

# Faults and alarms

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## 4.1 Overview of faults and alarms

### 4.1.1 General information on faults and alarms

#### Fault/alarm displays

In the case of a fault, the drive signals the corresponding fault(s) and/or alarm(s).

The following methods are available for displaying faults and alarms:

- Display via the fault and alarm buffer for PROFIBUS.
- In online operation, display via the commissioning software.

#### Differences between faults and alarms

The differences between faults and alarms are as follows:

Table 4-1 Differences between faults and alarms

Type	Description
Faults	<p>What happens when a fault occurs?</p> <ul style="list-style-type: none"> <li>• The appropriate fault reaction is initiated.</li> <li>• Status signal ZSW1.3 is set.</li> <li>• The fault is entered into the fault buffer.</li> </ul> <p>How are faults removed?</p> <ul style="list-style-type: none"> <li>• Remove the original cause of the fault.</li> <li>• Acknowledge the fault.</li> </ul>
Alarms	<p>What happens when an alarm occurs?</p> <ul style="list-style-type: none"> <li>• Status signal ZSW1.7 is set.</li> <li>• The alarm is entered into the alarm buffer.</li> </ul> <p>How are alarms removed?</p> <ul style="list-style-type: none"> <li>• Alarms acknowledge themselves. If the cause of the alarm is no longer present, they automatically reset themselves.</li> </ul>

## Fault reactions

The following fault reactions are defined:

Table 4-2 Fault reactions

List	PROFIdrive	Reaction	Description
NONE	-	None	No reaction when a fault occurs.
OFF1	ON/ OFF	Brake along the ramp-function generator down ramp followed by pulse inhibit	<b>Closed-loop speed control (p50084 = 1)</b> <ul style="list-style-type: none"> <li>n_set = 0 is input immediately to brake the drive along the ramp-function generator down ramp.</li> <li>When zero speed is detected, the motor holding brake (if parameterized) is closed. The pulses are suppressed when the closing time (p50088) expires.</li> </ul> <p>Zero speed is detected when the actual speed value falls below the speed threshold (p50370).</p> <b>Closed-loop torque control (p50084 = 2)</b> <ul style="list-style-type: none"> <li>The following applies for closed-loop torque control: Reaction as for OFF2.</li> </ul>
OFF2	COAST STOP	Internal/external pulse inhibit	<b>Closed-loop speed and torque control</b> <ul style="list-style-type: none"> <li>Immediate pulse suppression, the drive "coasts" to a standstill.</li> <li>Switching on inhibited is activated.</li> </ul>
OFF3	QUICK STOP	Brake along the OFF3 down ramp followed by pulse inhibit	<b>Closed-loop speed control (p50084 = 1)</b> <ul style="list-style-type: none"> <li>n_set = 0 is input immediately to brake the drive along the OFF3 down ramp (p50296).</li> <li>When zero speed is detected, the motor holding brake (if parameterized) is closed. The pulses are suppressed when the holding brake's closing time (p50088) expires.</li> </ul> <p>Zero speed is detected when the actual speed value falls below the speed threshold (p50370).</p> <ul style="list-style-type: none"> <li>Switching on inhibited is activated.</li> </ul> <b>Closed-loop torque control (p50084 = 2)</b> <ul style="list-style-type: none"> <li>Reaction as for OFF2.</li> </ul>
STOP2	-	OFF2	For SINAMICS DCM, these fault reactions have the same effect as for OFF2.
IASC/ DCBRAKE			
ENCODER			

## Acknowledgment of faults

The list of faults and alarms specifies how to acknowledge each fault after the cause has been removed.

Table 4-3 Acknowledgment of faults

Acknowledgment	Description
POWER ON	<p>The fault is acknowledged by a POWER ON (switch drive unit off and on again).</p> <p><b>Note:</b> If this action has not removed the fault cause, the fault is displayed again immediately after power up.</p>
IMMEDIATELY	<p>Faults can be acknowledged on one drive object (Points 1 to 3) or on all drive objects (Point 4) as follows:</p> <p>1 Acknowledge by setting parameter: p3981 = 0 --&gt; 1</p> <p>2 Acknowledge via binector inputs:</p> <p>p2103            BI: 1. Acknowledge faults p2104            BI: 2. Acknowledge faults p2105            BI: 3. Acknowledge faults</p> <p>3 Acknowledge using a PROFIBUS control signal: STW1.7 = 0 --&gt; 1 (edge)</p> <p>4 Acknowledge all faults</p> <p>p2102            BI: Acknowledge all faults</p> <p>All of the faults on all of the drive objects of the drive system can be acknowledged using this binector input.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• These faults can also be acknowledged by a POWER ON.</li> <li>• If the cause of the fault has not been removed, then the fault will continue to be displayed after acknowledgment.</li> </ul>
PULSE INHIBIT	<p>The fault can only be acknowledged when the pulses are inhibited (r0899.11 = 0).</p> <p>The same options are available for acknowledging as described under acknowledge IMMEDIATELY.</p>

### **Saving the fault buffer when switching off**

The contents of the fault buffer are saved to the non-volatile memory when the Control Unit is switched off, i.e. the fault buffer history is still available when the unit is switched on again.

The fault buffer of a drive object comprises the following parameters:

- r0945[0...63], r0947[0...63], r0948[0...63], r0949[0...63]
- r2109[0...63], r2130[0...63], r2133[0...63], r2136[0...63]

The fault buffer contents can be deleted manually as follows:

- Delete fault buffer for all drive objects:  
p2147 = 1 --> p2147 = 0 is automatically set after execution.
- Delete fault buffer for a specific drive object:  
p0952 = 0 --> The parameter belongs to the specified drive object.

The fault buffer contents are automatically deleted when the following occurs:

- Restore factory setting (p0009 = 30 and p0976 = 1).
- Download with modified structure (e.g. number of drive objects changed).
- Power-up after other parameter values have been loaded (e.g. p0976 = 10).
- Upgrade firmware to later version.

### 4.1.2 Explanation of the list of faults and alarms

The data in the following example have been chosen at random. The information listed below is the maximum amount of information that a description can contain. Some of the information is optional.

The "List of faults and alarms" (Page 870) has the following layout:

----- **Start of example** -----

<b>Axxxxx (F, N)</b>	<b>Fault location (optional): Name</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Text of the message class (number according to PROFIdrive)
<b>Drive object:</b>	List of objects.
<b>Reaction:</b>	NONE
<b>Acknowledgment:</b>	NONE
<b>Cause:</b>	Description of possible causes. Fault value (r0949, interpret format): or alarm value (r2124, interpret format): (optional) Information about fault or alarm values (optional).
<b>Remedy:</b>	Description of possible remedies.
Reaction to F:	NONE (OFF1, OFF2, OFF3)
Acknowledgment for F:	IMMEDIATELY (POWER ON)
Reaction to N:	NONE
Acknowledgment for N:	NONE

----- **End of example** -----

<b>Axxxxx</b>	<b>Alarm xxxxx</b>
<b>Axxxxx (F, N)</b>	<b>Alarm xxxxx (message type can be changed in F or N)</b>
<b>Fxxxxx</b>	<b>Fault xxxxx</b>
<b>Fxxxxx (A, N)</b>	<b>Fault xxxxx (message type can be changed in A or N)</b>
<b>Nxxxxx</b>	<b>No message</b>
<b>Nxxxxx (A)</b>	<b>No message (message type can be changed in A)</b>

A message comprises a letter followed by the relevant number.

The meaning of the letters is as follows:

- A means "Alarm"
- F means "Fault"
- N means "No message" or "Internal message" (or "No report")

The optional brackets indicate whether the type specified for this message can be changed and which message types can be adjusted via parameters (p2118, p2119).

Information about reaction and acknowledgment is specified independently for a message with adjustable message type (e.g. reaction to F, acknowledgment for F).

**Note:**

You can change the default properties of a fault or alarm by setting parameters.

References: SINAMICS DC MASTER operating instructions

The "List of faults and alarms" (Page 870) supplies information referred to the properties of a message set as default. If the properties of a specific message are changed, the corresponding information may have to be modified in this list.

**Fault location (optional): Name**

The fault location (optional), the name of the fault or alarm and the message number are all used to identify the message (e.g. with the commissioning software).

**Message value:**

The information provided under the message value informs you about the composition of the fault/alarm value.

**Example:**

Message value: Component number: %1, fault cause: %2

This message value contains information about the component number and cause of the fault. The entries %1 and %2 are placeholders, which are filled appropriately in online operation (e.g. with the commissioning software).

**Message class:**

For each message, specifies the associated message class with the following structure:

Text of the message class (number according to PROFIdrive)

The message classes are transferred at different interfaces to higher-level control systems and their associated display and operating units.

The message classes that are available are shown in Table "Message classes and coding of various diagnostic interfaces" (Page 864). In addition to the text of the message class and their number according to PROFIdrive – as well as a brief help text regarding the cause and remedy – they also include information about the various diagnostic interfaces:

- PN (hex)

Specifies the "Channel error type" of the PROFINET channel diagnostics.

When activating the channel diagnostics, using the GSDML file, the texts listed in the table can be displayed.

- DS1 (dec)

Specifies the bit number in data set DS1 of the diagnostic alarm for SIMATIC S7.

When the diagnostic alarms are activated, the texts listed in the table can be displayed.

- DP (dec)

Specifies the "Error type" of the channel-related diagnostics for PROFIBUS.

When the channel diagnostics are activated, the texts listed in the standard and the GSD file can be displayed.

## 4.1 Overview of faults and alarms

- ET 200 (dec)

Specifies the "Error type" of the channel-related diagnostics for the SIMATIC ET 200pro FC-2 device.

When the channel diagnostics are activated, the texts listed in the standard and the GSD file of the ET 200pro can be displayed.

- NAMUR (r3113.x)

Specifies the bit number in parameter r3113.

For the interfaces DP, ET 200, NAMUR, in some instances, the message classes are combined.

Table 4-4 Message classes and coding of various diagnostic interfaces

Text of the message class (number according to PROFIdrive) Cause and remedy.	Diagnostics interface				
	PN (hex)	DS1 (dec)	DP (dec)	ET 200 (dec)	NAMUR (r3113.x)
<b>Hardware/software errors (1)</b> A hardware or software malfunction was detected. Carry out a POWER ON for the relevant component. If it occurs again, contact the hotline.	9000	0	16	9	0
<b>Line fault (2)</b> A line supply fault has occurred (phase failure, voltage level ...). Check the line supply and fuses. Check the supply voltage. Check the wiring.	9001	1	17	24	1
<b>Supply voltage fault (3)</b> An electronics supply voltage fault (48 V, 24 V, 5 V ...) was detected. Check the wiring. Check the voltage level.	9002	2	2 <sup>1</sup> 3 <sup>2</sup>	2 <sup>1</sup> 3 <sup>2</sup>	15
<b>DC-link overvoltage (4)</b> The DC-link voltage has assumed an inadmissibly high value. Check the dimensioning of the system (line supply, reactor, voltages). Check the infeed settings.	9003	3	18	24	2
<b>Power electronics fault (5)</b> An impermissible operating state of the power electronics was detected (overcurrent, overtemperature, IGBT failure ...). Check compliance with the permissible load cycles. Check the ambient temperatures (fan).	9004	4	19	24	3
<b>Overtemperature of the electronic component (6)</b> The temperature in the component has exceeded the highest permissible limit. Check the ambient temperature / control cabinet ventilation.	9005	5	20	5	4
<b>Ground fault / inter-phase short-circuit detected (7)</b> A ground fault / inter-phase short-circuit was detected in the power cables or in the motor windings. Check the power cables (connection). Check the motor.	9006	6	21	20	5
<b>Motor overload (8)</b> The motor was operated outside the permissible limits (temperature, current, torque ...). Check the load cycles and set limits. Check the ambient temperature / motor cooling.	9007	7	22	24	6



Table 4-4 Message classes and coding of various diagnostic interfaces, continued

Text of the message class (number according to PROFIdrive) Cause and remedy.	Diagnostics interface				
	PN (hex)	DS1 (dec)	DP (dec)	ET 200 (dec)	NAMUR (r3113.x)
<b>Communication to the higher-level controller faulted (9)</b> The communication to the higher-level controller (internal coupling, PROFIBUS, PROFINET ...) is faulted or interrupted. Check the state of the higher-level controller. Check the communication connection/-wiring. Check the bus configuration/cycles.	9008	8	23	19	7
<b>Safety monitoring channel has detected an error (10)</b> A safe operation monitoring function has detected an error.	9009	9	24	25	8
<b>Actual position/speed value incorrect or not available (11)</b> An illegal signal state was detected while evaluating the encoder signals (track signals, zero marks, absolute values ...). Check the encoder / state of the encoder signals. Observe the maximum permissible frequencies.	900A	10	25	29	9
<b>Internal (DRIVE-CLiQ) communication faulted (12)</b> The internal communication between the SINAMICS components is faulted or interrupted. Check the DRIVE-CLiQ wiring. Ensure an EMC-compliant installation. Observe the maximum permissible quantity structures / cycles.	900B	11	26	31	10
<b>Infeed fault (13)</b> The infeed is faulty or has failed. Check the infeed and its environment (line supply, filters, reactors, fuses ...). Check the infeed control.	900C	12	27	24	11
<b>Braking controller / Braking Module faulted (14)</b> The internal or external Braking Module is faulted or overloaded (temperature). Check the connection/state of the Braking Module. Comply with the permissible number of braking operations and their duration.	900D	13	28	24	15
<b>Line filter fault (15)</b> The line filter monitoring has detected an excessively high temperature or another impermissible state. Check the temperature / temperature monitoring. Check the configuration to ensure that it is permissible (filter type, infeed, thresholds).	900E	14	17	24	15
<b>External measured value / signal state outside of the permissible range (16)</b> A measured value / signal state read in via the input area (digital/analog/temperature) has assumed an impermissible value/state. Identify and check the relevant signal. Check the set thresholds.	900F	15	29	26	15
<b>Application / technological function faulty (17)</b> The application / technological function has exceeded a (set) limit (position, velocity, torque ...). Identify and check the relevant limit. Check the setpoint specification of the higher-level controller.	9010	16	30	9	15

Table 4-4 Message classes and coding of various diagnostic interfaces, continued

Text of the message class (number according to PROFIdrive) Cause and remedy.	Diagnostics interface				
	PN (hex)	DS1 (dec)	DP (dec)	ET 200 (dec)	NAMUR (r3113.x)
<b>Error in the parameterization/configuration/commissioning procedure (18)</b> An error was identified in the parameterization or in a commissioning procedure, or the parameterization does not match the actual device configuration. Determine the precise cause of the fault using the commissioning tool. Adapt the parameterization or device configuration.	9011	17	31	16	15
<b>General drive fault (19)</b> Group fault. Determine the precise cause of the fault using the commissioning tool.	9012	18	9	9	15
<b>Auxiliary unit fault (20)</b> The monitoring of an auxiliary unit (incoming transformer, cooling unit ...) has detected an illegal state. Determine the exact cause of the fault and check the relevant device.	9013	19	29	26	15

1. Undervoltage condition of the electronics power supply
2. Overvoltage condition of the electronics power supply

**Drive object:**

Each message (fault/alarm) specifies the drive object in which it can be found.

A message can belong to either one, several, or all drive objects.

**Reaction: Default fault reaction (adjustable fault reaction)**

Specifies the default reaction in the event of a fault.

The optional parentheses indicate whether the default fault reactions can be changed and which fault reactions can be adjusted via parameters (p2100, p2101).

**Note**

See Table "Fault reactions" (Page 859)

**Acknowledgment: Default acknowledgment (adjustable acknowledgment)**

Specifies the default method of acknowledging faults after the cause has been eliminated.

The optional parentheses indicate whether the default acknowledgment can be changed and which acknowledgment can be adjusted via parameters (p2126, p2127).

**Note**

See Table "Acknowledgment of faults" (Page 860)

**Cause:**

Description of the possible causes of the fault/alarm. A fault or alarm value can also be specified (optional).

Fault value (r0949, format):

The fault value is entered in the fault buffer in r0949[0...63] and specifies additional, more precise information about a fault.

Alarm value (r2124, format):

The alarm value specifies additional, more precise information about an alarm.

The alarm value is entered in the alarm buffer in r2124[0...7] and specifies additional, more precise information about an alarm.

**Remedy:**

Description of the methods available for removing the cause of the active fault or alarm.

**WARNING**

In certain cases, servicing and maintenance personnel are responsible for choosing a suitable method to remove the fault cause.

### 4.1.3 Number ranges of faults and alarms

**Note:**

The following number ranges represent an overview of all faults and alarms used in the SINAMICS drive family.

The faults and alarms for the product described in this List Manual are described in detail in "List of faults and alarms" (Page 870).

Faults and alarms are organized into the following number ranges:

Table 4-5 Number ranges of faults and alarms

of	To	Area
1000	3999	Control Unit
4000	4999	Reserved
5000	5999	Power section
6000	6899	Infeed
6900	6999	Braking Module
7000	7999	Drive
8000	8999	Option Board
9000	12999	Reserved
13000	13020	Licensing
13021	13099	Reserved
13100	13102	Know-how protection
13103	19999	Reserved
20000	29999	OEM
30000	30999	DRIVE-CLiQ component power unit
31000	31999	DRIVE-CLiQ component encoder 1
32000	32999	DRIVE-CLiQ component encoder 2  <b>Note</b> Faults that occur are automatically output as an alarm if the encoder is parameterized as a direct measuring system and does not intervene in the motor control.
33000	33999	DRIVE-CLiQ component encoder 3  <b>Note</b> Faults that occur are automatically output as an alarm if the encoder is parameterized as a direct measuring system and does not intervene in the motor control.
34000	34999	Voltage Sensing Module (VSM)
35000	35199	Terminal Module 54F (TM54F)
35200	35999	Terminal Module 31 (TM31)
36000	36999	DRIVE-CLiQ Hub Module
37000	37999	HF Damping Module

Table 4-5 Number ranges of faults and alarms, continued

of	To	Area
40000	40999	Controller Extension 32 (CX32)
41000	48999	Reserved
49000	49999	SINAMICS GM/SM/GL
50000	50499	Communication Board (COMM BOARD)
50500	59999	OEM Siemens
60000	65535	SINAMICS DC MASTER (closed-loop DC current control)

## 4.2 List of faults and alarms

Product: SINAMICS DC MASTER, Version: 4702900, Language: eng  
Objects: CU\_DC, CU\_DC\_R, CU\_DC\_R\_S, CU\_DC\_S, DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31  
Product: SINAMICS DC MASTER OA, Version: 1401800, Language: eng  
Objects: DC\_CTRL

### F01000

#### Internal software error

**Message value:** Module: %1, line: %2  
**Message class:** Hardware / software error (1)  
**Drive object:** All objects  
**Reaction:** OFF2  
**Acknowledge:** POWER ON  
**Cause:** An internal software error has occurred.  
Fault value (r0949, interpret hexadecimal):  
Only for internal Siemens troubleshooting.  
**Remedy:**  
- evaluate fault buffer (r0945).  
- carry out a POWER ON (power off/on) for all components.  
- if required, check the data on the non-volatile memory (e.g. memory card).  
- upgrade firmware to later version.  
- contact the Hotline.  
- replace the Control Unit.

### F01001

#### FloatingPoint exception

**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** All objects  
**Reaction:** OFF2  
**Acknowledge:** POWER ON  
**Cause:** An exception occurred during an operation with the FloatingPoint data type.  
The error may be caused by the basic system or an OA application (e.g., FBLOCKS, DCC).  
Fault value (r0949, interpret hexadecimal):  
Only for internal Siemens troubleshooting.  
Note:  
Refer to r9999 for further information about this fault.  
r9999[0]: Fault number.  
r9999[1]: Program counter at the time when the exception occurred.  
r9999[2]: Cause of the FloatingPoint exception.  
Bit 0 = 1: Operation invalid  
Bit 1 = 1: Division by zero  
Bit 2 = 1: Overflow  
Bit 3 = 1: Underflow  
Bit 4 = 1: Inaccurate result  
**Remedy:**  
- carry out a POWER ON (power off/on) for all components.  
- check configuration and signals of the blocks in FBLOCKS.  
- check configuration and signals of DCC charts.  
- upgrade firmware to later version.  
- contact the Hotline.

### F01002

#### Internal software error

**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** All objects  
**Reaction:** OFF2  
**Acknowledge:** IMMEDIATELY  
**Cause:** An internal software error has occurred.

**Remedy:**

Fault value (r0949, interpret hexadecimal):  
Only for internal Siemens troubleshooting.

- carry out a POWER ON (power off/on) for all components.
- upgrade firmware to later version.
- contact the Hotline.

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**F01003      Acknowledgement delay when accessing the memory**

**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** All objects  
**Reaction:** OFF2  
**Acknowledge:** IMMEDIATELY  
**Cause:** A memory area was accessed that does not return a "READY".  
 Fault value (r0949, interpret hexadecimal):  
 Only for internal Siemens troubleshooting.

**Remedy:**

- carry out a POWER ON (power off/on) for all components.
- contact the Hotline.

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**N01004 (F, A)      Internal software error**

**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** An internal software error has occurred.  
 Fault value (r0949, hexadecimal):  
 Only for internal Siemens troubleshooting.

**Remedy:**

- read out diagnostics parameter (r9999).
- contact the Hotline.

See also: r9999 (Software error internal supplementary diagnostics)

Reaction upon F: OFF2  
 Acknowl. upon F: POWER ON  
 Reaction upon A: NONE  
 Acknowl. upon A: NONE

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**F01005      Firmware download for DRIVE-CLiQ component unsuccessful**

**Message value:** Component number: %1, fault cause: %2  
**Message class:** Hardware / software error (1)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** IMMEDIATELY  
**Cause:** It was not possible to download the firmware to a DRIVE-CLiQ component.  
 Fault value (r0949, interpret hexadecimal):  
 yyxxxx hex: yy = component number, xxxx = fault cause  
 xxxx = 000B hex = 11 dec:  
 DRIVE-CLiQ component has detected a checksum error.  
 xxxx = 000F hex = 15 dec:  
 The selected DRIVE-CLiQ component did not accept the contents of the firmware file.  
 xxxx = 0012 hex = 18 dec:  
 Firmware version is too old and is not accepted by the component.  
 xxxx = 0013 hex = 19 dec:  
 Firmware version is not suitable for the hardware release of the component.  
 xxxx = 0065 hex = 101 dec:  
 After several communication attempts, no response from the DRIVE-CLiQ component.

xxxx = 008B hex = 139 dec:

Initially, a new boot loader is loaded (must be repeated after POWER ON).

xxxx = 008C hex = 140 dec:

Firmware file for the DRIVE-CLiQ component not available on the memory card.

xxxx = 008D hex = 141 dec:

An inconsistent length of the firmware file was signaled. The firmware download may have been caused by a loss of connection to the firmware file. This can occur during a project download/reset in the case of a SINAMICS Integrated Control Unit, for example.

xxxx = 008F hex = 143 dec:

Component has not changed to the mode for firmware download. It was not possible to delete the existing firmware.

xxxx = 0090 hex = 144 dec:

When checking the firmware that was downloaded (checksum), the component detected a fault. It is possible that the file on the memory card is defective.

xxxx = 0091 hex = 145 dec:

Checking the loaded firmware (checksum) was not completed by the component in the appropriate time.

xxxx = 009C hex = 156 dec:

Component with the specified component number is not available (p7828).

xxxx = Additional values:

Only for internal Siemens troubleshooting.

**Remedy:**

- check the selected component number (p7828).
- check the DRIVE-CLiQ wiring.
- save suitable firmware file for download in the directory "/siemens/sinamics/code/sac/".
- use a component with a suitable hardware version
- after POWER ON has been carried out again for the DRIVE-CLiQ component, download firmware again. Depending on p7826, the firmware will be automatically downloaded.

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**A01006**

**Firmware update for DRIVE-CLiQ component required**

**Message value:** Component number: %1

**Message class:** General drive fault (19)

**Drive object:** All objects

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The firmware of a DRIVE-CLiQ component must be updated as there is no suitable firmware or firmware version in the component for operation with the Control Unit.

Alarm value (r2124, interpret decimal):

Component number of the DRIVE-CLiQ component.

**Remedy:**

Firmware update using the commissioning software:

The firmware version of all of the components on the "Version overview" page can be read in the Project Navigator under "Configuration" of the associated drive unit and an appropriate firmware update can be carried out.

Firmware update via parameter:

- take the component number from the alarm value and enter into p7828.
- start the firmware download with p7829 = 1.

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**A01007**

**POWER ON for DRIVE-CLiQ component required**

**Message value:** Component number: %1

**Message class:** General drive fault (19)

**Drive object:** All objects

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A DRIVE-CLiQ component must be powered up again (POWER ON) (e.g. due to a firmware update).

Alarm value (r2124, interpret decimal):

Component number of the DRIVE-CLiQ component.

Note:

For a component number = 1, a POWER ON of the Control Unit is required.



**Remedy:**

- Switch off the power supply of the specified DRIVE-CLiQ component and switch it on again.
- For SINUMERIK, auto commissioning is prevented. In this case, a POWER ON is required for all components and the auto commissioning must be restarted.

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**F01010 Drive type unknown**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** IMMEDIATELY  
**Cause:** An unknown drive type was found.

Fault value (r0949, interpret decimal):  
 Drive object number (refer to p0101, p0107).

**Remedy:**

- replace Power Module.
- carry out a POWER ON (power off/on) for all components.
- upgrade firmware to later version.
- contact the Hotline.

---

**F01011 (N) Download interrupted**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** IMMEDIATELY  
**Cause:** The project download was interrupted.  
 Fault value (r0949, interpret decimal):  
 1: The user prematurely interrupted the project download.  
 2: The communication cable was interrupted (e.g. cable breakage, cable withdrawn).  
 3: The project download was prematurely ended by the commissioning software (e.g. STARTER, SCOUT).  
 100: Different versions between the firmware version and project files which were loaded by loading into the file system "Download from memory card".

Note:  
 The response to an interrupted download is the state "first commissioning".

**Remedy:**

- check the communication cable.
- download the project again.
- boot from previously saved files (power-down/power-up or p0976).
- when loading into the file system (download from memory card), use the matching version.

Reaction upon N: NONE  
 Acknowl. upon N: NONE

---

**F01015 Internal software error**

**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** All objects  
**Reaction:** OFF2  
**Acknowledge:** POWER ON  
**Cause:** An internal software error has occurred.

Fault value (r0949, interpret decimal):  
 Only for internal Siemens troubleshooting.

**Remedy:**

- carry out a POWER ON (power off/on) for all components.
- upgrade firmware to later version.
- contact the Hotline.

<b>A01016 (F)</b>	<b>Firmware changed</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	At least one firmware file in the directory was illegally changed on the non-volatile memory (memory card/device memory) with respect to the version when shipped from the factory. Alarm value (r2124, interpret decimal): 0: Checksum of one file is incorrect. 1: File missing. 2: Too many files. 3: Incorrect firmware version. 4: Incorrect checksum of the back-up file.
<b>Remedy:</b>	For the non-volatile memory for the firmware (memory card/device memory), restore the delivery condition. Note: The file involved can be read out using parameter r9925. The status of the firmware check is displayed using r9926. See also: r9925 (Firmware file incorrect), r9926 (Firmware check status)
Reaction upon F:	OFF2
Acknowl. upon F:	POWER ON
<b>A01017</b>	<b>Component lists changed</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	On the memory card, one file in the directory /SIEMENS/SINAMICS/DATA or /ADDON/SINAMICS/DATA has been illegally changed with respect to that supplied from the factory. No changes are permitted in this directory. Alarm value (r2124, interpret decimal): zyx dec: x = Problem, y = Directory, z = File name x = 1: File does not exist. x = 2: Firmware version of the file does not match the software version. x = 3: File checksum is incorrect. y = 0: Directory /SIEMENS/SINAMICS/DATA/ y = 1: Directory /ADDON/SINAMICS/DATA/ z = 0: File MOTARM.ACX z = 1: File MOTSRM.ACX z = 2: File MOTSLM.ACX z = 3: File ENCDATA.ACX z = 4: File FILTDATA.ACX z = 5: File BRKDATA.ACX z = 6: File DAT_BEAR.ACX z = 7: File CFG_BEAR.ACX z = 8: File ENC_GEAR.ACX
<b>Remedy:</b>	For the file on the memory card involved, restore the status originally supplied from the factory.
<b>F01018</b>	<b>Bootling has been interrupted several times</b>
<b>Message value:</b>	-
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	POWER ON
<b>Cause:</b>	Module bootling was interrupted several times. As a consequence, the module boots with the factory setting.

