-2703
Function	This parameter is used to specify the target command value for regenerative mode in the "voltage control, floating DC bus voltage" mode. The parameter can be cyclically written.
Use	The value entered in the parameter is cyclically applied by the DC bus voltage control. However, the parameter is only taken into account in the "voltage control, floating DC bus voltage" mode. If the DC bus voltage exceeds the actual value from parameter "S-0-1708.0.153, Upper DC bus voltage threshold", DC bus voltage control is activated until the entered command value has been reached. Afterwards, DC bus voltage control is deactivated. Observe the following rule for entering the value: Internal lower limit < S-0-1708.0.152 < S-0-1706.0.152 < S-0-1706.0.153 < S-0-1708.0.153 < internal maximum value
See also Functional Description "Voltage control, floating DC bus voltage"	

Standard parameters

S-0-1706.0.153 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: s. Text

4.6.36 S-0-1706.0.160, Reactive power, command value

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-2732	--
Function	This parameter is used to specify the command value for the reactive power control. It can be specified cyclically.	
Use	The value entered in the parameter is cyclically applied by the reactive power control. The parameter only takes effect with active reactive power control (S-0-1709.0.160 Reactive power controller, control word, bit 0 = 1) in the "voltage control" mode.	
 If a positive reactive power is input, the supply unit has an inductive effect.		

See also Functional Description "Reactive power control"

S-0-1706.0.160 - Attributes	Function: Par Memory: PARAM_SP Unit: var Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: s. Text

4.6.37 S-0-1707.0.1, Actual DC bus voltage

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2028	--	
Function	This parameter displays the current DC bus voltage.		
S-0-1707.0.1 - Attributes	Function: Par Memory: -- Unit: V Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.6.38 S-0-1707.0.11, Effective active-current generating component, command value

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2029	--
Function	Display parameter for the effective active-current generating component of the current command value. The DC bus voltage controller generates the active-current generating command value for generating an active power. The value is therefore updated in the DC bus voltage controller cycle time (125 µs).	
See also Functional Description "Mains current control"		

S-0-1707.0.11 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.6.39 S-0-1707.0.12, Effective reactive-current generating component, command value

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-2030
Function	Display parameter for the effective reactive-current generating component of the current command value. To generate reactive power, the reactive-current generating current is input directly or via the reactive power controller. See also Functional Description "Mains current control" See also Functional Description "Reactive power control"	
S-0-1707.0.12 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.6.40 S-0-1707.0.13, Active-current generating component, actual value

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-2031
Function	Display parameter for the active-current generating component of the measured actual current value. The value is updated with the current controller cycle time.	
	 The mains currents of the supply unit are measured. The resulting active-current generating component of the total current is calculated internally and displayed via this parameter.	
S-0-1707.0.13 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.6.41 S-0-1707.0.14, Reactive-current generating component, actual value

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-2032
Function	Display parameter for the component of the measured actual current value generating the reactive power consumption from the mains. The value is updated with the current controller cycle time.	
	 The mains currents of the supply unit are measured. The resulting reactive-current generating component of the total current is calculated internally and displayed via this parameter.	

Standard parameters

S-0-1707.0.14 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.6.42 S-0-1707.0.15, Output voltage, active component

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2033	--
Function	Display parameter for the active-current generating component of the voltage output by the current controller. The value is updated with the current controller cycle time.	
S-0-1707.0.15 - Attributes	Function: Par Memory: -- Unit: V Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

4.6.43 S-0-1707.0.16, Output voltage, reactive component

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2034	--
Function	Display parameter for the reactive-current generating component of the voltage output by the current controller. The value is updated with the current controller cycle time.	
S-0-1707.0.16 - Attributes	Function: Par Memory: -- Unit: V Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

4.6.44 S-0-1707.0.17, Output voltage, absolute value

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2035	--
Function	Display parameter for the absolute voltage value output by the current controller. The value is updated with the current controller cycle time.	
S-0-1707.0.17 - Attributes	Function: Par Memory: -- Unit: V Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

4.6.45 S-0-1707.0.150, Mains current controller, status word

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1777	--
Function	This parameter displays internal status information of the mains current controller.	

Structure	Bit	Designation/function	Comment
	0	Internal drive enable active 0: no 1: yes	
	1	Absolute value of actual current > 1.2 times the allowed output current 0: no 1: yes	
	2	Overshoot in DC bus 0: no 1: yes	
	3	Voltage limitation active in current controller 0: no 1: yes	
	4	Integrating reactive-current generating component in positive limitation 0: no 1: yes	
	5	Integrating reactive-current generating component in negative limitation 0: no 1: yes	
	6	Integrating active-current generating component in positive limitation 0: no 1: yes	
	7	Integrating active-current generating component in negative limitation 0: no 1: yes	
	23... 8	Reserved	
	24	Positive reactive-current generating voltage is limited 0: no 1: yes	
	25	Active-current generating voltage is limited 0: no 1: yes	
	26	Reserved	

Standard parameters

Bit	Designation/function	Comment
27	Negative reactive-current generating voltage is limited 0: no 1: yes	
31... 28	Reserved	

Tab. 4-138: Relevant bits of the current controller status word



The current controller status word can be configured in the AT. It is therefore possible to apply the status messages to a digital output or have them evaluated by the higher-level control.

S-0-1707.0.150 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

4.6.46 S-0-1707.0.160, Reactive power, actual value

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-2733	--
Function	This parameter displays the currently determined reactive power. See also Functional Description "Reactive power control"	
Use	The parameter only provides an actual reactive power value with active reactive power control " S-0-1709.0.160 Reactive power controller, control word" in the "voltage control" mode.	
	The actual reactive power value consists of the reactive power of the supply unit that was set and the reactive power of the mains connection (mains filter and mains choke). If the parameter " S-0-1709.0.160 , Reactive power controller, control word" deactivates the mains connection being taken into account, the actual reactive power value only results from the reactive power of the supply unit. In this case, the reactive power of the mains connection is not taken into account.	



If a positive reactive power is determined, the supply unit has an inductive effect.

S-0-1707.0.160 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	var	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS: min./max.: --- / --- Default value: ---

4.6.47 S-0-1708.0.1, DC bus voltage controller proportional gain

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2036	--
Function	The DC bus voltage controller generates an active-current generating mains current command value (S-0-1707.0.11) from the difference of DC bus voltage command value and actual DC bus voltage value.	
	See also Functional Description "Voltage control, floating DC bus voltage"	

- Use** The active-current generating command value component consists of:
- Proportional term:

$$(P\text{-term} = S-0-1708.0.1 * (S-0-1706.0.1 - S-0-1707.0.1))$$
active-current generating command value component (proportional term)
 - Integral term:

$$I\text{-term} = t * S-0-1708.0.1 / S-0-1708.0.2 * (S-0-1706.0.1 - S-0-1707.0.1)$$
active-current generating command value component (integral term)
 - This results in the following transmission function for the PI controller:

$$S-0-1707.0.11(t) = S-0-1708.0.1 * (1 + t/S-0-1708.0.2) * (S-0-1706.0.1 - S-0-1707.0.1)$$
transmission function for the PI controller

The "C0710 Command Load power-supply specific controller values" allows a default value to be loaded for this parameter.

S-0-1708.0.1 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	A/V	Extr. val. ch.:	+	Decim. pl.:	2
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: s. Text
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4.6.48 S-0-1708.0.2, DC bus voltage controller integral action time

- Allocation** Hardware --
 Funct. package(s):
 Device parameter:
 Alias: S-0-2037
- Function** The DC bus voltage controller generates an active-current generating mains current command value ([S-0-1707.0.11](#)) from the difference of DC bus voltage command value and actual DC bus voltage value.
 See also Functional Description "Voltage control, floating DC bus voltage"
- Use** The active-current generating command value component consists of:
- Proportional term

$$(P\text{-term} = S-0-1708.0.1 * (S-0-1706.0.1 - S-0-1707.0.1))$$
active-current generating command value component (proportional term)
 - Integral term

$$I\text{-term} = t * S-0-1708.0.1 / S-0-1708.0.2 * (S-0-1706.0.1 - S-0-1707.0.1)$$
active-current generating command value component (integral term)
 - This results in the following transmission function for the PI controller:

$$S-0-1707.0.11(t) = S-0-1708.0.1 * (1 + t/S-0-1708.0.2) * (S-0-1706.0.1 - S-0-1707.0.1)$$

The "C0710 Command Load power-supply specific controller values" allows a default value to be loaded for this parameter.

Defining the integral action time



"[S-0-1708.0.2](#), Integral action time" refers to the value on the time axis where the integral term equals the proportional term. It means the time a purely integral controller would need until the controller output variable y equals the output variable of a proportional controller when time $t = 0$.

Standard parameters

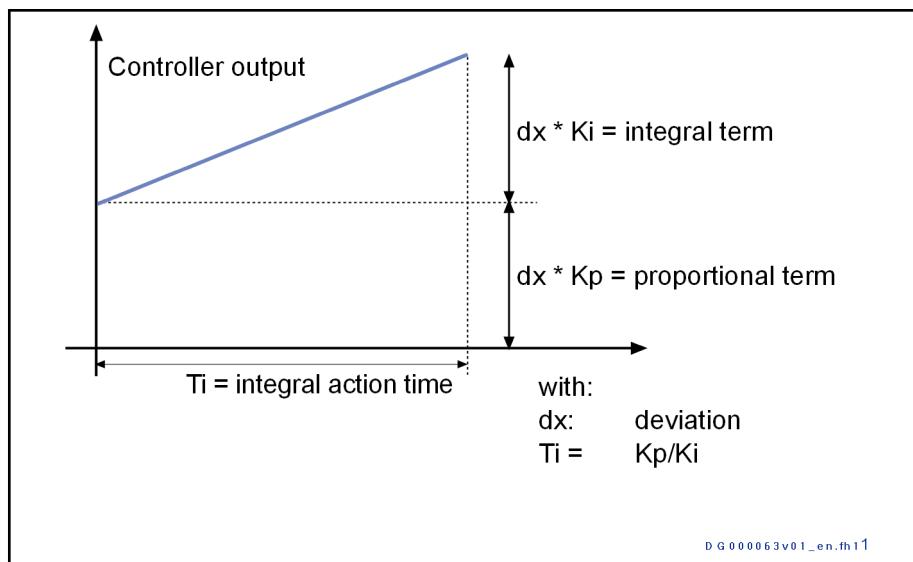


Fig. 4-35: Explanation of integral action time (T_i) and proportional gain K_p with PI controller

The input value "[S-0-1708.0.2 = 0 ms](#)" switches off the integral term.

S-0-1708.0.2 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	ms	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: s. Text
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4.6.49 S-0-1708.0.11, Mains current controller proportional gain

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2038	--
Function	This parameter defines the proportional gain for the current controller (I_d and I_q control loop). The parameterization of the current loop proportional gain depends on the inductance of the commutation choke, the control performance (current controller clock $T_{A,i}$) and the switching frequency (S-0-1709.0.151).	
Use	The "C0710 Command Load power-supply specific controller values" allows a default value to be loaded for this parameter. The inductance of the commutation choke, the active performance and the active switching frequency (S-0-1709.0.151) are taken into account. Therefore, it is usually not required to adjust the determined proportional gain.	

S-0-1708.0.11 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	V/A	Extr. val. ch.:	--	Decim. pl.:	2

AXS:	min./max.: --- / ---	Default value: s. Text
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4.6.50 S-0-1708.0.12, Mains current controller integral action time

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2039	--
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Function	This parameter defines the integral action time for the current controller (I_d and I_q control loop). The parameterization of the current loop integral action time depends on the control performance (current controller clock $T_{A,i}$) and the switching frequency (S-0-1709.0.151).				
Use	The "C0710 Command Load power-supply specific controller values" allows a default value to be loaded for this parameter. The inductance of the commutation choke, the active performance and the active switching frequency (S-0-1709.0.151) are taken into account. It is usually not required to adjust the determined integral action time.				
S-0-1708.0.12 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --	Format: DEC_OV Decim. pl.: 1 Set-depend.: --		
	AXS:	min./max.: --- / ---		Default value: s. Text	

4.6.51 S-0-1708.0.13, Bipolar mains current limit value

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2040	--			
Function	With this parameter, the mains current command value can be limited to protect the electric components of the supply unit (mains filter, mains choke, DC bus capacitor, lines, ...). Another application is limiting the mains activities of the supply unit to make use of the energy buffer function of the DC bus.				
Use	See also Functional Description "Mains current control"				
S-0-1708.0.13 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --		
	AXS:	min./max.: s. Text / s. Text		Default value: s. Text	

4.6.52 S-0-1708.0.15, Positive mains current limit value

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2042	--			
Function	The parameter limits the positive mains current and thereby the energy flow to the power grid.				
Use	See also Functional Description "Mains current control"				
S-0-1708.0.15 - Attributes	The entered percentage factor refers to parameter " S-0-1701.0.1 Nominal current of power supply".				
	This parameter allows the mains activity of the supply unit to be limited to make use of the energy buffer function of the DC bus or to completely prevent regeneration to the power grid.				
	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --		
	AXS:	min./max.: s. Text / s. Text		Default value: s. Text	

Standard parameters

4.6.53 S-0-1708.0.16, Negative mains current limit value

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-2043	
Function	The parameter limits the negative mains current and thereby the energy flow to the DC bus. See also Functional Description "Mains current control"		
Use	The entered percentage factor refers to parameter "S-0-1701.0.1 Nominal current of power supply". This parameter allows the mains activity of the supply unit to be limited or the supply to the DC bus to be thoroughly prevented.		
S-0-1708.0.16 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: s. Text

4.6.54 S-0-1708.0.22, Active power limit positive

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-2044	
Function	The parameter indicates the current short-term available peak power available for supply by the supply unit or the converter from mains. This load must not be exceeded by the load by all connected nodes (axes). Otherwise, the supply unit is deactivated due to overcurrent. The value is adjusted according to the current mains voltage.		
	 At phase failure and network failure, the value is directly reduced or set to 0.		
		The control system can apply this value for positive power limitation adjustment of all supplied axes to ensure that the total motive power is not exceeded by all axes.	
S-0-1708.0.22 - Attributes	Function: Par Memory: -- Unit: W Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

4.6.55 S-0-1708.0.23, Active power limit negative

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-2045
Function	The parameter indicates the current short-term available peak power available for feedback by the supply unit or the converter or conversion to heat in the braking resistor. The regenerative power of all connected axes must not exceed this power. In this case, the supply unit is deactivated due to overvoltage in the DC bus. The value is adjusted according to the current mains voltage. At devices with power recovery, the value is defined by the configured braking resistor. At devices without power recovery and without braking	

resistor, this value is zero. The supplied axes must not have any regenerative power.

The control system can apply this value for negative power limitation adjustment of all supplied axes to ensure that the total regenerative power is not exceeded by all axes.

S-0-1708.0.23 - Attributes	Function: Par Memory: -- Unit: W Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
		AXS: min./max.: --- / ---	Default value: ---

4.6.56 S-0-1708.0.150, Mains current command value filter time constant

Allocation	Hardware -- Funct. package(s): Device parameter: Alias: P-0-1778
Function	The time constant that can be activated in this parameter has an effect in the command value path of the current controller and is suitable for smoothing the current command value.
Use	See also Functional Description "Mains current control" The limit frequency is derived from the smoothing time constant T via the relationship:

$$f_g = \frac{1}{2 \cdot \pi \cdot T}$$

Fig. 4-36: Bandwidth

The filter is deactivated by entering a smoothing time constant that is less than or equal to the sampling time of the DC bus voltage controller.

An overview of the clock rates is available under "Control section design and performance".

S-0-1708.0.150 - Attributes	Function: Par Memory: PARAM_SP Unit: us Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
		AXS: min./max.: --- / ---	Default value: s. Text

4.6.57 S-0-1708.0.151, Voltage command value filter time constant

Allocation	Hardware -- Funct. package(s): Device parameter: Alias: P-0-2739
Function	The time constant that can be activated in this parameter has an effect in the command value path of the DC bus voltage controller and is suitable for smoothing the DC bus voltage command value.
Use	See also Functional Description "Voltage control" The limit frequency is derived from the smoothing time constant T via the relationship:

Standard parameters

$$f_g = \frac{1}{2\pi f}$$

Fig. 4-37: Bandwidth

The filter is deactivated by entering a smoothing time constant that is less than or equal to the sampling time of the DC bus voltage controller.

S-0-1708.0.151 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	us	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: s. Text / s. Text			Default value: s. Text	

4.6.58 S-0-1708.0.152, Lower DC bus voltage threshold

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-2706
Function	This parameter is used to specify the lower DC bus voltage threshold in the "voltage control, floating DC bus voltage" mode. The parameter can be cyclically written. See also Functional Description "Voltage control, floating DC bus voltage"	
Use	The value entered in the parameter is cyclically applied by the DC bus voltage control. However, the parameter is only taken into account in the "voltage control, floating DC bus voltage" mode. If the DC bus voltage drops below the entered actual value, DC bus voltage control is activated with the command value from "S-0-1706.0.152, DC bus voltage command value, feeding". Observe the following rule for entering the value: Internal lower limit < S-0-1708.0.152 < S-0-1706.0.152 < S-0-1706.0.153 < S-0-1708.0.153 < internal maximum value	
S-0-1708.0.152 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.:	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: -- Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: s. Text

4.6.59 S-0-1708.0.153, Upper DC bus voltage threshold

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-2707
Function	This parameter is used to specify the upper DC bus voltage threshold in the "voltage control, floating DC bus voltage" mode. The parameter can be cyclically written. See also Functional Description "Voltage control, floating DC bus voltage"	
Use	The value entered in the parameter is cyclically applied by the DC bus voltage control. However, the parameter is only taken into account in the "voltage control, floating DC bus voltage" mode. If the DC bus voltage exceeds the entered actual value, DC bus voltage control is activated with the command value from parameter "S-0-1706.0.153, DC bus voltage command value, regenerative".	