Possible reasons for booting being interrupted:

- power supply interrupted.
- CPU crashed.
- parameterization invalid.

**Remedy:**

- carry out a POWER ON (power off/on). After switching on, the module reboots from the valid parameterization (if available).

- restore the valid parameterization.

Examples:

a) Carry out a first commissioning, save, carry out a POWER ON (switch-off/switch-on).

b) Load another valid parameter backup (e.g. from the memory card), save, carry out a POWER ON (switch-off/switch-on).

Note:

If the fault situation is repeated, then this fault is again output after several interrupted boots.

---

**A01019 Writing to the removable data medium unsuccessful**

**Message value:**

-

**Message class:**

Hardware / software error (1)

**Drive object:**

All objects

**Reaction:**

NONE

**Acknowledge:**

NONE

**Cause:**

The write access to the removable data medium was unsuccessful.

**Remedy:**

Remove and check the removable data medium. Then run the data backup again.

---

**A01020 Writing to RAM disk unsuccessful**

**Message value:**

-

**Message class:**

Hardware / software error (1)

**Drive object:**

All objects

**Reaction:**

NONE

**Acknowledge:**

NONE

**Cause:**

A write access to the internal RAM disk was unsuccessful.

**Remedy:**

Adapt the file size for the system logbook to the internal RAM disk (p9930).

See also: p9930 (System logbook activation)

---

**F01023 Software timeout (internal)**

**Message value:**

%1

**Message class:**

Hardware / software error (1)

**Drive object:**

All objects

**Reaction:**

NONE

**Acknowledge:**

IMMEDIATELY

**Cause:**

An internal software timeout has occurred.

Fault value (r0949, interpret decimal):

Only for internal Siemens troubleshooting.

**Remedy:**

- carry out a POWER ON (power off/on) for all components.

- upgrade firmware to later version.

- contact the Hotline.

---

**F01030 Sign-of-life failure for master control**

**Message value:**

-

**Message class:**

Communication error to the higher-level control system (9)

**Drive object:**

DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:**

OFF3 (IASC/DCBRK, NONE, OFF1, OFF2, STOP2)

**Acknowledge:**

IMMEDIATELY

**Cause:**

For active PC master control, no sign-of-life was received within the monitoring time.

The master control was returned to the active BICO interconnection.

## 4 Faults and alarms

### 4.2 List of faults and alarms

**Remedy:** Set the monitoring time higher at the PC or, if required, completely disable the monitoring function.  
For the commissioning software, the monitoring time is set as follows:  
<Drive> -> Commissioning -> Control panel -> Button "Fetch master control" -> A window is displayed to set the monitoring time in milliseconds.  
Notice:  
The monitoring time should be set as short as possible. A long monitoring time means a late response when the communication fails!

---

#### **F01031 Sign-of-life failure for OFF in REMOTE**

**Message value:** -  
**Message class:** Communication error to the higher-level control system (9)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF3 (IASC/DCBRK, NONE, OFF1, OFF2, STOP2)  
**Acknowledge:** IMMEDIATELY  
**Cause:** With the "OFF in REMOTE" mode active, no sign-of-life was received within 3 seconds.  
**Remedy:** - Check the data cable connection at the serial interface for the Control Unit (CU) and operator panel.  
- Check the data cable between the Control Unit and operator panel.

---

#### **A01032 (F) ACX: all parameters must be saved**

**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The parameters of an individual drive object were saved (p0971 = 1), although there is still no backup of all drive system parameters.  
The saved object-specific parameters are not loaded the next time that the system powers up.  
For the system to successfully power up, all of the parameters must have been completely backed up.  
Alarm value (r2124, interpret decimal):  
Only for internal Siemens troubleshooting.  
See also: p0971 (Save drive object parameters)  
**Remedy:** Save all parameters (p0977 = 1 or "copy RAM to ROM").  
See also: p0977 (Save all parameters)  
Reaction upon F: NONE (OFF1, OFF2, OFF3)  
Acknowl. upon F: IMMEDIATELY

---

#### **F01033 Units changeover: Reference parameter value invalid**

**Message value:** Parameter: %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** IMMEDIATELY  
**Cause:** When changing over the units to the referred representation type, it is not permissible for any of the required reference parameters to be equal to 0.0  
Fault value (r0949, parameter):  
Reference parameter whose value is 0.0.  
See also: p0595 (Technological unit selection)  
**Remedy:** Set the value of the reference parameter to a number different than 0.0.  
See also: p0596 (Technological unit reference quantity), p2000 (Reference speed), p2001 (Reference voltage), p2002 (Reference current), p2003 (Reference torque), r2004 (Reference power)

<b>F01034</b>	<b>Units changeover: Calculation parameter values after reference value change unsuccessful</b>
<b>Message value:</b>	Parameter: %1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>The change of a reference parameter meant that for an involved parameter the selected value was not able to be re-calculated in the per unit representation. The change was rejected and the original parameter value restored.</p> <p>Fault value (r0949, parameter):</p> <p>Parameter whose value was not able to be re-calculated.</p> <p>See also: p0596 (Technological unit reference quantity), p2000 (Reference speed), p2001 (Reference voltage), p2002 (Reference current), p2003 (Reference torque), r2004 (Reference power)</p>
<b>Remedy:</b>	<p>- Select the value of the reference parameter such that the parameter involved can be calculated in the per unit representation.</p> <p>- Technology unit selection (p0595) before changing the reference parameter p0596, set p0595 = 1.</p> <p>See also: p0596 (Technological unit reference quantity), p2000 (Reference speed), p2001 (Reference voltage), p2002 (Reference current), p2003 (Reference torque), r2004 (Reference power)</p>
<b>A01035 (F)</b>	<b>ACX: Parameter back-up file corrupted</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>When the Control Unit is booted, no complete data set was found from the parameter back-up files. The last time that the parameterization was saved, it was not completely carried out.</p> <p>It is possible that the backup was interrupted by switching off or withdrawing the memory card.</p> <p>Alarm value (r2124, interpret hexadecimal):</p> <p>ddccbbaa hex:</p> <p>aa = 01 hex:</p> <p>Power up was realized without data backup. The drive is in the factory setting.</p> <p>aa = 02 hex:</p> <p>The last available backup data record was loaded. The parameterization must be checked. It is recommended that the parameterization is downloaded again.</p> <p>dd, cc, bb:</p> <p>Only for internal Siemens troubleshooting.</p> <p>See also: p0971 (Save drive object parameters), p0977 (Save all parameters)</p>
<b>Remedy:</b>	<p>- Download the project again with the commissioning software.</p> <p>- save all parameters (p0977 = 1 or "copy RAM to ROM").</p> <p>See also: p0977 (Save all parameters)</p>
Reaction upon F:	NONE (OFF1, OFF2, OFF3)
Acknowl. upon F:	IMMEDIATELY
<b>F01036 (A)</b>	<b>ACX: Parameter back-up file missing</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE (OFF1, OFF2, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>When downloading the device parameterization, a parameter back-up file PSxxxxxy.ACX associated with a drive object cannot be found.</p> <p>Fault value (r0949, interpret hexadecimal):</p> <p>Byte 1: yyy in the file name PSxxxxxy.ACX</p> <p>yyy = 000 --&gt; consistency back-up file</p> <p>yyy = 001 ... 062 --&gt; drive object number</p>

## 4 Faults and alarms

### 4.2 List of faults and alarms

	yyy = 099 --> PROFIBUS parameter back-up file
	Byte 2, 3, 4:
	Only for internal Siemens troubleshooting.
<b>Remedy:</b>	If you have saved the project data using the commissioning software, carry out a new download for your project. Save using the function "Copy RAM to ROM" or with p0977 = 1 This means that the parameter files are again completely written into the non-volatile memory.
	Note:
	If the project data have not been backed up, then a new first commissioning is required.
Reaction upon A:	NONE
Acknowled. upon A:	NONE

<b>F01038 (A)</b>	<b>ACX: Loading the parameter back-up file unsuccessful</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE (OFF1, OFF2, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	An error has occurred when downloading PSxxxxxy.ACX or PTxxxxxy.ACX files from the non-volatile memory. Fault value (r0949, interpret hexadecimal): Byte 1: yyy in the file name PSxxxxxy.ACX yyy = 000 --> consistency back-up file yyy = 001 ... 062 --> drive object number yyy = 099 --> PROFIBUS parameter back-up file Byte 2: 255: Incorrect drive object type. 254: Topology comparison unsuccessful -> drive object type was not able to be identified. Reasons could be: - Incorrect component type in the actual topology - Component does not exist in the actual topology. - Component not active. Additional values: Only for internal Siemens troubleshooting. Byte 4, 3:
<b>Remedy:</b>	Only for internal Siemens troubleshooting. - If you have saved the project data using the commissioning software, download the project again. Save using the function "Copy RAM to ROM" or with p0977 = 1 so that all of the parameter files are again completely written to the non-volatile memory. - replace the memory card or Control Unit. Re byte 2 = 255: - Correct the drive object type (see p0107).
Reaction upon A:	NONE
Acknowled. upon A:	NONE

<b>F01039 (A)</b>	<b>ACX: Writing to the parameter back-up file was unsuccessful</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE (OFF1, OFF2, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	Writing to at least one parameter back-up file PSxxxxyy.*** in the non-volatile memory was unsuccessful. - In the directory /USER/SINAMICS/DATA/ at least one parameter back-up file PSxxxxyy.*** has the "read only" file attribute and cannot be overwritten. - There is not sufficient free memory space available. - The non-volatile memory is defective and cannot be written to.

Fault value (r0949, interpret hexadecimal):

dcba hex

a = yyy in the file names PSxxxxyy.\*\*\*

a = 000 --> consistency back-up file

a = 001 ... 062 --> drive object number

a = 070 --> FEPROM.BIN

a = 080 --> DEL4BOOT.TXT

a = 099 --> PROFIBUS parameter back-up file

b = xxx in the file names PSxxxxyy.\*\*\*

b = 000 --> data save started with p0977 = 1 or p0971 = 1

b = 010 --> data save started with p0977 = 10

b = 011 --> data save started with p0977 = 11

b = 012 --> data save started with p0977 = 12

d, c:

Only for internal Siemens troubleshooting.

**Remedy:**

- check the file attribute of the files (PSxxxxyy.\*\*\*, CAxxxxyy.\*\*\*, CCxxxxyy.\*\*\*) and, if required, change from "read only" to "writeable".
- check the free memory space in the non-volatile memory. Approx. 80 kbyte of free memory space is required for every drive object in the system.
- replace the memory card or Control Unit.

Reaction upon A: NONE

Acknowled. upon A: NONE

---

#### **F01040 Save parameter settings and carry out a POWER ON**

**Message value:** -

**Message class:** Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:** All objects

**Reaction:** OFF2

**Acknowledge:** POWER ON

**Cause:** A parameter was changed in the drive system which means that it is necessary to save the parameters and re-boot.

**Remedy:**

- save parameters (p0971, p0977).
- carry out a POWER ON (power off/on) for all components.

Then:

- upload the drive unit (commissioning software).

---

#### **F01041 Parameter save necessary**

**Message value:** %1

**Message class:** Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:** All objects

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** Defective or missing files were detected on the memory card when booting.

Fault value (r0949, interpret decimal):

- 1: Source file cannot be opened.
- 2: Source file cannot be read.
- 3: Target directory cannot be set up.
- 4: Target file cannot be set up/opened.
- 5: Target file cannot be written to.

Additional values:

Only for internal Siemens troubleshooting.

**Remedy:**

- save the parameters.
- download the project again to the drive unit.
- update the firmware
- if required, replace the Control Unit and/or memory card card.

<b>F01042</b>	<b>Parameter error during project download</b>
<b>Message value:</b>	Parameter: %1, Index: %2, fault cause: %3
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	OFF2 (NONE, OFF1, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>An error was detected when downloading a project using the commissioning software (e.g. incorrect parameter value).</p> <p>For the specified parameter, it was detected that dynamic limits were exceeded that may possibly depend on other parameters.</p> <p>Fault value (r0949, interpret hexadecimal):</p> <p>ccbbaaaa hex</p> <p>aaaa = Parameter</p> <p>bb = Index</p> <p>cc = fault cause</p> <p>0: Parameter number illegal.</p> <p>1: Parameter value cannot be changed.</p> <p>2: Lower or upper value limit exceeded.</p> <p>3: Sub-index incorrect.</p> <p>4: No array, no sub-index.</p> <p>5: Data type incorrect.</p> <p>6: Setting not permitted (only resetting).</p> <p>7: Descriptive element cannot be changed.</p> <p>9: Descriptive data not available.</p> <p>11: No master control.</p> <p>15: No text array available.</p> <p>17: Task cannot be executed due to operating state.</p> <p>20: Illegal value.</p> <p>21: Response too long.</p> <p>22: Parameter address illegal.</p> <p>23: Format illegal.</p> <p>24: Number of values not consistent.</p> <p>25: Drive object does not exist.</p> <p>101: Presently de-activated.</p> <p>104: Illegal value.</p> <p>107: Write access not permitted when controller enabled.</p> <p>108: Unit unknown.</p> <p>109: Write access only in the commissioning state, encoder (p0010 = 4).</p> <p>110: Write access only in the commissioning state, motor (p0010 = 3).</p> <p>111: Write access only in the commissioning state, power unit (p0010 = 2).</p> <p>112: Write access only in the quick commissioning mode (p0010 = 1).</p> <p>113: Write access only in the ready mode (p0010 = 0).</p> <p>114: Write access only in the commissioning state, parameter reset (p0010 = 30).</p> <p>115: Write access only in the Safety Integrated commissioning state (p0010 = 95).</p> <p>116: Write access only in the commissioning state, technological application/units (p0010 = 5).</p> <p>117: Write access only in the commissioning state (p0010 not equal to 0).</p> <p>118: Write access only in the commissioning state, download (p0010 = 29).</p> <p>119: Parameter may not be written in download.</p> <p>120: Write access only in the commissioning state, drive basic configuration (device: p0009 = 3).</p> <p>121: Write access only in the commissioning state, define drive type (device: p0009 = 2).</p> <p>122: Write access only in the commissioning state, data set basic configuration (device: p0009 = 4).</p> <p>123: Write access only in the commissioning state, device configuration (device: p0009 = 1).</p> <p>124: Write access only in the commissioning state, device download (device: p0009 = 29).</p> <p>125: Write access only in the commissioning state, device parameter reset (device: p0009 = 30).</p> <p>126: Write access only in the commissioning state, device ready (device: p0009 = 0).</p>



- 127: Write access only in the commissioning state, device (device: p0009 not equal to 0).
- 129: Parameter may not be written in download.
- 130: Transfer of the master control is inhibited via binector input p0806.
- 131: Required BICO interconnection not possible because BICO output does not supply floating value
- 132: Free BICO interconnection inhibited via p0922.
- 133: Access method not defined.
- 200: Below the valid values.
- 201: Above the valid values.
- 202: Cannot be accessed from the Basic Operator Panel (BOP).
- 203: Cannot be read from the Basic Operator Panel (BOP).
- 204: Write access not permitted.

**Remedy:**

- enter the correct value in the specified parameter.
- identify the parameter that restricts the limits of the specified parameter.

---

### **F01043 Fatal error at project download**

**Message value:** Fault cause: %1

**Message class:** Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:** All objects

**Reaction:** OFF2 (OFF1, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** A fatal error was detected when downloading a project using the commissioning software.  
Fault value (r0949, interpret decimal):

- 1: Device status cannot be changed to Device Download (drive object ON?).
- 2: Incorrect drive object number.
- 3: A drive object that has already been deleted is deleted again.
- 4: Deleting of a drive object that has already been registered for generation.
- 5: Deleting a drive object that does not exist.
- 6: Generating an undeleted drive object that already existed.
- 7: Regenerating a drive object already registered for generation.
- 8: Maximum number of drive objects that can be generated exceeded.
- 9: Error while generating a device drive object.
- 10: Error while generating target topology parameters (p9902 and p9903).
- 11: Error while generating a drive object (global component).
- 12: Error while generating a drive object (drive component).
- 13: Unknown drive object type.
- 14: Drive status cannot be changed to "ready for operation" (r0947 and r0949).
- 15: Drive status cannot be changed to drive download.
- 16: Device status cannot be changed to "ready for operation".
- 17: It is not possible to download the topology. The component wiring should be checked, taking into account the various messages/signals.
- 18: A new download is only possible if the factory settings are restored for the drive unit.
- 19: The slot for the option module has been configured several times (e.g. CAN and COMM BOARD)
- 20: The configuration is inconsistent (e.g. CAN for Control Unit, however no CAN configured for drive objects A\_INF, SERVO or VECTOR ).
- 21: Error when accepting the download parameters.
- 22: Software-internal download error.

Additional values: only for internal Siemens troubleshooting.

**Remedy:**

- use the current version of the commissioning software.
- modify the offline project and carry out a new download (e.g. compare the number of drive objects, motor, encoder, power unit in the offline project and at the drive).
- change the drive state (is a drive rotating or is there a message/signal?).
- carefully note any other messages/signals and remove their cause.
- boot from previously saved files (power-down/power-up or p0976).

<b>F01044</b>	<b>CU: Descriptive data error</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	POWER ON
<b>Cause:</b>	An error was detected when loading the descriptive data saved in the non-volatile memory.
<b>Remedy:</b>	Replace the memory card or Control Unit.
<b>A01045</b>	<b>CU: Configuring data invalid</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	An error was detected when evaluating the parameter files PSxxxxxyy.ACX, PTxxxxxyy.ACX, CAxxxxxyy.ACX, or CCxxxxxyy.ACX saved in the non-volatile memory. Because of this, under certain circumstances, several of the saved parameter values were not able to be accepted. Also see r9406 up to r9408. Alarm value (r2124, interpret hexadecimal): Only for internal Siemens troubleshooting.
<b>Remedy:</b>	- Check the parameters displayed in r9406 up to r9408, and correct these if required. - Restore the factory setting using (p0976 = 1) and re-load the project into the drive unit. Then save the parameterization in STARTER using the "Copy RAM to ROM" function or with p0977 = 1. This overwrites the incorrect parameter files in the non-volatile memory – and the alarm is withdrawn.
<b>A01049</b>	<b>CU: It is not possible to write to file</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	It is not possible to write into a write-protected file (PSxxxxxx.acx). The write request was interrupted. Alarm value (r2124, interpret decimal): Drive object number.
<b>Remedy:</b>	Check whether the "write protected" attribute has been set for the files in the non-volatile memory under .../USER/SINAMICS/DATA/... When required, remove write protection and save again (e.g. set p0977 to 1).
<b>F01050</b>	<b>Memory card and device incompatible</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	OFF2 (NONE, OFF1, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The memory card and the device type do not match (e.g. a memory card for SINAMICS S is inserted in SINAMICS G).
<b>Remedy:</b>	- insert the matching memory card. - use the matching Control Unit or power unit.
<b>F01054</b>	<b>CU: System limit exceeded</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	At least one system overload has been identified.

Fault value (r0949, interpret decimal):

1: Computing time load too high (r9976[1]).

5: Peak load too high (r9976[5]).

Note:

As long as this fault is present, it is not possible to save the parameters (p0971, p0977).

See also: r9976 (System utilization)

**Remedy:**

Re fault value = 1, 5:

- reduce the computing time load of the drive unit (r9976[1] and r9976[5]) to under 100 %.
- check the sampling times and adjust if necessary (p0115, p0799, p4099).
- de-activate function modules.
- de-activate drive objects.
- remove drive objects from the target topology.
- note the DRIVE-CLiQ topology rules and if required, change the DRIVE-CLiQ topology.

When using the Drive Control Chart (DCC) or free function blocks (FBLOCKS), the following applies

- the computing time load of the individual run-time groups on a drive object can be read out in r21005 (DCC) or r20005 (FBLOCKS).
- if necessary, the assignment of the run-time group (p21000, p20000) can be changed in order to increase the sampling time (r21001, r20001).
- if necessary, reduce the number of cyclically calculated blocks (DCC) and/or function blocks (FBLOCKS).

---

<b>F01055</b>	<b>CU: Internal error (SYNO of port and application not identical)</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	All applications that operate with slaves at one port must be derived from the same SYNO clock cycle. The first application whose registration (log-on) connects a slave to a port defines the SYNO clock cycle that will be used as basis for the port. Fault value (r0949, interpret hexadecimal): Method ID. Note: Only for internal Siemens troubleshooting.
<b>Remedy:</b>	Contact the Hotline.

---

<b>F01056</b>	<b>CU: Internal error (clock cycle of parameter group already assigned differently)</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The requested parameter group (IREG, NREG, ...) is already being used in a different clock cycle. Fault value (r0949, interpret hexadecimal): Method ID. Note: Only for internal Siemens troubleshooting.
<b>Remedy:</b>	Contact the Hotline.

---

<b>F01057</b>	<b>CU: Internal error (different DRIVE-CLiQ type for the slave)</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The requested DRIVE-CLiQ type (hps_ps, hps_enc, ...) has been specified differently for the same slave component.

## 4 Faults and alarms

### 4.2 List of faults and alarms

Fault value (r0949, interpret hexadecimal):  
Method ID.  
Note:  
Only for internal Siemens troubleshooting.  
**Remedy:** Contact the Hotline.

---

**F01058 CU: Internal error (slave missing in topology)**  
**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150  
**Reaction:** NONE  
**Acknowledge:** IMMEDIATELY  
**Cause:** The requested slave component does not exist in the topology.  
Fault value (r0949, interpret hexadecimal):  
Method ID.  
Note:  
Only for internal Siemens troubleshooting.  
**Remedy:** Contact the Hotline.

---

**F01059 CU: Internal error (port does not exist)**  
**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150  
**Reaction:** NONE  
**Acknowledge:** IMMEDIATELY  
**Cause:** The port object assigned according to the topology of the requested slave component does not exist.  
Fault value (r0949, interpret hexadecimal):  
Method ID.  
Note:  
Only for internal Siemens troubleshooting.  
**Remedy:** Contact the Hotline.

---

**F01060 CU: Internal error (parameter group not available)**  
**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150  
**Reaction:** NONE  
**Acknowledge:** IMMEDIATELY  
**Cause:** The requested parameter group (IREG, NREG, ...) is not offered by this slave type.  
Fault value (r0949, interpret hexadecimal):  
Method ID.  
Note:  
Only for internal Siemens troubleshooting.  
**Remedy:** Contact the Hotline.

---

**F01061 CU: Internal error (application not known)**  
**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150  
**Reaction:** NONE  
**Acknowledge:** IMMEDIATELY  
**Cause:** An application that is not registered with TSM has attempted to register with registerSlaves().  
The cause can be an unsuccessful TSM registration or an incorrect registration sequence. It is always necessary to log in to the TSM before registerSlaves() can be used.

Fault value (r0949, interpret hexadecimal):  
Method ID.  
Note:  
Only for internal Siemens troubleshooting.  
Remedy:  
Contact the Hotline.

---

**F01063 CU: Internal error (PDM)**  
**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150  
**Reaction:** NONE  
**Acknowledge:** IMMEDIATELY  
**Cause:** An internal software error has occurred.  
 Fault value (r0949, interpret hexadecimal):  
 Method ID.  
 Note:  
 Only for internal Siemens troubleshooting.  
 Remedy:  
 Contact the Hotline.

---

**F01068 CU: Data memory memory overflow**  
**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** OFF2  
**Acknowledge:** IMMEDIATELY  
**Cause:** The utilization for a data memory area is too large.  
 Fault value (r0949, interpret binary):  
 Bit 0 = 1: High-speed data memory 1 overloaded  
 Bit 1 = 1: High-speed data memory 2 overloaded  
 Bit 2 = 1: High-speed data memory 3 overloaded  
 Bit 3 = 1: High-speed data memory 4 overloaded  
 Remedy:  
 - de-activate the function module.  
 - de-activate drive object.  
 - remove the drive object from the target topology.

---

**A01069 Parameter backup and device incompatible**  
**Message value:** -  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** CU\_DC, CU\_DC\_R, CU\_DC\_R\_S, CU\_DC\_S  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The parameter backup on the memory card and the drive unit do not match.  
 The module boots with the factory settings.  
 Example:  
 Devices A and B. are not compatible and a memory card with the parameter backup for device A is inserted in device B.  
 Remedy:  
 - insert a memory card with compatible parameter backup and carry out a POWER ON.  
 - insert a memory card without parameter backup and carry out a POWER ON.  
 - If required, withdraw the memory card and carry out POWER ON.  
 - save the parameters (p0971 = 1).

---

<b>A01069</b>	<b>Parameter backup and device incompatible</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The parameter backup on the memory card and the drive unit do not match. The module boots with the factory settings. Example: Devices A and B. are not compatible and a memory card with the parameter backup for device A is inserted in device B.
<b>Remedy:</b>	- insert a memory card with compatible parameter backup and carry out a POWER ON. - insert a memory card without parameter backup and carry out a POWER ON. - save the parameters (p0977 = 1).
<b>F01072</b>	<b>Memory card restored from the backup copy</b>
<b>Message value:</b>	-
<b>Message class:</b>	General drive fault (19)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The Control Unit was switched-off while writing to the memory card. This is why the visible partition became defective. After switching on, the data from the non-visible partition (backup copy) were written to the visible partition.
<b>Remedy:</b>	Check that the firmware and parameterization is up-to-date.
<b>A01073 (N)</b>	<b>POWER ON required for backup copy on memory card</b>
<b>Message value:</b>	-
<b>Message class:</b>	General drive fault (19)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The parameter assignment on the visible partition of the memory card has changed. In order that the backup copy on the memory card is updated on the non-visible partition, it is necessary to carry out a POWER ON or hardware reset (p0972) of the Control Unit. Note: It is possible that a new POWER ON is requested via this alarm (e.g. after saving with p0971 = 1).
<b>Remedy:</b>	- carry out a POWER ON (power off/on) for the Control Unit. - carry out a hardware reset (RESET button, p0972).
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>A01099</b>	<b>Tolerance window of time synchronization exited</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The time master exited the selected tolerance window for time synchronization. See also: p3109 (RTC real time synchronization tolerance window)
<b>Remedy:</b>	Select the re-synchronization interval so that the synchronization deviation between the time master and drive system lies within the tolerance window. See also: r3108 (RTC last synchronization deviation)

---

<b>A01100</b>	<b>CU: Memory card withdrawn</b>
<b>Message value:</b>	-
<b>Message class:</b>	General drive fault (19)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The memory card (non-volatile memory) was withdrawn during operation. Notice: It is not permissible for the memory card to be withdrawn or inserted under voltage.
<b>Remedy:</b>	- power down the drive system. - re-insert the memory card that was withdrawn - this card must match the drive system. - power up the drive system again.

---

<b>A01104</b>	<b>CU: Do not power down. File system being optimized.</b>
<b>Message value:</b>	-
<b>Message class:</b>	General drive fault (19)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The file system is currently being optimized in the non-volatile device memory of the Control Unit. This process may take several minutes. Notice: The Control Unit must not be powered down during optimization, as this can lead to user data being lost.
<b>Remedy:</b>	Leave the Control Unit powered up during optimization. Note: The alarm disappears automatically once file system optimization is complete.

---

<b>F01105 (A)</b>	<b>CU: Insufficient memory</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	OFF1
<b>Acknowledge:</b>	POWER ON
<b>Cause:</b>	Too many functions have been configured on this Control Unit (e.g. too many drives, function modules, data sets, OA applications, blocks, etc). Fault value (r0949, interpret decimal): Only for internal Siemens troubleshooting.
<b>Remedy:</b>	- change the configuration on this Control Unit (e.g. fewer drives, function modules, data sets, OA applications, blocks, etc). - use an additional Control Unit.
Reaction upon A:	NONE
Acknowl. upon A:	NONE

---

<b>F01106</b>	<b>CU: Insufficient memory</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	There is not sufficient free memory space available.
<b>Remedy:</b>	Not necessary.

---

#### **F01107 CU: Save to memory card unsuccessful**

**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** IMMEDIATELY  
**Cause:** A data save in the non-volatile memory was not able to be successfully carried out.  
- non-volatile memory is defective.  
- insufficient space in the non-volatile memory.  
Fault value (r0949, interpret decimal):  
Only for internal Siemens troubleshooting.  
**Remedy:** - try to save again.  
- replace the memory card or Control Unit.

---

#### **F01110 CU: More than one SINAMICS G on one Control Unit**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** TM150, TM15DI\_DO, TM31  
**Reaction:** NONE  
**Acknowledge:** IMMEDIATELY  
**Cause:** More than one SINAMICS G type power unit is being operated from the Control Unit.  
Fault value (r0949, interpret decimal):  
Number of the second drive with a SINAMICS G type power unit.  
**Remedy:** Only one SINAMICS G drive type is permitted.

---

#### **F01111 CU: Mixed operation of drive units illegal**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** IMMEDIATELY  
**Cause:** Illegal operation of various drive units on one Control Unit:  
- SINAMICS S together with SINAMICS G  
- SINAMICS S together with SINAMICS S Value or Combi  
Fault value (r0949, interpret decimal):  
Number of the first drive object with a different power unit type.  
**Remedy:** Only power units of one particular drive type may be operated with one Control Unit.

---

#### **F01112 CU: Power unit not permissible**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** IMMEDIATELY  
**Cause:** The connected power unit cannot be used together with this Control Unit.  
Fault value (r0949, interpret decimal):  
1: Power unit is not supported (e.g. PM240).  
2: DC/AC power unit connected to CU310 not permissible.  
3: Power unit (S120M) not permitted for vector control.  
**Remedy:** Replace the power unit that is not permissible by a component that is permissible.

---



<b>F01120 (A)</b>	<b>Terminal initialization has failed</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	OFF1 (OFF2)
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	An internal software error occurred while the terminal functions were being initialized. Fault value (r0949, interpret hexadecimal): Only for internal Siemens troubleshooting.
<b>Remedy:</b>	- carry out a POWER ON (power off/on) for all components. - upgrade firmware to later version. - contact the Hotline. - replace the Control Unit.
Reaction upon A:	NONE
Acknowl. upon A:	NONE
<b>F01122 (A)</b>	<b>Frequency at the measuring probe input too high</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Application / technological function faulted (17)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	OFF1 (OFF2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The frequency of the pulses at the measuring probe input is too high. Fault value (r0949, interpret decimal): 1: DI/DO 9 (X122.8) 2: DI/DO 10 (X122.10) 4: DI/DO 11 (X122.11) 8: DI/DO 13 (X132.8) 16: DI/DO 14 (X132.10) 32: DI/DO 15 (X132.11) 64: DI/DO 8 (X122.7) 128: DI/DO 12 (X132.7)
<b>Remedy:</b>	Reduce the frequency of the pulses at the measuring probe input.
Reaction upon A:	NONE
Acknowl. upon A:	NONE
<b>F01150</b>	<b>CU: Number of instances of a drive object type exceeded</b>
<b>Message value:</b>	Drive object type: %1, number permitted: %2, actual number: %3
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The maximum permissible number of instances of a drive object type was exceeded. Drive object type: Drive object type (p0107), for which the maximum permissible number of instances was exceeded. Number permitted: Max. permissible number of instances for this drive object type. Actual number: Current number of instances for this drive object type. Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): ddccbbaa hex: aa = drive object type, bb = number limited, cc = actual number, dd = no significance
<b>Remedy:</b>	- power down the unit. - suitably restrict the number of instances of a drive object type by reducing the number of inserted components. - re-commission the unit.

---

<b>F01151</b>	<b>CU: Number of drive objects of a category exceeded</b>
<b>Message value:</b>	Drive object category: %1, number permitted: %2, actual number: %3
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The maximum permissible number of drive objects of a category was exceeded. Drive object category: Drive object category, for which the maximum permissible number of drive objects was exceeded. Number permitted: Max. permissible number for this drive object category. Actual number: Actual number for this drive object category. Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): ddccbbaa hex: aa = drive object category, bb = number limited, cc = actual number, dd = no significance
<b>Remedy:</b>	- power down the unit. - suitably restrict the number of drive objects of the specified category by reducing the number of inserted components. - re-commission the unit.

---

<b>F01152</b>	<b>CU: Invalid constellation of drive object types</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	POWER ON
<b>Cause:</b>	It is not possible to simultaneously operate drive object types SERVO, VECTOR and HLA. A maximum of 2 of these drive object types can be operated on a Control Unit.
<b>Remedy:</b>	- power down the unit. - restrict the use of drive object types SERVO, VECTOR, HLA to a maximum of 2. - re-commission the unit.

---

<b>F01200</b>	<b>CU: Time slice management internal software error</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	A time slice management error has occurred. It is possible that the sampling times have been inadmissibly set. Fault value (r0949, interpret hexadecimal): 998: Too many time slices occupied by OA (e.g. DCC). 999: Too many time slices occupied by the basic system. Too many different sampling times may have been set. Additional values: Only for internal Siemens troubleshooting.
<b>Remedy:</b>	- check the sampling time setting (p0112, p0115, p4099, p9500, p9511). - contact the Hotline.

---

**F01205 CU: Time slice overflow**

**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** All objects  
**Reaction:** OFF2  
**Acknowledge:** POWER ON  
**Cause:** Insufficient processing time is available for the existing topology.  
 Fault value (r0949, interpret hexadecimal):  
 Only for internal Siemens troubleshooting.  
**Remedy:** - reduce the number of drives.  
 - increase the sampling times.

---

**F01221 CU: Bas clk cyc too low**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** IMMEDIATELY  
**Cause:** The closed-loop control / monitoring cannot maintain the envisaged clock cycle.  
 The runtime of the closed-loop control/monitoring is too long for the particular clock cycle or the computing time remaining in the system is not sufficient for the closed-loop control/monitoring.  
 Fault value (r0949, interpret hexadecimal):  
 Only for internal Siemens troubleshooting.  
**Remedy:** Increase the basic clock cycle of DRIVE-CLiQ communication.  
 See also: p0112 (Sampling times pre-setting p0115)

---

**F01222 CU: Basic clock cycle too low (computing time for communication not available)**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150  
**Reaction:** NONE  
**Acknowledge:** IMMEDIATELY  
**Cause:** A time slice has not been defined that fulfills the requirements.  
 The port cannot be correctly operated as the alternating cyclic clock cycle cannot be maintained.  
 Fault value (r0949, interpret hexadecimal):  
 Method ID.  
 Note:  
 Only for internal Siemens troubleshooting.  
**Remedy:** Contact the Hotline.

---

**A01223 CU: Sampling time inconsistent**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** When changing a sampling time (p0115[0], p0799 or p4099), inconsistency between the clock cycles has been identified.  
 Alarm value (r2124, interpret decimal):  
 1: Value lower than minimum value.  
 2: Value higher than maximum value.  
 3: Value not a multiple of 1.25 µs.  
 4: Value does not match clock-cycle synchronous PROFIBUS operation.  
 5: Value not a multiple of 125 µs.  
 6: Value not a multiple of 250 µs.

- 7: Value not a multiple of 375  $\mu$ s.
- 8: Value not a multiple of 400  $\mu$ s.
- 10: Special restriction of the drive object violated.
- 20: On a SERVO with a sampling time of 62.5  $\mu$ s, more than two drive objects or one drive object of a type other than SERVO have been detected on the same DRIVE-CLiQ line (a maximum of two SERVO type drive objects are permitted).
- 21: Value can be a multiple of the current controller sampling time of a servo or vector drive in the system (e.g. for TB30, the values of all of the indices should be taken into account).
- 30: Value less than 31.25  $\mu$ s.
- 31: Value less than 62.5  $\mu$ s (31.25  $\mu$ s is not supported for SMC10, SMC30, SMI10 and Double Motor Modules).
- 32: Value less than 125  $\mu$ s.
- 33: Value less than 250  $\mu$ s.
- 40: Nodes have been identified on the DRIVE-CLiQ line whose highest common denominator of the sampling times is less than 125  $\mu$ s. Further, none of the nodes has a sampling time of less than 125  $\mu$ s.
- 41: A chassis unit was identified on the DRIVE-CLiQ line as a node. Further, the highest common denominator of the sampling times of all of the nodes connected to the line is less than 250  $\mu$ s.
- 42: An Active Line Module was identified on the DRIVE-CLiQ line as a node. Further, the highest common denominator of the sampling times of all of the nodes connected to the line is less than 125  $\mu$ s.
- 43: A Voltage Sensing Module (VSM) was identified on the DRIVE-CLiQ line as a node. Further, the highest common denominator of the sampling times of all of the nodes connected to the line is not equal to the current controller sampling time of the drive object of the VSM.
- 44: The highest common denominator of the sampling times of all of the components connected to the DRIVE-CLiQ line is not the same for all components of this drive object (e.g. there are components on different DRIVE-CLiQ lines on which different highest common denominators are generated).
- 45: A chassis parallel unit was identified on the DRIVE-CLiQ line as a node. Further, the highest common denominator of the sampling times of all of the nodes connected to the line is less than 162.5  $\mu$ s or 187.5  $\mu$ s (for a 2 or 3x parallel connection).
- 46: A node has been identified on the DRIVE-CLiQ line whose sampling time is not a multiple of the lowest sampling time on this line.
- 52: Nodes have been identified on the DRIVE-CLiQ line whose highest common denominator of the sampling times is less than 31.25  $\mu$ s.
- 54: Nodes have been identified on the DRIVE-CLiQ line whose highest common denominator of the sampling times is less than 62.5  $\mu$ s.
- 56: Nodes have been identified on the DRIVE-CLiQ line whose highest common denominator of the sampling times is less than 125  $\mu$ s.
- 58: Nodes have been identified on the DRIVE-CLiQ line whose highest common denominator of the sampling times is less than 250  $\mu$ s.
- 99: Inconsistency of cross drive objects detected.
- 116: Recommended clock cycle in r0116[0...1].

General note:

The topology rules should be noted when connecting up DRIVE-CLiQ (refer to the appropriate product documentation).

The parameters of the sampling times can also be changed with automatic calculations.

Example for highest common denominator: 125  $\mu$ s, 125  $\mu$ s, 62.5  $\mu$ s --> 62.5  $\mu$ s

#### Remedy:

- check the DRIVE-CLiQ cables.
- set a valid sampling time.

See also: p0115, p4099

#### A01224

#### CU: Pulse frequency inconsistent

**Message value:** %1

**Message class:** Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:** All objects

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** When changing the minimum pulse frequency (p0113) inconsistency between the pulse frequencies was identified.

Alarm value (r2124, interpret decimal):

- 1: Value lower than minimum value.
- 2: Value higher than maximum value.

- 3: Resulting sampling time is not a multiple of 1.25 µs.  
4: Value does not match clock-cycle synchronous PROFIBUS operation.  
10: Special restriction of the drive object violated.  
99: Inconsistency of cross drive objects detected.  
116: Recommended clock cycle in r0116[0...1].

**Remedy:** Set a valid pulse frequency.

---

**F01250 CU: CU-EEPROM incorrect read-only data**

**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** All objects  
**Reaction:** NONE (OFF2)  
**Acknowledge:** POWER ON  
**Cause:** Error when reading the read-only data of the EEPROM in the Control Unit.  
Fault value (r0949, interpret decimal):  
Only for internal Siemens troubleshooting.  
**Remedy:**  
- carry out a POWER ON.  
- replace the Control Unit.

---

**A01251 CU: CU-EEPROM incorrect read-write data**

**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** Error when reading the read-write data of the EEPROM in the Control Unit.  
Alarm value (r2124, interpret decimal):  
Only for internal Siemens troubleshooting.  
**Remedy:**  
For alarm value r2124 < 256, the following applies:  
- carry out a POWER ON.  
- replace the Control Unit.  
For alarm value r2124 >= 256, the following applies:  
- for the drive object with this alarm, clear the fault memory (p0952 = 0).  
- as an alternative, clear the fault memory of all drive objects (p2147 = 1).  
- replace the Control Unit.

---

**F01255 CU: Option Board EEPROM read-only data error**

**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** All objects  
**Reaction:** NONE (OFF2)  
**Acknowledge:** POWER ON  
**Cause:** Error when reading the read-only data of the EEPROM in the Option Board.  
Fault value (r0949, interpret decimal):  
Only for internal Siemens troubleshooting.  
**Remedy:**  
- carry out a POWER ON.  
- replace the Control Unit.

---

**A01256 CU: Option Board EEPROM read-write data error**

**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** Error when reading the read-write data of the EEPROM in the Option Board.

**Remedy:**

Fault value (r0949, interpret decimal):  
Only for internal Siemens troubleshooting.

- carry out a POWER ON.
- replace the Control Unit.

<b>F01303</b>	<b>Component does not support the required function</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>A function requested by the Control Unit is not supported by a DRIVE-CLiQ component.</p> <p>Fault value (r0949, interpret decimal):</p> <p>1: The component does not support the de-activation.</p> <p>101: The Motor Module does not support an internal armature short-circuit.</p> <p>102: The Motor Module does not support the de-activation.</p> <p>201: The Sensor Module does not support actual value inversion (p0410.0 = 1) when using a Hall sensor (p0404.6 = 1) for the commutation.</p> <p>202: The Sensor Module does not support parking/unparking.</p> <p>203: The Sensor Module does not support the de-activation.</p> <p>204: The firmware of this Terminal Module 15 (TM15) does not support the application TM15DI/DO.</p> <p>205: The Sensor Module does not support the selected temperature evaluation (r0458).</p> <p>206: The firmware of this Terminal Modules TM41/TM31/TM15 refers to an old firmware version. It is urgently necessary to upgrade the firmware to ensure disturbance-free operation.</p> <p>207: The power unit with this hardware version does not support operation with device supply voltages of less than 380 V.</p> <p>208: The Sensor Module does not support de-selection of commutation with zero mark (via p0430.23).</p> <p>211: The Sensor Module does not support single-track encoders (r0459.10).</p> <p>212: The Sensor Module does not support LVDT sensors (p4677.0).</p> <p>213: The Sensor Module does not support the characteristic type (p4662).</p>
<b>Remedy:</b>	<p>Upgrade the firmware of the DRIVE-CLiQ component involved.</p> <p>For fault value = 205:</p> <p>Check parameter p0600 and p0601 and if required, adapt interpretation.</p> <p>For fault value = 207:</p> <p>Replace the power unit or if required set the device supply voltage higher (p0210).</p> <p>For fault value = 208:</p> <p>Check parameter p0430.23 and reset if necessary.</p>

<b>A01304 (F)</b>	<b>Firmware version of DRIVE-CLiQ component is not up-to-date</b>
<b>Message value:</b>	%1
<b>Message class:</b>	General drive fault (19)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The non-volatile memory has a more recent firmware version than the one in the connected DRIVE-CLiQ component.</p> <p>Alarm value (r2124, interpret decimal):</p> <p>Component number of the DRIVE-CLiQ component involved.</p>
<b>Remedy:</b>	Update the firmware (p7828, p7829 and commissioning software).
Reaction upon F:	NONE
Acknowl. upon F:	IMMEDIATELY

<b>F01305</b>	<b>Topology: Component number missing</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>The component number from the topology was not parameterized (p0121 (for power unit, refer to p0107), p0131 (for servo/vector drives, refer to p0107), p0141, p0151, p0161).</p> <p>Fault value (r0949, interpret decimal):</p> <p>Data set number.</p> <p>Note:</p> <p>The fault also occurs if encoders have been configured (p0187 to p0189) but no component numbers exist for them. In this case, the fault value includes the drive data set number plus 100 * encoder number (e.g. 3xx, if a component number was not entered in p0141 for encoder 3 (p0189)).</p> <p>See also: p0121 (Power unit component number), p0141 (Encoder interface (Sensor Module) component number), p0142 (Encoder component number), p0151 (Terminal Module component number), p0187 (Encoder 1 encoder data set number), p0188 (Encoder 2 encoder data set number)</p>
<b>Remedy:</b>	<p>- enter missing component number.</p> <p>- if required, remove the component and restart commissioning.</p> <p>See also: p0121 (Power unit component number), p0141 (Encoder interface (Sensor Module) component number), p0142 (Encoder component number), p0151 (Terminal Module component number), p0187 (Encoder 1 encoder data set number), p0188 (Encoder 2 encoder data set number)</p>
<b>A01306</b>	<b>Firmware of the DRIVE-CLiQ component being updated</b>
<b>Message value:</b>	%1
<b>Message class:</b>	General drive fault (19)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>Firmware update is active for at least one DRIVE-CLiQ component.</p> <p>Alarm value (r2124, interpret decimal):</p> <p>Component number of the DRIVE-CLiQ component.</p>
<b>Remedy:</b>	<p>Not necessary.</p> <p>This alarm automatically disappears after the firmware has been updated.</p>
<b>A01314</b>	<b>Topology: Component must not be present</b>
<b>Message value:</b>	%1, to %2: %3, connection: %4
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>For a component, "de-activate and not present" is set but this component is still in the topology.</p> <p>Alarm value (r2124, interpret hexadecimal):</p> <p>ddccbbaa hex:</p> <p>aa = component number</p> <p>bb = component class of the component</p> <p>cc = connection number</p> <p>Note:</p> <p>Component class and connection number are described in F01375.</p>
<b>Remedy:</b>	<p>- remove the corresponding component.</p> <p>- change the setting "de-activate and not present".</p> <p>Note:</p> <p>Under "Topology --&gt; Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).</p> <p>See also: p0105 (Activate/de-activate drive object), p0125 (Activate/de-activate power unit components), p0145 (Activate/de-activate encoder interface)</p>

<b>A01315</b>	<b>Drive object not ready for operation</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	For the active drive object involved, at least one activated component is missing. Note: All other active and operational drive objects can be in the "RUN" state.
<b>Remedy:</b>	The alarm automatically disappears again with the following actions: - de-activate the drive object involved (p0105 = 0). - de-activate the components involved (p0125 = 0, p0145 = 0, p0155 = 0, p0165 = 0). - re-insert the components involved. See also: p0105 (Activate/de-activate drive object), p0125 (Activate/de-activate power unit components), p0145 (Activate/de-activate encoder interface)
<b>A01316</b>	<b>Drive object inactive and again ready for operation</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	If, when inserting a component of the target topology, an inactive, non-operational drive object becomes operational again. The associated parameter of the component is, in this case, set to "activate" (p0125, p0145, p0155, p0165). Note: This is the only message that is displayed for a de-activated drive object.
<b>Remedy:</b>	The alarm automatically disappears again with the following actions: - activate the drive object involved (p0105 = 1). - again withdraw the components involved. See also: p0105 (Activate/de-activate drive object)
<b>A01317 (N)</b>	<b>De-activated component again present</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	If a component of the target topology for an active drive object is inserted and the associated parameter of the component is set to "de-activate" (p0125, p0145, p0155, p0165). Note: This is the only message that is displayed for a de-activated component.
<b>Remedy:</b>	The alarm automatically disappears again with the following actions: - activate the components involved (p0125 = 1, p0145 = 1, p0155 = 1, p0165 = 1). - again withdraw the components involved. See also: p0125 (Activate/de-activate power unit components), p0145 (Activate/de-activate encoder interface)
Reaction upon N:	NONE
Acknowled. upon N:	NONE



<b>A01318</b>	<b>BICO: De-activated interconnections present</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	This alarm is used in the following cases: - If an inactive/non-operational drive object is active again/ready for operation - If there are items in the list of BI/CI parameters (r9498[0...29], r9499[0...29]) - If the BICO interconnections saved in the list of BI/CI parameters (r9498[0...29], r9499[0...29]) have actually been changed
<b>Remedy:</b>	Reset alarm: - Set p9496 to 1 or 2 or - de-activate the drive object again.
<b>A01319</b>	<b>Inserted component not initialized</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	Initialization is required for at least one inserted component. This is only possible if the pulses are inhibited for all the drive objects.
<b>Remedy:</b>	Activate pulse inhibit for all drive objects.
<b>A01320</b>	<b>Topology: Drive object number does not exist in configuration</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	A drive object number is missing in p0978 Alarm value (r2124, interpret decimal): Index of p0101 under which the missing drive object number can be determined.
<b>Remedy:</b>	Set p0009 to 1 and change p0978: Rules: - p0978 must include all of the drive object numbers (p0101). - it is not permissible for a drive object number to be repeated. - by entering a 0, the drive objects with PZD are separated from those without PZD. - only 2 partial lists are permitted. After the second 0, all values must be 0. - dummy drive object numbers (255) are only permitted in the first partial list.
<b>A01321</b>	<b>Topology: Drive object number does not exist in configuration</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	p0978 contains a drive object number that does not exist. Alarm value (r2124, interpret decimal): Index of p0978 under which the drive object number can be determined.

**Remedy:** Set p0009 to 1 and change p0978:  
Rules:  
- p0978 must include all of the drive object numbers (p0101).  
- it is not permissible for a drive object number to be repeated.  
- by entering a 0, the drive objects with PZD are separated from those without PZD.  
- only 2 partial lists are permitted. After the second 0, all values must be 0.  
- dummy drive object numbers (255) are only permitted in the first partial list.

---

**A01322 Topology: Drive object number present twice in configuration**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** A drive object number is present more than once in p0978.  
Alarm value (r2124, interpret decimal):  
Index of p0978 under which the involved drive object number is located.  
**Remedy:** Set parameter p0009 = 1 and change p0978:  
Rules:  
- p0978 must include all of the drive object numbers (p0101).  
- it is not permissible for a drive object number to be repeated.  
- by entering a 0, the drive objects with PZD are separated from those without PZD.  
- only 2 partial lists are permitted. After the second 0, all values must be 0.  
- dummy drive object numbers (255) are only permitted in the first partial list.

---

**A01323 Topology: More than two partial lists created**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** Partial lists are available more than twice in p0978. After the second 0, all must be 0.  
Alarm value (r2124, interpret decimal):  
Index of p0978 under which the illegal value is located.  
**Remedy:** Set p0009 to 1 and change p0978:  
Rules:  
- p0978 must include all of the drive object numbers (p0101).  
- it is not permissible for a drive object number to be repeated.  
- by entering a 0, the drive objects with PZD are separated from those without PZD.  
- only 2 partial lists are permitted. After the second 0, all values must be 0.  
- dummy drive object numbers (255) are only permitted in the first partial list.

---

**A01324 Topology: Dummy drive object number incorrectly created**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** In p0978, dummy drive object numbers (255) are only permitted in the first partial list.  
Alarm value (r2124, interpret decimal):  
Index of p0978 under which the illegal value is located.

**Remedy:** Set p0009 to 1 and change p0978:

Rules:

- p0978 must include all of the drive object numbers (p0101).
- it is not permissible for a drive object number to be repeated.
- by entering a 0, the drive objects with PZD are separated from those without PZD.
- only 2 partial lists are permitted. After the second 0, all values must be 0.
- dummy drive object numbers (255) are only permitted in the first partial list.

#### F01325

#### Topology: Component number not present in target topology

**Message value:** Component number: %1

**Message class:** Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:** All objects

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** The component configured in a parameter (e.g. p0121, p0131, etc.) is not present in the target topology.

Alarm value (r2124, interpret decimal):

Configured component number that is not present in target topology.

**Remedy:** Establish topology and DO configuration consistency.

#### A01330

#### Topology: Quick commissioning not possible

**Message value:** Fault cause: %1, supplementary information: %2, preliminary component number: %3

**Message class:** Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:** All objects

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** Unable to carry out a quick commissioning. The existing actual topology does not fulfill the requirements.

Alarm value (r2124, interpret hexadecimal):

ccccbbaa hex: cccc = preliminary component number, bb = supplementary information, aa = fault cause

aa = 01 hex = 1 dec:

On one component illegal connections were detected.

- bb = 01 hex = 1 dec: For a Motor Module, more than one motor with DRIVE-CLiQ was detected.

- bb = 02 hex = 2 dec: For a motor with DRIVE-CLiQ, the DRIVE-CLiQ cable is not connected to a Motor Module.

aa = 02 hex = 2 dec:

The topology contains too many components of a particular type.

- bb = 01 hex = 1 dec: There is more than one master Control Unit.

- bb = 02 hex = 2 dec: There is more than 1 infeed (8 for a parallel circuit configuration).

- bb = 03 hex = 3 dec: There are more than 10 Motor Modules (8 for a parallel circuit configuration).

- bb = 04 hex = 4 dec: There are more than 9 encoders.

- bb = 05 hex = 5 dec: There are more than 8 Terminal Modules.

- bb = 07 hex = 7 dec: Unknown component type

- bb = 08 hex = 8 dec: There are more than 6 drive slaves.

- bb = 09 hex = 9 dec: Connection of a drive slave not permitted.

- bb = 0a hex = 10 dec: There is no drive master.

- bb = 0b hex = 11 dec: There is more than one motor with DRIVE-CLiQ for a parallel circuit.

- bb = 0c hex = 12 dec: Different power units are being used in a parallel connection.

- cccc: Not used.

aa = 03 hex = 3 dec:

More than 16 components are connected at a DRIVE-CLiQ socket of the Control Unit.

- bb = 0, 1, 2, 3 means e.g. detected at the DRIVE-CLiQ socket X100, X101, X102, X103.

- cccc: Not used.

aa = 04 hex = 4 dec:

The number of components connected one after the other is greater than 125.

- bb: Not used.

- cccc = preliminary component number of the first component and component that resulted in the fault.

aa = 05 hex = 5 dec:

The component is not permissible for SERVO.

- bb = 01 hex = 1 dec: SINAMICS G available.

- bb = 02 hex = 2 dec: Chassis available.

- cccc = preliminary component number of the first component and component that resulted in the fault.

aa = 06 hex = 6 dec:

On one component illegal EEPROM data was detected. These must be corrected before the system continues to boot.

- bb = 01 hex = 1 dec: The Order No. [MLFB] of the power unit that was replaced includes a space retainer. The space retainer (\*) must be replaced by a correct character.

- cccc = preliminary component number of the component with illegal EEPROM data.

aa = 07 hex = 7 dec:

The actual topology contains an illegal combination of components.

- bb = 01 hex = 1 dec: Active Line Module (ALM) and Basic Line Module (BLM).

- bb = 02 hex = 2 dec: Active Line Module (ALM) and Smart Line Module (SLM).

- bb = 03 hex = 3 dec: SIMOTION control (e.g. SIMOTION D445) and SINUMERIK component (e.g. NX15).

- bb = 04 hex = 4 dec: SINUMERIK control (e.g. SINUMERIK 730.net) and SIMOTION component (e.g. CX32).

- cccc: Not used.

Note:

Connection type and connection number are described in F01375.

See also: p0097 (Select drive object type), r0098 (Actual device topology), p0099 (Device target topology)

#### Remedy:

- adapt the output topology to the permissible requirements.

- carry out commissioning using the commissioning software.

- for motors with DRIVE-CLiQ, connect the power and DRIVE-CLiQ cable to the same Motor Module (Single Motor Module: DRIVE-CLiQ at X202, Double Motor Module: DRIVE-CLiQ from motor 1 (X1) to X202, from motor 2 (X2) to X203).

Re aa = 06 hex = 6 dec and bb = 01 hex = 1 dec:

Correct the order number when commissioning using the commissioning software.

See also: p0097 (Select drive object type), r0098 (Actual device topology), p0099 (Device target topology)

#### A01331

#### Topology: At least one component not assigned to a drive object

Message value:

Component number: %1

Message class:

Error in the parameterization / configuration / commissioning procedure (18)

Drive object:

All objects

Reaction:

NONE

Acknowledge:

NONE

Cause:

At least one component is not assigned to a drive object.

- when commissioning, a component was not able to be automatically assigned to a drive object.

- the parameters for the data sets are not correctly set.

Alarm value (r2124, interpret decimal):

Component number of the unassigned component.

#### Remedy:

This component is assigned to a drive object.

Check the parameters for the data sets.

Examples:

- power unit (p0121).

- motor (p0131, p0186).

- encoder interface (p0140, p0141, p0187 ... p0189).

- encoder (p0140, p0142, p0187 ... p0189).

- Terminal Module (p0151).

- option board (p0161).