Observe the following rule for entering the value:

Internal lower limit < S-0-1708.0.152 < S-0-1706.0.152 < S-0-1706.0.153 < S-0-1708.0.153 < internal maximum value

S-0-1708.0.153 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	V	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: s. Text
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4.6.60 S-0-1708.0.160, Proportional gain of reactive power controller

Allocation

Hardware --

Funct. package(s):

Device parameter:

Alias: P-0-2740

Function

Using the gain factor has been entered, the reactive power controller generates a reactive power command value (S-0-1707.0.12, Effective reactive-current generating component, cmd value) from the difference of "S-0-1706.0.160, Reactive power, command value" and "S-0-1707.0.160, Reactive power, actual value".

See also Functional Description "Reactive power control"

S-0-1708.0.160 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV
Unit:	1/kV	Extr. val. ch.:	--	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: 0,500
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4.6.61 S-0-1708.0.161, Integral action time of reactive power controller

Allocation

Hardware --

Funct. package(s):

Device parameter:

Alias: P-0-2741

Function

Using the integral action time that has been entered and an integrator, the reactive power controller generates the "S-0-1707.0.12, Effective reactive-current generating component, cmd value" from the difference of "S-0-1706.0.160, Reactive power, command value" and "S-0-1707.0.160, Reactive power, actual value".

See also Functional Description "Reactive power control"

Use

The integral action time affects the duration in which the control difference is eliminated. A short integral action time increases the dynamics of the transient oscillation process. If the value is too low, this may lead to an instable behavior.

An integral action time greater than 20 ms and reduced dynamics are recommended to increase the system stability. If the reactive power of external components does not require compensating, only the virtually constant reactive power of the mains connection has to be compensated. This does not require any high dynamics.

S-0-1708.0.161 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	--	Format:	DEC_OV
Unit:	ms	Extr. val. ch.:	+	Decim. pl.:	2
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / 160,00	Default value: 10,00
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Standard parameters

4.6.62 S-0-1709.0.1, Primary operation mode

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-2046																														
Function	Using this input parameter, an operation mode can be preselected from the List of supported operation modes (S-0-1705.0.1). The operation modes are controlled in all communication buses by using the control word of the supply unit (S-0-1720.0.1).	The operation mode determined in this parameter is activated in the supply unit if: <ul style="list-style-type: none"> • The primary operation mode is selected in the control word • control and power sections are ready for operation • enable S-0-1720.0.1, bit 15 is set 																														
 At XCS, only rectifier operation is possible.																																
See also Functional Description "Selecting the operation mode"																																
See also parameter description " S-0-1705.0.1 , List of supported operation modes"																																
S-0-1709.0.1 - Attributes	<table border="1"> <tr> <td>Function:</td><td>Par</td><td>Editable:</td><td>SUBD:CM</td><td>Data length:</td><td>2Byte</td></tr> <tr> <td>Memory:</td><td>PARAM_SP</td><td>Validity ch.:</td><td>SUBD:PM->OM</td><td>Format:</td><td>HEX</td></tr> <tr> <td>Unit:</td><td>--</td><td>Extr. val. ch.:</td><td>--</td><td>Decim. pl.:</td><td>0</td></tr> <tr> <td>Cycl. tra.:</td><td>--</td><td>Comb. check:</td><td>+</td><td>Set-depend.:</td><td>--</td></tr> <tr> <td>AXS:</td><td colspan="2">min./max.: --- / ---</td><td colspan="3">Default value: s. Text</td></tr> </table>		Function:	Par	Editable:	SUBD:CM	Data length:	2Byte	Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	HEX	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--	AXS:	min./max.: --- / ---		Default value: s. Text		
Function:	Par	Editable:	SUBD:CM	Data length:	2Byte																											
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	HEX																											
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																											
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--																											
AXS:	min./max.: --- / ---		Default value: s. Text																													

4.6.63 S-0-1709.0.2, Secondary operation mode 1

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-2047																														
Function	Using this input parameter, an operation mode can be preselected from the List of supported operation modes (S-0-1705.0.1). The operation modes are controlled in all communication buses by using the power supply control word (S-0-1720.0.1).	The operation mode determined in this parameter is activated in the supply unit if: <ul style="list-style-type: none"> • the secondary operation mode 1 has been selected in the control word • control and power sections are ready for operation • drive enable "RF" was set 																														
See also Functional Description "Selecting the operation mode"																																
See also parameter description " S-0-1705.0.1 , List of supported operation modes"																																
S-0-1709.0.2 - Attributes	<table border="1"> <tr> <td>Function:</td><td>Par</td><td>Editable:</td><td>SUBD:CM</td><td>Data length:</td><td>2Byte</td></tr> <tr> <td>Memory:</td><td>PARAM_SP</td><td>Validity ch.:</td><td>SUBD:PM->OM</td><td>Format:</td><td>HEX</td></tr> <tr> <td>Unit:</td><td>--</td><td>Extr. val. ch.:</td><td>--</td><td>Decim. pl.:</td><td>0</td></tr> <tr> <td>Cycl. tra.:</td><td>--</td><td>Comb. check:</td><td>+</td><td>Set-depend.:</td><td>--</td></tr> <tr> <td>AXS:</td><td colspan="2">min./max.: --- / ---</td><td colspan="3">Default value: s. Text</td></tr> </table>		Function:	Par	Editable:	SUBD:CM	Data length:	2Byte	Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	HEX	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--	AXS:	min./max.: --- / ---		Default value: s. Text		
Function:	Par	Editable:	SUBD:CM	Data length:	2Byte																											
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	HEX																											
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																											
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--																											
AXS:	min./max.: --- / ---		Default value: s. Text																													

4.6.64 S-0-1709.0.3, Secondary operation mode 2

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-2048																														
Function	Using this input parameter, an operation mode can be preselected from the List of supported operation modes (S-0-1705.0.1). The operation modes are controlled in all communication buses by using the power supply control word (S-0-1720.0.1). The operation mode determined in this parameter is activated in the supply unit if:																															
<ul style="list-style-type: none"> • the secondary operation mode 2 has been selected in the control word • control and power sections are ready for operation • drive enable "RF" was set 																																
See also Functional Description "Selecting the operation mode"																																
See also parameter description " S-0-1705.0.1 , List of supported operation modes"																																
S-0-1709.0.3 - Attributes <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Function:</td> <td>Par</td> <td>Editable:</td> <td>SUBD:CM</td> <td>Data length:</td> <td>2Byte</td> </tr> <tr> <td>Memory:</td> <td>PARAM_SP</td> <td>Validity ch.:</td> <td>SUBD:PM->OM</td> <td>Format:</td> <td>HEX</td> </tr> <tr> <td>Unit:</td> <td>--</td> <td>Extr. val. ch.:</td> <td>--</td> <td>Decim. pl.:</td> <td>0</td> </tr> <tr> <td>Cycl. tra.:</td> <td>--</td> <td>Comb. check:</td> <td>+</td> <td>Set-depend.:</td> <td>--</td> </tr> <tr> <td>AXS:</td> <td colspan="2">min./max.: --- / ---</td> <td colspan="3">Default value: s. Text</td> </tr> </table>			Function:	Par	Editable:	SUBD:CM	Data length:	2Byte	Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	HEX	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--	AXS:	min./max.: --- / ---		Default value: s. Text		
Function:	Par	Editable:	SUBD:CM	Data length:	2Byte																											
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	HEX																											
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																											
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--																											
AXS:	min./max.: --- / ---		Default value: s. Text																													

4.6.65 S-0-1709.0.4, Secondary operation mode 3

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-2049																														
Function	Using this input parameter, an operation mode can be preselected from the List of supported operation modes (S-0-1705.0.1). The operation modes are controlled in all communication buses by using the power supply control word (S-0-1720.0.1). The operation mode determined in this parameter is activated in the supply unit if:																															
<ul style="list-style-type: none"> • the secondary operation mode 3 has been selected in the control word • control and power sections are ready for operation • drive enable "RF" was set 																																
See also Functional Description "Selecting the operation mode"																																
See also parameter description " S-0-1705.0.1 , List of supported operation modes"																																
S-0-1709.0.4 - Attributes <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Function:</td> <td>Par</td> <td>Editable:</td> <td>SUBD:CM</td> <td>Data length:</td> <td>2Byte</td> </tr> <tr> <td>Memory:</td> <td>PARAM_SP</td> <td>Validity ch.:</td> <td>SUBD:PM->OM</td> <td>Format:</td> <td>HEX</td> </tr> <tr> <td>Unit:</td> <td>--</td> <td>Extr. val. ch.:</td> <td>--</td> <td>Decim. pl.:</td> <td>0</td> </tr> <tr> <td>Cycl. tra.:</td> <td>--</td> <td>Comb. check:</td> <td>+</td> <td>Set-depend.:</td> <td>--</td> </tr> <tr> <td>AXS:</td> <td colspan="2">min./max.: --- / ---</td> <td colspan="3">Default value: s. Text</td> </tr> </table>			Function:	Par	Editable:	SUBD:CM	Data length:	2Byte	Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	HEX	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--	AXS:	min./max.: --- / ---		Default value: s. Text		
Function:	Par	Editable:	SUBD:CM	Data length:	2Byte																											
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	HEX																											
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0																											
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--																											
AXS:	min./max.: --- / ---		Default value: s. Text																													

4.6.66 S-0-1709.0.150, Mains current controller, control word

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1602
Function	This parameter is used to configure the mains current controller.	

Standard parameters

Structure

See also Functional Description "Mains current control"

Bit	Designation/function	Comment
4... 0	Reserved	
5	Voltage drops compensation in the power output stage 0: Disabled 1: Enabled	
11... 6	Reserved	
12	Harmonics controller 0: Disabled 1: Enabled Note: It is recommended to only activate the harmonics controller after having consulted the Rexroth service staff.	
15... 13	Reserved	

Tab. 4-139: Current controller configuration

S-0-1709.0.150 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--

AXS: min./max.: --- / --- Default value: s. Text

4.6.67 S-0-1709.0.151, Power supply switching frequency

Allocation

Hardware --
 Funct. package(s):
 Device parameter:
 Alias: P-0-1604

Function

This parameter can be used to set the switching frequency of the power output stage (f_{PWM}) as desired within the frequencies supported by each power section.



Only set switching frequencies that are supported by the components being used! Observe the technical data for supply units, direct voltage converters (DC/DC converters) and additional components.

See also Functional Description "Supply unit switching frequency"

See also Functional Description "Switching frequency of a DC/DC converter"

Use

Observe the following aspects when configuring:

The minimum and maximum switching frequencies are determined by the hardware (factory-side configuration in the device type data). Changing the switching frequency affects the cycle time of current control. Basically, it is the shorter, and thereby provides higher performance, the higher the selected switching frequency.

The higher the selected switching frequency, the lower the continuous power of the supply unit.

S-0-1709.0.151 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	DEC_OV
Unit:	Hz	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: s. Text
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4.6.68 S-0-1709.0.152, Power supply control, configuration

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1607	--						
Function	This parameter is used to configure the power supply control (DC bus voltage control).							
Structure	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Bit</th><th style="width: 80%;">Designation/function</th><th style="width: 10%;">Comment</th></tr> </thead> <tbody> <tr> <td style="text-align: center;">0</td><td> Smart Energy Mode 0: Not active 1: Active </td><td></td></tr> </tbody> </table>		Bit	Designation/function	Comment	0	Smart Energy Mode 0: Not active 1: Active	
Bit	Designation/function	Comment						
0	Smart Energy Mode 0: Not active 1: Active							

Tab. 4-140: S-0-1709.0.152, Power supply control, configuration

Use Bit 0: The **Smart Energy Mode** bit has only has an effect on the power supply-specific configuration made via the command C0710.

S-0-1709.0.152 - Attributes	Function: Par	Editable: SUBD:CM	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: SUBD:CM->PM	Format: BIN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: +	Set-depend.: --

AXS:	min./max.: s. Text / s. Text	Default value: s. Text
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4.6.69 S-0-1709.0.153, Power section configuration

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1609	--												
Function	This parameter is used to configure the power output stage. See also Functional Description "Motor control"													
Structure	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Bit</th><th style="width: 80%;">Designation/function</th><th style="width: 10%;">Comment</th></tr> </thead> <tbody> <tr> <td style="text-align: center;">9-0</td><td>Reserved</td><td></td></tr> <tr> <td style="text-align: center;">13-10</td><td> Type of PWM clocking 0000: Static PWM 0001: PWM switching depending on load 1000: Open-loop-controlled PWM frequency switching </td><td></td></tr> <tr> <td style="text-align: center;">31-14</td><td>Reserved</td><td></td></tr> </tbody> </table>		Bit	Designation/function	Comment	9-0	Reserved		13-10	Type of PWM clocking 0000: Static PWM 0001: PWM switching depending on load 1000: Open-loop-controlled PWM frequency switching		31-14	Reserved	
Bit	Designation/function	Comment												
9-0	Reserved													
13-10	Type of PWM clocking 0000: Static PWM 0001: PWM switching depending on load 1000: Open-loop-controlled PWM frequency switching													
31-14	Reserved													
		(continued)												

Tab. 4-141: S-0-1709.0.153, Power section configuration

S-0-1709.0.153 - Attributes	Function: Par	Editable: SUBD:CM	Data length: 2Byte
	Memory: PARAM_SP	Validity ch.: SUBD:CM->PM	Format: BIN
	Unit: --	Extr. val. ch.: --	Decim. pl.: 0
	Cycl. tra.: --	Comb. check: +	Set-depend.: --

AXS:	min./max.: --- / ---	Default value: s. Text
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4.6.70 S-0-1709.0.154, Power output stage control word

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1611	--
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Standard parameters

Function Structure

This parameter is used to control the output stage of the DC/DC converter.

Bit	Designation/function	Comment
0	PWM frequency switching 0: PWM frequency set in S-0-1709.0.151 , Power supply switching frequency is active 1: $\frac{1}{2} * \text{value of } \text{S-0-1709.0.151}$ is active as PWM frequency	
15-1	Reserved	

Tab. 4-142: *S-0-1709.0.154, Power output stage control word*

 The PWM frequency switching has to be enabled in the parameter "[S-0-1709.0.153](#), Power section configuration".

S-0-1709.0.154 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.6.71 S-0-1709.0.160, Reactive power controller, control word

Allocation

Hardware

Funct. package(s):

Device parameter:

Alias: [P-0-1749](#)

Function Structure

The parameter is used for configuring the reactive power controller.

Bit	Designation/function	Comment
0	Reactive power controller 0: Inactive 1: Active	
1	Determining the reactive power of the mains connection 0: Contains the reactive power of the mains connection 1: Does not take the reactive power of the mains connection into consideration	

Tab. 4-143: *S-0-1709.0.160, Reactive power controller, control word*

 The reactive power of the mains connection is only compensated for if the reactive power controller is active, i.e. bit 0 = 1

S-0-1709.0.160 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: s. Text
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4.6.72 S-0-1710.0.2, Thermal device load

Allocation

Hardware

Funct. package(s):

Device parameter:

Alias: [S-0-2051](#)

Function	Parameter "S-0-1710.0.2" is used to check the thermal load of the amplifier. 0% corresponds to a chip overtemperature of 0 kelvin. 100% corresponds to the maximum chip overtemperature. If the supply unit has been sized correctly, the thermal load should not exceed a value of 80% for the specified machining cycles.				
Use	<p>The typical duration for heating a controller output stage to final temperature is approx. 10 minutes. The controller load can be preset with 80%, for example, in order to check the thermal supply unit load during commissioning without having to perform machining cycles within this period. This can be done by writing the parameter "S-0-1710.0.2".</p> <ul style="list-style-type: none"> • Due to the switching loss of the supply unit, "S-0-1710.0.2" always shows a value > 0 at drive enable, even if the current equals zero. • The amplifier current starts being limited when the load reaches approx. 100%. This is displayed with the warning "E2811 Overtemp. in mains connection module/soft start module". 				
S-0-1710.0.2 - Attributes	Function: Par	Editable: ALWAYS	Data length: 2Byte	Format: DEC_MV	
	Memory: --	Validity ch.: --	Decim. pl.: 1		
	Unit: %	Extr. val. ch.: +	Comb. check: --	Set-depend.: --	
	Cycl. tra.: AT				
	AXS:	min./max.: 0,0 / 100,0	Default value: ---		

4.6.73 S-0-1710.0.3, Dynamic maximum device current

Allocation	Hardware	--			
	Funct. package(s):				
	Device parameter:				
	Alias:	S-0-2052			
Function	<p>This parameter displays the currently possible maximum current. The thermal controller monitoring provides the load of the controller. If the load is greater than 100%, the allowed maximum current is limited.</p>				
S-0-1710.0.3 - Attributes	Function: Par	Editable: --	Data length: 4Byte	Format: DEC_MV	
	Memory: --	Validity ch.: --	Decim. pl.: 3		
	Unit: A	Extr. val. ch.: --	Comb. check: --	Set-depend.: --	
	Cycl. tra.: --				
	AXS:	min./max.: --- / ---	Default value: ---		

4.6.74 S-0-1710.0.4, Thermal controller load warning threshold

Allocation	Hardware	--			
	Funct. package(s):				
	Device parameter:				
	Alias:	S-0-2053			
Function	<p>Parameter for determining a threshold value for the thermal controller load. If the value displayed in "S-0-1710.0.2, Thermal device load" exceeds the determined threshold, the warning "E2861 Device overload prewarning" is generated. The warning sets bit 1 in parameter "S-0-0012, Class 2 diagnostics".</p>				
S-0-1710.0.4 - Attributes	Function: Par	Editable: ALWAYS	Data length: 2Byte	Format: DEC_OV	
	Memory: PARAM_SP	Validity ch.: SUBD:PM->OM	Decim. pl.: 1		
	Unit: %	Extr. val. ch.: +	Comb. check: --	Set-depend.: --	
	Cycl. tra.: --				
	AXS:	min./max.: 0,0 / 110,0	Default value: 80,0		

Standard parameters

4.6.75 S-0-1710.0.5, Maximum value thermal controller load

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-2054
Function	This parameter detects the peak value of the device load (S-0-1710.0.3). The user has to write the parameter to reset the value.	
Use	The value "zero" has to be written to the parameter in order to detect the maximum value of the load during a machining cycle. After completion of the machining cycle, the peak value of the load of this cycle can be read.	
S-0-1710.0.5 - Attributes	Function: Par Memory: -- Unit: % Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --
	AXS: min./max.: 0,0 / 110,0	Default value: ---

4.6.76 S-0-1711.0.2, Control word of current rms value generator

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-2055
Function	If bit 0 of the parameter " S-0-1711.0.2 " is set, the rms value of the total current is calculated cyclically and output to " S-0-1711.0.3 " for being displayed. Otherwise, the display shows the last value that was output.	
Structure	Bit	Designation/function
	0	Cyclic calculation of the total current rms value 0: Not active 1: Active
		Comment
S-0-1711.0.2 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS: min./max.: --- / ---	Default value: ---

4.6.77 S-0-1711.0.3, Current rms value

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-2056
Function	If bit 0 of the parameter " S-0-1711.0.2 " is set, the rms value of the total current is calculated cyclically and output here for being displayed. If bit 0 of the parameter " S-0-1711.0.2 " was deleted, the cyclic calculation of the total current's rms value is stopped. The parameter shows the last value that was calculated.	
Use	The current rms value is used to determine the supply unit's current load, e.g. over a production cycle. In terms of energy efficiency, adjusting the axis motions should make this value as small as possible.	