<b>F01340</b>	<b>Topology: Too many components on one line</b>
<b>Message value:</b>	Component number or connection number: %1, fault cause: %2
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>For the selected communications clock cycle, too many DRIVE-CLiQ components are connected to one line of the Control Unit.</p> <p>Fault value (r0949, interpret hexadecimal):</p> <p>xyy hex: x = fault cause, yy = component number or connection number.</p> <p>1yy: The communications clock cycle of the DRIVE-CLiQ connection on the Control Unit is not sufficient for all read transfers.</p> <p>2yy: The communications clock cycle of the DRIVE-CLiQ connection on the Control Unit is not sufficient for all write transfers.</p> <p>3yy: Cyclic communication is fully utilized.</p> <p>4yy: The DRIVE-CLiQ cycle starts before the earliest end of the application. An additional dead time must be added to the control. Sign-of-life errors can be expected.</p> <p>The conditions of operation with a current controller sampling time of 31.25 µs have not been maintained.</p> <p>5yy: Internal buffer overflow for net data of a DRIVE-CLiQ connection.</p> <p>6yy: Internal buffer overflow for receive data of a DRIVE-CLiQ connection.</p> <p>7yy: Internal buffer overflow for send data of a DRIVE-CLiQ connection.</p> <p>8yy: The component clock cycles cannot be combined with one another</p> <p>900: The lowest common multiple of the clock cycles in the system is too high to be determined.</p> <p>901: The lowest common multiple of the clock cycles in the system cannot be generated with the hardware.</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check the DRIVE-CLiQ wiring.</li> <li>- Reduce the number of components on the DRIVE-CLiQ line involved and distribute these to other DRIVE-CLiQ sockets of the Control Unit. This means that communication is uniformly distributed over several lines.</li> </ul> <p>Re fault value = 1yy - 4yy in addition:</p> <ul style="list-style-type: none"> <li>- increase the sampling times (p0112, p0115, p4099). If necessary, for DCC or FBLOCKS, change the assignment of the run-time group (p21000, p20000) so that the sampling time (r21001, r20001) is increased.</li> <li>- if necessary, reduce the number of cyclically calculated blocks (DCC) and/or function blocks (FBLOCKS).</li> <li>- reduce the function modules (r0108).</li> <li>- establish the conditions for operation with a current controller sampling time of 31.25 µs (at the DRIVE-CLiQ line, only operate Motor Modules and Sensor Modules with this sampling time and only use a permitted Sensor Module (e.g. SMC20, this means a 3 at the last position of the order number)).</li> <li>- For an NX, the corresponding Sensor Module for a possibly existing second measuring system should be connected to a free DRIVE-CLiQ socket of the NX.</li> </ul> <p>Re fault value = 8yy in addition:</p> <ul style="list-style-type: none"> <li>- check the clock cycles settings (p0112, p0115, p4099). Clock cycles on a DRIVE-CLiQ line must be perfect integer multiples of one another. As clock cycle on a line, all clock cycles of all drive objects in the previously mentioned parameters apply, which have components on the line involved.</li> </ul> <p>Re fault value = 9yy in addition:</p> <ul style="list-style-type: none"> <li>- check the clock cycles settings (p0112, p0115, p4099). The lower the numerical value difference between two clock cycles, the higher the lowest common multiple. This behavior has a significantly stronger influence, the higher the numerical values of the clock cycles.</li> </ul>

<b>F01341</b>	<b>Topology: Maximum number of DRIVE-CLiQ components exceeded</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	Too many DRIVE-CLiQ components were defined in the actual topology. Note: Pulse enable is withdrawn and prevented.
<b>Remedy:</b>	- check the DRIVE-CLiQ wiring. - reduce the number components on the DRIVE-CLiQ line involved in order to maintain the maximum quantity structure.
<b>F01354</b>	<b>Topology: Actual topology indicates an illegal component</b>
<b>Message value:</b>	Fault cause: %1, component number: %2
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The actual topology indicates at least one illegal component. Fault value (r0949, interpret hexadecimal): yyxx hex: yy = component number, xx = cause. xx = 1: Component at this Control Unit not permissible. xx = 2: Component in combination with another component not permissible. Note: Pulse enable is prevented.
<b>Remedy:</b>	Remove the illegal components and restart the system.
<b>F01355</b>	<b>Topology: Actual topology changed</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The device target topology (p0099) does not correspond to the device actual topology (r0098). The fault only occurs if the topology was commissioned using the automatic internal device mechanism and not using the commissioning software. Fault value (r0949, interpret decimal): Only for internal Siemens troubleshooting. See also: r0098 (Actual device topology), p0099 (Device target topology)
<b>Remedy:</b>	One of the following counter-measures can be selected if no faults have occurred in the topology detection itself: If commissioning is still not completed: - carry out a self-commissioning routine (starting from p0009 = 1). In general: Set p0099 = r0098, set p0009 = 0; for existing Motor Modules, this results in servo drives being automatically generated (p0107). Generating servo drives: Set p0097 to 1, set p0009 to 0. Generating vector drives: Set p0097 to 2, set p0009 to 0. Generating vector drives with parallel circuit: Set p0097 to 12, set p0009 to 0. In order to set configurations in p0108, before setting p0009 to 0, it is possible to first set p0009 to 2 and modify p0108. The index corresponds to the drive object (p0107).

If commissioning has already been completed:

- re-establish the original connections and re-connect power to the Control Unit.
- restore the factory setting for the complete equipment (all of the drives) and allow automatic self-commissioning again.
- change the device parameterization to match the connections (this is only possible using the commissioning software).

Notice:

Topology changes that result in this fault being generated cannot be accepted by the automatic function in the device, but must be transferred using the commissioning software and parameter download. The automatic function in the device only allows constant topology to be used. Otherwise, when the topology is changed, all of the previous parameter settings are lost and replaced by the factory setting.

See also: r0098 (Actual device topology)

#### F01356

#### Topology: There is a defective DRIVE-CLiQ component

**Message value:** Fault cause: %1, Component number: %2, Connection number: %3  
**Message class:** Hardware / software error (1)  
**Drive object:** All objects  
**Reaction:** OFF2  
**Acknowledge:** IMMEDIATELY  
**Cause:** The actual topology indicates at least one defective DRIVE-CLiQ component.

Fault value (r0949, interpret hexadecimal):

zzyyxx hex:

zz = connection number of the component at which the defective component is connected

yy = component number of the component at which the defective component is connected

xx = fault cause

xx = 1: Component at this Control Unit not permissible.

xx = 2: component with communication defect.

Note:

Pulse enable is withdrawn and prevented.

**Remedy:** Replace the defective component and restart the system.

#### F01357

#### Topology: Two Control Units identified on the DRIVE-CLiQ line

**Message value:** component number: %1, connection number: %2  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** OFF2  
**Acknowledge:** IMMEDIATELY  
**Cause:** In the actual topology, 2 Control Units are connected with one another through DRIVE-CLiQ.

As standard, this is not permitted.

It is only permitted, if the OA application OALINK is already installed on both Control Units.

Fault value (r0949, interpret hexadecimal):

yyxx hex:

yy = connection number of the Control Unit at which the second Control Unit is connected

xx = component number of the Control Unit at which the second Control Unit is connected

Note:

Pulse enable is withdrawn and prevented.

**Remedy:**

- remove the DRIVE-CLiQ connection, restart the systems, install OALINK on both Control Units and commission.
- remove the connection to the second Control Unit and restart.
- for the S120M component DRIVE-CLiQ extension, interchange the hybrid cable (IN/OUT).

<b>A01358</b>	<b>Topology: Line termination not available</b>
<b>Message value:</b>	CU connection number: %1, component number: %2, connection number: %3
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	At least one line with distributed drives is not terminated. The last participant on the line must be terminated with a line termination connector. This therefore ensures the degree of protection of the distributed drives. Fault value (r0949, interpret hexadecimal): zzyyxx hex: zz = connection number of the distributed drive where there is no terminating connector yy = component number xx = CU connection number
<b>Remedy:</b>	Install the line terminating connector for the last distributed drive.
<b>F01359</b>	<b>Topology: DRIVE-CLiQ performance not sufficient</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The DRIVE-CLiQ performance is not sufficient at one line in order to identify an inserted component. Fault value (r0949, interpret hexadecimal): Only for internal Siemens troubleshooting.
<b>Remedy:</b>	- carry out a POWER ON (power off/on). - Distribute components across several DRIVE-CLiQ lines. Note: For this topology, do not withdraw and insert components in operation.
<b>F01360</b>	<b>Topology: Actual topology not permissible</b>
<b>Message value:</b>	Fault cause: %1, preliminary component number: %2
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The detected actual topology is not permissible. Fault value (r0949, interpret hexadecimal): ccccbbaa hex: cccc = preliminary component number, bb = no significance, aa = fault cause aa = 01 hex = 1 dec: Too many components were detected at the Control Unit. A maximum of 199 components is permissible. aa = 02 hex = 2 dec: The component type of a component is not known. aa = 03 hex = 3 dec: It is illegal to combine ALM and BLM. aa = 04 hex = 4 dec: It is illegal to combine ALM and SLM. aa = 05 hex = 5 dec: It is illegal to combine BLM and SLM. aa = 06 hex = 6 dec: A CX32 was not directly connected to a permitted Control Unit. aa = 07 hex = 7 dec: An NX10 or NX15 was not directly connected to a permitted Control Unit.



aa = 08 hex = 8 dec:  
A component was connected to a Control Unit that is not permitted for this purpose.  
aa = 09 hex = 9 dec:  
A component was connected to a Control Unit with out-of-date firmware.  
aa = 0A hex = 10 dec:  
Too many components of a particular type detected.  
aa = 0B hex = 11 dec:  
Too many components of a particular type detected on a single line.  
Note:  
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

**Remedy:**  
Re fault cause = 1:  
Change the configuration. Connect less than 199 components to the Control Unit.  
Re fault cause = 2:  
Remove the component with unknown component type.  
Re fault cause = 3, 4, 5:  
Establish a valid combination.  
Re fault cause = 6, 7:  
Connect the expansion module directly to a permitted Control Unit.  
Re fault cause = 8:  
Remove component or use a permissible component.  
Re fault cause = 9:  
Upgrade the firmware of the Control Unit to a later version.  
Re fault cause = 10, 11:  
Reduce the number of components.

<b>A01361</b>	<b>Topology: Actual topology contains SINUMERIK and SIMOTION components</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The detected actual topology contains SINUMERIK and SIMOTION components. The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled. Alarm value (r2124, interpret hexadecimal): ddccbbaa hex: cc = fault cause, bb = component class of the actual topology, aa = component number of the component cc = 01 hex = 1 dec: An NX10 or NX15 was connected to a SIMOTION control. cc = 02 hex = 2 dec: A CX32 was connected to a SINUMERIK control.
<b>Remedy:</b>	Re alarm value = 1: Replace all NX10 or NX15 by a CX32. Re alarm value = 2: Replace all CX32 by an NX10 or NX15.

<b>A01362</b>	<b>Topology: Topology rule(s) broken</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	At least one topology rule for the SINAMICS S120 Combi has been broken. In the event of a fault, the ramping up of the drive system is aborted and closed-loop drive control is not enabled.

Alarm value (r2124, interpret decimal):

The alarm value indicates which rule has been violated.

- 1: The S120 Combi may only be wired via DRIVE-CLiQ socket X200 to X100 on the NCU.
- 2: Only one Single Motor Module (SMM) or one Double Motor Module (DMM) may be connected via X200 to the DRIVE-CLiQ socket X101 on the NCU.
- 3: Only one Terminal Module 54F (TM54F) or one DRIVE-CLiQ Hub Module (hub) may be connected via X500 to the DRIVE-CLiQ socket X102 on the NCU.
- 4: Only Sensor Modules may be connected to DRIVE-CLiQ sockets X201 up to X203 (3-axis) or X204 (4-axis) on the S120 Combi.
- 5: Only one Sensor Module, type SMC20 or SME20 may be connected to DRIVE-CLiQ socket X205 (X204 is not available for 3-axis).
- 6: If a Single Motor Module is being used as the first expansion axis, only one more Single Motor Module may be connected (via X200 to X201 on the first Single Motor Module).
- 7: Only Sensor Modules may be connected to the corresponding DRIVE-CLiQ socket X202 on any Single Motor Modules which may be present.
- 8: For a second Single Motor Module or for a Double Motor Module, it is not permissible to connect anything at X201.
- 9: If a Double Motor Module is used as an expansion axis, only Sensor Modules may be connected to X202 and X203.
- 10: If a Terminal Module 54F (TM54F) is configured, only one DRIVE-CLiQ Hub Module (DMC20, DME20) may be connected to X501 of the TM54F module via DRIVE-CLiQ socket X500.
- 11: On the DRIVE-CLiQ Hub Module, only Sensor Modules Cabinet (SMC) and Sensor Modules External (SME) may be connected to X501 through X505.
- 12: Only certain Motor Modules may be used for expansion axes.
- 13: For an S120 Combi with 3 axes, nothing must be connected at the DRIVE-CLiQ Hub Module at X503.

**Remedy:**

Evaluate the alarm value and ensure compliance with the corresponding topology rule(s).

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**F01375**

**Topology: Connection duplicated between two components**

**Message value:**

Component: %1, %2, connection: %3

**Message class:**

Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:**

All objects

**Reaction:**

NONE

**Acknowledge:**

IMMEDIATELY

**Cause:**

When checking the actual topology, a ring-type connection was detected.

The fault value describes a component contained in the ring.

Fault value (r0949, interpret hexadecimal):

ccbbaaaa hex:

cc = connection number (%3)

bb = component class (% 2)

aaaa = preliminary component number (%1)

Component class:

0: Component unknown.

1: Control Unit

2: Motor Module

3: Line Module

4: Sensor Module

5: Voltage Sensing Module

6: Terminal Module

7: DRIVE-CLiQ Hub Module

8: Controller Extension

9: Filter Module

10: Hydraulic Module.

49: DRIVE-CLiQ component

50: Option slot

60: Encoder

70: DRIVE-CLiQ motor

71: Hydraulic cylinder

72: Hydraulic valve  
80: Motor  
Connection number:  
0: Port 0, 1: Port 1, 2: Port 2, 3: Port 3, 4: Port 4, 5: Port 5  
10: X100, 11: X101, 12: X102, 13: X103, 14: X104, 15: X105  
20: X200, 21: X201, 22: X202, 23: X203  
50: X500, 51: X501, 52: X502, 53: X503, 54: X504, 55: X505

**Remedy:** Output the fault value and remove the specified connection.  
Note:  
Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

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**F01380      Topology: Actual topology EEPROM defective**

**Message value:** Preliminary component number: %1  
**Message class:** Hardware / software error (1)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** POWER ON  
**Cause:** When detecting the actual topology, a component with a defective EEPROM was detected.  
Fault value (r0949, interpret hexadecimal):  
bbbbaaaa hex:  
bbbb = reserved  
aaaa = preliminary component number of the defective components  
**Remedy:** Output the fault value and remove the defected component.

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**A01381      Topology: power unit incorrectly inserted**

**Message value:** Component: %1, to %2: %3, connection : %4  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The topology comparison has detected a power unit in the actual topology that has been incorrectly inserted.  
Alarm value (r2124, interpret hexadecimal):  
ddccbbaa hex:  
dd = connection number (%4)  
cc = component number (%3)  
bb = component class (% 2)  
aa = component number of the incorrectly inserted component (% 1)  
Note:  
The component is described in dd, cc and bb, where the component involved is incorrectly inserted.  
Component class and connection number are described in F01375.  
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.  
**Remedy:** Adapting topologies:  
- insert the components involved at the right connection (correct the actual topology).  
- adapt the project/parameterization in the commissioning software (correct the target topology).  
- automatically remove the topology error (p9904).  
Note:  
Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

<b>A01382</b>	<b>Topology: Sensor Module incorrectly inserted</b>
<b>Message value:</b>	Component: %1, to %2: %3, connection : %4
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The topology comparison has detected a Sensor Module in the actual topology that has been incorrectly inserted with respect to the target technology.</p> <p>Alarm value (r2124, interpret hexadecimal):</p> <p>ddccbbaa hex:</p> <p>dd = connection number (%4)</p> <p>cc = component number (%3)</p> <p>bb = component class (% 2)</p> <p>aa = component number of the incorrectly inserted component (% 1)</p> <p>Note:</p> <p>The component is described in dd, cc and bb, where the component involved is incorrectly inserted.</p> <p>Component class and connection number are described in F01375.</p> <p>The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.</p>
<b>Remedy:</b>	<p>Adapting topologies:</p> <ul style="list-style-type: none"><li>- insert the components involved at the right connection (correct the actual topology).</li><li>- adapt the project/parameterization in the commissioning software (correct the target topology).</li><li>- automatically remove the topology error (p9904).</li></ul> <p>Note:</p> <p>Under "Topology --&gt; Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).</p>
<b>A01383</b>	<b>Topology: Terminal Module incorrectly inserted</b>
<b>Message value:</b>	Component: %1, to %2: %3, connection : %4
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The topology comparison has detected a Terminal Module in the actual topology that has been incorrectly inserted with respect to the target technology.</p> <p>Alarm value (r2124, interpret hexadecimal):</p> <p>ddccbbaa hex:</p> <p>dd = connection number (%4)</p> <p>cc = component number (%3)</p> <p>bb = component class (% 2)</p> <p>aa = component number of the incorrectly inserted component (% 1)</p> <p>Note:</p> <p>The component is described in dd, cc and bb, where the component involved is incorrectly inserted.</p> <p>Component class and connection number are described in F01375.</p> <p>The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.</p>
<b>Remedy:</b>	<p>Adapting topologies:</p> <ul style="list-style-type: none"><li>- insert the components involved at the right connection (correct the actual topology).</li><li>- adapt the project/parameterization in the commissioning software (correct the target topology).</li><li>- automatically remove the topology error (p9904).</li></ul> <p>Note:</p> <p>Under "Topology --&gt; Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).</p>

<b>A01384</b>	<b>Topology: DRIVE-CLiQ Hub Module incorrectly inserted</b>
<b>Message value:</b>	Component: %1, to %2: %3, connection : %4
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The topology comparison has detected a DRIVE-CLiQ Hub Module in the actual topology that has been incorrectly inserted with respect to the target topology.</p> <p>Alarm value (r2124, interpret hexadecimal):</p> <p>ddccbbaa hex:</p> <p>dd = connection number (%4)</p> <p>cc = component number (%3)</p> <p>bb = component class (% 2)</p> <p>aa = component number of the incorrectly inserted component (% 1)</p> <p>Note:</p> <p>The component is described in dd, cc and bb, where the component involved is incorrectly inserted.</p> <p>Component class and connection number are described in F01375.</p> <p>The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.</p>
<b>Remedy:</b>	<p>Adapting topologies:</p> <ul style="list-style-type: none"> <li>- insert the components involved at the right connection (correct the actual topology).</li> <li>- adapt the project/parameterization in the commissioning software (correct the target topology).</li> <li>- automatically remove the topology error (p9904).</li> </ul> <p>Note:</p> <p>Under "Topology --&gt; Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).</p>
<b>A01385</b>	<b>Topology: Controller Extension incorrectly inserted</b>
<b>Message value:</b>	Component: %1, to %2: %3, connection : %4
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The topology comparison has detected a controller extension 32 (CX32) in the actual topology that has been incorrectly inserted with respect to the target topology.</p> <p>Alarm value (r2124, interpret hexadecimal):</p> <p>ddccbbaa hex:</p> <p>dd = connection number (%4)</p> <p>cc = component number (%3)</p> <p>bb = component class (% 2)</p> <p>aa = component number of the incorrectly inserted component (% 1)</p> <p>Note:</p> <p>The component is described in dd, cc and bb, where the component involved is incorrectly inserted.</p> <p>Component class and connection number are described in F01375.</p> <p>The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.</p>
<b>Remedy:</b>	<p>Adapting topologies:</p> <ul style="list-style-type: none"> <li>- insert the components involved at the right connection (correct the actual topology).</li> <li>- adapt the project/parameterization in the commissioning software (correct the target topology).</li> <li>- automatically remove the topology error (p9904).</li> </ul> <p>Note:</p> <p>Under "Topology --&gt; Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).</p>

<b>A01386</b>	<b>Topology: DRIVE-CLiQ component incorrectly inserted</b>
<b>Message value:</b>	Component: %1, to %2: %3, connection : %4
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The topology comparison has detected a DRIVE-CLiQ component in the actual topology that has been incorrectly inserted with respect to the target topology.</p> <p>Alarm value (r2124, interpret hexadecimal):</p> <p>ddccbbaa hex:</p> <p>dd = connection number (%4)</p> <p>cc = component number (%3)</p> <p>bb = component class (% 2)</p> <p>aa = component number of the incorrectly inserted component (% 1)</p> <p>Note:</p> <p>The component is described in dd, cc and bb, where the component involved is incorrectly inserted. Component class and connection number are described in F01375.</p> <p>The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.</p>
<b>Remedy:</b>	<p>Adapting topologies:</p> <ul style="list-style-type: none"> <li>- insert the components involved at the right connection (correct the actual topology).</li> <li>- adapt the project/parameterization in the commissioning software (correct the target topology).</li> <li>- automatically remove the topology error (p9904).</li> </ul> <p>Note:</p> <p>Under "Topology --&gt; Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).</p>
<b>A01389</b>	<b>Topology: Motor with DRIVE-CLiQ incorrectly inserted</b>
<b>Message value:</b>	Component: %1, to %2: %3, connection : %4
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The topology comparison has detected a motor with DRIVE-CLiQ in the actual topology that has been incorrectly inserted with respect to the target topology.</p> <p>Alarm value (r2124, interpret hexadecimal):</p> <p>ddccbbaa hex:</p> <p>dd = connection number (%4)</p> <p>cc = component number (%3)</p> <p>bb = component class (% 2)</p> <p>aa = component number of the incorrectly inserted component (% 1)</p> <p>Note:</p> <p>The component is described in dd, cc and bb, where the component involved is incorrectly inserted. Component class and connection number are described in F01375.</p> <p>The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.</p>
<b>Remedy:</b>	<p>Adapting topologies:</p> <ul style="list-style-type: none"> <li>- insert the components involved at the right connection (correct the actual topology).</li> <li>- adapt the project/parameterization in the commissioning software (correct the target topology).</li> <li>- automatically remove the topology error (p9904).</li> </ul> <p>Note:</p> <p>Under "Topology --&gt; Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).</p>

<b>A01416</b>	<b>Topology: Component additionally inserted</b>
<b>Message value:</b>	%1, to %2: %3, connection: %4
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The topology comparison has found a component in the actual topology which is not specified in the target topology.</p> <p>Alarm value (r2124, interpret hexadecimal):</p> <p>ddccbbaa hex:</p> <p>dd = component class (% 2)</p> <p>cc = connection number (%4)</p> <p>bb = component class of the additional component (%1)</p> <p>aa = component number (%3)</p> <p>Note:</p> <p>The component class of the additional component is contained in bb.</p> <p>The component is described in dd, cc and aa, where the additional component is inserted.</p> <p>Component class and connection number are described in F01375.</p>
<b>Remedy:</b>	<p>Adapting topologies:</p> <ul style="list-style-type: none"><li>- remove the additional component (correct the actual topology).</li><li>- adapt the project/parameterization in the commissioning software (correct the target topology).</li></ul> <p>Note:</p> <p>Under "Topology --&gt; Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).</p>
<b>A01420</b>	<b>Topology: Component different</b>
<b>Message value:</b>	Component : %1, Soll: %2, actual: %3, difference: %4
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The topology comparison has detected differences in the actual and target topologies in the electronic rating plate.</p> <p>Alarm value (r2124, interpret hexadecimal):</p> <p>ddccbbaa hex: aa = component number (%1), bb = component class of the target topology (%2), cc = component class of the actual topology (%3), dd = difference (%4)</p> <p>dd = 01 hex = 1 dec:</p> <p>Different component type.</p> <p>dd = 02 hex = 2 dec:</p> <p>Different Order No.</p> <p>dd = 03 hex = 3 dec:</p> <p>Different manufacturer.</p> <p>dd = 04 hex = 4 dec:</p> <p>Connection changed over for a multi-component slave (e.g. Double Motor Module), defective EEPROM data in the electronic rating plate, or only part of a multi-component slave set to "de-activate and not present".</p> <p>dd = 05 hex = 5 dec:</p> <p>NX10 or NX15 used instead of CX32.</p> <p>dd = 06 hex = 6 dec:</p> <p>NX10 or NX15 used instead of CX32.</p> <p>dd = 07 hex = 7 dec:</p> <p>Different number of connections.</p> <p>Note:</p> <p>The component class is described in F01375.</p> <p>The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.</p>

**Remedy:**

Adapting topologies:

- connect the expected component (correct the actual topology).
- adapt the project/parameterization in the commissioning software (correct the target topology).

Topology comparison - if required, adapt the comparison level:

- parameterize the topology comparison of all components (p9906).
- parameterize the topology comparison of one components (p9907, p9908).

**Note:**

Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

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**A01425**      **Topology: Serial number different**

**Message value:**      Component: %1, %2, differences: %3

**Message class:**      Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:**      All objects

**Reaction:**      NONE

**Acknowledge:**      NONE

**Cause:**      The topology comparison has detected differences in the actual and target topologies in relation to one component.  
The serial number is different.  
Alarm value (r2124, interpret hexadecimal):  
ddccbbaa hex:  
dd = reserved  
cc = number of differences (%3)  
bb = component class (% 2)  
aa = component number (%1)  
**Note:**  
The component class is described in F01375.  
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

**Remedy:**

Adapting topologies:

- change over the actual topology to match the target topology.
- download the target topology that matches the actual topology (commissioning software).

Re byte cc:

cc = 1 --> can be acknowledged using p9904 or p9905.  
cc > 1 --> can be acknowledged using p9905 and can be de-activated using p9906 or p9907/p9908.

**Note:**

Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).  
See also: p9904 (Topology comparison acknowledge differences), p9905 (Device specialization), p9906 (Topology comparison stage of all components), p9907 (Topology comparison stage of the component number), p9908 (Topology comparison stage of a component)

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**A01428**      **Topology: Incorrect connection used**

**Message value:**      Component: %1, %2, connection (actual): %3, connection (target): %4

**Message class:**      Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:**      All objects

**Reaction:**      NONE

**Acknowledge:**      NONE

**Cause:**      The topology comparison has detected differences in the actual and target topologies in relation to one component.  
For a component, another connection was used.  
The different connections of a component are described in the alarm value.  
Alarm value (r2124, interpret hexadecimal):  
ddccbbaa hex:  
dd = connection number of the target topology (%4)  
cc = connection number of the actual topology (%3)  
bb = component class (% 2)  
aa = component number (%1)



Note:

Component class and connection number are described in F01375.

The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

**Remedy:**

Adapting topologies:

- reinsert the DRIVE-CLiQ cable to the component (correct the actual topology).
- adapt the project/parameterization in the commissioning software (correct the target topology).
- automatically remove the topology error (p9904).

Note:

Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

See also: p9904 (Topology comparison acknowledge differences)

**F01451**

**Topology: Target topology is invalid**

**Message value:**

%1

**Message class:**

Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:**

All objects

**Reaction:**

NONE

**Acknowledge:**

IMMEDIATELY

**Cause:**

An error was detected in the target topology.

The target topology is invalid.

Fault value (r0949, interpret hexadecimal):

ccccbbaa hex: cccc = index error, bb = component number, aa = fault cause

aa = 1B hex = 27 dec: Error not specified.

aa = 1C hex = 28 dec: Value illegal.

aa = 1D hex = 29 dec: Incorrect ID.

aa = 1E hex = 30 dec: Incorrect ID length.

aa = 1F hex = 31 dec: Too few indices left.

aa = 20 hex = 32 dec: component not connected to Control Unit.

**Remedy:**

Reload the target topology using the commissioning software.

**A01481 (N)**

**Topology: power unit not inserted**

**Message value:**

Component: %1, to %2: %3, connection : %4

**Message class:**

Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:**

All objects

**Reaction:**

NONE

**Acknowledge:**

NONE

**Cause:**

The topology comparison has detected a power unit that is missing in the actual topology with respect to the target topology.

Alarm value (r2124, interpret hexadecimal):

ddccbbaa hex:

dd = connection number (%4)

cc = component number (%3)

bb = component class (% 2)

aa = component number of the component that has not been inserted (% 1)

Note:

The component is described in dd, cc and bb, where the component has not been inserted.

Component class and connection number are described in F01375.

**Remedy:**

Adapting topologies:

- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterization in the commissioning software (correct the target topology).

Check the hardware:

- check the 24 V supply voltage.
- check DRIVE-CLiQ cables for interruption and contact problems.
- check that the component is working properly.

Note:

Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

Reaction upon N:

NONE

Acknowled. upon N:

NONE

#### A01482

#### Topology: Sensor Module not inserted

**Message value:**

Component: %1, to %2: %3, connection : %4

**Message class:**

Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:**

All objects

**Reaction:**

NONE

**Acknowledge:**

NONE

**Cause:**

The topology comparison has detected a Sensor Module that is missing in the actual topology with respect to the target topology.