S-0-1711.0.3 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: SUBD:CM+PM Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.6.78 S-0-1712.0.150, Mains supply configuration word

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1779
Function	If the supply unit is used for energy supply to the power grid or grid system, extended functions can be enabled using this parameter.	
Structure	Structure of the parameter	

Bit	Designation/function	Comment
0	Advanced mains monitoring 0: Not active 1: Active	Function not available in the current firmware
1	Limiting the active power flow to the mains 0: Not active 1: Active	
2	Frequency-depending limitation of active power flow to mains 0: Not active 1: Active	
3	Reactive power command value input depending on the active power 0: Not active 1: Active	

Tab. 4-145: S-0-1712.000.150

Use The active power flow to the mains is limited via parameter "S-0-1713.0.180". For the frequency-depending limitation of active power flow to mains, characteristics have to be defined using the parameters "S-0-1712.0.181", "S-0-1712.0.182" and "S-0-1712.0.183".

The reactive power command value input depending on the active power is based on the characteristic defined in the parameters "S-0-1712.0.190" and "S-0-1712.0.191". The reactive power command values only take effect if the reactive power control has been activated. The effective reactive power command value is mapped to parameter "S-0-1707.0.161".

S-0-1712.0.150 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

Standard parameters

4.6.79 S-0-1712.0.181, Power reduction starting frequency

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1612
Function	The parameter defines a frequency threshold above which the active power flow from the supply unit to the power grid or grid system is reduced. If the mains frequency exceeds the frequency threshold that was input, the mains supply power is reduced in accordance with the value in parameter "S-0-712.0.182".	



The parameter is only active if bit 2 has been set in "S-0-1712.0.150".

S-0-1712.0.181 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	Hz	Extr. val. ch.:	+	Decim. pl.:	2
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: 43,00 / 67,00	Default value: 50,20
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4.6.80 S-0-1712.0.182, Power reduction gradient

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1613
Function	The entered value specifies the gradient of the active power reduction with mains supply after the starting frequency has been exceeded. If the mains frequency exceeds the frequency threshold that was entered in parameter "S-0-1712.0.181", the mains supply power is reduced in accordance with the entered value. The reduction is based on the actual active power value that is active when the starting frequency is exceeded.	



The parameter is only active if bit 2 has been set in "S-0-1712.0.150".

S-0-1712.0.182 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	%/Hz	Extr. val. ch.:	+	Decim. pl.:	2
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: s. Text
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4.6.81 S-0-1712.0.183, Allowed active power increase after power reduction

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1614
Function	This value defines the allowed active power increase after the return from the power reduction range to the range of the allowed mains frequency. If the frequency value has fallen below the starting frequency, the active power can only be increased slowly. The starting point is the active power that is active when the starting frequency is crossed over.	



The parameter is only active if bit 2 has been set in "S-0-1712.0.150".

Only the maximum possible active power to the power grid or grid system is limited. It is always possible to use lower values.

S-0-1712.0.183 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	%/min	Extr. val. ch.:	--	Decim. pl.:	2
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: s. Text
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4.6.82 S-0-1712.0.190, Active power-dependent cos(phi) characteristic: performance

Allocation

Hardware --

Funct. package(s):

Device parameter:

Alias: P-0-1615

Function

This parameter defines the active power axis for the cos(ϕ) characteristic. The cos(ϕ) axis is given by "[S-0-1712.0.191](#)". Using the characteristic, it is possible to achieve active power-dependent reactive power generation or an active power-dependent power factor.



The parameter is only active if bit 3 has been set in "[S-0-1712.0.150](#)".

Use

At least two list values have to be input. The number of list values has to comply with the one in "[S-0-1712.0.191](#)".

Positive active power flows from the power grid or grid system to the supply unit. The active power values have to be entered in equidistant form.

The active power values have to be entered as normalized to the device's nominal active power ("[S-0-1712.0.192](#), Nominal active power of power plant"). The nominal active power of the power plant can be the nominal active power of the device at the max. That is why the nominal active power of the device is used as default value for "[S-0-1712.0.192](#), Nominal active power of power plant". If the nominal active power of the power plant is smaller than the nominal active power of the device, "[S-0-1712.0.192](#), Nominal active power of power plant" has to be adjusted accordingly.

S-0-1712.0.190 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	2Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: -1,000 / 1,000	Default value: s. Text
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4.6.83 S-0-1712.0.191, Active power-dependent cos(phi) characteristic: cos(phi)

Allocation

Hardware --

Funct. package(s):

Device parameter:

Alias: P-0-1616

Function

This parameter defines the cos(phi) axis for the cos(phi) characteristic. The active power axis is given by the parameter "[S-0-1712.0.190](#)". Using the characteristic it is possible to achieve active power-dependent reactive power generation or an active power-dependent power factor.



The parameter is only active if bit 3 has been set in "[S-0-1712.0.150](#)".

Standard parameters

At least two list values have to be input. The number of list values has to comply with the one in "[S-0-1712.0.190](#)".

Positive cos(phi) values cause inductive behavior. Negative cos(phi) values cause capacitive behavior.

S-0-1712.0.191 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	2Byte var.
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: -1,000 / 1,000 Default value: s. Text

4.6.84 S-0-1712.0.192, Nominal active power of power plant**Allocation**

Hardware	--
Funct. package(s):	--
Device parameter:	

Alias: [P-0-1617](#)

Function

With this parameter, the nominal active power of the power plant can be set.



The parameter serves as reference value for power values in "[S-0-1712.0.190](#), Effective power-dependent cos(phi) characteristic: Power"

See also Functional Description "Reactive power command value input depending on the active power"

S-0-1712.0.192 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	W	Extr. val. ch.:	+	Decim. pl.:	0

Cycl. tra.: -- Comb. check: -- Set-depend.: --

AXS: min./max.: s. Text / s. Text Default value: s. Text

4.6.85 S-0-1713.0.180, Active power limit value, mains supply**Allocation**

Hardware	--
Funct. package(s):	--
Device parameter:	

Alias: [P-0-1618](#)

Function

This parameter limits the active power flowing from the supply unit to the power grid or grid system. The power flowing from the power grid or grid system to the supply unit is not limited.



The parameter is only active if bit 1 has been set in parameter "[S-0-1712.0.150](#)".

S-0-1713.0.180 - Attributes

Function:	Par	Editable:	SUBD:CM+PM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	W	Extr. val. ch.:	+	Decim. pl.:	0

Cycl. tra.: -- Comb. check: -- Set-depend.: --

AXS: min./max.: s. Text / s. Text Default value: s. Text

4.6.86 S-0-1715.0.150, Basic configuration of supply unit**Allocation**

Hardware	--
Funct. package(s):	--
Device parameter:	

Alias: [P-0-1619](#)

Function

With this parameter, the basic configuration of the supply unit is set.

Structure

The table below shows the configuration options:

Bit	Designation/function	Comment
3-0	Operating mode 0: Mains operation (default) 1: Island grid mode 2: DC/DC actuator Operation as DC/DC converter will only become effective after restart.	
7-4	Location of mains voltage measurement with island grid mode 0: Between mains filter and supply unit (standard with mains operation, default) 1: Between main contactor and mains filter/supply unit 2: Between island grid (consumer/load side) and main contactor	
8	Dynamic operating mode change with island grid mode 0: Not allowed (default) 1: Allowed	
15-9	Reserved	

Tab. 4-146: Basic configuration of supply unit

See also Functional Description "Island grid mode"

Use **Bit 0-3:** The operating mode of the device is set. Depending on the activated operating mode, interconnection of components may need to be adjusted. For activation of the DC/DC converter, the device must be restarted. In parameter "[S-0-1717.0.151](#)", the currently effective operating mode is displayed.

Bit 4-7: Definition of the location of mains voltage measurement in island grid mode. This defines the possible island grid modes and whether dynamic operation mode change is admissible.

Bit 8: Enables dynamic operation mode change between mains operation and island grid mode. This enables dynamic change from passive mains consumer (e.g. control of DC bus voltage or mains current) to active mains generator.

S-0-1715.0.150 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	+	Set-depend.:	--

AXS:

min./max.: s. Text / s. Text

Default value: s. Text

4.6.87 S-0-1715.0.160, Transformer vector group

Allocation	Hardware -- Funct. package(s): Device parameter: Alias: P-0-1621
Function	This parameter enables input of the vector group of any transformer in place. Besides the gear ratio of the transformer winding regarding voltage and current, a phase offset is generated by a transformer between primary and secondary side. The angle of offset is coded in the vector group (e.g. Dyn5). See also Functional Description "Island grid mode"
Structure	The parameter has the following structure:

Standard parameters

Bit	Designation/function	Comment
0-3	Code number specification 0: Code number 0 _{hex} 5: Code number 5 _{hex} 6: Code number 6 _{hex} 11: Code number 11 _{hex}	
4-7	Neutral conductor specification 0: No neutral conductor lead-out 1: Neutral conductor lead-out	
8-11	Secondary side interconnection specification (mains side) 0: No input 1: Delta (d) 2: Star (y) 3: Zigzag (z)	
12-15	Primary side interconnection specification (supply unit side) 0: No input 1: Delta (D) 2: Star (Y)	

Tab. 4-147: Transformer vector group

Use For the transformer, the following equivalent circuit diagram is applied:

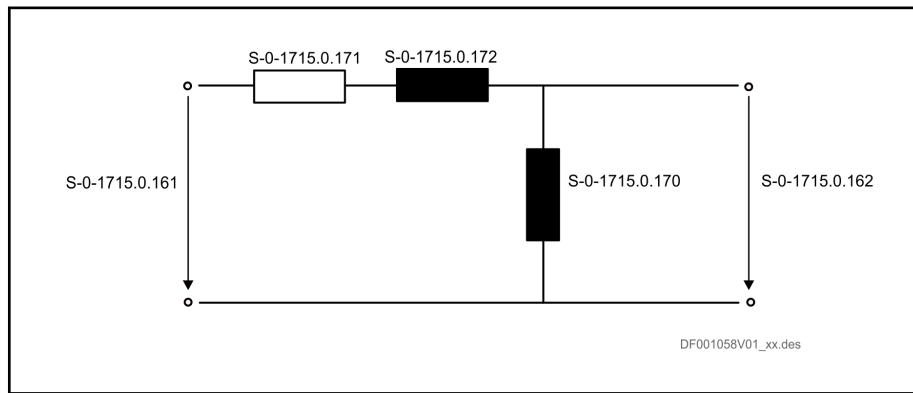


Fig. 4-38: Equivalent circuit diagram

The transformer is deactivated by input of vector group 0x0000.



The primary connection side of the transformer is defined as side of the supply unit. The connection on the mains side is on the secondary side.

Examples:

- Dy5 = 0x1205
- Dyn5 = 0x1215
- Dy11 = 0x120B
- Dyn11 = 0x121B

S-0-1715.0.160 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

4.6.88 S-0-1715.0.161, Primary side transformer voltage

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1622	--	
Function	Parameter for input of transformer nominal voltage of the primary side (supply unit side) for determination of the gear ratio. The primary connection side of the transformer is defined as side of the supply unit. The connection on the mains side is on the secondary side.		
See also Functional Description "Island grid mode"			
See also parameter description " S-0-1715.0.160: Transformer vector group "			
S-0-1715.0.161 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: s. Text / 1200,0	Default value: 400,0	

4.6.89 S-0-1715.0.162, Secondary side transformer voltage

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1623	--	
Function	Parameter for input of transformer nominal voltage of the secondary side (mains side) for determination of the gear ratio. The secondary connection side of the transformer is defined as side of the mains. The connection on the supply side is on the primary side.		
See also Functional Description "Island grid mode"			
See also parameter description " S-0-1715.0.160: Transformer vector group "			
S-0-1715.0.162 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: s. Text / 1200,0	Default value: 400,0	

4.6.90 S-0-1715.0.170, Transformer magnetizing inductance

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1624	--	
Function	The parameter defines the magnetizing inductance of the transformer. See also Functional Description "Island grid mode"		
See also parameter description " S-0-1715.0.160: Transformer vector group "			
S-0-1715.0.170 - Attributes	Function: Par Memory: PARAM_SP Unit: mH Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: s. Text / s. Text	Default value: 50,000	

Standard parameters

4.6.91 S-0-1715.0.171, Resistance on primary side of transformer

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1625
Function	The parameter defines the winding resistance on the primary side (supply unit side) of the transformer. The primary connection side of the transformer is defined as side of the supply unit. The connection on the mains side is on the secondary side.	
See also Functional Description "Island grid mode" See also parameter description " S-0-1715.0.160: Transformer vector group "		
S-0-1715.0.171 - Attributes	Function: Par Memory: PARAM_SP Unit: ohm Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --
		Data length: 4Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: --
	AXS:	min./max.: s. Text / 2000,000 Default value: s. Text

4.6.92 S-0-1715.0.172, Leakage inductance on primary side of transformer

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1626
Function	The parameter defines the leakage inductance on the primary side (supply unit side) of the transformer. The primary connection side of the transformer is defined as side of the supply unit. The connection on the mains side is on the secondary side.	
See also Functional Description "Island grid mode" See also parameter description " S-0-1715.0.160: Transformer vector group "		
S-0-1715.0.172 - Attributes	Function: Par Memory: PARAM_SP Unit: mH Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: + Comb. check: --
		Data length: 4Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: --
	AXS:	min./max.: s. Text / s. Text Default value: s. Text

4.6.93 S-0-1716.0.150, Island grid mode control word

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-3863
Function	With this parameter, island grid mode can be parameterized.	
Structure	The following settings are possible.	

Bit	Designation/function	Comment
0	Characteristic curve mode 0: Active 1: Not active	
1	External synchronization 0: Not active 1: Active Prerequisite: Characteristic curve mode not active	
2	Current offset compensation 0: Not active 1: Active	

Tab. 4-148: S-0-1716.0.150, Island grid mode control word

See also Functional Description "Island grid mode"

Use The characteristic curve mode to be activated via "bit 0" enables synchronization of multiple island grid sources in one grid. By means of parameterization of the characteristic, the working point of the individual sources can be set. Before deactivation of characteristic curve mode at island grids with multiple sources, the sequence has to be checked for load distribution.

By means of external synchronization to be activated via "bit 1", alignment of two grids is possible. For this purpose, the voltage and phase controllers are activated for adjustment to zero of the voltage and phase differences determined by an external measuring unit.

A DC offset can be compensated in the phase current via "bit 2". A DC offset in the phase currents can result in saturation of a connected, unloaded or lightly loaded transformer. This can result in current harmonics or oscillations with high amplitudes. This becomes evident by the flow of the currents. However, partially also by the noise that is caused by current harmonics or oscillations.

S-0-1716.0.150 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	MDT	Comb. check:	+	Set-depend.:	--

AXS: min./max.: s. Text / s. Text Default value: s. Text

4.6.94 S-0-1716.0.160, Island grid voltage command value**Allocation**

Hardware --
Funct. package(s):
Device parameter:
Alias: P-0-3829

Function

This parameter is used to set the command value for island grid voltage. It can be specified cyclically or once.



The command value is effective in controlled island grid mode. In closed-loop controlled island grid mode, the parameter is only effective if synchronization and characteristic curve mode are not active.