Alarm value (r2124, interpret hexadecimal):

ddccbbaa hex:

dd = connection number (%4)

cc = component number (%3)

bb = component class (% 2)

aa = component number of the component that has not been inserted (% 1)

Note:

The component is described in dd, cc and bb, where the component has not been inserted.

Component class and connection number are described in F01375.

**Remedy:**

Adapting topologies:

- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterization in the commissioning software (correct the target topology).

Check the hardware:

- check the 24 V supply voltage.
- check DRIVE-CLiQ cables for interruption and contact problems.
- check that the component is working properly.

Note:

Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

#### A01483

#### Topology: Terminal Module not inserted

**Message value:**

Component: %1, to %2: %3, connection : %4

**Message class:**

Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:**

All objects

**Reaction:**

NONE

**Acknowledge:**

NONE

**Cause:**

The topology comparison has detected a Terminal Module that is missing in the actual topology with respect to the target topology.

Alarm value (r2124, interpret hexadecimal):

ddccbbaa hex:

dd = connection number (%4)

cc = component number (%3)

bb = component class (% 2)

aa = component number of the component that has not been inserted (% 1)

Note:

The component is described in dd, cc and bb, where the component has not been inserted.

Component class and connection number are described in F01375.

<b>Remedy:</b>	<p>Adapting topologies:</p> <ul style="list-style-type: none"> <li>- insert the components involved at the right connection (correct the actual topology).</li> <li>- adapt the project/parameterization in the commissioning software (correct the target topology).</li> </ul> <p>Check the hardware:</p> <ul style="list-style-type: none"> <li>- check the 24 V supply voltage.</li> <li>- check DRIVE-CLiQ cables for interruption and contact problems.</li> <li>- check that the component is working properly.</li> </ul> <p>Note:</p> <p>Under "Topology --&gt; Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).</p>
<b>A01484</b>	<b>Topology: DRIVE-CLiQ Hub Module not inserted</b>
<b>Message value:</b>	Component: %1, to %2: %3, connection : %4
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The topology comparison has detected a DRIVE-CLiQ Hub Module missing in the actual topology with respect to the target topology.</p> <p>Alarm value (r2124, interpret hexadecimal):</p> <p>ddccbbaa hex:</p> <p>dd = connection number (%4)</p> <p>cc = component number (%3)</p> <p>bb = component class (% 2)</p> <p>aa = component number of the component that has not been inserted (% 1)</p> <p>Note:</p> <p>The component is described in dd, cc and bb, where the component has not been inserted.</p> <p>Component class and connection number are described in F01375.</p>
<b>Remedy:</b>	<p>Adapting topologies:</p> <ul style="list-style-type: none"> <li>- insert the components involved at the right connection (correct the actual topology).</li> <li>- adapt the project/parameterization in the commissioning software (correct the target topology).</li> </ul> <p>Check the hardware:</p> <ul style="list-style-type: none"> <li>- check the 24 V supply voltage.</li> <li>- check DRIVE-CLiQ cables for interruption and contact problems.</li> <li>- check that the component is working properly.</li> </ul> <p>Note:</p> <p>Under "Topology --&gt; Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).</p>
<b>A01485</b>	<b>Topology: Controller Extension not inserted</b>
<b>Message value:</b>	Component: %1, to %2: %3, connection : %4
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The topology comparison has detected a Control Extension (CX32) missing in the actual topology with respect to the target topology.</p> <p>Alarm value (r2124, interpret hexadecimal):</p> <p>ddccbbaa hex:</p> <p>dd = connection number (%4)</p> <p>cc = component number (%3)</p> <p>bb = component class (% 2)</p> <p>aa = component number of the component that has not been inserted (% 1)</p> <p>Note:</p> <p>The component is described in dd, cc and bb, where the component has not been inserted.</p> <p>Component class and connection number are described in F01375.</p>

**Remedy:**

Adapting topologies:

- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterization in the commissioning software (correct the target topology).

Check the hardware:

- check the 24 V supply voltage.
- check DRIVE-CLiQ cables for interruption and contact problems.
- check that the component is working properly.

**Note:**

Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

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**A01486**      **Topology: DRIVE-CLiQ component not inserted**

**Message value:**      Component: %1, to %2: %3, connection : %4

**Message class:**      Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:**      All objects

**Reaction:**      NONE

**Acknowledge:**      NONE

**Cause:**      The topology comparison has detected a DRIVE-CLiQ component missing in the actual topology with respect to the target topology.

Alarm value (r2124, interpret hexadecimal):

ddccbbaa hex:

dd = connection number (%4)

cc = component number (%3)

bb = component class (% 2)

aa = component number of the component that has not been inserted (% 1)

**Note:**

The component is described in dd, cc and bb, where the component has not been inserted.

Component class and connection number are described in F01375.

**Remedy:**

Adapting topologies:

- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterization in the commissioning software (correct the target topology).

Check the hardware:

- check the 24 V supply voltage.
- check DRIVE-CLiQ cables for interruption and contact problems.
- check that the component is working properly.

**Note:**

Under "Topology --> Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

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**A01487**      **Topology: Option slot component not inserted**

**Message value:**      Component: %1, to %2: %3, connection : %4

**Message class:**      Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:**      All objects

**Reaction:**      NONE

**Acknowledge:**      NONE

**Cause:**      The topology comparison has detected an option slot component missing in the actual topology with respect to the target topology.

Alarm value (r2124, interpret hexadecimal):

ddccbbaa hex:

dd = connection number (%4)

cc = component number (%3)

bb = component class (% 2)

aa = component number of the component that has not been inserted (% 1)

**Note:**

The component is described in dd, cc and bb, where the component has not been inserted.

Component class and connection number are described in F01375.

<b>Remedy:</b>	<p>Adapting topologies:</p> <ul style="list-style-type: none"> <li>- insert the components involved at the right connection (correct the actual topology).</li> <li>- adapt the project/parameterization in the commissioning software (correct the target topology).</li> </ul> <p>Check the hardware:</p> <ul style="list-style-type: none"> <li>- check the 24 V supply voltage.</li> <li>- check DRIVE-CLiQ cables for interruption and contact problems.</li> <li>- check that the component is working properly.</li> </ul> <p>Note:</p> <p>Under "Topology --&gt; Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).</p>
<b>A01489</b>	<b>Topology: Motor with DRIVE-CLiQ not inserted</b>
<b>Message value:</b>	Component: %1, to %2: %3, connection : %4
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The topology comparison has detected a motor with DRIVE-CLiQ missing in the actual topology with respect to the target topology.</p> <p>Alarm value (r2124, interpret hexadecimal):</p> <p>ddccbbaa hex:</p> <p>dd = connection number (%4)</p> <p>cc = component number (%3)</p> <p>bb = component class (% 2)</p> <p>aa = component number of the component that has not been inserted (% 1)</p> <p>Note:</p> <p>The component is described in dd, cc and bb, where the component has not been inserted.</p> <p>Component class and connection number are described in F01375.</p>
<b>Remedy:</b>	<p>Adapting topologies:</p> <ul style="list-style-type: none"> <li>- insert the components involved at the right connection (correct the actual topology).</li> <li>- adapt the project/parameterization in the commissioning software (correct the target topology).</li> </ul> <p>Check the hardware:</p> <ul style="list-style-type: none"> <li>- check the 24 V supply voltage.</li> <li>- check DRIVE-CLiQ cables for interruption and contact problems.</li> <li>- check that the component is working properly.</li> </ul> <p>Note:</p> <p>Under "Topology --&gt; Topology view" the commissioning software where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).</p>
<b>F01505 (A)</b>	<b>BICO: Interconnection cannot be established</b>
<b>Message value:</b>	Parameter: %1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>A PROFIdrive telegram has been set (p0922).</p> <p>An interconnection contained in the telegram was not able to be established.</p> <p>Fault value (r0949, interpret decimal):</p> <p>Parameter receiver that should be changed.</p>
<b>Remedy:</b>	Establish another interconnection.
Reaction upon A:	NONE
Acknowled. upon A:	NONE

<b>F01506 (A)</b>	<b>BICO: No standard telegram</b>
<b>Message value:</b>	Parameter: %1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The standard telegram in p0922 is not maintained and therefore p0922 is set to 999. Fault value (r0949, interpret decimal): BICO parameter for which the write attempt was unsuccessful.
<b>Remedy:</b>	Again set the required standard telegram (p0922).
Reaction upon A:	NONE
Acknowl. upon A:	NONE
<b>A01507 (F, N)</b>	<b>BICO: Interconnections to inactive objects present</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	There are BICO interconnections to an inactive/inoperable drive object. The BI/CI parameters involved are listed in r9498. The associated BO/CO parameters are listed in r9499. The list of the BICO interconnections to other drive objects is displayed in r9491 and r9492 of the de-activated drive object. Note: r9498 and r9499 are only written to, if p9495 is not set to 0. Alarm value (r2124, interpret decimal): Number of BICO interconnections found to inactive drive objects.
<b>Remedy:</b>	- set all open BICO interconnections centrally to the factory setting with p9495 = 2. - make the non-operational drive object active/operational again (re-insert or activate components).
Reaction upon F:	OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>A01508</b>	<b>BICO: Interconnections to inactive objects exceeded</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The maximum number of BICO interconnections (signal sinks) when de-activating a drive object was exceeded. When de-activating a drive object, all BICO interconnections (signal sinks) are listed in the following parameters: - r9498[0...29]: List of the BI/CI parameters involved. - r9499[0...29]: List of the associated BO/CO parameters.
<b>Remedy:</b>	The alarm automatically disappears as soon as no BICO interconnection (value = 0) is entered in r9498[29] and r9499[29]. Notice: When re-activating the drive object, all BICO interconnections should be checked and if required, re-established.

<b>F01510</b>	<b>BICO: Signal source is not float type</b>
<b>Message value:</b>	Parameter: %1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The requested connector output does not have the correct data type. This interconnection is not established. Fault value (r0949, interpret decimal): Parameter number to which an interconnection should be made (connector output).
<b>Remedy:</b>	Interconnect this connector input with a connector output having a float data type.
<b>F01511 (A)</b>	<b>BICO: Interconnection with different scalings</b>
<b>Message value:</b>	Parameter: %1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The requested BICO interconnection was established. However, a conversion is made between the BICO output and BICO input using the reference values. - the BICO output has different normalized units than the BICO input. - message only for interconnections within a drive object. Example: The BICO output has, as normalized unit, voltage and the BICO input has current. This means that the factor p2002/p2001 is calculated between the BICO output and the BICO input. p2002: contains the reference value for current p2001: contains the reference value for voltage Fault value (r0949, interpret decimal): Parameter number of the BICO input (signal sink).
<b>Remedy:</b>	Not necessary.
Reaction upon A:	NONE
Acknowled. upon A:	NONE
<b>F01512</b>	<b>BICO: No scaling available</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	POWER ON
<b>Cause:</b>	An attempt was made to determine a conversion factor for a scaling that does not exist. Fault value (r0949, interpret decimal): Unit (e.g. corresponding to SPEED) for which an attempt was made to determine a factor.
<b>Remedy:</b>	Apply scaling or check the transfer value.
<b>F01513 (N, A)</b>	<b>BICO: Interconnection cross DO with different scalings</b>
<b>Message value:</b>	Parameter: %1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The requested BICO interconnection was established. However, a conversion is made between the BICO output and BICO input using the reference values. An interconnection is made between different drive objects and the BICO output has different normalized units than the BICO input or the normalized units are the same but the reference values are different.

## 4 Faults and alarms

### 4.2 List of faults and alarms

Example 1:

BICO output with voltage normalized unit, BICO input with current normalized unit, BICO output and BICO input lie in different drive objects. This means that the factor p2002/p2001 is calculated between the BICO output and the BICO input.

p2002: contains the reference value for current

p2001: contains the reference value for voltage

Example 2:

BICO output with voltage normalized unit in drive object 1 (DO1), BICO input with voltage normalized unit in drive object 2 (DO2). The reference values for voltage (p2001) of the two drive objects have different values. This means that the factor p2001(DO1)/p2001(DO2) is calculated between the BICO output and the BICO input.

p2001: contains the reference value for voltage, drive objects 1, 2

Fault value (r0949, interpret decimal):

Parameter number of the BICO input (signal sink).

**Remedy:**

Not necessary.

Reaction upon N:

NONE

Acknowl. upon N:

NONE

Reaction upon A:

NONE

Acknowl. upon A:

NONE

---

#### **A01514 (F)**

#### **BICO: Error when writing during a reconnect**

**Message value:**

Parameter: %1

**Message class:**

Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:**

All objects

**Reaction:**

NONE

**Acknowledge:**

NONE

**Cause:**

During a reconnect operation (e.g. while booting or downloading - but can also occur in normal operation) a parameter was not able to be written to.

Example:

When writing to BICO input with double word format (DWORD), in the second index, the memory areas overlap (e.g. p8861). The parameter is then reset to the factory setting.

Alarm value (r2124, interpret decimal):

Parameter number of the BICO input (signal sink).

**Remedy:**

Not necessary.

Reaction upon F:

NONE

Acknowl. upon F:

IMMEDIATELY

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#### **F01515 (A)**

#### **BICO: Writing to parameter not permitted as the master control is active**

**Message value:**

-

**Message class:**

Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:**

DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:**

NONE

**Acknowledge:**

IMMEDIATELY

**Cause:**

When changing the number of CDS or when copying from CDS, the master control is active.

**Remedy:**

If required, return the master control and repeat the operation.

Reaction upon A:

NONE

Acknowl. upon A:

NONE

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#### **A01590 (F)**

#### **Drive: Motor maintenance interval expired**

**Message value:**

Fault cause: %1 bin

**Message class:**

General drive fault (19)

**Drive object:**

CU\_DC, CU\_DC\_R, CU\_DC\_R\_S, CU\_DC\_S, TM150, TM15DI\_DO, TM31

**Reaction:**

NONE

**Acknowledge:**

NONE

**Cause:**

The selected service/maintenance interval for this motor was reached.

Alarm value (r2124, interpret decimal):

Motor data set number.



**Remedy:** carry out service/maintenance and reset the service/maintenance interval (p0651).  
**Reaction upon F:** NONE  
**Acknowled. upon F:** IMMEDIATELY

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<b>F01800</b>	<b>DRIVE-CLiQ: Hardware/configuration error</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	A DRIVE-CLiQ connection fault has occurred. Fault value (r0949, interpret decimal): 100 ... 107: Communication via DRIVE-CLiQ socket X100 ... X107 has not been switched to cyclic operation. The cause may be an incorrect structure or a configuration that results in an impossible bus timing. 10: Loss of the DRIVE-CLiQ connection. The cause may be, for example, that the DRIVE-CLiQ cable was withdrawn from the Control Unit or as a result of a short-circuit for motors with DRIVE-CLiQ. This fault can only be acknowledged in cyclic communication. 11: Repeated faults when detecting the connection. This fault can only be acknowledged in cyclic communication. 12: A connection was detected but the node ID exchange mechanism does not function. The reason is probably that the component is defective. This fault can only be acknowledged in cyclic communication.
<b>Remedy:</b>	Re fault value = 100 ... 107: - ensure that the DRIVE-CLiQ components have the same firmware versions. - avoid longer topologies for short current controller clock cycles. For fault value = 10: - check the DRIVE-CLiQ cables at the Control Unit. - remove any short-circuit for motors with DRIVE-CLiQ. - carry out a POWER ON. For fault value = 11: - check the electrical cabinet design and cable routing for EMC compliance For fault value = 12: - replace the component involved.

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<b>A01839</b>	<b>DRIVE-CLiQ diagnostics: cable fault to the component</b>
<b>Message value:</b>	Component number: %1
<b>Message class:</b>	General drive fault (19)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The fault counter (r9936[0...199]) to monitor the DRIVE-CLiQ connections/cables has been incremented. Alarm value (r2124, interpret decimal): Component number. Note: The component number specifies the component whose feeder cable from the direction of the Control Unit is faulted. The alarm automatically disappears after 5 seconds, assuming that no other data transfer error has occurred. See also: r9936 (DRIVE-CLiQ diagnostic error counter connection)
<b>Remedy:</b>	- check the corresponding DRIVE-CLiQ cables. - check the electrical cabinet design and cable routing for EMC compliance

<b>A01900 (F)</b>	<b>PB/PN: Configuration telegram error</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>A controller attempts to establish a connection using an incorrect configuring telegram.</p> <p>Alarm value (r2124, interpret decimal):</p> <p>1: Connection established to more drive objects than configured in the device. The drive objects for process data exchange and their sequence are defined in p0978.</p> <p>2: Too many PZD data words for output or input to a drive object. The number of possible PZD items in a drive object is determined by the number of indices in r2050/p2051.</p> <p>3: Uneven number of bytes for input or output.</p> <p>4: Setting data for synchronization not accepted. For more information, see A01902.</p> <p>211: Unknown parameterizing block.</p> <p>223: Clock synchronization for the PZD interface set in p8815[0] is not permissible. More than one PZD interface is operated in clock synchronism.</p> <p>253: PN Shared Device: Illegal mixed configuration of PROFIsafe and PZD.</p> <p>254: PN Shared Device: Illegal double assignment of a slot/subslot.</p> <p>255: PN: Configured drive object and existing drive object do not match.</p> <p>500: Illegal PROFIsafe configuration for the interface set in p8815[1]. More than one PZD interface is operated with PROFIsafe.</p> <p>501: PROFIsafe parameter error (e.g. F_dest).</p> <p>502: PROFIsafe telegram does not match.</p> <p>503: PROFIsafe connection is rejected as long as there is no isochronous connection (p8969).</p> <p>Additional values: Only for internal Siemens troubleshooting.</p>
<b>Remedy:</b>	<p>Check the bus configuration on the master and the slave sides.</p> <p>Re alarm value = 1, 2: - Check the list of the drive objects with process data exchange (p0978).</p> <p>Note: With p0978[x] = 0, all of the following drive objects in the list are excluded from the process data exchange.</p> <p>Re alarm value = 2: - Check the number of data words for output and input to a drive object.</p> <p>Re alarm value = 211: - Ensure offline version &lt;= online version.</p> <p>Re alarm value = 223, 500: - Check the setting in p8839 and p8815. - Check for inserted but not configured CBE20. - Ensure that only one PZD interface is operated in clock synchronism or with PROFIsafe.</p> <p>Re alarm value = 255: - Check configured drive objects.</p>

Re alarm value = 501:  
- Check the set PROFIsafe address (p9610).  
Re alarm value = 502:  
- Check the set PROFIsafe telegram (p60022, p9611).

Reaction upon F: NONE (OFF1)  
Acknowl. upon F: IMMEDIATELY

<b>A01902</b>	<b>PB/PN clock cycle synchronous operation parameterization not permissible</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	Parameterization for isochronous operation is not permissible. Alarm value (r2124, interpret decimal): 0: Bus cycle time Tdp < 0.5 ms. 1: Bus cycle time Tdp > 32 ms. 2: Bus cycle time Tdp is not an integer multiple of the current controller sampling time. 3: Instant of the actual value sensing Ti > Bus cycle time Tdp or Ti = 0. 4: Instant of the actual value sensing Ti is not an integer multiple of the current controller sampling time. 5: Instant of the setpoint acceptance To >= Bus cycle time Tdp or To = 0. 6: Instant of the setpoint acceptance To is not an integer multiple of the current controller sampling time. 7: Master application cycle time Tmapc is not an integer multiple of the speed controller sampling time. 8: Bus reserve bus cycle time Tdp - data exchange time Tdx less than two current controller sampling times. 10: Instant of the setpoint acceptance To <= data exchange time Tdx + current controller sampling time 11: Master application cycle time Tmapc > 14 x Tdp or Tmapc = 0. 12: PLL tolerance window Tpll_w > Tpll_w_max. 13: Bus cycle time Tdp is not a multiple of all basic clock cycles p0110[x]. 16: For COMM BOARD, the instant in time for the actual value sensing Ti is less than two current controller sampling times.
<b>Remedy:</b>	- Adapt the bus parameterization Tdp, Ti, To. - adapt the sampling time for the current controller or speed controller. Re alarm value = 10: - Reduce Tdx by using fewer bus participants or shorter telegrams. Note: PB: PROFIBUS PN: PROFINET

<b>F01910 (N, A)</b>	<b>Fieldbus: setpoint timeout</b>
<b>Message value:</b>	-
<b>Message class:</b>	Communication error to the higher-level control system (9)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	OFF3 (IASC/DCBRK, NONE, OFF1, OFF2, STOP2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The reception of setpoints from the fieldbus interface (onboard, PROFIBUS/PROFINET/USS) has been interrupted. - bus connection interrupted. - controller switched off. - controller set into the STOP state. See also: p2040 (Fieldbus interface monitoring time), p2047 (PROFIBUS additional monitoring time)
<b>Remedy:</b>	Restore the bus connection and set the controller to RUN. Note regarding PROFIBUS slave redundancy: For operation on a Y link, it must be ensured that "DP alarm mode = DPV1" is set in the slave parameterization.
Reaction upon N:	NONE
Acknowl. upon N:	NONE

## 4 Faults and alarms

### 4.2 List of faults and alarms

Reaction upon A: NONE

Acknowl. upon A: NONE

---

#### **F01911 (N, A) PB/PN clock cycle synchronous operation clock cycle failure**

**Message value:** -

**Message class:** Communication error to the higher-level control system (9)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31

**Reaction:** OFF1 (OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The global control telegram to synchronize the clock cycles has failed - in cyclic operation - for several DP clock cycles or has violated the time grid specified in the parameterizing telegram over several consecutive DP clock cycles (refer to the bus cycle time, Tdp and Tpllw).

**Remedy:** - check the physical bus configuration (cable, connector, terminating resistor, shielding, etc.).  
- check whether communication was briefly or permanently interrupted.  
- check the bus and controller for utilization level (e.g. bus cycle time Tdp was set too short).

PB: PROFIBUS

PN: PROFINET

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

---

#### **F01915 (N, A) PB/PN clock cycle synchronous operation sign-of-life failure drive object 1**

**Message value:** -

**Message class:** Communication error to the higher-level control system (9)

**Drive object:** All objects

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** Group display for problems with the sign-of-life of the master (clock-cycle synchronous operation) on the drive object 1 (Control Unit).

For central measurements, synchronism with the central master is lost.

**Remedy:** Note:

PB: PROFIBUS

PN: PROFINET

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

---

#### **A01920 (F) PROFIBUS: Interruption cyclic connection**

**Message value:** -

**Message class:** Communication error to the higher-level control system (9)

**Drive object:** All objects

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The cyclic connection to the PROFIBUS master is interrupted.

**Remedy:** Establish the PROFIBUS connection and activate the PROFIBUS master in the cyclic mode.

Note:

If there is no communication to a higher-level control system, then p2030 should be set = 0 to suppress this message.

See also: p2030 (Field bus int protocol selection)

Reaction upon F: NONE (OFF1)

Acknowl. upon F: IMMEDIATELY

<b>A01921 (F)</b>	<b>PROFIBUS: Receive setpoints after To</b>
<b>Message value:</b>	-
<b>Message class:</b>	Communication error to the higher-level control system (9)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	Output data of PROFIBUS master (setpoints) received at the incorrect instant in time within the PROFIBUS clock cycle.
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check bus configuration.</li> <li>- check parameters for clock cycle synchronization (ensure To &gt; Tdx).</li> </ul> <p>Note: To: Time of setpoint acceptance Tdx: Data exchange time</p>
Reaction upon F:	NONE (OFF1)
Acknowl. upon F:	IMMEDIATELY
<b>A01930</b>	<b>PB/PN current controller sampling time clock cycle synch. not equal</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The current controller sampling time of all drives must be set the same for the clock cycle synchronous operation.</p> <p>Alarm value (r2124, interpret decimal): Number of the drive object with different current controller sampling time.</p>
<b>Remedy:</b>	<p>Set current controller sampling time to identical values (p0115[0]).</p> <p>Note: PB: PROFIBUS PN: PROFINET See also: p0115</p>
<b>A01931</b>	<b>PB/PN speed controller sampling time clock cycle synch. not equal</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The speed controller sampling time of all drives must be set the same for the clock cycle synchronous operation.</p> <p>Alarm value (r2124, interpret decimal): Number of the drive object with the different speed controller sampling time.</p>
<b>Remedy:</b>	<p>Set the speed controller sampling times to identical values (p0115[1]).</p> <p>Note: PB: PROFIBUS PN: PROFINET See also: p0115</p>
<b>A01940</b>	<b>PB/PN clock cycle synchronism not reached</b>
<b>Message value:</b>	-
<b>Message class:</b>	Communication error to the higher-level control system (9)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The bus is in the data exchange state and clock synchronous operation has been selected using the parameterizing telegram. It was not possible to synchronize to the clock cycle specified by the master.

	<ul style="list-style-type: none"><li>- the master does not send a clock synchronous global control telegram although clock synchronous operation was selected when configuring the bus.</li><li>- the master is using another clock synchronous DP clock cycle than was transferred to the slave in the parameterizing telegram.</li><li>- at least one drive object has a pulse enable (not controlled from PROFIBUS/PROFINET either).</li></ul>
<b>Remedy:</b>	<ul style="list-style-type: none"><li>- check the master application and bus configuration.</li><li>- check the consistency between the clock cycle input when configuring the slave and clock cycle setting at the master.</li><li>- check that no drive object has a pulse enable. Only enable the pulses after synchronizing the PROFIBUS/PROFINET drives.</li></ul>
	<b>Note:</b> PB: PROFIBUS PN: PROFINET

<b>A01941</b>	<b>PB/PN clock cycle signal missing when establishing bus communication</b>
<b>Message value:</b>	-
<b>Message class:</b>	Communication error to the higher-level control system (9)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The bus is in the data exchange state and clock synchronous operation has been selected using the parameterizing telegram. The global control telegram for synchronization is not being received.
<b>Remedy:</b>	Check the master application and bus configuration.
	<b>Note:</b> PB: PROFIBUS PN: PROFINET

<b>A01943</b>	<b>PB/PN clock cycle signal error when establishing bus communication</b>
<b>Message value:</b>	-
<b>Message class:</b>	Communication error to the higher-level control system (9)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The bus is in the data exchange state and clock synchronous operation has been selected using the parameterizing telegram. The global control telegram for synchronization is being irregularly received. <ul style="list-style-type: none"><li>-the master is sending an irregular global control telegram.</li><li>- the master is using another clock synchronous DP clock cycle than was transferred to the slave in the parameterizing telegram.</li></ul>
<b>Remedy:</b>	<ul style="list-style-type: none"><li>- check the master application and bus configuration.</li><li>- check the consistency between the clock cycle input when configuring the slave and clock cycle setting at the master.</li></ul>
	<b>Note:</b> PB: PROFIBUS PN: PROFINET

<b>A01945</b>	<b>PROFIBUS: Connection to the Publisher failed</b>
<b>Message value:</b>	Fault cause: %1 bin
<b>Message class:</b>	Communication error to the higher-level control system (9)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	For PROFIBUS peer-to-peer data transfer, the connection to at least one Publisher has failed. Alarm value (r2124, interpret binary): Bit 0 = 1: Publisher with address in r2077[0], connection failed. ... Bit 15 = 1: Publisher with address in r2077[15], connection failed.

**Remedy:**

- check the PROFIBUS cables.
- carry out a first commissioning of the Publisher that has the failed connection.

See also: r2077 (PROFIBUS diagnostics peer-to-peer data transfer addresses)

---

**F01946 (A) PROFIBUS: Connection to the Publisher aborted**

**Message value:** Fault cause: %1 bin  
**Message class:** Communication error to the higher-level control system (9)  
**Drive object:** All objects  
**Reaction:** OFF1 (NONE, OFF2, OFF3)  
**Acknowledge:** IMMEDIATELY (POWER ON)  
**Cause:** At this drive object, the connection to at least one Publisher for PROFIBUS peer-to-peer data transfer in cyclic operation has been aborted.  
 Fault value (r0949, interpret binary):  
 Bit 0 = 1: Publisher with address in r2077[0], connection aborted.

...

Bit 15 = 1: Publisher with address in r2077[15], connection aborted.

**Remedy:**

- check the PROFIBUS cables.
- check the state of the Publisher that has the aborted connection.

See also: r2077 (PROFIBUS diagnostics peer-to-peer data transfer addresses)

Reaction upon A: NONE

Acknowl. upon A: NONE

---

**F01950 (N, A) PB/PN clock cycle synchronous operation synchronization unsuccessful**

**Message value:** -  
**Message class:** Communication error to the higher-level control system (9)  
**Drive object:** All objects  
**Reaction:** OFF1 (NONE)  
**Acknowledge:** IMMEDIATELY (POWER ON)  
**Cause:** Synchronization of the internal clock cycle to the global control telegram has failed. The internal clock cycle exhibits an unexpected shift.

**Remedy:** Only for internal Siemens troubleshooting.

Note:

PB: PROFIBUS

PN: PROFINET

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

---

**F01951 CU SYNC: Synchronization application clock cycle missing**

**Message value:** %1  
**Message class:** Internal (DRIVE-CLiQ) communication error (12)  
**Drive object:** All objects  
**Reaction:** OFF2 (NONE)  
**Acknowledge:** IMMEDIATELY (POWER ON)  
**Cause:** If DRIVE-CLiQ components with different application clock cycle are operated on a DRIVE-CLiQ port, this requires synchronization with the Control Unit. This synchronization routine was unsuccessful.  
 Fault value (r0949, interpret decimal):

Only for internal Siemens troubleshooting.

**Remedy:**

- carry out a POWER ON (power off/on) for all components.
- upgrade the software of the DRIVE-CLiQ components.
- upgrade the Control Unit software.

Note:  
 If a Controller Extension is being used (e.g. CX32, NX10), then the following applies:  
 Check whether the Controller Extension is issuing error messages, and if required, remove these.

<b>F01952</b>	<b>CU DRIVE-CLiQ: Synchronization of component not supported</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	OFF2 (NONE)
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	The existing system configuration requires that the connected DRIVE-CLiQ components support the synchronization between the basic clock cycle, DRIVE-CLiQ clock cycle and the application clock cycle. However, not all DRIVE-CLiQ components have this functionality. Fault value (r0949, interpret decimal): Component number of the first faulty DRIVE-CLiQ component.
<b>Remedy:</b>	Upgrade the firmware of the component specified in the fault value. Note: If required, also upgrade additional components in the DRIVE-CLiQ line.
<b>A01953</b>	<b>CU SYNC: Synchronization not completed</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	After the drive system is powered up, the synchronization between the basic clock cycle, DRIVE-CLiQ clock cycle and application clock cycle was started but was not completed within the selected time tolerance. Alarm value (r2124, interpret decimal): Only for internal Siemens troubleshooting.
<b>Remedy:</b>	Carry out a POWER ON (power off/on) for all components. If the error occurs after the drive sampling times were changed, and if a Terminal Module 31 (TM31) is being used, the sampling times (p0115, p4099) should be set as integer multiples to the drive clock cycles (p0115).
<b>F01954</b>	<b>CU DRIVE-CLiQ: Synchronization unsuccessful</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	Synchronization between the basic clock cycle, DRIVE-CLiQ clock cycle and application clock cycle was started and was not able to be successfully completed (e.g. after switch-on). Fault value (r0949, interpret decimal): Only for internal Siemens troubleshooting.
<b>Remedy:</b>	1. Remove the cause of a possible DRIVE-CLiQ fault. 2. Initiate a new synchronization, e.g. as follows: <ul style="list-style-type: none"><li>- remove the PROFIBUS master and re-insert again.</li><li>- restart the PROFIBUS master.</li><li>- switch-off the Control Unit and switch-on again.</li><li>- carry out a Control Unit hardware reset (RESET button, p0972).</li><li>- carry out a parameter reset and download the saved parameters (p0009 = 30, p0976 = 2, 3).</li></ul>
<b>A01955</b>	<b>CU DRIVE-CLiQ: Synchronization DO not completed</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	After the drive system is powered up, the synchronization between the basic clock cycle, DRIVE-CLiQ clock cycle and application clock cycle was started but was not completed within the selected time tolerance.



Alarm value (r2124, interpret decimal):  
Only for internal Siemens troubleshooting.  
**Remedy:** Carry out a POWER ON (power off/on) for all components of the DO.

---

<b>A01990 (F)</b>	<b>USS: PZD configuration error</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The configuration of the process data (PZD) for the USS protocol is incorrect. Alarm value (r2124, interpret decimal): 2: PZD amount (p2022) too great for the first drive object (p978[0]). The number of possible PZD items in a drive object is determined by the number of indices in r2050/p2051.
<b>Remedy:</b>	Re alarm value = 2: Check the amount of USS PZD (p2022) and the maximum PZD amount (r2050/p2051) for the first drive object (p0978[0]).
Reaction upon F:	NONE (OFF1)
Acknowl. upon F:	IMMEDIATELY

---

<b>A02000</b>	<b>Function generator: Start not possible</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The function generator has already been started.
<b>Remedy:</b>	Stop the function generator and restart again if necessary. Note: The alarm is reset as follows: - remove the cause of this alarm. - restart the function generator. See also: p4800 (Function generator control)

---

<b>A02005</b>	<b>Function generator: Drive does not exist</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The drive object specified for connection does not exist.
<b>Remedy:</b>	Use the existing drive object with the corresponding number. Note: The alarm is reset as follows: - remove the cause of this alarm. - restart the function generator.

---

<b>A02006</b>	<b>Function generator: No drive specified for connection</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	No drive specified for connection in p4815.

---

**Remedy:** At least one drive to be connected must be specified in p4815.

Note:

The alarm is reset as follows:

- remove the cause of this alarm.
- restart the function generator.

---

#### **A02007      Function generator: Drive not SERVO / VECTOR / DC\_CTRL**

**Message value:** %1

**Message class:** Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:** All objects

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The drive object specified for connection is not a SERVO / VECTOR or DC\_CTRL.

**Remedy:** Use a SERVO / VECTOR / DC\_CTRL drive object with the corresponding number.

Note:

The alarm is reset as follows:

- remove the cause of this alarm.
- restart the function generator.

---

#### **A02008      Function generator: Drive specified a multiple number of times**

**Message value:** %1

**Message class:** Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:** All objects

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The drive object specified for connection is already specified.

Alarm value (r2124, interpret decimal):

Drive object number of the drive object that is specified a multiple number of times.

**Remedy:** Specify a different drive object.

Note:

The alarm is reset as follows:

- remove the cause of this alarm.
- restart the function generator.

---

#### **A02009      Function generator: Illegal mode**

**Message value:** %1

**Message class:** Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:** All objects

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The set operating mode (p1300) of the drive object is not permissible when using the function generator.

Alarm value (r2124, interpret decimal):

Number of the drive object involved.

**Remedy:** Change the operating mode for this drive object to p1300 = 20 (encoderless speed control) or p1300 = 21 (speed control with encoder).

Note:

The alarm is reset as follows:

- remove the cause of this alarm.
- restart the function generator.

---

<b>A02010</b>	<b>Function generator: Speed setpoint from the drive is not zero</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The speed setpoint of a drive selected for connection is greater than the value for the standstill detection set using p1226.
<b>Remedy:</b>	For all of the drives specified for connection, set the speed setpoints to zero. Note: The alarm is reset as follows: - remove the cause of this alarm. - restart the function generator.

---

<b>A02011</b>	<b>Function generator: The actual drive speed is not zero</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The speed actual value of a drive selected for connection is greater than the value for the standstill detection set using p1226.
<b>Remedy:</b>	Set the relevant drives to zero speed before starting the function generator. Note: The alarm is reset as follows: - remove the cause of this alarm. - restart the function generator.

---

<b>A02015</b>	<b>Function generator: Drive enable signals missing</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The master control and/or enable signals are missing to connect to the specified drive.
<b>Remedy:</b>	Fetch the master control to the specified drive object and set all enable signals. Note: The alarm is reset as follows: - remove the cause of this alarm. - restart the function generator.

---

<b>A02016</b>	<b>Function generator: Magnetizing running</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	Magnetizing has not yet been completed on a drive object specified for connection. Alarm value (r2124, interpret decimal): Number of the drive object involved.
<b>Remedy:</b>	Wait for magnetizing of the motor (r0056.4). Note: The alarm is reset as follows: - restart the function generator. See also: r0056 (Status word, closed-loop control)

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**A02020      Function generator: Parameter cannot be changed**

**Message value:** -  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** This parameter setting cannot be changed when the function generator is active (p4800 = 1).  
See also: p4810, p4812, p4813, p4820, p4821, p4822, p4823, p4824, p4825, p4826, p4827, p4828, p4829  
**Remedy:** - stop the function generator before parameterizing (p4800 = 0).  
- if required, start the function generator (p4800 = 1).  
**Note:**  
The alarm is reset as follows:  
- remove the cause of this alarm.  
- restart the function generator.  
See also: p4800 (Function generator control)

---

**A02025      Function generator: Period too short**

**Message value:** -  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The value for the period is too short.  
See also: p4821 (Function generator period)  
**Remedy:** Check and adapt the value for the period.  
**Note:**  
The alarm is reset as follows:  
- remove the cause of this alarm.  
- restart the function generator.  
See also: p4821 (Function generator period)

---

**A02026      Function generator: Pulse width too high**

**Message value:** -  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The selected pulse width is too high.  
The pulse width must be less than the period duration.  
See also: p4822 (Function generator pulse width)  
**Remedy:** Reduce pulse width.  
**Note:**  
The alarm is reset as follows:  
- remove the cause of this alarm.  
- restart the function generator.  
See also: p4821 (Function generator period), p4822 (Function generator pulse width)

---

**A02030      Function generator: Physical address equals zero**

**Message value:** -  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The specified physical address is zero.  
See also: p4812 (Function generator physical address)

**Remedy:** Set a physical address with a value other than zero.  
**Note:**  
The alarm is reset as follows:  
- remove the cause of this alarm.  
- restart the function generator.  
See also: p4812 (Function generator physical address)

---

**A02040      Function generator: Illegal value for offset**

**Message value:** -  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The value for the offset is higher than the value for the upper limit or lower than the value for the lower limit.  
See also: p4826 (Function generator offset)  
**Remedy:** Adjust the offset value accordingly.  
**Note:**  
The alarm is reset as follows:  
- remove the cause of this alarm.  
- restart the function generator.  
See also: p4826 (Function generator offset), p4828 (Function generator lower limit), p4829 (Function generator upper limit)

---

**A02041      Function generator: Illegal value for bandwidth**

**Message value:** -  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The bandwidth referred to the time slice clock cycle of the function generator has either been set too low or too high.  
Depending on the time slice clock cycle, the bandwidth is defined as follows:  
 $\text{Bandwidth\_max} = 1 / (2 \times \text{time slice clock cycle})$   
 $\text{Bandwidth\_min} = \text{Bandwidth\_max} / 100000$   
Example:  
Assumption: p4830 = 125  $\mu\text{s}$   
-->  $\text{Bandwidth\_max} = 1 / (2 \times 125 \mu\text{s}) = 4000 \text{ Hz}$   
-->  $\text{Bandwidth\_min} = 4000 \text{ Hz} / 100000 = 0.04 \text{ Hz}$   
**Note:**  
p4823: Function generator bandwidth  
p4830: Function generator time slice clock cycle  
See also: p4823 (Function generator bandwidth), p4830 (Function generator time slice cycle)  
**Remedy:** Check the value for the bandwidth and adapt accordingly.  
**Note:**  
The alarm is reset as follows:  
- remove the cause of this alarm.  
- restart the function generator.

---

**A02047      Function generator: Time slice clock cycle invalid**

**Message value:** -  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The time slice clock cycle selected does not match any of the existing time slices.  
See also: p4830 (Function generator time slice cycle)

**Remedy:** Enter an existing time slice clock cycle. The existing time slices can be read out via p7901.

Note:

The alarm is reset as follows:

- remove the cause of this alarm.
- restart the function generator.

See also: r7901 (Sampling times)

---

#### A02050

#### Trace: Start not possible

**Message value:** -

**Message class:** Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:** All objects

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The trace has already been started.

See also: p4700 (Trace control)

**Remedy:** Stop the trace and, if necessary, start again.

---

#### A02051

#### Trace: recording not possible as a result of know-how protection

**Message value:** involves %1

**Message class:** Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:** All objects

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** TRACE recording is not possible as at least one signal or trigger signal being used is under know-how protection.

Alarm value (r2124, interpret decimal):

1: Recorder 0

2: Recorder 1

3: Recorders 0 and 1

See also: p4700, p4711, p4730, p4731, p4732, p4733, p4734, p4735, p4736, p4737

**Remedy:** - Temporarily activate or deactivate know-how protection (p7766).

- Include the signal in the OEM exception list (p7763, p7764).

- Where relevant do not record of the signal.

See also: p7763 (KHP OEM exception list number of indices for p7764), p7764 (KHP OEM exception list)

---

#### A02055

#### Trace: Recording time too short

**Message value:** -

**Message class:** Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:** All objects

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The trace duration is too short.

The minimum is twice the value of the trace clock cycle.

See also: p4721 (Trace recording time)

**Remedy:** Check the selected recording time and, if necessary, adjust.

---

#### A02056

#### Trace: Recording cycle too short

**Message value:** -

**Message class:** Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:** All objects

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The selected recording cycle is shorter than the selected basic clock cycle 0 (p0110[0]).

See also: p4720 (Trace recording cycle)

**Remedy:** Increase the value for the trace cycle.

---

<b>A02057</b>	<b>Trace: Time slice clock cycle invalid</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The time slice clock cycle selected does not match any of the existing time slices. See also: p4723 (Trace time slice cycle)
<b>Remedy:</b>	Enter an existing time slice clock cycle. The existing time slices can be read out via p7901. See also: r7901 (Sampling times)

---

<b>A02058</b>	<b>Trace: Time slice clock cycle for endless trace not valid</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The selected time slice clock cycle cannot be used for the endless trace See also: p4723 (Trace time slice cycle)
<b>Remedy:</b>	Enter the clock cycle of an existing time slice with a cycle time $\geq 2$ ms for up to 4 recording channels or $\geq 4$ ms from 5 recording channels per trace. The existing time slices can be read out via p7901. See also: r7901 (Sampling times)

---

<b>A02059</b>	<b>Trace: Time slice clock cycle for 2 x 8 recording channels not valid</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The selected time slice clock cycle cannot be used for more than 4 recording channels. See also: p4723 (Trace time slice cycle)
<b>Remedy:</b>	Enter the clock cycle of an existing time slice with a cycle time $\geq 4$ ms or reduce the number of recording channels to 4 per trace. The existing time slices can be read out via p7901. See also: r7901 (Sampling times)

---

<b>A02060</b>	<b>Trace: Signal to be traced missing</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	- a signal to be traced was not specified. - the specified signals are not valid. See also: p4730 (Trace record signal 0), p4731 (Trace record signal 1), p4732 (Trace record signal 2), p4733 (Trace record signal 3)
<b>Remedy:</b>	- specify the signal to be traced. - check whether the relevant signal can be traced.

---

<b>A02061</b>	<b>Trace: Invalid signal</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<ul style="list-style-type: none"> <li>- the specified signal does not exist.</li> <li>- the specified signal can no longer be traced (recorded).</li> </ul> <p>See also: p4730 (Trace record signal 0), p4731 (Trace record signal 1), p4732 (Trace record signal 2), p4733 (Trace record signal 3)</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- specify the signal to be traced.</li> <li>- check whether the relevant signal can be traced.</li> </ul>
<b>A02062</b>	<b>Trace: Invalid trigger signal</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<ul style="list-style-type: none"> <li>- a trigger signal was not specified.</li> <li>- the specified signal does not exist.</li> <li>- the specified signal is not a fixed-point signal.</li> <li>- the specified signal cannot be used as a trigger signal for the trace.</li> </ul> <p>See also: p4711 (Trace trigger signal)</p>
<b>Remedy:</b>	Specify a valid trigger signal.
<b>A02063</b>	<b>Trace: Invalid data type</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The specified data type to select a signal using a physical address is invalid.</p> <p>See also: p4711 (Trace trigger signal), p4730 (Trace record signal 0), p4731 (Trace record signal 1), p4732 (Trace record signal 2), p4733 (Trace record signal 3)</p>
<b>Remedy:</b>	Use a valid data type.
<b>A02070</b>	<b>Trace: Parameter cannot be changed</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The trace parameter settings cannot be changed when the trace is active.</p> <p>See also: p4700, p4710, p4711, p4712, p4713, p4714, p4715, p4716, p4720, p4721, p4722, p4730, p4731, p4732, p4733, p4780, p4781, p4782, p4783, p4789, p4795</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- stop the trace before parameterization.</li> <li>- if required, start the trace.</li> </ul>



---

**A02075 Trace: Pretrigger time too long**

**Message value:** -  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The selected pretrigger time must be shorter than the trace time.  
See also: p4721 (Trace recording time), p4722 (Trace trigger delay)  
**Remedy:** Check the pretrigger time setting and change if necessary.

---

**F02080 Trace: Parameterization deleted due to unit changeover**

**Message value:** -  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** IMMEDIATELY  
**Cause:** The trace parameterization in the drive unit was deleted due to a unit changeover or a change in the reference parameters.  
**Remedy:** Restart trace.

---

**A02095 MTrace 0: multiple trace cannot be activated**

**Message value:** -  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The following functions or settings are not permissible in conjunction with a multiple trace (trace recorder 0):  
- measuring function  
- long-time trace  
- trigger condition "immediate recording start" (IMMEDIATE)  
- trigger condition "start with function generator" (FG\_START)  
**Remedy:** - if required, deactivate the multiple trace (p4840[0] = 0).  
- deactivate function or setting that is not permissible  
See also: p4840 (MTrace cycle number setting)

---

**A02096 MTrace 0: cannot be saved**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** It is not possible to save the measurement results of a multiple trace on the memory card (trace recorder 0).  
A multiple trace is not started or is canceled.  
Alarm value (r2124, interpret decimal):  
1: Memory card cannot be accessed.  
- card is not inserted or is blocked by a mounted USB drive.  
3: data save operation to slow.  
- a second trace has been completed before the measurement results of the first trace were able to be saved.  
- writing the measurement result files to the card is blocked by the parameter save.  
4: Data save operation canceled.  
- for instance, the file required for the data save operation was not able to be found.  
See also: p4840 (MTrace cycle number setting)

- Remedy:**
- insert or remove the memory card.
  - use a larger memory card.
  - configure a longer trace time or use an endless trace.
  - avoid saving parameters while a multiple trace is running.
  - check whether other functions are presently accessing measurement result files.

---

#### **A02097 MTrace 1: multiple trace cannot be activated**

- Message value:** -
- Message class:** Error in the parameterization / configuration / commissioning procedure (18)
- Drive object:** All objects
- Reaction:** NONE
- Acknowledge:** NONE
- Cause:** The following functions or settings are not permissible in conjunction with a multiple trace (trace recorder 1):
- measuring function
  - long-time trace
  - trigger condition "immediate recording start" (IMMEDIATE)
  - trigger condition "start with function generator" (FG\_START)
- Remedy:**
- if required, deactivate the multiple trace (p4840[1] = 0).
  - deactivate function or setting that is not permissible
- See also: p4840 (MTrace cycle number setting)

---

#### **A02098 MTrace 1: cannot be saved**

- Message value:** %1
- Message class:** Error in the parameterization / configuration / commissioning procedure (18)
- Drive object:** All objects
- Reaction:** NONE
- Acknowledge:** NONE
- Cause:** It is not possible to save the measurement results of a multiple trace on the memory card (trace recorder 1).  
A multiple trace is not started or is canceled.  
Alarm value (r2124, interpret decimal):
- 1: Memory card cannot be accessed.
- card is not inserted or is blocked by a mounted USB drive.
    - 3: data save operation too slow.
    - a second trace has been completed before the measurement results of the first trace were able to be saved.
    - writing the measurement result files to the card is blocked by the parameter save.
      - 4: Data save operation canceled.
      - for instance, the file required for the data save operation was not able to be found.

See also: p4840 (MTrace cycle number setting)

**Remedy:**

      - insert or remove the memory card.
      - use a larger memory card.
      - configure a longer trace time or use an endless trace.
      - avoid saving parameters while a multiple trace is running.
      - check whether other functions are presently accessing measurement result files.

---

#### **A02099 Trace: Insufficient Control Unit memory**

- Message value:** -
- Message class:** Error in the parameterization / configuration / commissioning procedure (18)
- Drive object:** All objects
- Reaction:** NONE
- Acknowledge:** NONE
- Cause:** The memory space still available on the Control Unit is no longer sufficient for the trace function.

**Remedy:** Reduce the memory required, e.g. as follows:  
 - reduce the trace time.  
 - increase the trace clock cycle.  
 - reduce the number of signals to be traced.  
 See also: r4708 (Trace memory space required), r4799 (Trace memory location free)

---

**A02150**      **OA: Application cannot be loaded**

**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The system was not able to load an OA application.  
 Alarm value (r2124, interpret hexadecimal):  
 16:  
 The interface version in the DCB user library is not compatible to the DCC standard library that has been loaded.  
 Only for internal Siemens troubleshooting.

**Remedy:**  
 - carry out a POWER ON (power off/on) for all components.  
 - upgrade firmware to later version.  
 - contact the Hotline.  
 Re alarm value = 16:  
 Load a compatible DCB user library (compatible to the interface of the DCC standard library).  
 Note:  
 OA: Open Architecture  
 See also: r4950, r4955, p4956, r4957

---

**F02151 (A)**      **OA: Internal software error**

**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** All objects  
**Reaction:** OFF2 (NONE, OFF1, OFF3)  
**Acknowledge:** IMMEDIATELY (POWER ON)  
**Cause:** An internal software error has occurred within an OA application.  
 Fault value (r0949, interpret hexadecimal):  
 Only for internal Siemens troubleshooting.

**Remedy:**  
 - carry out a POWER ON (power off/on) for all components.  
 - upgrade firmware to later version.  
 - contact the Hotline.  
 - replace the Control Unit.  
 Note:  
 OA: Open Architecture  
 See also: r4950, r4955, p4956, r4957

Reaction upon A: NONE  
 Acknowl. upon A: NONE

---

**F02152 (A)**      **OA: Insufficient memory**

**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** All objects  
**Reaction:** OFF1  
**Acknowledge:** IMMEDIATELY (POWER ON)  
**Cause:** Too many functions have been configured on this Control Unit (e.g. too many drives, function modules, data sets, OA applications, blocks, etc).  
 Fault value (r0949, interpret decimal):  
 Only for internal Siemens troubleshooting.

## 4 Faults and alarms

### 4.2 List of faults and alarms

**Remedy:**

- change the configuration on this Control Unit (e.g. fewer drives, function modules, data sets, OA applications, blocks, etc).
- use an additional Control Unit.

Note:

OA: Open Architecture

Reaction upon A: NONE

Acknowled. upon A: NONE

---

#### **F03000 NVRAM fault on action**

**Message value:** %1

**Message class:** Hardware / software error (1)

**Drive object:** All objects

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** A fault occurred during execution of action p7770 = 1 or 2 for the NVRAM data.

Fault value (r0949, interpret hexadecimal):

yyxx hex: yy = fault cause, xx = application ID

yy = 1:

The action p7770 = 1 is not supported by this version if Drive Control Chart (DCC) is activated for the drive object concerned.

yy = 2:

The data length of the specified application is not the same in the NVRAM and the backup.

yy = 3:

The data checksum in p7774 is not correct.

yy = 4:

No data available to load.

See also: p7770 (NVRAM action)

**Remedy:**

- Perform the remedy according to the results of the troubleshooting.

- If necessary, start the action again.

---

#### **F03001 NVRAM checksum incorrect**

**Message value:** %1

**Message class:** Hardware / software error (1)

**Drive object:** All objects

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** A checksum error occurred when evaluating the non-volatile data (NVRAM) on the Control Unit.

The NVRAM data affected was deleted.

**Remedy:** Carry out a POWER ON (power off/on) for all components.

---

#### **F03500 (A) TM: Initialization**

**Message value:** %1

**Message class:** Hardware / software error (1)

**Drive object:** All objects

**Reaction:** OFF1 (OFF2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** When initializing the Terminal Modules, the terminals of the Control Unit or the Terminal Board 30, an internal software error has occurred.

Fault value (r0949, interpret decimal):

yxxx dex

y = Only for internal Siemens troubleshooting

xxx = component number (p0151)

**Remedy:**

- power down/power up the power supply for the Control Unit.
- check the DRIVE-CLiQ connection.
- if required, replace the Terminal Module.

The Terminal Module should be directly connected to a DRIVE-CLiQ socket of the Control Unit.  
If the fault occurs again, replace the Terminal Module.

Reaction upon A: NONE  
Acknowl. upon A: NONE

---

**A03501 TM: Sampling time change**

**Message value:** -

**Message class:** Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:** All objects

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The sampling times of the inputs/outputs were changed.  
This change only becomes valid after the next boot.

**Remedy:** Carry out a POWER ON.

---

**F03505 (N, A) Analog input wire breakage**

**Message value:** %1

**Message class:** External measured value / signal state outside the permissible range (16)

**Drive object:** CU\_DC, CU\_DC\_R, CU\_DC\_R\_S, CU\_DC\_S, TM150

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The wire-break monitoring for an analog input has responded.  
The input current of the analog input has exceeded the threshold value parameterized in p4061[x].  
Index x = 0: Analog input 0 (X521.1/X521.2)  
Index x = 1: Analog input 1 (X521.3/X521.4)  
Fault value (r0949, interpret decimal):  
yxxx dec  
y = analog input (0 = analog input 0 (AI 0), 1 = analog input 1 (AI 1))  
xxx = component number (p0151)  
Note:  
For the following analog input type, the wire breakage monitoring is active:  
p4056[x] = 3 (unipolar current input monitored (+4 ... +20 mA))

**Remedy:**

- check the wiring for interruptions.
- Check the magnitude of the injected current - it is possible that the infed signal is too low.
- Check the load resistor (250 Ohm).

Note:  
The input current measured by the Terminal Module can be read out from r4052[x].  
For p4056[x] = 3 (unipolar current input monitored (+4 ... +20 mA)) the following applies:  
A current less than 4 mA is not displayed in r4052[x] - but instead r4052[x] = 4 mA is output.

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

**F03505 (N, A) Analog input wire breakage**

**Message value:** %1

**Message class:** External measured value / signal state outside the permissible range (16)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** OFF1 (NONE, OFF2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The wire-break monitoring for an analog input has responded.

**Remedy:** Check the wiring for interruptions.

## 4 Faults and alarms

### 4.2 List of faults and alarms

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

<b>F03505 (N, A)</b>	<b>TM: Analog input wire breakage</b>
<b>Message value:</b>	%1
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	<p>The wire-break monitoring for an analog input has responded.</p> <p>The input current of the analog input has exceeded the threshold value parameterized in p4061[x].</p> <p>Index x = 0: Analog input 0 (X521.1/X521.2)</p> <p>Index x = 1: Analog input 1 (X521.3/X521.4)</p> <p>Fault value (r0949, interpret decimal):</p> <p>yxxx dec</p> <p>y = analog input (0 = analog input 0 (AI 0), 1 = analog input 1 (AI 1))</p> <p>xxx = component number (p0151)</p> <p>Note:</p> <p>For the following analog input type, the wire breakage monitoring is active:</p> <p>p4056[x] = 3 (unipolar current input monitored (+4 ... +20 mA))</p>
<b>Remedy:</b>	<p>- check the wiring for interruptions.</p> <p>- Check the magnitude of the injected current - it is possible that the infed signal is too low.</p> <p>- Check the load resistor (250 Ohm).</p> <p>Note:</p> <p>The input current measured by the Terminal Module can be read out from r4052[x].</p> <p>For p4056[x] = 3 (unipolar current input monitored (+4 ... +20 mA)) the following applies:</p> <p>A current less than 4 mA is not displayed in r4052[x] - but instead r4052[x] = 4 mA is output.</p>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

<b>A03510 (F, N)</b>	<b>Calibration data not plausible</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	CU_DC, CU_DC_R, CU_DC_R_S, CU_DC_S, DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>During ramp-up, the Terminal Module 31 (TM31) calibration data is read in and checked for plausibility.</p> <p>At least one calibration data point was determined to be invalid.</p> <p>Alarm value (r2124, interpret binary):</p> <p>Bit 1: 10 V value, analog input 0 invalid.</p> <p>Bit 3: 10 V value, analog input 1 invalid.</p> <p>Bit 4: Offset, analog output 0 invalid.</p> <p>Bit 5: 10 V value, analog output 0 invalid.</p> <p>Bit 6: Offset, analog output 1 invalid.</p> <p>Bit 7: 10 V value, analog input 1 invalid.</p>
<b>Remedy:</b>	<p>- power down/power up the power supply for the Control Unit.</p> <p>- check the DRIVE-CLiQ wiring.</p> <p>Note:</p> <p>If it reoccurs, then replace the module.</p> <p>In principle, operation could continue.</p> <p>The analog channel involved possibly does not achieve the specified accuracy.</p>

Reaction upon F: NONE (OFF1, OFF2)  
Acknowl. upon F: IMMEDIATELY (POWER ON)  
Reaction upon N: NONE  
Acknowl. upon N: NONE

---

**A03510 (F, N) TM: Calibration data not plausible**

**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** TM150, TM15DI\_DO, TM31  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** During ramp-up, the Terminal Module 31 (TM31) calibration data is read in and checked for plausibility.  
At least one calibration data point was determined to be invalid.  
Alarm value (r2124, interpret binary):  
Bit 1: 10 V value, analog input 0 invalid.  
Bit 3: 10 V value, analog input 1 invalid.  
Bit 4: Offset, analog output 0 invalid.  
Bit 5: 10 V value, analog output 0 invalid.  
Bit 6: Offset, analog output 1 invalid.  
Bit 7: 10 V value, analog input 1 invalid.  
**Remedy:**  
- power down/power up the power supply for the Control Unit.  
- check the DRIVE-CLiQ wiring.  
Note:  
If it reoccurs, then replace the module.  
In principle, operation could continue.  
The analog channel involved possibly does not achieve the specified accuracy.