See also Functional Description "Island grid mode"

Standard parameters

S-0-1716.0.160 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --
AXS:		min./max.: 127,0 / 800,0	Default value: 400,0

4.6.95 S-0-1716.0.161, Island grid frequency command value

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-3830
Function	This parameter is used to set the command value for island grid frequency. It can be specified cyclically or once.	
 The command value is effective in controlled island grid mode. In closed-loop controlled island grid mode, the parameter is only effective if synchronization and characteristic curve mode are not active.		

See also Functional Description "Island grid mode"

S-0-1716.0.161 - Attributes	Function: Par Memory: PARAM_SP Unit: Hz Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 2 Set-depend.: --
AXS:		min./max.: 16,00 / 100,00	Default value: 50,00

4.6.96 S-0-1716.0.162, Island grid voltage, maximum value

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1627
Function	Parameter for limitation of the output voltage in island grid mode.	
Use	<p>The parameter is used to protect the AC consumers connected in particularly critical operating cases or for incorrect parameterization of the control. The parameter has no limiting effect on the output voltage in normal operation.</p> <p>The controller output of the voltage controller is limited in controlled operation and the specified island grid voltage is limited in regulated operation.</p>  Due to the voltage drops at the output stage, the value is to be parameterized approx. 20 V below the voltage critical for the AC consumer.	

See also Functional Description "Island grid mode"

S-0-1716.0.162 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
AXS:		min./max.: 127,0 / 800,0	Default value: 759,0

4.6.97 S-0-1716.0.170, f-P characteristic: f0

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1628
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Function In connection with "[S-0-1716.0.171](#)", this parameter defines the f-P characteristic for island grid mode.

This parameter defines the command frequency in characteristic curve mode in state without active power. This corresponds to the intersection of the characteristic with the ordinate axis at P = 0W.

See also Functional Description "Island grid mode"

S-0-1716.0.170 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	Hz	Extr. val. ch.:	+	Decim. pl.:	2
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: 16,00 / 100,00 Default value: 50,00

4.6.98 S-0-1716.0.171, f-P characteristic: Slope

Allocation Hardware --

Funct. package(s):

Device parameter:

Alias: P-0-1629

Function In connection with "[S-0-1716.0.170](#)", this parameter defines the f-P characteristic for island grid mode.

See also Functional Description "Island grid mode"

Use With this parameter, the pitch of the frequency of the characteristic curve is defined. The entered value specifies the frequency change in percent at the nominal power point (device nominal power flows to the island grid as the active component) compared to the dedicated point (defined by [S-0-1716.0.170](#)).

S-0-1716.0.171 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	%	Extr. val. ch.:	+	Decim. pl.:	2
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: -200,00 / 200,00 Default value: ---

4.6.99 S-0-1716.0.172, U-Q characteristic: U0

Allocation Hardware --

Funct. package(s):

Device parameter:

Alias: P-0-1631

Function In connection with "[S-0-1716.0.173](#)", this parameter defines the U-Q characteristic for island grid mode.

See also Functional Description "Island grid mode"

Use This parameter defines the command voltage in characteristic curve mode in state without reactive power. This corresponds to the intersection of the characteristic with the ordinate axis at Q = 0 var.

S-0-1716.0.172 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	V	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS: min./max.: 127,0 / 800,0 Default value: 400,0

4.6.100 S-0-1716.0.173, U-Q characteristic: Slope

Allocation Hardware --

Funct. package(s):

Device parameter:

Alias: P-0-1632

Standard parameters

Function In connection with "[S-0-1716.0.172](#)", this parameter defines the U-Q characteristic for island grid mode.

See also Functional Description "Island grid mode"

Use With this parameter, the pitch of the voltage of the characteristic curve is defined. The entered value specifies the voltage change in percent at the nominal power point (device nominal power flows to the island grid as the reactive component) compared to the dedicated point (defined by [S-0-1716.0.172](#)).

S-0-1716.0.173 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	%	Extr. val. ch.:	+	Decim. pl.:	2
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: -200,00 / 200,00	Default value: ---
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4.6.101 S-0-1716.0.180, Voltage controller proportional gain

Allocation Hardware
Funct. package(s):
Device parameter:
Alias: [P-0-1633](#)

Function The voltage controller for island grid mode controls the island grid voltage feedback value to the effective island grid voltage command value. For this purpose, a classical PI controller with proportional gain for adjustment by means of this parameter is applied.

See also Functional Description "Island grid mode"

Use Proportional gain defines the level of the voltage controller output for the existing control difference. A high gain factor increases the dynamic response of the transient oscillation process. If the value is too high, this may lead to an instable behavior or high overshooting.



A lower gain factor and reduced dynamics are recommended to reduce overshoot.

S-0-1716.0.180 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	--	Extr. val. ch.:	+	Decim. pl.:	4

AXS:	min./max.: s. Text / 100000,0000	Default value: 0,0100
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4.6.102 S-0-1716.0.181, Voltage controller integral action time

Allocation Hardware
Funct. package(s):
Device parameter:
Alias: [P-0-1635](#)

Function The voltage controller for island grid mode controls the island grid voltage feedback value to the effective island grid voltage command value. For this purpose, a classical PI controller with integral action time for adjustment by means of this parameter is applied.

See also Functional Description "Island grid mode"

Use The integral action time affects the time period in which the control difference is eliminated. A short integral action time increases the dynamics of the transient oscillation process. If the value is too low, this may lead to an instable behavior.

S-0-1716.0.181 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 1,00

4.6.103 S-0-1716.0.183, Filter time constant, island grid frequency, controller output

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1637
Function	The time constant that can be activated in this parameter has an effect in the command value path of the island grid frequency and is suitable for smoothing the frequency command value. See also Functional Description "Island grid mode"	
Use	The limit frequency is derived from the smoothing time constant T via the relationship:	

$$f_g = \frac{1}{2 \cdot \pi \cdot T}$$

Fig. 4-39: Bandwidth

The filter is deactivated by entering a smoothing time constant that is less than or equal to the sampling time of the DC bus voltage controller.

An overview of the clock rates is available under "Control section design and performance".

S-0-1716.0.183 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 10,00

4.6.104 S-0-1716.0.184, Phase controller proportional gain

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1638
Function	The phase controller for island grid mode enables control of an existing phase offset between two mains phases and synchronization of two mains. For this purpose, a classical PI controller with proportional gain for adjustment by means of this parameter is applied. See also Functional Description "Island grid mode"	
Use	Proportional gain defines the level of the frequency controller output for the existing control difference. A high gain factor increases the dynamic response of the transient oscillation process. If the value is too high, this may lead to an unstable behavior. A lower gain factor and reduced dynamics are recommended to minimize the risk of instability. Practical examinations have shown that low dynamic response is also sufficient for quick synchronization.	

S-0-1716.0.184 - Attributes	Function: Par Memory: PARAM_SP Unit: Hz/degree Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 4 Set-depend.: --
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Standard parameters

AXS:	min./max.: s. Text / 100000,0000	Default value: s. Text
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4.6.105 S-0-1716.0.185, Phase controller integral action time

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1640	
Function	The phase controller for island grid mode enables control of an existing phase offset between two mains phases and synchronization of two mains. For this purpose, a classical PI controller with integral action time for adjustment by means of this parameter is applied. See also Functional Description "Island grid mode"		
Use	The integral action time affects the time period in which the control difference is eliminated. A short integral action time increases the dynamics of the transient oscillation process. If the value is too low, this may lead to an unstable behavior. Practical examinations have shown that a pure P controller is often sufficient. When starting commissioning, the I-term should be deactivated. This is possible by resetting the integral action time to zero.		
S-0-1716.0.185 - Attributes			
	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: 10,0

4.6.106 S-0-1716.0.186, Filter time constant, voltage build-up

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1641
Function	The time constant that can be activated in this parameter has an effect in the command value path of the island grid voltage and is suitable for smoothing the voltage command value. This prevents that the island grid voltage is instantly applied at any transformer in place. See also Functional Description "Island grid mode"	
Use	The limit frequency is derived from the smoothing time constant T via the relationship:	
$f_g = \frac{1}{2 \cdot \pi \cdot T}$		

Fig. 4-40: Bandwidth

The filter is deactivated by entering a smoothing time constant that is less than or equal to the sampling time of the DC bus voltage controller. Parameterization of the filter for slow voltage increase is highly recommended to ensure slow magnetization of any transformer in place.

An overview of the clock rates is available under "Control section design and performance".

S-0-1716.0.186 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	

4.6.107 S-0-1716.0.190, Current offset compensation: Proportional gain

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1642	
Function	Current offset compensation eliminates any possible offset in feedback currents by means of a controller. For this purpose, a classical PI controller with proportional gain for adjustment by means of this parameter is applied.	See also Functional Description "Island grid mode"	
Use	Proportional gain defines the level of the voltage controller output for the existing control difference. A high gain factor increases the dynamic response of the transient oscillation process. If the value is too high, this may lead to an unstable behavior. A lower gain factor and reduced dynamics are recommended to minimize the risk of instability.		
S-0-1716.0.190 - Attributes	Function: Par Memory: PARAM_SP Unit: V/A Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 4 Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: 0,1000

4.6.108 S-0-1716.0.191, Current offset compensation: Integral action time

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1643	
Function	Current offset compensation eliminates any possible offset in feedback currents by means of a controller. For this purpose, a classical PI controller with integral action time for adjustment by means of this parameter is applied.	See also Functional Description "Island grid mode"	
Use	The integral action time affects the time period in which the control difference is eliminated. A short integral action time increases the dynamics of the transient oscillation process. If the value is too low, this may lead to an unstable behavior. Practical examinations have shown that a pure P controller is often sufficient. When starting commissioning, the I-term should be deactivated. This is possible by resetting the integral action time to zero.		
S-0-1716.0.191 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: s. Text

4.6.109 S-0-1716.0.192, Current offset compensation: Cutoff frequency

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1644
Function	In current offset compensation, the offset of signal proportions with higher frequencies is separated. For this purpose, this filter is used.	See also Functional Description "Island grid mode"
Use	This parameter enables presetting of the frequency limit as of which proportions with higher frequencies are damped. A compromise between the delay time of the filter and the filter result must be found.	

Standard parameters

S-0-1716.0.192 - Attributes	Function: Par Memory: PARAM_SP Unit: Hz Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 4 Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: 3000,0000

4.6.110 S-0-1716.0.193, Current offset compens.: Bipolar controller output limitation

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1645	
Function	Current offset compensation eliminates any possible offset in feedback currents by means of a controller. The voltage controller output by the controller can be limited via this parameter.		
	See also Functional Description "Island grid mode"		
Use	Using the controller output limitation, the controller output term can be limited to a maximum value to reduce the current offset. This way, a potentially required minimum controller output range for island grid mode can be ensured.		
S-0-1716.0.193 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
	AXS:	min./max.: s. Text / 2000,0	Default value: 10,0

4.6.111 S-0-1717.0.150, Island grid mode status word

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-3809
Function	This parameter enables reading out of status information of island grid mode.	
	See also Functional Description "Island grid mode"	
Structure	The following status information is provided.	
	Bit Designation/function	Comment
0	Island grid analysis result during Bb operating phase 0: Island grid voltage-free 1: Island grid not voltage-free	
1	Synchronization to grid 0: Not synchronized 1: Synchronized	
2	External synchronization 0: Not synchronized 1: Synchronized	

Tab. 4-149: Island grid mode status word

Bit 0: Indicates whether a voltage was recognized during analysis of the island grid in the Bb operating phase. This is required to distinguish between the operating cases "Black start" from "Synchronization with existing island grid". The condition for this, however, is connection of mains voltage measurement between consumer/load and main contactor.

Bit 2/1: Indicate in case of synchronization whether it has been completed. In this process, it is checked whether the control difference of angle and voltage controller has fallen below an internally defined threshold.

S-0-1717.0.150 - Attributes

Function:	Par	Editable:	--	Data length:	4Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: ---

4.6.112 S-0-1717.0.151, Supply unit status**Allocation**

Hardware	--
Funct. package(s):	
Device parameter:	
Alias:	P-0-1646

Function Structure

This parameter displays the current status information of the supply unit.

Bit	Designation/function	Comment
3-0	Active operating mode 0: Mains operation 1: Island grid mode 2: DC/DC converter	

Tab. 4-150: Supply unit status

S-0-1717.0.151 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: --- / ---

Default value: ---

4.6.113 S-0-1718.0.160, External synchronization, voltage difference**Allocation**

Hardware	--
Funct. package(s):	
Device parameter:	
Alias:	P-0-3810

Function

If the island grid in place is to be synchronized with another grid, the grid differences have to be determined via an external measuring point. If the deviations of the other grid from the island grid are known, they may be adjusted. Via this parameter, the voltage difference of both grids is transmitted (in V, current values of external conductor as reference).

A command value minus the actual value is expected. This means, target voltage minus the voltage of the island grid system.

See also Functional Description "Island grid mode"

Use

The difference provided by this parameter is directly supplied as input value to the voltage controller. For optimum synchronization, the value should be updated cyclically. In case of higher dead times due to transmission of the new value, the parameterization of the voltage controller can be adjusted.

S-0-1718.0.160 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	DEC_MV
Unit:	V	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: -1000,0 / 1000,0

Default value: ---

Standard parameters

4.6.114 S-0-1718.0.161, External synchronization, phase shift

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-3811
Function	If the island grid in place is to be synchronized with another grid, the grid differences have to be determined via an external measuring point. If the deviations of the other grid from the island grid are known, they may be adjusted. Via this parameter, the phase difference of both grids is transmitted (in °, mains phase as reference).	
	 A command value minus the actual value is expected. This means, target phase minus the phase of the island grid system.	
	See also Functional Description "Island grid mode"	
Use	The difference provided by this parameter is directly supplied as input value to the phase controller. For optimum synchronization, the value should be updated cyclically. In the case of higher dead times due to transmission of the new value, the parameterization of the phase controller can be adjusted.	
S-0-1718.0.161 - Attributes	Function: Par Memory: -- Unit: degrees Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: -- Data length: 2Byte Format: DEC_MV Decim. pl.: 2 Set-depend.: --
	AXS:	min./max.: -180,00 / 180,00 Default value: ---

4.6.115 S-0-1720.0.1, Power supply control word

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- S-0-2057															
Function	For supply units with a Sercos drive profile, the control word is cyclically transmitted from the master.																
Structure	<table border="1"> <thead> <tr> <th>Bit</th><th>Designation/function</th><th>Comment</th></tr> </thead> <tbody> <tr> <td>7...0</td><td>Reserved</td><td></td></tr> <tr> <td>9...8</td><td>Mode selection: 0x00: Primary operation mode 0x01: Secondary operating mode 1 0x10: Secondary operation mode 2 0x11: Secondary operation mode 3</td><td>XCS only supports the primary operation mode.</td></tr> <tr> <td>10</td><td>DC bus discharge: 0: DC bus discharge not activated 1: Start DC bus discharge function</td><td></td></tr> <tr> <td>12</td><td>Controlling the ready for operation relay Activating the supply unit integrated ready-for-operation relay which allows an optional main contactor (upstream, additional switching element) to be enabled. 0: Open contact 1: Close contact, enabling</td><td></td></tr> </tbody> </table>		Bit	Designation/function	Comment	7...0	Reserved		9...8	Mode selection: 0x00: Primary operation mode 0x01: Secondary operating mode 1 0x10: Secondary operation mode 2 0x11: Secondary operation mode 3	XCS only supports the primary operation mode.	10	DC bus discharge: 0: DC bus discharge not activated 1: Start DC bus discharge function		12	Controlling the ready for operation relay Activating the supply unit integrated ready-for-operation relay which allows an optional main contactor (upstream, additional switching element) to be enabled. 0: Open contact 1: Close contact, enabling	
Bit	Designation/function	Comment															
7...0	Reserved																
9...8	Mode selection: 0x00: Primary operation mode 0x01: Secondary operating mode 1 0x10: Secondary operation mode 2 0x11: Secondary operation mode 3	XCS only supports the primary operation mode.															
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12	Controlling the ready for operation relay Activating the supply unit integrated ready-for-operation relay which allows an optional main contactor (upstream, additional switching element) to be enabled. 0: Open contact 1: Close contact, enabling																

Bit	Designation/function	Comment
14	Controlling DC bus charging and mains contactor: 0: Mains contactor off 1: Charge DC bus and switch on mains contactor - device goes to rectifier mode	
15	Enabling: Acts on the IGBT jumper of the supply unit, activates the DC bus voltage control and the command operation mode 0: Disabled, command operation mode not active 1: Enabled, activate command operation mode	

Tab. 4-151: Structure of power supply control word

S-0-1720.0.1 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--
AXS:		min./max.: --- / ---			
Default value: ---					

4.6.116 S-0-1720.0.2, Power supply status word

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2058	--															
Function	The power supply status word is used to provide feedback from the supply unit to the control. The status of the mains connection is displayed here.																
Structure	<table border="1"> <thead> <tr> <th>Bit</th> <th>Designation/function</th> <th>Comment</th> </tr> </thead> <tbody> <tr> <td>0-3</td> <td>Reserved</td> <td></td></tr> <tr> <td>4</td> <td>Mains status 0: Supply voltage does not meet connection conditions 1: Supply voltage meets connection conditions</td> <td></td></tr> <tr> <td>5</td> <td>Hardware enable 0: Device hardware prevents switch-on 1: Device ready for power on</td> <td>For XCS, this bit is always set.</td></tr> <tr> <td>6</td> <td>Controlling the mains connection XVR: 0: DC bus has not been charged. Mains contactor is off. 1: DC bus is being charged or has been charged. Mains contactor is closed when charging completed. XCS, XVE: 0: DC bus has not been charged, thyristors are disabled. 1: DC bus is being charged or has been charged. Thyristors are controlled.</td> <td>For XCS, the bit is set as soon as the thyristor rectifier is controlled.</td></tr> </tbody> </table>	Bit	Designation/function	Comment	0-3	Reserved		4	Mains status 0: Supply voltage does not meet connection conditions 1: Supply voltage meets connection conditions		5	Hardware enable 0: Device hardware prevents switch-on 1: Device ready for power on	For XCS, this bit is always set.	6	Controlling the mains connection XVR: 0: DC bus has not been charged. Mains contactor is off. 1: DC bus is being charged or has been charged. Mains contactor is closed when charging completed. XCS, XVE: 0: DC bus has not been charged, thyristors are disabled. 1: DC bus is being charged or has been charged. Thyristors are controlled.	For XCS, the bit is set as soon as the thyristor rectifier is controlled.	
Bit	Designation/function	Comment															
0-3	Reserved																
4	Mains status 0: Supply voltage does not meet connection conditions 1: Supply voltage meets connection conditions																
5	Hardware enable 0: Device hardware prevents switch-on 1: Device ready for power on	For XCS, this bit is always set.															
6	Controlling the mains connection XVR: 0: DC bus has not been charged. Mains contactor is off. 1: DC bus is being charged or has been charged. Mains contactor is closed when charging completed. XCS, XVE: 0: DC bus has not been charged, thyristors are disabled. 1: DC bus is being charged or has been charged. Thyristors are controlled.	For XCS, the bit is set as soon as the thyristor rectifier is controlled.															

Standard parameters

Bit	Designation/function	Comment
7	Bb contact 0: Open 1: Closed The Bb contact may be connected in the control circuit of an upstream main contactor. Thus, it would be possible to switch the main contactor via the control word.	
8-9	Feedback of preselected operation modes 00: Primary operation mode 01: Secondary operation mode 1 10: Secondary operation mode 2 11: Secondary operation mode 3	XCS only supports the primary operation mode
10	DC bus discharge 0: DC bus discharge not selected or DC bus live (> approx. 35 V) 1: DC bus discharge selected and DC bus de-energized (< approx. 35 V)	
11	Braking resistor 0: Not active 1: Active	
12	Warning 0: Not active 1: Active	
13	Error 0: Not active 1: Active	
14	Ready for enabling 0: Not ready for enabling: mains contactor off, firing pulses off, charging resistor active 1: Ready for enabling: mains contactor closed, DC bus charged. The supplied axes show "bb"	
15	Enabling 0: The DC bus cannot be charged, drive enable cannot be set for the supplied axes. 1: Drive enable has been set, i.e. the DC bus can be charged. The supplied axes can be switched to "Ab" and drive enable can be set. For the XM* inverters, the bit has to be written by the control if the supply unit or the supplying converter has set the "enabling" status.	

Tab. 4-152: Power supply status word

S-0-1720.0.2 - Attributes

Function:	Par	Editable:	--	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.6.117 S-0-1720.0.3, Power off delay

Allocation	Hardware Funct. package(s): Device parameter: Alias:	--				
Function	In the case of a non-fatal supply error, the mains supply can be switched off with a delay. The switch-off delay can be configured in this parameter. This makes sense particularly for regenerative supply units. Because in this case the energy generated by axes to be decelerated can be regenerated to the mains. The value 0 immediately causes power to be switched off.					
S-0-1720.0.3 - Attributes		Function:	Par	Editable:	SUBD:CM	Data length: 4Byte
		Memory:	ON_BOARD_SP	Validity ch.:	SUBD:PM->OM	Format: DEC_OV
		Unit:	s	Extr. val. ch.:	+	Decim. pl.: 3
		Cycl. tra.:	--	Comb. check:	--	Set-depend.: --
AXS:		min./max.: s. Text / s. Text			Default value: ---	

4.6.118 S-0-1720.0.150, Power supply ON/OFF

Allocation	Hardware Funct. package(s): Device parameter: Alias:	--								
Function	If the converter configuration is set to local operation (bit 17/16) in parameter " P-0-0860 ", the power supply can be fully controlled via local I/Os.									
 Note		The OFF signal and the ZKS signal also take effect for controlling the power supply via the master communication. If no local I/Os have been configured, the "OFF" and "ZKS" bits have to be set to 1 so that the power supply can be switched on.								
Structure	Bit	Designation/function								

Bit	Designation/function	Comment
0	OFF 0: Switches off the supply unit. This means the mains contactor or the firing pulses is/are disabled and the DC bus discharges. Bit 0 takes precedence over bit 1 (if bit 0 = 0 -> bit 1 = don't care). 1: No reaction Also takes effect if the supply unit or supply section of the converter is controlled by the control unit, and in the case of automatic run-up.	
1	ON 0: No reaction 1: If bit 0 = 1: <ul style="list-style-type: none"> • DC bus is charged • Mains contactor/firing pulses is/are enabled • Boost converter mode is activated depending on how primary operation mode has been configured • Axes are enabled by setting the "DC bus OK" message 	

Standard parameters

Bit	Designation/function	Comment
2	Clear error 0: No function 1: 0 -> 1 edge: Starts the command "Clear error"	
3	DC bus discharge control 0: The rectifier is locked immediately and DC bus discharge initiated if there is a discharging resistor in the DC bus. In the case of devices without power disconnection function (diode rectifier), the bb relay is opened, the DC bus short circuit is activated as soon as the mains voltage is below the allowed operating voltage. 1: No function Also takes effect if the supply unit or supply section of the converter is controlled by the control unit, and in the case of automatic run-up.	

Tab. 4-153: Power supply control word, local

S-0-1720.0.150 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	--	Validity ch.:	--	Format:	HEX
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	AT + MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.6.119 S-0-1731.0.20, Commutation choke inductance

Allocation	Hardware	--
Funct. package(s):		
Device parameter:		
Alias:		S-0-2061

Function This parameter displays the inductance measured at the commutation choke.

S-0-1731.0.20 - Attributes

Function:	Par	Editable:	SUBD:CM	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	mH	Extr. val. ch.:	--	Decim. pl.:	3
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: 0,000
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4.6.120 S-0-1731.0.22, Equivalent capacitance of mains connection

Allocation	Hardware	--
Funct. package(s):		
Device parameter:		

Alias: [S-0-2063](#)

Function Input parameter for the equivalent capacitance of the mains connection.

Use This parameter is required as a basis for determining the reactive power of the mains connection. In this parameter, enter the capacitance, referred to the neutral point, between mains connection and preconnected choke or commutation choke, if the preconnected choke is not used. The capacitance usually results from the capacitance of the mains filter and, where applicable, the preconnected capacitor of the mains choke, if the preconnected choke is not used.

If the capacitors have delta connection, it is necessary to convert to star connection ($C_{star} = 3 * C_{delta}$).

The input value always represents the total capacitance between a phase and the neutral point. If there are multiple capacitor circuits, the total capacitance has to be determined.

S-0-1731.0.22 - Attributes	Function: Par Memory: PARAM_SP Unit: μ F Cycl. tra.: --	Editable: SUBD:CM Validity ch.: -- Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: 0,0

4.6.121 S-0-1732.0.1, Measured DC bus capacitance

Allocation	Hardware Funct. package(s): Device parameter: Alias: S-0-2064
Function	<p>This parameter displays the DC bus capacitance determined when the DC bus was charged for the first time.</p> <p>By loading the factory settings and in new devices the value is set to 0. When the DC bus is charged for the first time, the DC bus capacitance of the system is determined and saved in S-0-1732.0.1. The measured capacitance is compared to this value when the DC bus is charged afterwards.</p> <p>If the measured value falls below the value that was saved, the entry "DC bus capacitance decreased by more than 30%" is made in the diagnostic trace.</p> <p>If the measured value falls below the nominal capacitance used in the device, the detailed diagnostics "Capacitance decreased by more than 30% as compared to nominal value" is generated.</p>
	 If the value is set to 0, the DC bus capacitance is saved again during the next charging procedure, and the control loop parameter is recalculated.
	 If the capacitance is 30% lower than the nominal value, the capacitors have considerably aged. It is recommended to replace the controller.

S-0-1732.0.1 - Attributes	Function: Par Memory: PARAM_SP Unit: μ F Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

4.6.122 S-0-1741.0.150, DC/DC converter control word

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1647						
Function Structure	The DC/DC converter mode can be parameterized with this parameter.						
	<table border="1"> <thead> <tr> <th>Bit</th><th>Designation/function</th><th>Comment</th></tr> </thead> <tbody> <tr> <td>0</td><td>DC output voltage build-up prior to enabling 0: Required 1: Not required</td><td></td></tr> </tbody> </table>	Bit	Designation/function	Comment	0	DC output voltage build-up prior to enabling 0: Required 1: Not required	
Bit	Designation/function	Comment					
0	DC output voltage build-up prior to enabling 0: Required 1: Not required						

Tab. 4-154: DC/DC converter control word

Use Bit 0 deactivates the loading of any existing capacities in the DC output circuit before power enable is given. This is useful when no DC output voltage must be directly available with the power enable and no greater capacities are

Standard parameters

integrated into the DC output circuit. This way, the state machine is shortened until power enable.

See also Functional Description "Device control and state machine"

S-0-1741.0.150 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:CM->PM	Format:	BIN
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: s. Text
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4.6.123 S-0-1741.0.160, DC voltage command value

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-3832
Function	This parameter is used to specify the DC voltage command value. It can be specified cyclically or once.	
Use	The value entered in the parameter is cyclically applied by the DC voltage control and filtered with the entered time constant (S-0-1741.0.170).	



The parameter only takes effect in the "DC voltage control" mode.

S-0-1741.0.160 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	V	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / 2000,0	Default value: s. Text
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4.6.124 S-0-1741.0.161, DC current command value

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-3833
Function	This parameter is used to specify the DC current command value. It can be specified cyclically or once.	
Use	The value entered in the parameter is cyclically applied by the DC control, limited via " S-0-1741.0.180 or S-0-1741.0.181/S-0-1741.0.182 " and filtered with the time constant entered in parameter " S-0-1741.0.183 ".	



The parameter only takes effect in the "DC control" mode.

S-0-1741.0.161 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	A	Extr. val. ch.:	+	Decim. pl.:	3
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: -20000,000 / 20000,000	Default value: s. Text
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4.6.125 S-0-1741.0.170, DC voltage command value filter, time constant

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1648
Function	The time constant that can be activated in this parameter has an effect in the command value path of the DC voltage controller and is suitable for smoothing the DC voltage command value. See also Functional Description "Operation modes"	
Use	The limit frequency is derived from the smoothing time constant T via the relationship:	

$$f_g = \frac{1}{2 \cdot \pi \cdot T}$$

Fig. 4-41: Bandwidth

The filter is deactivated by entering a smoothing time constant that is less than or equal to the sampling time of the DC voltage controller.



The sampling time of the DC voltage controller is 250 µs and cannot be configured.

S-0-1741.0.170 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	us	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:

min./max.: s. Text / s. Text

Default value: s. Text

4.6.126 S-0-1741.0.171, DC voltage controller proportional gain

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1649
Function	The DC voltage controller forms a DC command value from the difference between DC voltage command value and DC voltage actual value. See also Functional Description "Operation modes"	
Use	This DC command value consists of: <ul style="list-style-type: none"> • A proportional term: P-term = S-0-1741.0.171 * (S-0-1741.0.160 - S-0-1742.0.160) Current command value (proportional term) • An integral term: I-term = t * S-0-1741.0.171/S-0-1741.0.172 * (S-0-1741.0.160 - S-0-1742.0.160) Current command value (integral term) • This results in the following transmission function for the PI controller: S-0-1742.0.162(t) = S-0-1741.0.171 * (1 + t/S-0-1741.0.172) * (S-0-1741.0.160 - S-0-1742.0.160) 	

Standard parameters

It is recommended to design the PI controller according to the symmetric optimum. The proportional gain is calculated according to the following formula:

$$K_p = 1/\alpha * C_{DC} / T_{Sum_u}$$

K_p : Proportional gain

α : Damping factor

C_{DC} : DC capacity at the output side of the DC/DC converter

T_{Sum_u} : Sum time constant of the DC voltage control loop

A value of ≥ 4 is recommended for the damping factor. The sum time constant consists of half the current controller cycle time, half the PWM periodic time and half the voltage controller cycle time.

Additionally, the current command value filter must be taken into account, if active ([S-0-1741.0.183](#)).

If the DC voltage command value is read in via an external measuring unit and an analog input, the following aspects will be added as well:

- Filter behavior or deceleration behavior of the external measuring unit, if applicable
- Time constant for the analog input filter, if the filter is activated
- Dead time of the position control loop as evaluation of the analog inputs is only done in the position controller interrupt. Dead time of the position control loop is equal to half the position controller cycle time.

S-0-1741.0.171 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	A/V	Extr. val. ch.:	+	Decim. pl.:	2
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: s. Text
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4.6.127 S-0-1741.0.172, DC voltage controller integral action time

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1650
Function	The DC voltage controller forms a DC command value from the difference between DC voltage command value and DC voltage actual value. See also Functional Description "Operation modes"	
Use	This DC command value consists of: <ul style="list-style-type: none"> • A proportional term: $P\text{-term} = S-0-1741.0.171 * (S-0-1741.0.160 - S-0-1742.0.160)$ Current command value (proportional term) • An integral term: $I\text{-term} = t * S-0-1741.0.171/S-0-1741.0.172 * (S-0-1741.0.160 - S-0-1742.0.160)$ Current command value (integral term) • This results in the following transmission function for the PI controller: $S-0-1742.0.162(t) = S-0-1741.0.171 * (1 + t/S-0-1741.0.172) * (S-0-1741.0.160 - S-0-1742.0.160)$ 	

Defining the integral action time



"[S-0-1741.0.172](#), Integral action time" refers to the value on the time axis where the integral term equals the proportional term. It means the time a purely integral controller would need until the controller output variable y equals the output variable of a proportional controller when time $t = 0$.

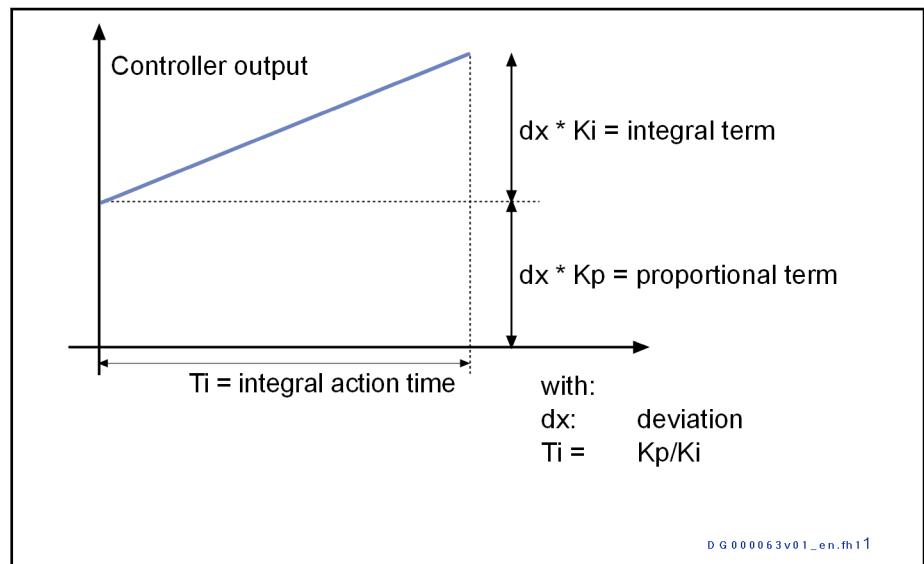


Fig. 4-42: Explanation of integral action time T_n and proportional gain K_p with PI controller



The input value "[S-0-1741.0.172](#) = 0 ms" switches off the integral term.

It is recommended to design the PI controller according to the symmetric optimum. The integral action time is calculated according to the following formula:

$$T_n = \alpha^2 * T_{\text{Sum_i}}$$

α : Damping factor

$T_{\text{Sum_u}}$: Sum time constant of the DC voltage control loop

A value of ≥ 4 is recommended for damping.

The sum time constant consists of half the current controller cycle time, half the PWM periodic time and 125 μ s.

S-0-1741.0.172 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	ms	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: s. Text
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4.6.128 S-0-1741.0.180, Bipolar DC current limit value

Allocation

Hardware --

Funct. package(s):

Device parameter:

Alias: [P-0-1660](#)

Function

This parameter can be used to limit the DC command value.

The parameter has a bipolar effect, i.e., positive and negative command values are limited to the value that has been entered. The entered

Standard parameters

percentage factor refers to parameter "[S-0-1701.0.1](#), Nominal current of power supply".