Reaction upon F: NONE  
Acknowl. upon F: IMMEDIATELY (POWER ON)  
Reaction upon N: NONE  
Acknowl. upon N: NONE

---

**A03550 TM: Speed setpoint filter natural frequency > Shannon frequency**

**Message value:** -  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The natural filter frequency of the speed setpoint filter (p1417) is greater than or equal to the Shannon frequency.  
The Shannon frequency is calculated according to the following formula:  
$$0.5 / p4099[3]$$
  
**Remedy:** Reduce the natural frequency of the speed setpoint filter (PT2 low pass) (p1417).

---

**F03590 (N, A) TM: Module not ready**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)  
**Acknowledge:** IMMEDIATELY (POWER ON)  
**Cause:** The Terminal Module involved does not send a ready signal and no valid cyclic data.  
Fault value (r0949, interpret decimal):  
Drive object number of the Terminal Module involved.  
**Remedy:**  
- check the 24 V power supply.  
- check the DRIVE-CLiQ wiring.  
- check whether the sampling time of the drive object involved is not equal to zero (p4099[0]).

## 4 Faults and alarms

### 4.2 List of faults and alarms

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

<b>F07082</b>	<b>Macro: Execution not possible</b>
<b>Message value:</b>	Fault cause: %1, supplementary information: %2, preliminary parameter number: %3
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The macro cannot be executed. Fault value (r0949, interpret hexadecimal): ccccbbaa hex: cccc = preliminary parameter number, bb = supplementary information, aa = fault cause Fault causes for the trigger parameter itself: 19: Called file is not valid for the trigger parameter. 20: Called file is not valid for parameter 15. 21: Called file is not valid for parameter 700. 22: Called file is not valid for parameter 1000. 23: Called file is not valid for parameter 1500. 24: Data type of a TAG is incorrect (e.g. Index, number or bit is not U16). Fault causes for the parameters to be set: 25: Error level has an undefined value. 26: Mode has an undefined value. 27: A value was entered as string in the tag value that is not "DEFAULT". 31: Entered drive object type unknown. 32: A device was not able to be found for the determined drive object number. 34: A trigger parameter was recursively called. 35: It is not permissible to write to the parameter via macro. 36: Check, writing to a parameter unsuccessful, parameter can only be read, not available, incorrect data type, value range or assignment incorrect. 37: Source parameter for a BICO interconnection was not able to be determined. 38: An index was set for a non-indexed (or CDS-dependent) parameter. 39: No index was set for an indexed parameter. 41: A bit operation is only permissible for parameters with the parameter format DISPLAY_BIN. 42: A value not equal to 0 or 1 was set for a BitOperation. 43: Reading the parameter to be changed by the BitOperation was unsuccessful. 51: Factory setting for DEVICE may only be executed on the DEVICE. 61: The setting of a value was unsuccessful.
<b>Remedy:</b>	- check the parameter involved. - check the macro file and BICO interconnection. See also: p0015, p0700, p1000 (Macro Connector Inputs (CI) for speed setpoints), p1500 (Macro Connector Inputs (CI) for torque setpoints)

---

<b>F07083</b>	<b>Macro: ACX file not found</b>
<b>Message value:</b>	Parameter: %1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The ACX file (macro) to be executed was not able to be found in the appropriate directory. Fault value (r0949, interpret decimal): Parameter number with which the execution was started. See also: p0015, p0700, p1000 (Macro Connector Inputs (CI) for speed setpoints), p1500 (Macro Connector Inputs (CI) for torque setpoints)



**Remedy:** - check whether the file is saved in the appropriate directory on the memory card.  
Example:  
If p0015 is set to 1501, then the selected ACX file must be located in the following directory:  
... /PMACROS/DEVICE/P15/PM001501.ACX

<b>F07084</b>	<b>Macro: Condition for WaitUntil not fulfilled</b>
<b>Message value:</b>	Parameter: %1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The WaitUntil condition set in the macro was not fulfilled in a certain number of attempts. Fault value (r0949, interpret decimal): Parameter number for which the condition was set.
<b>Remedy:</b>	Check and correct the conditions for the WaitUntil loop.
<b>F07086</b>	<b>Units changeover: Parameter limit violation due to reference value change</b>
<b>Message value:</b>	Parameter: %1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	A reference parameter was changed in the system. This resulted in the fact that for the parameters involved, the selected value was not able to be written in the per unit notation. The values of the parameters were set to the corresponding violated minimum limit/maximum limit or to the factory setting. Possible causes: - the steady-state minimum limit/maximum limit or that defined in the application was violated. Fault value (r0949, parameter): Diagnostics parameter to display the parameters that were not able to be re-calculated. See also: p0596 (Technological unit reference quantity), p2000 (Reference speed), p2001 (Reference voltage), p2002 (Reference current), p2003 (Reference torque), r2004 (Reference power)
<b>Remedy:</b>	Check the adapted parameter value and if required correct. See also: r9450 (Reference value change parameter with unsuccessful calculation)
<b>F07088</b>	<b>Units changeover: Parameter limit violation due to units changeover</b>
<b>Message value:</b>	Parameter: %1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	A changeover of units was initiated. This resulted in a violation of a parameter limit Possible causes for the violation of a parameter limit: - When rounding off a parameter corresponding to its decimal places, the steady-state minimum limit or maximum limit was violated. - inaccuracies for the data type "FloatingPoint". In these cases, when the minimum limit is violated then the parameter value is rounded up and when the maximum limited is violated the parameter value is rounded down. Fault value (r0949, interpret decimal): Diagnostics parameter r9451 to display all parameters whose value had to be adapted. See also: p0595 (Technological unit selection)
<b>Remedy:</b>	Check the adapted parameter values and if required correct. See also: r9451 (Units changeover adapted parameters)

<b>A07089</b>	<b>Changing over units: Function module activation is blocked because the units have been changed over</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	An attempt was made to activate a function module. This is not permissible if the units have already been changed over.
<b>Remedy:</b>	Restore units that have been changed over to the factory setting.
<b>F07110</b>	<b>Drive: Sampling times and basic clock cycle do not match</b>
<b>Message value:</b>	Parameter: %1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The parameterized sampling times do not match the basic clock cycle. Fault value (r0949, interpret decimal): The fault value specifies the parameter involved. See also: r0110, r0111, p0115
<b>Remedy:</b>	Enter the current controller sampling times so that they are identical to the basic clock cycle, e.g. by selecting p0112. Note which basic clock cycle is selected in p0111. The sampling times in p0115 can only be changed manually in the sampling times pre-setting "Expert" (p0112). See also: r0110, r0111, p0112, p0115
<b>A07200</b>	<b>Drive: Master control ON command present</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The ON/OFF1 command is present (no 0 signal). The command is either influenced via binector input p0840 (current CDS) or control word bit 0 via the master control.
<b>Remedy:</b>	Switch the signal via binector input p0840 (current CDS) or control word bit 0 via the master control to 0.
<b>F07220 (N, A)</b>	<b>Drive: Master control by PLC missing</b>
<b>Message value:</b>	-
<b>Message class:</b>	Communication error to the higher-level control system (9)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (NONE, OFF2, OFF3, STOP2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The "master control by PLC" signal was missing in operation. - interconnection of the binector input for "master control by PLC" is incorrect (p0854). - the higher-level control has withdrawn the "master control by PLC" signal. - data transfer via the fieldbus (master/drive) was interrupted.
<b>Remedy:</b>	- check the interconnection of the binector input for "master control by PLC" (p0854). - check the "master control by PLC" signal and, if required, switch in. - check the data transfer via the fieldbus (master/drive). Note: If the drive should continue to operate after withdrawing "master control by PLC" then fault response must be parameterized to NONE or the message type should be parameterized as alarm.
<b>Reaction upon N:</b>	NONE
<b>Acknowl. upon N:</b>	NONE

Reaction upon A: NONE  
Acknowl. upon A: NONE

---

**A07350 (F) Drive: Measuring probe parameterized to a digital output**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The measuring probe is connected to a bi-directional digital input/output and the terminal is set as output.  
 Alarm value (r2124, interpret decimal):  
 8: DI/DO 8 (X122.9/X132.1)  
 9: DI/DO 9 (X122.10/X132.2)  
 10: DI/DO 10 (X122.12/X132.3)  
 11: DI/DO 11 (X122.13/X132.4)  
 12: DI/DO 12 (X132.9)  
 13: DI/DO 13 (X132.10)  
 14: DI/DO 14 (X132.12)  
 15: DI/DO 15 (X132.13)  
 To the terminal designation:  
 The first designation is valid for CU320, the second for CU305.  
**Remedy:**  
 - set the terminal as input (p0728).  
 - de-select the measuring probe (p0488, p0489, p0580).  
 Reaction upon F: OFF1  
 Acknowl. upon F: IMMEDIATELY

---

**F07426 (A) Technology controller actual value limited**

**Message value:** %1  
**Message class:** Application / technological function faulted (17)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)  
**Acknowledge:** IMMEDIATELY  
**Cause:** The actual value for the technology controller, interconnected via connector input p2264, has reached a limit.  
 Fault value (r0949, interpret decimal):  
 1: upper limit reached.  
 2: lower limit reached.  
**Remedy:**  
 - adapt the limits to the signal level (p2267, p2268).  
 - Check the actual value normalization (p0595, p0596).  
 - Deactivate evaluation of the limits (p2252 bit 3)  
 See also: p0595 (Technological unit selection), p0596 (Technological unit reference quantity), p2264 (Technology controller actual value), p2267 (Technology controller upper limit actual value), p2268 (Technology controller lower limit actual value)  
 Reaction upon A: NONE  
 Acknowl. upon A: NONE

---

**A07428 (N) Technology controller parameterizing error**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The technology controller has a parameterizing error.  
 Alarm value (r2124, interpret decimal):  
 1:  
 The upper output limit in p2291 is set lower than the lower output limit in p2292.

**Remedy:** Re alarm value = 1:  
Set the output limit in p2291 higher than in p2292.  
See also: p2291 (Technology controller maximum limiting), p2292 (Technology controller minimum limiting)

Reaction upon N: NONE

Acknowled. upon N: NONE

---

**F07447 Load gear: Position tracking, maximum actual value exceeded**

**Message value:** Component number: %1, encoder data set: %2, drive data set: %3

**Message class:** Application / technological function faulted (17)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** When the position tracking of the load gear is configured, the drive/encoder (motor encoder) identifies a maximum possible absolute position actual value (r2723) that can no longer be represented within 32 bits.  
Maximum value:  $p0408 * p2721 * 2^{p0419}$   
Fault value (r0949, interpret hexadecimal):  
ccbbaa hex  
aa = encoder data set  
bb = component number  
cc = drive data set  
See also: p0408 (Rotary encoder pulse number), p0419 (Fine resolution absolute value Gx\_XIST2 (in bits)), p2721 (Load gear rotary absolute encoder revolutions virtual)

**Remedy:** - reduce the fine resolution (p0419).  
- reduce the multiturn resolution (p2721).  
See also: p0419 (Fine resolution absolute value Gx\_XIST2 (in bits)), p2721 (Load gear rotary absolute encoder revolutions virtual)

---

**F07448 (A) Load gear: Position tracking, linear axis has exceeded the maximum range**

**Message value:** -

**Message class:** Application / technological function faulted (17)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** For a configured linear axis/no modulo axis, the currently effective motor encoder (encoder 1) has exceeded the maximum possible traversing range.  
For the configured linear axis, the maximum traversing range is defined to be  $64x (+/- 32x)$  of p0421. It should be read in p2721 and interpreted as the number of load revolutions.  
Note:  
Only the motor encoder in the currently effective drive data set is monitored here. The actual effective drive data set is displayed in x = r0051 and the corresponding motor encoder is specified in p0187[x].

**Remedy:** The fault should be resolved as follows:  
- select encoder commissioning (p0010 = 4).  
- reset position tracking, position (p2720.2 = 1).  
- de-select encoder commissioning (p0010 = 0).  
The fault should then be acknowledged and the absolute encoder adjusted.

Reaction upon A: NONE

Acknowled. upon A: NONE

---

**F07449 (A) Load gear: Position tracking actual position outside tolerance window**

**Message value:** %1

**Message class:** Application / technological function faulted (17)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** When powered down, the currently effective motor encoder was moved through a distance greater than was parameterized in the tolerance window. It is possible that there is no longer any reference between the mechanical system and encoder.

**Note:**

Only the motor encoder in the currently effective drive data set is monitored here. The actual effective drive data set is displayed in x = r0051 and the corresponding motor encoder is specified in in p0187[x].

Fault value (r0949, interpret decimal):

Deviation (difference) to the last encoder position in increments of the absolute value after the measuring gear - if one is being used. The sign designates the traversing direction.

**Note:**

The deviation (difference) found is also displayed in r2724.

See also: p2722 (Load gear position tracking tolerance window), r2724 (Load gear position difference)

**Remedy:**

Reset the position tracking as follows:

- select encoder commissioning (p0010 = 4).
- reset position tracking, position (p2720.2 = 1).
- de-select encoder commissioning (p0010 = 0).

The fault should then be acknowledged and, if necessary, the absolute encoder adjusted (p2507).

See also: p0010

Reaction upon A:

NONE

Acknowl. upon A:

NONE

---

**F07500 Drive: Power unit data set PDS not configured**

**Message value:** Drive data set: %1

**Message class:** Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:** TM150, TM15DI\_DO, TM31

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** Only for controlled line supply infeed/regenerative feedback units:

The power unit data set was not configured - this means that a data set number was not entered into the drive data set.

Fault value (r0949, interpret decimal):

Drive data set number of p0185.

**Remedy:**

The index of the power unit data set associated with the drive data set should be entered into p0185.

---

**F07501 Drive: Motor Data Set MDS not configured**

**Message value:** Drive data set: %1

**Message class:** Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:** All objects

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** Only for power units:

The motor data set was not configured - this means that a data set number was not entered into the associated drive data set.

Fault value (r0949, interpret decimal):

The fault value includes the drive data set number of p0186.

**Remedy:**

The index of the motor data set associated with the drive data set should be entered into p0186.

---

**F07502 Drive: Encoder Data Set EDS not configured**

**Message value:** Drive data set: %1

**Message class:** Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:** All objects

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** Only for power units:

The encoder data set was not configured - this means that a data set number was not entered into the associated drive data set.

Fault value (r0949, interpret decimal):

The fault value includes the drive data set number of p0187, p0188 and p0189.

The fault value is increased by 100 \* encoder number (e.g. for p0189: Fault value 3xx with xx = data set number).

**Remedy:** The index of the encoder data set associated with the drive data set should be entered into p0187 (1st encoder), p0188 (2nd encoder) and p0189 (3rd encoder).

---

<b>A07504</b>	<b>Drive: Motor data set is not assigned to a drive data set</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>A motor data set is not assigned to a drive object.</p> <p>All of the existing motor data sets in the drive data sets must be assigned using the MDS number (p0186[0...n]). There must be at least as many drive data sets as motor data sets.</p> <p>Alarm value (r2124, interpret decimal):</p> <p>Number of the motor data set that has not been assigned.</p>
<b>Remedy:</b>	<p>In the drive data sets, assign the non-assigned motor data set using the MDS number (p0186[0...n]).</p> <ul style="list-style-type: none"> <li>- check whether all of the motor data sets are assigned to drive data sets.</li> <li>- if required, delete superfluous motor data sets.</li> <li>- if required, set up new drive data sets and assign to the corresponding motor data sets.</li> </ul>

---

<b>F07509</b>	<b>Drive: Component assignment missing</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>A Drive Data Set (DDS) is assigned to a Motor Data Set (MDS) or Encoder Data Set (EDS) that does not have a component number.</p> <p>Alarm value (r2124, interpret decimal):</p> <p>nnmmmxxyyy</p> <p>nn: Number of the MDS/EDS.</p> <p>mmm: Parameter number of the missing component number.</p> <p>xx: Number of the DDS that is assigned to the MDS/EDS.</p> <p>yyy: Parameter number that references the MDS/EDS.</p> <p>Example:</p> <p>p0186[7] = 5: DDS 7 is assigned MDS 5.</p> <p>p0131[5] = 0: There is no component number set in MDS 5.</p> <p>Alarm value = 0513107186</p>
<b>Remedy:</b>	<p>In the drive data sets, no longer assign MDS/EDS using p0186, p0187, p0188, p0189 or set a valid component number.</p> <p>See also: p0141 (Encoder interface (Sensor Module) component number), p0142 (Encoder component number), p0187 (Encoder 1 encoder data set number), p0188 (Encoder 2 encoder data set number)</p>

---

<b>F07510</b>	<b>Drive: Identical encoder in the drive data set</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>More than one encoder with identical component number is assigned to a single drive data set. In one drive data set, it is not permissible that identical encoders are operated together.</p> <p>Fault value (r0949, interpret decimal):</p> <p>1000 * first identical encoder + 100 * second identical encoder + drive data set.</p> <p>Example:</p> <p>Fault value = 1203 means:</p> <p>In drive data set 3, the first (p0187[3]) and second encoder (p0188[3]) are identical.</p>

**Remedy:** Assign the drive data set to different encoders.  
See also: p0141 (Encoder interface (Sensor Module) component number), p0187 (Encoder 1 encoder data set number), p0188 (Encoder 2 encoder data set number)

---

**F07511 Drive: Encoder used a multiple number of times**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** IMMEDIATELY  
**Cause:** Each encoder may only be assigned to one drive and within a drive must - in each drive data set - either always be encoder 1, always encoder 2 or always encoder 3. This unique assignment has been violated.  
 Fault value (r0949, interpret decimal):  
 The two parameters in coded form, that refer to the same component number.  
 First parameter:  
 Index: First and second decimal place (99 for EDS, not assigned DDS)  
 Parameter number: Third decimal place (1 for p0187, 2 for p0188, 3 for p0189, 4 for EDS not assigned DDS)  
 Drive number: Fourth and fifth decimal place  
 Second parameter:  
 Index: Sixth and seventh decimal place (99 for EDS, not assigned DDS)  
 Parameter number: Eighth decimal place (1 for p0187, 2 for p0188, 3 for p0189, 4 for EDS, not assigned DDS)  
 Drive number: Ninth and tenth decimal place  
 See also: p0141 (Encoder interface (Sensor Module) component number)  
**Remedy:** Correct the double use of a component number using the two parameters coded in the fault value.

---

**F07512 Drive: Encoder data set changeover cannot be parameterized**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF2  
**Acknowledge:** IMMEDIATELY  
**Cause:** Using p0141, a changeover of the encoder data set is prepared that is illegal. In this firmware release, an encoder data set changeover is only permitted for the components in the actual topology.  
 Alarm value (r2124, interpret decimal):  
 Incorrect EDS data set number.  
 See also: p0187 (Encoder 1 encoder data set number), p0188 (Encoder 2 encoder data set number)  
**Remedy:** Every encoder data set must be assigned its own dedicated DRIVE-CLiQ socket. The component numbers of the encoder interfaces (p0141) must have different values within a drive object.  
 The following must apply:  
 p0141[0] not equal to p0141[1] not equal to ... not equal to p0141[n]

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**F07515 Drive: Power unit and motor incorrectly connected**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF2  
**Acknowledge:** IMMEDIATELY  
**Cause:** A power unit (via PDS) was assigned to a motor (via MDS) in a drive data set that is not connected in the target topology. It is possible that a motor has not been assigned to the power unit (p0131).  
 Fault value (r0949, interpret decimal):  
 Number of the incorrectly parameterized drive data set.  
**Remedy:**  
 - assign the drive data set to a combination of motor and power unit permitted by the target topology.  
 - adapt the target topology.  
 - If required, for a missing motor, recreate the component (drive Wizard).  
 See also: p0121 (Power unit component number)

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<b>F07516</b>	<b>Drive: Re-commission the data set</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The assignment between the drive data set and motor data set (p0186) or between the drive data set and the encoder data set was modified (p0187). This is the reason that the drive data set must re-commissioned. Fault value (r0949, interpret decimal): Drive data set to be re-commissioned.
<b>Remedy:</b>	Commission the drive data set specified in the fault value (r0949).
<b>F07517</b>	<b>Drive: Encoder data set changeover incorrectly parameterized</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	An MDS cannot have different motor encoders in two different DDS. The following parameterization therefore results results in an error: p0186[0] = 0, p0187[0] = 0 p0186[0] = 0, p0187[0] = 1 Alarm value (r2124, interpret decimal): The lower 16 bits indicate the first DDS and the upper 16 bits indicate the second DDS.
<b>Remedy:</b>	If you wish to operate a motor once with one motor encoder and then another time with the other motor encoder, then you must set up two different MDSS, in which the motor data are the same. Example: p0186[0] = 0, p0187[0] = 0 p0186[0] = 1, p0187[0] = 1
<b>F07518</b>	<b>Drive: Motor data set changeover incorrectly parameterized</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The system has identified that two motor data sets were incorrectly parameterized. Parameter r0313 (calculated from p0314, p0310, p0311), r0315 and p1982 may only have different values if the motor data sets are assigned different motors. p0827 is used to assign the motors and/contactors. It is not possible to toggle between motor data sets. Alarm value (r2124, interpret hexadecimal): xxxxyyyy: xxxx: First DDS with assigned MDS, yyyy: Second DDS with assigned MDS
<b>Remedy:</b>	Correct the parameterization of the motor data sets.
<b>A07530</b>	<b>Drive: Drive Data Set DDS not present</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The selected drive data set is not available (p0837 > p0180). The drive data set was not changed over. See also: p0180 (Number of Drive Data Sets (DDS)), p0820 (Drive Data Set selection DDS bit 0), p0821 (Drive Data Set selection DDS bit 1), r0837 (Drive Data Set DDS selected)
<b>Remedy:</b>	- select the existing drive data set. - set up additional drive data sets.



<b>A07531</b>	<b>Drive: Command Data Set CDS not present</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The selected command data set is not available (p0836 > p0170). The command data set was not changed over. See also: p0810 (Command data set selection CDS bit 0), r0836 (Command Data Set CDS selected)
<b>Remedy:</b>	- select the existing command data set. - set up additional command data sets.
<b>A07541</b>	<b>Drive: Data set changeover not possible</b>
<b>Message value:</b>	-
<b>Message class:</b>	Application / technological function faulted (17)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The selected drive data set changeover and the assigned motor changeover are not possible and are not carried out. For synchronous motors, the motor contactor may only be switched for actual speeds less than the speed at the start of field weakening (r0063 < p0348). See also: r0063 (Speed actual value)
<b>Remedy:</b>	Reduce the speed to below the speed at the start of field weakening (r0063 < p0348).
<b>A07550 (F, N)</b>	<b>Drive: Not possible to reset encoder parameters</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	When carrying out a factory setting (e.g. using p0970 = 1), it was not possible to reset the encoder parameters. The encoder parameters are directly read out of the encoder via DRIVE-CLiQ. Alarm value (r2124, interpret decimal): Component number of the encoder involved.
<b>Remedy:</b>	- repeat the operation. - check the DRIVE-CLiQ connection.
Reaction upon F:	NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>F07551</b>	<b>Drive encoder: No commutation angle information</b>
<b>Message value:</b>	Fault cause: %1, drive data set: %2
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2 (IASC/DCBRK)
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	The commutation angle information is missing. This means that synchronous motors cannot be controlled (closed-loop control) Fault value (r0949, interpret decimal): yyyyxxxx dec: yyyy = fault cause, xxxx = drive data set yyyy = 1 dec: The motor encoder used does not supply an absolute commutation angle. yyyy = 2 dec: The selected ratio of the measuring gear does not match the motor pole pair number.

**Remedy:**

Re fault cause = 1:

- check the encoder parameterization (p0404).
- use an encoder with track C/D, EnDat interface of Hall sensors.
- use an encoder with sinusoidal A/B track for which the motor pole pair number (r0313) is an integer multiple of the encoder pulse number (p0408).
- activate the pole position identification routine (p1982 = 1).

Re fault cause = 2:

- the quotient of the pole pair number divided by the ratio of the measuring gear must be an integer number:  $(p0314 * p0433) / p0432$ .

Note:

For operation with track C/D, this quotient must be less than 8.

See also: p0402 (Gearbox type selection), p0404 (Encoder configuration effective), p0432 (Gearbox factor encoder revolutions), p0433 (Gearbox factor motor/load revolutions)

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#### **F07552 (A) Drive encoder: Encoder configuration not supported**

**Message value:** Fault cause: %1, component number: %2, encoder data set: %3

**Message class:** Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The requested encoder configuration is not supported. Only bits may be requested in p0404 that are signaled as being supported by the encoder evaluation in r0456.

Fault value (r0949, interpret decimal):

ccccbbba hex: cccc = fault cause, bb = component number, aa = encoder data set

cccc = 1: encoder sin/cos with absolute track (is supported by SME25).

cccc = 3: Squarewave encoder (this is supported by SMC30).

cccc = 4: sin/cos encoder (this is supported by SMC20, SMI20, SME20, SME25).

cccc = 10: DRIVE-CLiQ encoder (is supported by DQI).

cccc = 12: sin/cos encoder with reference mark (this is supported by SME20).

cccc = 15: Commutation with zero mark for separately-excited synchronous motors with VECTORMV.

cccc = 23: Resolver (this is supported by SMC10, SMI10).

cccc = 65535: Other function (compare r0456 and p0404).

See also: p0404 (Encoder configuration effective), r0456 (Encoder configuration supported)

**Remedy:**

- check the encoder parameterization (p0400, p0404).
- use the matching encoder evaluation (r0456).

Reaction upon A: NONE

Acknowled. upon A: NONE

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#### **F07553 (A) Drive encoder: Sensor Module configuration not supported**

**Message value:** Encoder data set: %1, first incorrect bit: %2, incorrect parameter: %3

**Message class:** Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The Sensor Module does not support the requested configuration.

For incorrect p0430 (cc = 0), the following applies:

- In p0430 (requested functions), at least 1 bit was set that is not set in r0458 (supported functions) (exception: Bit 19, 28, 29, 30, 31).
- p1982 > 0 (pole position identification requested), but r0458.16 = 0 (pole position identification not supported).

For incorrect p0437 (cc = 1), the following applies:

- In p0437 (requested functions), at least 1 bit was set that is not set in r0459 (supported functions).

Fault value (r0949, interpret hexadecimal):

ddccbbba hex

aa: encoder data set number

bb: first incorrect bit

cc: incorrect parameter  
cc = 0: incorrect parameter is p0430  
cc = 1: incorrect parameter is p0437  
cc = 2: incorrect parameter is r0459  
dd: reserved (always 0)

**Remedy:**

- check the encoder parameterization (p0430, p0437).
- check the pole position identification routine (p1982).
- use the matching encoder evaluation (r0458, r0459).