See also Functional Description "Operation modes"

S-0-1741.0.180 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: s. Text

4.6.129 S-0-1741.0.181, Positive DC current limit value

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1670	--	
Function	The parameter limits the positive DC and thereby the energy flow to the DC output mains. The entered percentage factor refers to parameter " S-0-1701.0.1 , Nominal current of power supply".		
	See also Functional Description "Operation modes"		
S-0-1741.0.181 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: s. Text

4.6.130 S-0-1741.0.182, Negative DC current limit value

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1671	--	
Function	The parameter limits the negative DC and the energy flow to the DC bus. The entered percentage factor refers to parameter " S-0-1701.0.1 , Nominal current of power supply".		
	See also Functional Description "Operation modes"		
S-0-1741.0.182 - Attributes	Function: Par Memory: ON_BOARD_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 1 Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: ---

4.6.131 S-0-1741.0.183, DC current command value filter, time constant

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1672	--
Function	The time constant that can be activated in this parameter has an effect in the command value path of the current controller and is suitable for smoothing the current command value.	
	See also Functional Description "Operation modes"	

Use The limit frequency is derived from the smoothing time constant T via the relationship:

$$f_g = \frac{1}{2 \cdot \pi \cdot T}$$

Fig. 4-43: Bandwidth

The filter is deactivated by entering a smoothing time constant that is less than or equal to the sampling time of the DC controller.



The sampling time of the DC controller is 250 µs and cannot be configured.

S-0-1741.0.183 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	us	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: s. Text / s. Text			Default value:	s. Text

4.6.132 S-0-1741.0.184, DC current controller proportional gain**Allocation**

Hardware --

Funct. package(s):

Device parameter:

Alias: P-0-1673

Function

This parameter defines the proportional gain for the DC controller. The parameterization of the current loop proportional gain depends on the inductance of the DC smoothing choke, the control performance (current controller cycle time) and the switching frequency ([S-0-1741.0.184](#)).

Use

It is recommended to design the PI controller according to the symmetric optimum. The proportional gain is calculated according to the following formula:

$$K_p = 1/\alpha * L_{Choke}/T_{Sum_i}$$

α : Damping factor

L_{Choke} : Inductance of the DC smoothing choke

T_{Sum_i} : Sum time constant of the DC control loop

A value of ≥ 2 is recommended for the damping factor. The sum time constant consists of half the current controller cycle time and half the PWM periodic time.

S-0-1741.0.184 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	V/A	Extr. val. ch.:	+	Decim. pl.:	2
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
AXS:	min./max.: s. Text / s. Text			Default value:	s. Text

4.6.133 S-0-1741.0.185, DC current controller integral action time**Allocation**

Hardware --

Funct. package(s):

Device parameter:

Alias: P-0-1674

Function

This parameter defines the integral action time for the DC controller. The parameterization of the current loop integral action time is dependent on the control performance (current controller cycle time) and the switching frequency ([S-0-1741.0.184](#)).

Standard parameters

Use It is recommended to design the PI controller according to the symmetric optimum. The integral action time is calculated according to the following formula:

$$T_n = \alpha^2 * T_{Sum_i}$$

T_n : Integral action time

α : Damping factor

T_{Sum_i} : Sum time constant of the DC control loop

A value of ≥ 2 is recommended for the damping factor.

The sum time constant consists of half the current controller cycle time and half the PWM periodic time.

S-0-1741.0.185 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_OV
Unit:	ms	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: s. Text
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4.6.134 S-0-1741.0.186, DC current controller output limitation

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1675	--
Function	Parameter for limitation of the DC controller output voltage / controller output.	
Use	The parameter is used to protect the DC consumers connected in particularly critical operating cases or for incorrect parameterization of the control. The parameter has no limiting effect on the output voltage in normal operation.	



Due to the voltage drops at the output stage, the value is to be parameterized approx. 20 V below the voltage critical for the DC consumer.

S-0-1741.0.186 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	2Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	V	Extr. val. ch.:	+	Decim. pl.:	1
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / 2000,0	Default value: 2000,0
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4.6.135 S-0-1741.0.187, Power limit positive

Allocation	Hardware Funct. package(s): Device parameter: Alias: P-0-1794	--
Function	The positive power limitation is used to limit the power that is withdrawn. In the case of power limitation, the current is limited depending on the output voltage. The power limitation only works reliably if the output voltage is read in. External voltage measurement is required for this purpose.	

See also Functional Description "Power supply"

S-0-1741.0.187 - Attributes

Function:	Par	Editable:	ALWAYS	Data length:	4Byte
Memory:	PARAM_SP	Validity ch.:	SUBD:PM->OM	Format:	DEC_MV
Unit:	W	Extr. val. ch.:	+	Decim. pl.:	0
Cycl. tra.:	MDT	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: s. Text / s. Text	Default value: s. Text
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4.6.136 S-0-1741.0.188, Power limit negative

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1795	
Function	The negative power limitation is used to limit the power that is supplied. In the case of power limitation, the current is limited depending on the output voltage. The power limitation only works reliably if the output voltage is read in. External voltage measurement is required for this purpose.		
	See also Functional Description "Power supply"		
S-0-1741.0.188 - Attributes	Function: Par Memory: PARAM_SP Unit: W Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: s. Text / s. Text	Default value: s. Text

4.6.137 S-0-1742.0.160, DC voltage feedback value

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-3835	
Function	This parameter displays the currently measured DC output voltage.		
Use	An external measuring element must measure the DC output voltage in case the device does not perform measurements itself. With this parameter, the voltage value determined can be provided cyclically to the control, e.g. via an analog input.		
S-0-1742.0.160 - Attributes	Function: Par Memory: -- Unit: V Cycl. tra.: AT + MDT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

4.6.138 S-0-1742.0.161, DC current feedback value

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-3836	
Function	Display parameter for the DC total command value of three individual measurements. The value is updated with the current controller cycle time.		
S-0-1742.0.161 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

4.6.139 S-0-1742.0.162, DC current, effective command value

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-3860
Function	Display parameter for the effective DC command value. See also Functional Description "Operation modes"	

Standard parameters

S-0-1742.0.162 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT + MDT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: +	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.6.140 S-0-1742.0.163, Output power actual value

Allocation	Hardware Funct. package(s): Device parameter: Alias:	-- P-0-1796
Function	The parameter S-0-1742.0.163 displays the output power at the DC output.	



The output power can only be displayed if the output voltage of an external voltage measurement is read in. If the output voltage measurement has not been activated, only the DC bus power can be displayed. That is to say the value contains output stage losses and choke losses.

S-0-1742.0.163 - Attributes	Function: Par Memory: -- Unit: W Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.7 S-0-1800 to S-0-3599 Power supply parameters**4.7.1 S-0-1800.0.1, List of applications**

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter contains a list of the assemblies supported by the device (S-0-1820.0.1). It is defined at compile time.	
S-0-1800.0.1 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

4.7.2 S-0-1800.0.2, List of validator objects

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter contains the list of the CIP Safety Validators available in the drive. They are listed in S-0-1810.x.1 .	
S-0-1800.0.2 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

4.7.3 S-0-1800.0.4, SV Safety connection fault count

Allocation	Hardware Funct. package(s): Device parameter:	--
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Function	This parameter contains the error counter of the CIP Safety Validators. It is a global fault counter over all validator instances.				
S-0-1800.0.4 - Attributes	Function: Par	Editable:	SMO depend	Data length:	2Byte
	Memory: --	Validity ch.:	--	Format:	DEC_OV
	Unit: --	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.: --	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: --- / ---		Default value: ---	

4.7.4 S-0-1800.0.10, SSO Device Status

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	This parameter contains the internal device status of the CIP Safety Supervisor.				
	There are the following states:				
	Undefined: Is represented by the value 0				
	Self-Testing: Is represented by the value 1				
	Idle: Is represented by the value 2				
	Self-Test Exception: Is represented by the value 3				
	Executing: Is represented by the value 4				
	Abort: Is represented by the value 5				
	Critical Fault: Is represented by the value 6				
	Configuring: Is represented by the value 7				
	Waiting for TUNID: Is represented by the value 8				
	The values from 9 to 50 are reserved by the CIP protocol. The values from 51 to 99 are device-specific. The values from 100 to 255 are manufacturer-specific.				
S-0-1800.0.10 - Attributes	Function: Par	Editable:	SMO depend	Data length:	2Byte
	Memory: --	Validity ch.:	--	Format:	DEC_OV
	Unit: --	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.: --	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: --- / ---		Default value: ---	

4.7.5 S-0-1800.0.15, SSO Safety Configuration Identifier

Allocation	Hardware Funct. package(s): Device parameter:	--			
Function	This parameter contains the Safety Configuration Identifier SCID that consists of the Safety Configuration CRC (P-0-3234.0.1 and P-0-3234.0.4) and the Safety Configuration Time Stamp (SCTS).				
S-0-1800.0.15 - Attributes	Function: Par	Editable:	SMO depend	Data length:	1Byte var.
	Memory: --	Validity ch.:	--	Format:	HEX
	Unit: --	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.: --	Comb. check:	--	Set-depend.:	--
	AXS:	min./max.: --- / ---		Default value: ---	

4.7.6 S-0-1800.0.16, SSO Configuration Lock

Allocation	Hardware Funct. package(s): Device parameter:	--
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Standard parameters

	Function	This parameter contains the SSO Configuration Lock. It shows whether the flag for the configuration lock in the CIP Safety Supervisor has been set or not.				
S-0-1800.0.16 - Attributes	Function:	Par	Editable:	SMO depend	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	BIN
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS: min./max.: --- / ---					Default value: ---

4.7.7 S-0-1800.0.17, SSO Configuration UNID

	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	This parameter contains the SSO Configuration UNID. The SNCT Interface is not supported and therefore only the tool-based selection (10 octets with 0xFF) is allowed.				
S-0-1800.0.17 - Attributes	Function:	Par	Editable:	SMO depend	Data length:	1Byte var.
	Memory:	--	Validity ch.:	--	Format:	HEX
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS: min./max.: --- / ---					Default value: ---

4.7.8 S-0-1800.0.18, SSO Proposed TUNID

	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	This parameter contains the SSO Proposed TUNID.				
S-0-1800.0.18 - Attributes	Function:	Par	Editable:	SMO depend	Data length:	1Byte var.
	Memory:	--	Validity ch.:	--	Format:	HEX
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	Verify: +					
	AXS: min./max.: --- / ---					Default value: ---

4.7.9 S-0-1800.0.19, SSO Target UNID

	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	This parameter contains the SSO Target UNID.				
S-0-1800.0.19 - Attributes	Function:	Par	Editable:	SMO depend	Data length:	1Byte var.
	Memory:	--	Validity ch.:	--	Format:	HEX
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--
	AXS: min./max.: --- / ---					Default value: ---

4.7.10 S-0-1801.0.1, CIP Vendor ID

	Allocation	Hardware Funct. package(s): Device parameter:	--			
	Function	The Vendor ID is a part (attribute 1) of the CIP Identity Object.				
S-0-1801.0.1 - Attributes	Function:	Par	Editable:	SMO depend	Data length:	2Byte
	Memory:	--	Validity ch.:	--	Format:	DEC_OV
	Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--

AXS:	min./max.: --- / ---	Default value: ---
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4.7.11 S-0-1801.0.2, CIP Device Type

Allocation	Hardware	--
	Funct. package(s):	
Function	Device parameter:	
	The Device Type is a part (attribute 2) of the CIP Identity Object.	
S-0-1801.0.2 - Attributes	Function: Par	Editable: SMO depend
	Memory: --	Validity ch.: --
	Unit: --	Extr. val. ch.: --
	Cycl. tra.: --	Comb. check: --
		Data length: 2Byte
		Format: DEC_OV
		Decim. pl.: 0
		Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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4.7.12 S-0-1801.0.3, CIP Product Code

Allocation	Hardware	--
	Funct. package(s):	
Function	Device parameter:	
	The Product Code is a part (attribute 3) of the CIP Identity Object.	
S-0-1801.0.3 - Attributes	Function: Par	Editable: SMO depend
	Memory: --	Validity ch.: --
	Unit: --	Extr. val. ch.: --
	Cycl. tra.: --	Comb. check: --
		Data length: 2Byte
		Format: DEC_OV
		Decim. pl.: 0
		Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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4.7.13 S-0-1801.0.4, CIP Revision

Allocation	Hardware	--
	Funct. package(s):	
Function	Device parameter:	
	The parameter represents the revision number (major and minor) of the CIP Identity Object. CIP also uses the attribute 4. The minor revision is assigned to the lower octet of the two-byte value, whereas the major revision is assigned to the upper octet.	
	The most significant bit is reserved for the compatibility bit. The compatibility bit is always set, since the setting is applied to the SDDML. However, this does not affect the controllability via the Forward Open request.	
S-0-1801.0.4 - Attributes	Function: Par	Editable: SMO depend
	Memory: --	Validity ch.: --
	Unit: --	Extr. val. ch.: --
	Cycl. tra.: --	Comb. check: --
		Data length: 2Byte
		Format: HEX
		Decim. pl.: 0
		Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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4.7.14 S-0-1801.0.5, CIP Status

Allocation	Hardware	--
	Funct. package(s):	
Function	Device parameter:	
	Internal status of the CIP Safety Supervisor (attribute 11 Safety Supervisor Instance Attribute).	
		Attribute (value)
		Status
	0	Undefined
	1	Self-Testing
	2	Idle

Standard parameters

Attribute (value)	Status
3	Self-Test Exception
4	Executing
5	Abort
6	Critical Fault
7	Configuring
8	Waiting for TUNID
9 - 50	Reserved by CIP
51 - 99	Device Specific
100 - 255	Vendor Specific

Tab. 4-155: S-0-1801.0.5, Status

S-0-1801.0.5 - Attributes

Function:	Par	Editable:	SMO depend	Data length:	2Byte	
Memory:	--	Validity ch.:	--	Format:	HEX	
Unit:	--	Extr. val. ch.:	--	Decim. pl.:	0	
Cycl. tra.:	--	Comb. check:	--	Set-depend.:	--	
AXS:		min./max.: --- / ---				Default value: ---

4.7.15 S-0-1801.0.6, CIP serial number**S-0-1801.0.6 - Attributes**

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The CIP serial number is a part (attribute 6) of the CIP Identity Object.	
Function:	Par	Editable:
Memory:	--	Validity ch.:
Unit:	--	Extr. val. ch.:
Cycl. tra.:	--	Comb. check:
AXS:		min./max.: --- / ---
		Default value: ---

4.7.16 S-0-1801.0.7, CIP Product Name**S-0-1801.0.7 - Attributes**

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The Product Name is a part (attribute 7) of the CIP Identity Object.	
Function:	Par	Editable:
Memory:	--	Validity ch.:
Unit:	--	Extr. val. ch.:
Cycl. tra.:	--	Comb. check:
AXS:		min./max.: --- / ---
		Default value: ---

4.7.17 S-0-1810.x.1, SV Max data age**S-0-1810.x.1 - Attributes**

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter contains the maximum measured data age of the respective CIP Safety connection. Via CIP services it can be reset to 0 by writing.	
Function:	Par	Editable:
Memory:	--	Validity ch.:
Unit:	--	Extr. val. ch.:
Cycl. tra.:	--	Comb. check:
AXS:		min./max.: --- / ---
		Default value: ---

AXS:	min./max.: --- / ---	Default value: ---
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4.7.18 S-0-1810.x.2, Safety Validator State

Allocation	Hardware	--			
	Funct. package(s):				
Device parameter:					
Function	This parameter contains the state of the Safety Validator.				
	Function:	Par	Editable:	SMO depend	Data length: 2Byte
S-0-1810.x.2 - Attributes	Memory:	--	Validity ch.:	--	Format: DEC_OV
	Unit:	--	Extr. val. ch.:	--	Decim. pl.: 0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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4.7.19 S-0-1810.x.3, SV Error code

Allocation	Hardware	--			
	Funct. package(s):				
Device parameter:					
Function	This parameter contains any internal error codes of the Safety Validator.				
	Function:	Par	Editable:	SMO depend	Data length: 2Byte
S-0-1810.x.3 - Attributes	Memory:	--	Validity ch.:	--	Format: DEC_OV
	Unit:	--	Extr. val. ch.:	--	Decim. pl.: 0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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4.7.20 S-0-1810.x.4, Safety Validator type

Allocation	Hardware	--			
	Funct. package(s):				
Device parameter:					
Function	This parameter contains the type of the Safety Validator. It specifies whether the CIP Safety Validator is a consumer type or a producer.				
	Function:	Par	Editable:	SMO depend	Data length: 2Byte
S-0-1810.x.4 - Attributes	Memory:	--	Validity ch.:	--	Format: DEC_OV
	Unit:	--	Extr. val. ch.:	--	Decim. pl.: 0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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4.7.21 S-0-1810.x.5, SV Time coord msg min multiplier

Allocation	Hardware	--			
	Funct. package(s):				
Device parameter:					
Function	This parameter contains the time coordination multiplier of the Safety Validator.				
	Function:	Par	Editable:	SMO depend	Data length: 2Byte var.
S-0-1810.x.5 - Attributes	Memory:	--	Validity ch.:	--	Format: DEC_OV
	Unit:	--	Extr. val. ch.:	--	Decim. pl.: 0
	Cycl. tra.:	--	Comb. check:	--	Set-depend.: --

AXS:	min./max.: --- / ---	Default value: ---
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4.7.22 S-0-1810.x.6, SV Max consumer number

Allocation	Hardware	--			
	Funct. package(s):				
Device parameter:					
Function	This parameter contains the maximum supported Consumer Number of the respective Safety Validator.				

Standard parameters

S-0-1810.x.6 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.7.23 S-0-1810.x.7, SV Timeout multiplier

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter contains the Timeout multiplier of the Safety Validator.	
S-0-1810.x.7 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

4.7.24 S-0-1810.x.8, SV Ping interval EPI multiplier

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter contains the Ping interval EPI Multiplier of the Safety Validator.	
S-0-1810.x.8 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

4.7.25 S-0-1810.x.9, SV Network time expectation multiplier

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter contains the Network Time Expectation multiplier of the Safety Validator.	
S-0-1810.x.9 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

4.7.26 S-0-1820.x.1, CIP assembly instance number

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter contains the CIP Assembly Instance Number. The respective connection point is output as a parameter.	
S-0-1820.x.1 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: ---

4.7.27 S-0-1820.x.2, Safety Validator instance number

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter contains the instance number of the Safety Validator. No distinction is made between consumer and producer.		
S-0-1820.x.2 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: IDN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

4.7.28 S-0-1820.x.3, Safety application type

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter contains the Safety Application type. The flag at bit 0 specifies whether it is a producing or a consuming connection.		
S-0-1820.x.3 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

4.7.29 S-0-1820.x.4, Safety application data size

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter contains the data size of the Safety Application. It outputs the useful data connection length of this instance as a Sercos parameter.		
S-0-1820.x.4 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SMO depend Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

4.7.30 S-0-1830.x.1, Cyclic SMP container (out)

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	This parameter specifies the Sercos SMP container to be used for the cyclic output data of the CIP Safety on Sercos connection.		
S-0-1830.x.1 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: IDN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: ---

4.7.31 S-0-1830.x.2, Cyclic SMP Session ID (out)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter specifies the Sercos SMP session to be used for the cyclic output data of the CIP Safety on Sercos connection.	

Standard parameters

S-0-1830.x.2 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.7.32 S-0-1830.x.3, List of cyclic SMP containers (in)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter specifies the Sercos SMP containers to be used for the cyclic input data of the CIP Safety on Sercos connection.	
S-0-1830.x.3 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.33 S-0-1830.x.4, List of cyclic SMP Session IDs (in)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter specifies the Sercos SMP sessions to be used for the cyclic input data of the CIP Safety on Sercos connection.	
S-0-1830.x.4 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.34 S-0-1830.x.5, List of UCM SMP containers (in)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter specifies the Sercos SMP containers to be used for the acyclic input data of the CIP Safety on Sercos connection.	
S-0-1830.x.5 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.35 S-0-1830.x.6, List of UCM SMP Session IDs (in)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter specifies the Sercos SMP sessions to be used for the acyclic input data of the CIP Safety on Sercos connection.	
S-0-1830.x.6 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.36 S-0-1830.x.7, List of UCM SMP containers (out)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter specifies the Sercos SMP containers to be used for the acyclic output data of the CIP Safety on Sercos connection.	
S-0-1830.x.7 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.:	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 4Byte var. Format: IDN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

4.7.37 S-0-1830.x.8, List of UCM SMP Session IDs (out)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	This parameter specifies the Sercos SMP sessions to be used for the acyclic output data of the CIP Safety on Sercos connection.	
S-0-1830.x.8 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.:	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

4.7.38 S-0-1830.x.9, List of consumer numbers

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The parameter is relevant for devices that support "multicast CIP Safety connections". It is used for communication of the respective list entries of the "S-0-1830.0.x" parameters.	
 "Multicast CIP Safety connections" are not supported at present.		
S-0-1830.x.9 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.:	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

4.7.39 S-0-1848.x.3, CSS Consumer Fifo State

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The functional principle of the parameter is documented only internally, and changes or evaluations are reserved to customer support.	
S-0-1848.x.3 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.:	Editable: SMO depend Validity ch.: ???? Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: HEX Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

Standard parameters

4.7.40 S-0-1848.x.4, CSS Consumer Fifo

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The functional principle of the parameter is documented only internally, and changes or evaluations are reserved to customer support.	
S-0-1848.x.4 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.:	Editable: SMO depend Validity ch.: ???? Extr. val. ch.: -- Comb. check: -- Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---

4.7.41 S-0-1849.x.3, CSS Producer Fifo State

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The functional principle of the parameter is documented only internally, and changes or evaluations are reserved to customer support.	
S-0-1849.x.3 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.:	Editable: SMO depend Validity ch.: ???? Extr. val. ch.: -- Comb. check: -- Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---

4.7.42 S-0-1849.x.4, CSS Producer Fifo

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	The functional principle of the parameter is documented only internally, and changes or evaluations are reserved to customer support.	
S-0-1849.x.4 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.:	Editable: SMO depend Validity ch.: ???? Extr. val. ch.: -- Comb. check: -- Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---

4.7.43 S-0-2000, List of FSP Power Supply classes

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1700.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2000 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.:	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---

4.7.44 S-0-2001, List of supplied drives

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1700.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

S-0-2001 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

4.7.45 S-0-2002, Nominal current of power supply

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1701.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
S-0-2002 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---	

4.7.46 S-0-2003, Amplifier peak current

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1701.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
S-0-2003 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---	

4.7.47 S-0-2008, Mains voltage actual value

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1702.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
S-0-2008 - Attributes	Function: Par Memory: -- Unit: V Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---	

4.7.48 S-0-2009, Mains current

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1702.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
S-0-2009 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---	

Standard parameters

4.7.49 S-0-2010, Phase current L1

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"S-0-1702.0.3" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			
S-0-2010 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --	
	AXS:	min./max.: --- / ---	Default value: ---	

4.7.50 S-0-2011, Phase current L2

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"S-0-1702.0.4" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			
S-0-2011 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --	
	AXS:	min./max.: --- / ---	Default value: ---	

4.7.51 S-0-2012, Phase current L3

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"S-0-1702.0.5" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			
S-0-2012 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --	
	AXS:	min./max.: --- / ---	Default value: ---	

4.7.52 S-0-2013, Mains voltage L1-L2

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"S-0-1702.0.9" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			
S-0-2013 - Attributes	Function: Par Memory: -- Unit: V Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --	
	AXS:	min./max.: --- / ---	Default value: ---	

4.7.53 S-0-2014, Mains voltage L2-L3

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"S-0-1702.0.10" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			

S-0-2014 - Attributes	Function: Par Memory: -- Unit: V Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --
	AXS: min./max.: --- / ---		Default value: ---

4.7.54 S-0-2015, Mains voltage L3-L1

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1702.0.11" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2015 - Attributes	Function: Par Memory: -- Unit: V Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS: min./max.: --- / ---	

4.7.55 S-0-2016, Mains frequency

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1702.0.12" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2016 - Attributes	Function: Par Memory: -- Unit: Hz Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS: min./max.: --- / ---	

4.7.56 S-0-2017, Mains power

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1702.0.13" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2017 - Attributes	Function: Par Memory: -- Unit: W Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS: min./max.: --- / ---	

4.7.57 S-0-2018, Short-time mains energy counter

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1702.0.14" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2018 - Attributes	Function: Par Memory: -- Unit: Ws Cycl. tra.: AT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS: min./max.: --- / ---	

Standard parameters

4.7.58 S-0-2019, Energy counter of mains

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"S-0-1702.0.15" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			
S-0-2019 - Attributes	Function: Memory: Unit: Cycl. tra.:	Par RETAIN_KUNDE kWh AT	Editable: Validity ch.: Extr. val. ch.: Comb. check:	-- -- -- --
	AXS:		min./max.: --- / ---	Default value: ---

4.7.59 S-0-2020, Power factor

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"S-0-1702.0.16" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			
S-0-2020 - Attributes	Function: Memory: Unit: Cycl. tra.:	Par -- -- --	Editable: Validity ch.: Extr. val. ch.: Comb. check:	-- -- -- --
	AXS:		min./max.: --- / ---	Default value: ---

4.7.60 S-0-2021, Mains voltage Phase to Phase L1-L2 RMS value

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"S-0-1702.0.17" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			
S-0-2021 - Attributes	Function: Memory: Unit: Cycl. tra.:	Par -- V AT	Editable: Validity ch.: Extr. val. ch.: Comb. check:	-- -- -- --
	AXS:		min./max.: --- / ---	Default value: ---

4.7.61 S-0-2022, Mains voltage Phase to Phase L2-L3 RMS value

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"S-0-1702.0.18" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			
S-0-2022 - Attributes	Function: Memory: Unit: Cycl. tra.:	Par -- V AT	Editable: Validity ch.: Extr. val. ch.: Comb. check:	-- -- -- --
	AXS:		min./max.: --- / ---	Default value: ---

4.7.62 S-0-2023, Mains voltage Phase to Phase L3-L1 RMS value

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"S-0-1702.0.19" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			

S-0-2023 - Attributes	Function: Par Memory: -- Unit: V Cycl. tra.: AT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.7.63 S-0-2024, List of operation modes

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1705.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2024 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.64 S-0-2025, DC bus voltage command value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1706.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2025 - Attributes	Function: Par Memory: PARAM_SP Unit: V Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	

4.7.65 S-0-2026, Active-current generating component, command value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1706.0.11" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2026 - Attributes	Function: Par Memory: PARAM_SP Unit: A Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	

4.7.66 S-0-2027, Reactive-current generating component, command value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1706.0.12" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2027 - Attributes	Function: Par Memory: PARAM_SP Unit: A Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	

Standard parameters

4.7.67 S-0-2028, Actual DC bus voltage

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1707.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2028 - Attributes	Function: Par Memory: -- Unit: V Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: DEC_MV Decim. pl.: 1 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

4.7.68 S-0-2029, Effective active-current generating component, command value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1707.0.11" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2029 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

4.7.69 S-0-2030, Effective reactive-current generating component, command value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1707.0.12" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2030 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

4.7.70 S-0-2031, Active-current generating component, actual value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1707.0.13" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2031 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

4.7.71 S-0-2032, Reactive-current generating component, actual value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1707.0.14" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2032 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: ---

4.7.72 S-0-2033, Output voltage, active component

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1707.0.15" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2033 - Attributes	Function: Par Memory: -- Unit: V Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: ---

4.7.73 S-0-2034, Output voltage, reactive component

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1707.0.16" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2034 - Attributes	Function: Par Memory: -- Unit: V Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: ---

4.7.74 S-0-2035, Output voltage, absolute value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1708.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2035 - Attributes	Function: Par Memory: -- Unit: V Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: ---

4.7.75 S-0-2036, DC bus voltage controller proportional gain

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1708.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

Standard parameters

S-0-2036 - Attributes	Function: Par Memory: PARAM_SP Unit: A/V Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 2 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: s. Text

4.7.76 S-0-2037, DC bus voltage controller integral action time

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1708.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2037 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: s. Text

4.7.77 S-0-2038, Mains current controller proportional gain

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1708.0.11" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2038 - Attributes	Function: Par Memory: PARAM_SP Unit: V/A Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: s. Text

4.7.78 S-0-2039, Mains current controller integral action time

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1708.0.12" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2039 - Attributes	Function: Par Memory: PARAM_SP Unit: ms Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: s. Text

4.7.79 S-0-2040, Bipolar mains current limit value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1708.0.13" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2040 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	Default value: s. Text

4.7.80 S-0-2042, Positive mains current limit value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1708.0.15" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2042 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: -- Format: DEC_OV Decim. pl.: 1 Set-depend.: --
	AXS:	min./max.: s. Text / s. Text Default value: s. Text

4.7.81 S-0-2043, Negative mains current limit value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1708.0.16" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2043 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: -- Format: DEC_OV Decim. pl.: 1 Set-depend.: --
	AXS:	min./max.: s. Text / s. Text Default value: s. Text

4.7.82 S-0-2044, Active power limit positive

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1709.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2044 - Attributes	Function: Par Memory: -- Unit: W Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

4.7.83 S-0-2045, Active power limit negative

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1709.0.3" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2045 - Attributes	Function: Par Memory: -- Unit: W Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 4Byte Format: DEC_MV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

4.7.84 S-0-2046, Primary operation mode

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1709.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

Standard parameters

S-0-2046 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: +	Data length: 2Byte Format: HEX Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

4.7.85 S-0-2047, Secondary operation mode 1

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1709.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2047 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: +
AXS:	min./max.: --- / ---	Default value: s. Text

4.7.86 S-0-2048, Secondary operation mode 2

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1709.0.3" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2048 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: +
AXS:	min./max.: --- / ---	Default value: s. Text

4.7.87 S-0-2049, Secondary operation mode 3

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1709.0.4" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2049 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: +
AXS:	min./max.: --- / ---	Default value: s. Text

4.7.88 S-0-2051, Thermal device load

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1710.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2051 - Attributes	Function: Par Memory: -- Unit: % Cycl. tra.: AT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: + Comb. check: --
AXS:	min./max.: 0,0 / 100,0	Default value: ---

4.7.89 S-0-2052, Dynamic maximum device current

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1710.0.3" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2052 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: ---

4.7.90 S-0-2053, Thermal controller load warning threshold

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1720.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2053 - Attributes	Function: Par Memory: PARAM_SP Unit: % Cycl. tra.: --	Editable: ALWAYS Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
	AXS:	min./max.: 0,0 / 110,0 Default value: 80,0

4.7.91 S-0-2054, Maximum value thermal controller load

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1720.0.3" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2054 - Attributes	Function: Par Memory: -- Unit: % Cycl. tra.: AT + MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: 0,0 / 110,0 Default value: ---

4.7.92 S-0-2055, Control word of current rms value generator

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1711.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2055 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: SUBD:CM+PM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: ---

4.7.93 S-0-2056, Current rms value

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1711.0.3" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

Standard parameters

S-0-2056 - Attributes	Function: Par Memory: -- Unit: A Cycl. tra.: AT	Editable: SUBD:CM+PM Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_MV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.7.94 S-0-2057, Power supply control word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1720.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2057 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: MDT	Editable: ALWAYS Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.95 S-0-2058, Power supply status word

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1720.0.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2058 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.96 S-0-2059, Power off delay

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1720.0.3" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2059 - Attributes	Function: Par Memory: ON_BOARD_SP Unit: s Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:PM->OM Extr. val. ch.: + Comb. check: --
AXS:	min./max.: s. Text / s. Text	

4.7.97 S-0-2061, Commutation choke inductance

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1731.0.20" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2061 - Attributes	Function: Par Memory: PARAM_SP Unit: mH Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.98 S-0-2063, Equivalent capacitance of mains connection

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1731.0.22" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2063 - Attributes	Function: Par Memory: PARAM_SP Unit: μ F Cycl. tra.: --	Editable: SUBD:CM Validity ch.: -- Extr. val. ch.: + Comb. check: -- Format: DEC_OV Decim. pl.: 1 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: 0,0

4.7.99 S-0-2064, Measured DC bus capacitance

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1732.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2064 - Attributes	Function: Par Memory: PARAM_SP Unit: μ F Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: -- Format: DEC_OV Decim. pl.: 1 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: s. Text

4.7.100 S-0-2300, Encoder status

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0600.2.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2300 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

4.7.101 S-0-2320, Position, 32 Bit, fine

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0600.2.21" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2320 - Attributes	Function: Par Memory: -- Unit: incr Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: ---

4.7.102 S-0-2321, Position, 32 Bit, coarse

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0600.2.22" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

Standard parameters

S-0-2321 - Attributes	Function: Par Memory: -- Unit: incr Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.7.103 S-0-2322, Marker position, 32 bit fine

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0600.2.23" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2322 - Attributes	Function: Par Memory: -- Unit: incr Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.104 S-0-2323, Marker position, 32 bit coarse

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"P-0-2665.0.4" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2323 - Attributes	Function: Par Memory: -- Unit: incr Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.105 S-0-2325, Encoder status

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0600.3.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2325 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.106 S-0-2345, Position, 32 Bit, fine

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0600.3.21" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2345 - Attributes	Function: Par Memory: -- Unit: incr Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.107 S-0-2346, Position, 32 Bit, coarse

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0600.3.22" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2346 - Attributes	Function: Par Memory: -- Unit: incr Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---
		Default value: ---

4.7.108 S-0-2350, Encoder status

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0600.10.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2350 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---
		Default value: ---

4.7.109 S-0-2370, Position, 32 Bit, fine

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0600.10.21" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2370 - Attributes	Function: Par Memory: -- Unit: incr Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---
		Default value: ---

4.7.110 S-0-2371, Position, 32 Bit, coarse

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0600.10.22" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2371 - Attributes	Function: Par Memory: -- Unit: incr Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---
		Default value: ---

4.7.111 S-0-2372, Marker position, 32 bit fine

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0600.10.23" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

Standard parameters

S-0-2372 - Attributes	Function: Par Memory: -- Unit: incr Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.7.112 S-0-2373, Marker position, 32 bit coarse

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0600.10.24" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2373 - Attributes	Function: Par Memory: -- Unit: incr Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.113 S-0-2400, Encoder data out configuration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0601.2.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2400 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.114 S-0-2411, Encoder refresh time data out

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0601.2.12" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2411 - Attributes	Function: Par Memory: PARAM_SP Unit: us Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.115 S-0-2420, Resolution of position

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0601.2.21" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2420 - Attributes	Function: Par Memory: PARAM_SP Unit: incr Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.116 S-0-2421, Position overflow threshold

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0601.2.22" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2421 - Attributes	Function: Par Memory: PARAM_SP Unit: incr Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
		Data length: 4Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --

AXS:	min./max.: --- / ---	Default value: s. Text
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4.7.117 S-0-2422, Absolute position range

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0601.2.23" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2422 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
		Data length: 4Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --

AXS:	min./max.: --- / ---	Default value: s. Text
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4.7.118 S-0-2423, Extended position resolution (analog)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0601.2.24" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2423 - Attributes	Function: Par Memory: PARAM_SP Unit: nm Cycl. tra.: --	Editable: -- Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
		Data length: 4Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --

AXS:	min./max.: --- / ---	Default value: s. Text
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4.7.119 S-0-2425, Encoder data out configuration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0601.3.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2425 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
		Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --

AXS:	min./max.: --- / ---	Default value: 0x0
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4.7.120 S-0-2445, Resolution of position

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0601.3.21" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

Standard parameters

S-0-2445 - Attributes	Function: Par Memory: PARAM_SP Unit: incr Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

4.7.121 S-0-2446, Position overflow threshold

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0601.3.22" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2446 - Attributes	Function: Par Memory: PARAM_SP Unit: incr Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.122 S-0-2447, Absolute position range

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0601.3.23" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2447 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.123 S-0-2448, Extended position resolution (analog)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0601.3.24" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2448 - Attributes	Function: Par Memory: PARAM_SP Unit: nm Cycl. tra.: --	Editable: -- Validity ch.: SUBD:PM->OM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.124 S-0-2450, Encoder data out configuration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0601.10.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2450 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.125 S-0-2461, Encoder refresh time data out

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0601.10.12" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2461 - Attributes	Function: Par Memory: PARAM_SP Unit: us Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: 0,000

4.7.126 S-0-2470, Resolution of position

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0601.10.21" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2470 - Attributes	Function: Par Memory: PARAM_SP Unit: incr Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: s. Text

4.7.127 S-0-2471, Position overflow threshold

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0601.10.22" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2471 - Attributes	Function: Par Memory: PARAM_SP Unit: incr Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: s. Text

4.7.128 S-0-2472, Absolute position range

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0601.10.23" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2472 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: s. Text

4.7.129 S-0-2500, Phys. encoder type

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0602.2.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

Standard parameters

S-0-2500 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: 65535

4.7.130 S-0-2501, Phys. encoder properties

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0602.2.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2501 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: +
AXS:	min./max.: s. Text / s. Text	Default value: 0x0

4.7.131 S-0-2504, Phys. distance-coded reference offset A

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0602.2.21" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2504 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: 0

4.7.132 S-0-2505, Phys. distance-coded reference offset B

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0602.2.22" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2505 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: 0

4.7.133 S-0-2506, Phys. encoder protocol configuration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0602.2.7" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2506 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: 0x0

4.7.134 S-0-2507, Phys. max. initialization speed

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-0602.2.8" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
S-0-2507 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: 0

4.7.135 S-0-2520, Phys. encoder resolution (analog)

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-0602.2.21" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
S-0-2520 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: s. Text

4.7.136 S-0-2521, Phys. encoder resolution (digital)

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-0602.2.22" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
S-0-2521 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: s. Text

4.7.137 S-0-2525, Phys. encoder type

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-0602.3.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
S-0-2525 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---	Default value: 65535

4.7.138 S-0-2526, Phys. encoder properties

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0602.3.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

Standard parameters

S-0-2526 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: +	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: s. Text / s. Text		Default value: 0x0

4.7.139 S-0-2532, Phys. max. initialization speed

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0602.3.8" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2532 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: 0

4.7.140 S-0-2545, Phys. encoder resolution (analog)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0602.3.21" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2545 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: s. Text

4.7.141 S-0-2546, Phys. encoder resolution (digital)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0602.3.22" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2546 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: s. Text

4.7.142 S-0-2550, Phys. encoder type

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0602.10.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2550 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: 65535

4.7.143 S-0-2551, Phys. encoder properties

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0602.10.2" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2551 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: +
	AXS:	min./max.: s. Text / s. Text Default value: 0x0

4.7.144 S-0-2556, Phys. encoder protocol configuration

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0602.10.7" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2556 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: 0x0

4.7.145 S-0-2557, Phys. max. initialization speed

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0602.10.8" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2557 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: 0

4.7.146 S-0-2570, Phys. encoder resolution (analog)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0602.10.21" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2570 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
	AXS:	min./max.: --- / --- Default value: s. Text

4.7.147 S-0-2571, Phys. encoder resolution (digital)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0602.10.22" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

Standard parameters

S-0-2571 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --	Data length: 4Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: s. Text

4.7.148 S-0-2700, Encoder status (input)

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-0610.1.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
S-0-2700 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---	

4.7.149 S-0-2720, Position, 32 bit (input), fine

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-0610.1.21" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
S-0-2720 - Attributes	Function: Par Memory: -- Unit: incr Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---	

4.7.150 S-0-2721, Position, 32 bit (input), coarse

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-0610.1.22" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
S-0-2721 - Attributes	Function: Par Memory: -- Unit: incr Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---	

4.7.151 S-0-2722, Marker position, 32 bit (input), fine

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-0610.1.23" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
S-0-2722 - Attributes	Function: Par Memory: -- Unit: incr Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---	Default value: ---	

4.7.152 S-0-2723, Marker position, 32 bit (input), coarse

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0610.1.24" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2723 - Attributes	Function: Par Memory: -- Unit: incr Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---
		Default value: ---

4.7.153 S-0-2725, Encoder status (input)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0610.2.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2725 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: AT + MDT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---
		Default value: ---

4.7.154 S-0-2745, Position, 32 bit (input), fine

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0610.2.21" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2745 - Attributes	Function: Par Memory: -- Unit: incr Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---
		Default value: ---

4.7.155 S-0-2746, Position, 32 bit (input), coarse

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0610.2.22" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2746 - Attributes	Function: Par Memory: -- Unit: incr Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
		Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / ---
		Default value: ---

4.7.156 S-0-2747, Marker position, 32 bit (input), fine

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0610.2.23" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

Standard parameters

S-0-2747 - Attributes	Function: Par Memory: -- Unit: incr Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: ---

4.7.157 S-0-2748, Marker position, 32 bit (input), coarse

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0610.2.24" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2748 - Attributes	Function: Par Memory: -- Unit: incr Cycl. tra.: AT	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.158 S-0-2800, Encoder data out configuration (input)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0611.1.12" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2800 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.159 S-0-2811, Encoder refresh time data out (input)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0611.1.12" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2811 - Attributes	Function: Par Memory: PARAM_SP Unit: us Cycl. tra.: --	Editable: SUBD:CM Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.160 S-0-2820, Resolution of position, (input)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0611.1.21" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2820 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.161 S-0-2821, Position overflow threshold, (input)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0611.1.22" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2821 - Attributes	Function: Par Memory: PARAM_SP Unit: incr Cycl. tra.: --	Editable: SUBD:CM Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 4Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: s. Text

4.7.162 S-0-2822, Absolute position range, (input)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0611.1.23" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2822 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 4Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: s. Text

4.7.163 S-0-2823, Extended position resolution (analog) (input)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0611.1.24" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2823 - Attributes	Function: Par Memory: PARAM_SP Unit: nm Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: -- Data length: 4Byte var. Format: DEC_OV Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: s. Text

4.7.164 S-0-2825, Encoder data out configuration (input)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0611.2.12" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2825 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: -- Extr. val. ch.: -- Comb. check: -- Data length: 2Byte Format: BIN Decim. pl.: 0 Set-depend.: --
	AXS:	min./max.: --- / --- Default value: 0x0

4.7.165 S-0-2836, Encoder refresh time data out (input)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0611.2.12" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	

Standard parameters

S-0-2836 - Attributes	Function: Par Memory: PARAM_SP Unit: us Cycl. tra.: --	Editable: SUBD:CM Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 4Byte Format: DEC_OV Decim. pl.: 3 Set-depend.: --
AXS:	min./max.: --- / ---		Default value: 0,000

4.7.166 S-0-2845, Resolution of position, (input)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0611.2.21" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2845 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: s. Text

4.7.167 S-0-2846, Position overflow threshold, (input)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0611.2.22" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2846 - Attributes	Function: Par Memory: PARAM_SP Unit: incr Cycl. tra.: --	Editable: SUBD:CM Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: s. Text

4.7.168 S-0-2847, Absolute position range, (input)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0611.2.23" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2847 - Attributes	Function: Par Memory: PARAM_SP Unit: -- Cycl. tra.: --	Editable: SUBD:CM Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: s. Text

4.7.169 S-0-2848, Extended position resolution (analog) (input)

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-0611.2.24" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-2848 - Attributes	Function: Par Memory: PARAM_SP Unit: nm Cycl. tra.: --	Editable: SUBD:CM Validity ch.: SUBD:CM->PM Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	Default value: s. Text

4.7.170 S-0-3500, Component Name

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1300.0.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
S-0-3500 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: s. Text
	AXS:	min./max.: --- / ---	Default value: ---

4.7.171 S-0-3502, Vendor Code

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1300.0.3" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
S-0-3502 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 2Byte Format: DEC_OV Decim. pl.: 0 Set-depend.: s. Text
	AXS:	min./max.: --- / ---	Default value: ---

4.7.172 S-0-3504, Vendor Device ID

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1300.0.5" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
S-0-3504 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: s. Text
	AXS:	min./max.: --- / ---	Default value: ---

4.7.173 S-0-3506, Hardware version

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1300.0.8" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
S-0-3506 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: s. Text
	AXS:	min./max.: --- / ---	Default value: ---

4.7.174 S-0-3508, Order Number

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1300.0.11" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		

Standard parameters

S-0-3508 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: s. Text
AXS:	min./max.: --- / ---		Default value: ---

4.7.175 S-0-3509, Serial number

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1300.0.12" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-3509 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.176 S-0-3515, Component Name

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1300.1.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-3515 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.177 S-0-3517, Vendor Code

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1300.1.3" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-3517 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.178 S-0-3518, Device Name

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1300.1.4" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-3518 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.179 S-0-3519, Vendor Device ID

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"S-0-1300.1.5" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			
S-0-3519 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: s. Text	
AXS:	min./max.: --- / ---		Default value: ---	

4.7.180 S-0-3521, Hardware version

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"S-0-1300.1.8" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			
S-0-3521 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: s. Text	
AXS:	min./max.: --- / ---		Default value: ---	

4.7.181 S-0-3522, Software revision

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"S-0-1300.1.9" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			
S-0-3522 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: s. Text	
AXS:	min./max.: --- / ---		Default value: ---	

4.7.182 S-0-3523, Order Number

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"S-0-1300.1.11" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			
S-0-3523 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: s. Text	
AXS:	min./max.: --- / ---		Default value: ---	

4.7.183 S-0-3524, Serial number

Allocation	Hardware Funct. package(s): Device parameter:	--		
Function	"S-0-1300.1.12" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).			

Standard parameters

S-0-3524 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: s. Text
AXS:	min./max.: --- / ---		Default value: ---

4.7.184 S-0-3530, Component Name

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1300.20.1" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-3530 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.185 S-0-3532, Vendor Code

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1300.20.3" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-3532 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.186 S-0-3533, Device Name

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1300.20.4" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-3533 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.187 S-0-3534, Vendor Device ID

Allocation	Hardware Funct. package(s): Device parameter:	--
Function	"S-0-1300.20.5" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).	
S-0-3534 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --
AXS:	min./max.: --- / ---	

4.7.188 S-0-3536, Hardware version

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1300.20.8" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
S-0-3536 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: s. Text
	AXS:	min./max.: --- / ---	Default value: ---

4.7.189 S-0-3537, Software revision

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1300.20.9" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
S-0-3537 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: s. Text
	AXS:	min./max.: --- / ---	Default value: ---

4.7.190 S-0-3538, Order Number

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1300.20.11" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
S-0-3538 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: s. Text
	AXS:	min./max.: --- / ---	Default value: ---

4.7.191 S-0-3539, Serial number

Allocation	Hardware Funct. package(s): Device parameter:	--	
Function	"S-0-1300.20.12" replacement parameter for communication interfaces which do not support any 32-bit IDNs (EIDN).		
S-0-3539 - Attributes	Function: Par Memory: -- Unit: -- Cycl. tra.: --	Editable: -- Validity ch.: -- Extr. val. ch.: -- Comb. check: --	Data length: 1Byte var. Format: ASCII Decim. pl.: 0 Set-depend.: s. Text
	AXS:	min./max.: --- / ---	Default value: ---

5

Service and support

Our worldwide service network provides an optimized and efficient support. Our experts offer you advice and assistance should you have any queries. You can contact us **24/7**.

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Our technology-oriented Competence Center in Lohr, Germany, is responsible for all your service-related queries for electric drive and controls.

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Internet: <http://www.boschrexroth.com>

Additional information on service, repair (e.g. delivery addresses) and training can be found on our internet sites.

Service worldwide

Outside Germany, please contact your local service office first. For hotline numbers, refer to the sales office addresses on the internet.

Preparing information

To be able to help you more quickly and efficiently, please have the following information ready:

- Detailed description of malfunction and circumstances
- Type plate specifications of the affected products, in particular type codes and serial numbers
- Your contact data (phone and fax number as well as your e-mail address)

Explanation of the parameter attributes

Comb. check:

Combination check

--: When a value is written to it, the operating data is **not** checked for a valid combination (bit lists).

+: When a value is written to it, the operating data is checked for a valid combination (bit lists).

Cycl. tra.:

Cyclically transmittable

--: The operating data can neither be configured as a cyclic data in the master data telegram nor in the drive telegram.

AT: The operating data can be configured as a cyclic data in the drive telegram.

MDT: The operating data can be configured as a cyclic data in the master data telegram.

AT+MDT: The operating data can be configured as a cyclic data in the master data telegram and in the drive telegram.

Data length:

Data length

2 bytes: The data length of the operating data is 2 bytes.

4 bytes: The data length of the operating data is 4 bytes.

8 bytes: The data length of the operating data is 8 bytes.

1 byte var: The operating data is of variable length (list). The length of a data element is 1 byte.

2 byte var: The operating data is of variable length (list). The length of a data element is 2 bytes.

4 byte var: The operating data is of variable length (list). The length of a data element is 4 bytes.

8 byte var: The operating data is of variable length (list). The length of a data element is 8 bytes.

Decim. pl.:

Decimal place

Indicates the number of decimal places with display formats DEC_OV and DEC_MV.

Explanation of the parameter attributes

Example: 6 decimal places,
transmitted value: 30 000 ⇒ display value 0.030000.

Default

Default value

A parameter is set to its default value, when "[S-0-0262](#), C07_x Load defaults procedure command" is executed. This is done by:

- pressing the <ESC> key, when the display shows the message "PL" or
- starting command "[S-0-0262](#)" with "[P-0-4090](#), Configuration for loading default values" (factory settings)="1".

The default value is only relevant for parameters with attribute PARAM_SP or FIX_IDN_SP. Deviating "configurable factory default values" might have been activated.

Editable:

Editability of the operating data:

- : Cannot be edited.
- ++: Can always be edited.
- P2: Can only be edited in communication phase 2.
- P23: Can be edited in communication phases 2 and 3.
- P3: Can only be edited in communication phase 3.
- P4: Can only be edited in communication phase 4.
- PM: Can only be edited in the parameter mode.
- OM: Can only be edited in the operating mode.
- CCD_P2: Can only be edited in CCD phase 2.
- SCM: Can only be edited in the SMO configuration mode.

Extr. val. ch.:

Extreme value check

- (no): When a value is written to it, the operating data is not checked for its extreme values.
- + (yes): When a value is written to it, the operating data is checked for its extreme values.

Format:

Format of the operating data

BIN: Binary number

HEX: Hexadecimal number
DEC_OV: Unsigned decimal number
DEC_MV: Signed decimal number
ASCII: Text
IDN: Ident number
FLOAT: Floating-point number
TIME: Time in "Sercos time" format

Function:

Par: The parameter is used to display, set and configure values.

Cmd: The parameter is used to execute commands.

Memory:

Storage location. This parameter attribute specifies where the parameter is stored.

--: The operating data is not buffered in the drive, the value after switching on the drive controller is not defined.

FIX_IDN_SP: The operating data is stored in the non-volatile memory on the control panel.

PARAM_SP: The operating data is stored in the non-volatile memory on the control panel.

ON_BOARD_SP: The operating data is stored in the non-volatile memory on the control section.

RETAIN_KUNDE: In the event of a control voltage failure, the operating data is stored in the non-volatile memory on the control section.

RETAIN_GERAET: In the event of a control voltage failure, the operating data is stored in the non-volatile memory on the device.

FEEDBACK, FEEDB_I2C: The operating data is stored in the non-volatile memory of the motor feedback (only in the case of Rexroth motors with data feedback).

LT_SP: The operating data is stored in the non-volatile memory on the power section.

min./max.

Minimum value/maximum value

The minimum value and maximum value of the parameter are specified depending on the firmware variant.

Explanation of the parameter attributes

Set-depend.:

Set switchable

With parameter set switching available, these parameters are available 8 times as a maximum (parameter set 0 to parameter set 7, to parameter set 3 for MPM).

--: Available in all parameter sets, not assigned to any parameter group.

Grp. 1: The parameter is parameter set switchable, when "group 1, application parameters" has been activated.

Grp. 2: The parameter is parameter set switchable, when "group 2, control loop parameters" has been activated.

Grp. 3: The parameter is parameter set switchable, when "group 3, load gear parameters" has been activated.

Grp. 4: The parameter is parameter set switchable, when "group 4, winding parameters" has been activated.

Grp. 5: The parameter is parameter set switchable, when "group 5, motor control and encoder 1 parameters" has been activated.

See also Functional Description "Parameter set switching"

Unit:

If existing, the corresponding unit of the parameter is specified.

Validity ch.:

Validity check

--: The operating data is not checked for validity.

P2⇒P3: The operating data is checked in the "communication phase 3 transition check" command.

P3⇒P4: The operating data is checked in the "communication phase 4 transition check" command.

PM⇒OM: The operating data is checked in the "exit parameterization level procedure" command.

Verify:

Parameters of the integrated safety technology have to be verified by the user during commissioning. The verification ensures that a parameter has been transmitted correctly to the device.

+: The parameter value has to be verified by the user during commissioning.

-: The parameter value does **not** have to be verified by the user during commissioning.

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