See also: p0430 (Sensor Module configuration), p0437 (Sensor Module configuration extended), r0458 (Sensor Module properties), r0459 (Sensor Module properties extended)

Reaction upon A: NONE

Acknowled. upon A: NONE

## F07555 (A)

### Drive encoder: Configuration position tracking

**Message value:** Component number: %1, encoder data set: %2, drive data set: %3, fault cause: %4

**Message class:** Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:**

For position tracking, the configuration is not supported.  
Position tracking can only be activated for absolute encoders.  
For linear axes, it is not possible to simultaneously activate the position tracking for load and measuring gears.  
Fault value (r0949, interpret hexadecimal):  
ddccbbaa hex  
aa = encoder data set  
bb = component number  
cc = drive data set  
dd = fault cause  
dd = 00 hex = 0 dec  
An absolute encoder is not being used.  
dd = 01 hex = 1 dec  
Position tracking cannot be activated because the memory of the internal NVRAM is not sufficient or a Control Unit does not have an NVRAM.  
dd = 02 hex = 2 dec  
For a linear axis, the position tracking was activated for the load and measuring gear.  
dd = 03 hex = 3 dec  
Position tracking cannot be activated because position tracking with another gear ratio, axis type or tolerance window has already been detected for this encoder data set.  
dd = 04 hex = 4 dec  
A linear encoder is being used.  
See also: p0404 (Encoder configuration effective), p0411 (Measuring gear configuration)

**Remedy:**

For fault value 0:  
- use an absolute encoder.  
For fault value 1:  
- use a Control Unit with sufficient NVRAM.  
Re fault value = 2, 4:  
- if necessary, de-select the position tracking (p0411 for the measuring gear, p2720 for the load gear).  
For fault value 3:  
- Only activate position tracking of the load gear in the same encoder data set if the gear ratio (p2504, p2505), axis type (p2720.1) and tolerance window (p2722) are also the same. These parameters must be the same in all drive data sets, which use the same motor encoder (p187).

Reaction upon A: NONE

Acknowled. upon A: NONE

<b>F07556</b>	<b>Measuring gear: Position tracking, maximum actual value exceeded</b>
<b>Message value:</b>	Component number: %1, encoder data set: %2
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>When the position tracking of the measuring gear is configured, the drive/encoder identifies a maximum possible absolute position actual value (r0483) that cannot be represented within 32 bits.</p> <p>Maximum value: <math>p0408 * p0412 * 2^{p0419}</math></p> <p>Fault value (r0949, interpret decimal):</p> <p>aaaayyxx hex: yy = component number, xx = encoder data set</p> <p>See also: p0408 (Rotary encoder pulse number), p0412 (Measuring gear absolute encoder rotary revolutions virtual), p0419 (Fine resolution absolute value Gx_XIST2 (in bits))</p>
<b>Remedy:</b>	<p>- reduce the fine resolution (p0419).</p> <p>- reduce the multiturn resolution (p0412).</p> <p>See also: p0412 (Measuring gear absolute encoder rotary revolutions virtual), p0419 (Fine resolution absolute value Gx_XIST2 (in bits))</p>
<b>F07560</b>	<b>Drive encoder: Number of pulses is not to the power of two</b>
<b>Message value:</b>	Encoder data set: %1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	<p>For rotary absolute encoders, the pulse number in p0408 must be to the power of two.</p> <p>Fault value (r0949, interpret decimal):</p> <p>The fault value includes the encoder data set number involved.</p>
<b>Remedy:</b>	<p>- check the parameterization (p0408, p0404.1, r0458.5).</p> <p>- upgrade the Sensor Module firmware if necessary</p>
<b>F07561</b>	<b>Drive encoder: Number of multiturn pulses is not to the power of two</b>
<b>Message value:</b>	Encoder data set: %1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	<p>The multiturn resolution in p0421 must be to the power of two.</p> <p>Fault value (r0949, interpret decimal):</p> <p>The fault value includes the encoder data set number involved.</p>
<b>Remedy:</b>	<p>- check the parameterization (p0421, p0404.1, r0458.5).</p> <p>- upgrade the Sensor Module firmware if necessary</p>
<b>F07562 (A)</b>	<b>Drive, encoder: Position tracking, incremental encoder not possible</b>
<b>Message value:</b>	Fault cause: %1, component number: %2, encoder data set: %3
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	<p>The requested position tracking for incremental encoders is not supported.</p> <p>Fault value (r0949, interpret hexadecimal):</p> <p>ccccbbaa hex</p> <p>aa = encoder data set</p> <p>bb = component number</p>

cccc = fault cause  
cccc = 00 hex = 0 dec  
The encoder type does not support the "Position tracking incremental encoder" function.  
cccc = 01 hex = 1 dec  
Position tracking cannot be activated because the memory of the internal NVRAM is not sufficient or a Control Unit does not have an NVRAM.  
cccc = 04 hex = 4 dec  
A linear encoder is used that does not support the "position tracking" function.  
See also: p0404 (Encoder configuration effective), p0411 (Measuring gear configuration), r0456 (Encoder configuration supported)

**Remedy:**

- check the encoder parameterization (p0400, p0404).
- use a Control Unit with sufficient NVRAM.
- if required, de-select position tracking for the incremental encoder (p0411.3 = 0).

Reaction upon A: NONE  
Acknowl. upon A: NONE

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#### **F07563 (A) Drive encoder: XIST1\_ERW configuration incorrect**

**Message value:** Fault cause: %1, encoder data set: %2  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)  
**Acknowledge:** IMMEDIATELY (POWER ON)  
**Cause:** An incorrect configuration was identified for the "Absolute position for incremental encoder" function.  
Fault value (r0949, interpret decimal):  
Fault cause:  
1 (= 01 hex):  
The "Absolute value for incremental encoder" function is not supported (r0459.13 = 0).  
Note regarding the message value:  
The individual information is coded as follows in the message value (r0949/r2124):  
yyxx dec: yy = fault cause, xx = encoder data set  
See also: r0459 (Sensor Module properties extended), p4652 (XIST1\_ERW reset mode)

**Remedy:**

For fault value = 1:

- upgrade the Sensor Module firmware version.
- check the mode (p4652 = 1, 3 requires the property r0459.13 = 1).

Reaction upon A: NONE  
Acknowl. upon A: NONE

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#### **A07565 (F, N) Drive: Encoder error in PROFIdrive encoder interface 1**

**Message value:** %1  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** An encoder error was signaled for encoder 1 via the PROFIdrive encoder interface (G1\_ZSW.15).  
Alarm value (r2124, interpret decimal):  
Error code from G1\_XIST2, refer to the description regarding r0483.  
Note:

This alarm is only output if p0480[0] is not equal to zero.  
**Remedy:** Acknowledge the encoder error using the encoder control word (G1\_STW.15 = 1).

Reaction upon F: NONE (OFF1, OFF2, OFF3)  
Acknowl. upon F: IMMEDIATELY  
Reaction upon N: NONE  
Acknowl. upon N: NONE

<b>A07566 (F, N)</b>	<b>Drive: Encoder error in PROFIdrive encoder interface 2</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	An encoder error was signaled for encoder 2 via the PROFIdrive encoder interface (G2_ZSW.15). Alarm value (r2124, interpret decimal): Error code from G2_XIST2, refer to the description regarding r0483. Note: This alarm is only output if p0480[1] is not equal to zero.
<b>Remedy:</b>	Acknowledge the encoder error using the encoder control word (G2_STW.15 = 1).
Reaction upon F:	NONE (OFF1, OFF2, OFF3)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>A07567 (F, N)</b>	<b>Drive: Encoder error in PROFIdrive encoder interface 3</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	An encoder error was signaled for encoder 3 via the PROFIdrive encoder interface (G3_ZSW.15). Alarm value (r2124, interpret decimal): Error code from G3_XIST2, refer to the description regarding r0483. Note: This alarm is only output if p0480[2] is not equal to zero.
<b>Remedy:</b>	Acknowledge the encoder error using the encoder control word (G3_STW.15 = 1).
Reaction upon F:	NONE (OFF1, OFF2, OFF3)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>A07569 (F)</b>	<b>Enc identification active</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	During encoder identification (waiting) with p0400 = 10100, the encoder could still not be identified. Either the wrong encoder has been installed or no encoder has been installed, the wrong encoder cable has been connected or no encoder cable has been connected to the Sensor Module, or the DRIVE-CLiQ component has not been connected. Note: Encoder identification must be supported by the encoder and is possible in the following cases: - Encoder with EnDat interface. - Encoder with SSI interface. - Motor with DRIVE-CLiQ.
<b>Remedy:</b>	- check and, if necessary, connect the encoder / encoder cable. - check and, if necessary, establish the DRIVE-CLiQ connection. - for SSI encoders, carry out the required operator actions (see the Function Manual). - in the case of encoders that cannot be identified (e.g. encoders without EnDat interface), enter the correct encoder type in p0400.

Reaction upon F: NONE (OFF1, OFF2, OFF3)  
Acknowl. upon F: IMMEDIATELY

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<b>N07570 (F)</b>	<b>Encoder identification data transfer running</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The encoder type was automatically determined using p0400 = 10100. This fault causes the pulses to be suppressed - this is necessary to transfer the encoder parameterization to p0400ff. See also: p0400 (Encoder type selection)
<b>Remedy:</b>	The fault can be acknowledged without any additional measures.
Reaction upon F:	OFF2
Acknowl. upon F:	IMMEDIATELY

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<b>F07575</b>	<b>Drive: Motor encoder not ready</b>
<b>Message value:</b>	-
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2 (ENCODER)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The motor encoder signals that it is not ready. - initialization of encoder 1 (motor encoder) was unsuccessful. - the function "parking encoder" is active (encoder control word G1_STW.14 = 1). - the encoder interface (Sensor Module) is de-activated (p0145). - the Sensor Module is defective.
<b>Remedy:</b>	Evaluate other queued faults via encoder 1.

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<b>A07580 (F, N)</b>	<b>Drive: No Sensor Module with matching component number</b>
<b>Message value:</b>	Encoder data set: %1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	A Sensor Module with the component number specified in p0141 was not found. Alarm value (r2124, interpret decimal): Encoder data set involved (index of p0141).
<b>Remedy:</b>	Correct parameter p0141.
Reaction upon F:	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE

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<b>A07850 (F)</b>	<b>External alarm 1</b>
<b>Message value:</b>	-
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The condition for "External alarm 1" is satisfied. Note: The "External alarm 1" is initiated by a 1/0 edge via binector input p2112. See also: p2112 (External alarm 1)
<b>Remedy:</b>	Eliminate the causes of this alarm.

## 4 Faults and alarms

### 4.2 List of faults and alarms

Reaction upon F: NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)

Acknowl. upon F: IMMEDIATELY (POWER ON)

---

#### **A07851 (F) External alarm 2**

**Message value:** -

**Message class:** External measured value / signal state outside the permissible range (16)

**Drive object:** All objects

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The condition for "External alarm 2" is satisfied.

Note:

The "External alarm 2" is initiated by a 1/0 edge via binector input p2116.

See also: p2116 (External alarm 2)

**Remedy:** Eliminate the causes of this alarm.

Reaction upon F: NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)

Acknowl. upon F: IMMEDIATELY (POWER ON)

---

#### **A07852 (F) External alarm 3**

**Message value:** -

**Message class:** External measured value / signal state outside the permissible range (16)

**Drive object:** All objects

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The condition for "External alarm 3" is satisfied.

Note:

The "External alarm 3" is initiated by a 1/0 edge via binector input p2117.

See also: p2117 (External alarm 3)

**Remedy:** Eliminate the causes of this alarm.

Reaction upon F: NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)

Acknowl. upon F: IMMEDIATELY (POWER ON)

---

#### **F07860 (A) External fault 1**

**Message value:** -

**Message class:** External measured value / signal state outside the permissible range (16)

**Drive object:** All objects

**Reaction:** OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The condition for "External fault 1" is satisfied.

Note:

The "External fault 1" is initiated by a 1/0 edge via binector input p2106.

See also: p2106 (External fault 1)

**Remedy:** - eliminate the causes of this fault.

- acknowledge fault.

Reaction upon A: NONE

Acknowl. upon A: NONE

---

#### **F07861 (A) External fault 2**

**Message value:** -

**Message class:** External measured value / signal state outside the permissible range (16)

**Drive object:** All objects

**Reaction:** OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The condition for "External fault 2" is satisfied.

Note:

The "External fault 2" is initiated by a 1/0 edge via binector input p2107.

See also: p2107 (External fault 2)



**Remedy:**

- eliminate the causes of this fault.
- acknowledge fault.

Reaction upon A: NONE  
Acknowl. upon A: NONE

---

**F07862 (A) External fault 3**

**Message value:** -

**Message class:** External measured value / signal state outside the permissible range (16)

**Drive object:** All objects

**Reaction:** OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The condition for "External fault 3" is satisfied.  
Note:  
The "External fault 3" is initiated by a 1/0 edge via the following parameters.  
- AND logic operation, binector input p2108, p3111, p3112.  
- switch-on delay p3110.  
See also: p2108, p3110, p3111, p3112

**Remedy:**

- eliminate the causes of this fault.
- acknowledge fault.

Reaction upon A: NONE  
Acknowl. upon A: NONE

---

**F08000 (N, A) TB: +/-15 V power supply faulted**

**Message value:** %1

**Message class:** Supply voltage fault (undervoltage) (3)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31

**Reaction:** NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** Terminal Board 30 detects an incorrect internal power supply voltage.  
Fault value (r0949, interpret decimal):  
0: Error when testing the monitoring circuit.  
1: Fault in normal operation.

**Remedy:**

- replace Terminal Board 30.
- replace Control Unit.

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

**F08010 (N, A) TB: Analog-digital converter**

**Message value:** -

**Message class:** Hardware / software error (1)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31

**Reaction:** NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The analog/digital converter on Terminal Board 30 has not supplied any converted data.

**Remedy:**

- check the power supply.
- replace Terminal Board 30.

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

#### **F08500 (A)      COMM BOARD: Monitoring time configuration expired**

**Message value:** %1  
**Message class:** Communication error to the higher-level control system (9)  
**Drive object:** All objects  
**Reaction:** OFF1 (OFF2, OFF3)  
**Acknowledge:** IMMEDIATELY  
**Cause:** The monitoring time for the configuration has expired.  
 Fault value (r0949, interpret decimal):  
 0: The transfer time of the send configuration data has been exceeded.  
 1: The transfer time of the receive configuration data has been exceeded.  
**Remedy:** Check communications link.  
 Reaction upon A: NONE  
 Acknowl. upon A: NONE

---

#### **F08501 (N, A)      PN/COMM BOARD: Setpoint timeout**

**Message value:** -  
**Message class:** Communication error to the higher-level control system (9)  
**Drive object:** All objects  
**Reaction:** OFF3 (IASC/DCBRK, NONE, OFF1, OFF2, STOP2)  
**Acknowledge:** IMMEDIATELY  
**Cause:** The reception of setpoints from the COMM BOARD has been interrupted.  
 - bus connection interrupted.  
 - controller switched off.  
 - controller set into the STOP state.  
 - COMM BOARD defective.  
**Remedy:** - Restore the bus connection and set the controller to RUN.  
 - check the set monitoring time if the error persists (p2040).  
 See also: p8840 (COMM BOARD monitoring time)  
 Reaction upon N: NONE  
 Acknowl. upon N: NONE  
 Reaction upon A: NONE  
 Acknowl. upon A: NONE

---

#### **F08502 (A)      PN/COMM BOARD: Monitoring time sign-of-life expired**

**Message value:** -  
**Message class:** Communication error to the higher-level control system (9)  
**Drive object:** All objects  
**Reaction:** OFF1 (OFF2, OFF3)  
**Acknowledge:** IMMEDIATELY  
**Cause:** The monitoring time for the sign-of-life counter has expired.  
 The connection to the COMM BOARD was interrupted.  
**Remedy:** - check communications link.  
 - check COMM BOARD.  
 Reaction upon A: NONE  
 Acknowl. upon A: NONE

---

#### **A08504 (F)      PN/COMM BOARD: Internal cyclic data transfer error**

**Message value:** %1  
**Message class:** Communication error to the higher-level control system (9)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The cyclic actual and/or setpoint values were not transferred within the specified times.  
 Alarm value (r2124, interpret decimal):  
 Only for internal Siemens troubleshooting.

**Remedy:** Check the parameterizing telegram (Ti, To, Tdp, etc.).  
**Reaction upon F:** NONE (OFF1, OFF2, OFF3)  
**Acknowl. upon F:** IMMEDIATELY

---

**F08510 (A) PN/COMM BOARD: Send configuration data invalid**  
**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** OFF1 (OFF2, OFF3)  
**Acknowledge:** IMMEDIATELY  
**Cause:** COMM BOARD did not accept the send-configuration data.  
 Fault value (r0949, interpret decimal):  
 Return value of the send-configuration data check.  
**Remedy:** Check the send configuration data.  
**Reaction upon A:** NONE  
**Acknowl. upon A:** NONE

---

**A08511 (F) PN/COMM BOARD: Receive configuration data invalid**  
**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The drive unit did not accept the receive configuration data.  
 Alarm value (r2124, interpret decimal):  
 Return value of the receive configuration data check.  
 1: Connection established to more drive objects than configured in the device. The drive objects for process data exchange and their sequence are defined in p0978.  
 2: Too many PZD data words for output or input to a drive object. The number of possible PZD items in a drive object is determined by the number of indices in r2050/p2051 for PZD IF1, and in r8850/p8851 for PZD IF2.  
 3: Uneven number of bytes for input or output.  
 4: Setting data for synchronization not accepted. For more information, see A01902.  
 5: Cyclic operation not active.  
 17: CBE20 Shared Device: Configuration of the F-CPU has been changed.  
 223: Illegal clock synchronization for the PZD interface set in p8815[0].  
 500: Illegal PROFIsafe configuration for the interface set in p8815[1].  
 501: PROFIsafe parameter error (e.g. F\_dest).  
 503: PROFIsafe connection is rejected as long as there is no isochronous connection (p8969).  
 Additional values:  
 Only for internal Siemens troubleshooting.  
**Remedy:** Check the receive configuration data.  
 Re alarm value = 1, 2:  
 - Check the list of the drive objects with process data exchange (p0978). With p0978[x] = 0, all of the following drive objects in the list are excluded from the process data exchange.  
 Re alarm value = 2:  
 - Check the number of data words for output and input to a drive object.  
 Re alarm value = 17:  
 - CBE20 Shared Device: Unplug/plug A-CPU.  
 Re alarm value = 223, 500:  
 - Check the setting in p8839 and p8815.  
 - Ensure that only one PZD interface is operated in clock synchronism or with PROFIsafe.  
 Re alarm value = 501:  
 - Check the set PROFIsafe address (p9610).  
**Reaction upon F:** NONE (OFF1, OFF2, OFF3)  
**Acknowl. upon F:** IMMEDIATELY

<b>A08520 (F)</b>	<b>PN/COMM BOARD: Non-cyclic channel error</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Communication error to the higher-level control system (9)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The memory or the buffer status of the non-cyclic channel has an error. Alarm value (r2124, interpret decimal): 0: Error in the buffer status. 1: Error in the memory.
<b>Remedy:</b>	Check communications link.
Reaction upon F:	NONE (OFF1, OFF2, OFF3)
Acknowl. upon F:	IMMEDIATELY
<b>A08526 (F)</b>	<b>PN/COMM BOARD: No cyclic connection</b>
<b>Message value:</b>	-
<b>Message class:</b>	Communication error to the higher-level control system (9)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	There is no cyclic connection to the control.
<b>Remedy:</b>	Establish the cyclic connection and activate the control with cyclic operation. For PROFINET, check the parameters "Name of Station" and "IP of Station" (r61000, r61001). If a CBE20 is inserted and PROFIBUS is to communicate via PZD Interface 1, then this must be parameterized using the STARTER commissioning tool or directly using p8839.
Reaction upon F:	NONE (OFF1)
Acknowl. upon F:	IMMEDIATELY
<b>A08530 (F)</b>	<b>PN/COMM BOARD: Message channel error</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Communication error to the higher-level control system (9)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The memory or the buffer status of the message channel has an error. Alarm value (r2124, interpret decimal): 0: Error in the buffer status. 1: Error in the memory.
<b>Remedy:</b>	Check communications link.
Reaction upon F:	NONE (OFF1, OFF2, OFF3)
Acknowl. upon F:	IMMEDIATELY
<b>A08550</b>	<b>PZD Interface Hardware assignment error</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	CU_DC, CU_DC_R, CU_DC_R_S, CU_DC_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The assignment of the hardware to the PZD interface has been incorrectly parameterized. Alarm value (r2124, interpret decimal): 3: Assigned COMM BOARD missing. See also: p8839 (PZD interface hardware assignment)
<b>Remedy:</b>	Check the parameterization and if required, correct (p8839).

---

<b>A08550</b>	<b>PZD Interface Hardware assignment error</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The assignment of the hardware to the PZD interface has been incorrectly parameterized. Alarm value (r2124, interpret decimal): 1: Only one of the two indices is not equal to 99 (automatic). 2: Both PZD interfaces are assigned to the same hardware. 3: Assigned COMM BOARD missing. 4: CBC10 is assigned to interface 1. See also: p8839 (PZD interface hardware assignment)
<b>Remedy:</b>	Check the parameterization and if required, correct (p8839).

---

<b>A08564</b>	<b>CBE20: Syntax error in configuration file</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	A syntax error has been detected in the ASCII configuration file for the Communication Board Ethernet 20 (CBE20). The saved configuration file has not been loaded.
<b>Remedy:</b>	- Check the CBE20 configuration (p8940 and following), correct if necessary, and activate (p8945 = 2). Note: The configuration is not applied until the next POWER ON! - reconfigure the CBE20 (e.g. using the STARTER commissioning software) See also: p8945 (CBE2x interface configuration)

---

<b>A08565</b>	<b>PNCOMM BOARD : Consistency error affecting adjustable parameters</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	A consistency error was detected when activating the configuration (p8945) for the Communication Board Ethernet 20 (CBE20). Alarm value (r2124, interpret decimal): 0: general consistency error 1: error in the IP configuration (IP address, subnet mask or standard gateway). 2: Error in the station names. 3: DHCP was not able to be activated, as a cyclic PROFINET connection already exists. 4: a cyclic PROFINET connection is not possible as DHCP is activated. Note: For all alarm values, the following applies: currently set configuration has not been activated. DHCP: Dynamic Host Configuration Protocol See also: p8940 (CBE2x Name of Station), p8941 (CBE2x IP Address of Station), p8942 (CBE2x Default Gateway of Station), p8943 (CBE2x Subnet Mask of Station), p8944 (CBE2x DHCP Mode)
<b>Remedy:</b>	- Check the required interface configuration (p8940 and following), correct if necessary, and activate (p8945). or - Reconfigure the station via the "Edit Ethernet node" screen form (e.g. with STARTER commissioning software). See also: p8945 (CBE2x interface configuration)

---

<b>A13000</b>	<b>License not adequate</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<ul style="list-style-type: none"> <li>- for the drive unit, the options that require a license are being used but the licenses are not sufficient.</li> <li>- an error occurred when checking the existing licenses.</li> </ul> <p>Alarm value (r2124, interpret decimal):</p> <p>0: The existing license is not sufficient.</p> <p>1: An adequate license was not able to be determined as the memory card with the required licensing data was withdrawn in operation.</p> <p>2: An adequate license was not able to be determined as there is no licensing data available on the memory card.</p> <p>3: An adequate license was not able to be determined as there is a checksum error in the license key.</p> <p>4: An internal error occurred when checking the license.</p>
<b>Remedy:</b>	<p>Re alarm value = 0: Additional licenses are required and these must be activated (p9920, p9921).</p> <p>Re alarm value = 1: With the system powered down, re-insert the memory card that matches the system.</p> <p>Re alarm value = 2: Enter and activate the license key (p9920, p9921).</p> <p>Re alarm value = 3: Compare the license key (p9920) entered with the license key on the certificate of license. Re-enter the license key and activate (p9920, p9921).</p> <p>Re alarm value = 4:  <ul style="list-style-type: none"> <li>- carry out a POWER ON.</li> <li>- upgrade firmware to later version.</li> <li>- contact the Hotline.</li> </ul> </p>
<b>A13001</b>	<b>Error in license checksum</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	When checking the checksum of the license key, an error was detected.
<b>Remedy:</b>	<p>Compare the license key (p9920) entered with the license key on the certificate of license. Re-enter the license key and activate (p9920, p9921).</p>
<b>F13009</b>	<b>Licensing OA application not licensed</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	OFF1
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	At least one OA application which is under license does not have a license.
	Note: Refer to r4955 and p4955 for information about the installed OA applications.

**Remedy:**

- enter and activate the license key for OA applications under license (p9920, p9921).
- if necessary, de-activate unlicensed OA applications (p4956).

See also: p9920 (Licensing enter license key), p9921 (Licensing activate license key)

---

**F13010      Licensing function module not licensed**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** OFF1  
**Acknowledge:** IMMEDIATELY  
**Cause:** At least one function module which is under license does not have a license.  
 Fault value (r0949, interpret hexadecimal):  
 Bit x = 1: The corresponding function module does not have a license.  
 Note:  
 Refer to p0108 or r0108 for the assignment between the bit number and function module.

**Remedy:**

- enter and activate the license key for function modules under license (p9920, p9921).
- if necessary, de-activate unlicensed function modules (p0108, r0108).

See also: p9920 (Licensing enter license key), p9921 (Licensing activate license key)

---

**F13100      Know-how protection: Copy protection error**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** OFF1  
**Acknowledge:** IMMEDIATELY  
**Cause:** The know-how protection with copy protection for the memory card is active.  
 An error has occurred when checking the memory card.  
 Fault value (r0949, interpret decimal):  
 0: A memory card is not inserted.  
 2: An invalid memory card is inserted.  
 3: The memory card is being used in another Control Unit.  
 12: An invalid memory card is inserted (OEM input incorrect, p7769).  
 13: The memory card is being used in another Control Unit (OEM input incorrect, p7759).  
 See also: p7765 (KHP configuration)

**Remedy:**

For fault value = 0:

- Insert the correct memory card and carry out POWER ON.

Re fault value = 2, 3, 12, 13:

- contact the responsible OEM.
- Deactivate copy protection (p7765) and acknowledge the fault (p3981).
- Deactivate know-how protection (p7766 ... p7768) and acknowledge the fault (p3981).

Note:  
 In general, the copy protection can only be changed when know-how protection is deactivated.  
 KHP: Know-How Protection  
 See also: p3981 (Faults acknowledge drive object), p7765 (KHP configuration)

---

**F13101      Know-how protection: Copy protection cannot be activated**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** IMMEDIATELY  
**Cause:** An error occurred when attempting to activate the copy protection for the memory card.  
 Fault value (r0949, interpret decimal):  
 0: A memory card is not inserted.

Note:  
KHP: Know-How Protection

**Remedy:**

- insert the memory card and carry out POWER ON.
- Try to activate copy protection again (p7765).

See also: p7765 (KHP configuration)

---

**F13102**      **Know-how protection: Consistency error of the protected data**

**Message value:**      %1

**Message class:**      Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:**      All objects

**Reaction:**      OFF1

**Acknowledge:**      IMMEDIATELY

**Cause:**      An error was identified when checking the consistency of the protected files. As a consequence, the project on the memory card cannot be run.

Fault value (r0949, interpret hexadecimal):

yyyyxxxx hex: yyyy = object number, xxxx = fault cause

xxxx = 1:  
A file has a checksum error.

xxxx = 2:  
The files are not consistent with one another.

xxxx = 3:  
The project files, which were loaded into the file system via load (download from the memory card), are inconsistent.

Note:  
KHP: Know-How Protection

**Remedy:**

- Replace the project on the memory card or replace project files for download from the memory card.
- Restore the factory setting and download again.

---

**F30001**      **Power unit: Overcurrent**

**Message value:**      Fault cause: %1 bin

**Message class:**      Power electronics faulted (5)

**Drive object:**      DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:**      OFF2

**Acknowledge:**      IMMEDIATELY

**Cause:**      The power unit has detected an overcurrent condition.

- closed-loop control is incorrectly parameterized.
- motor has a short-circuit or fault to ground (frame).
- U/f operation: Up ramp set too low.
- U/f operation: Rated motor current is significantly greater than that of the Motor Module.
- infeed: High discharge and post-charging currents for voltage dip.
- infeed: High post-charging currents for overload when motoring and DC link voltage dip.
- infeed: Short-circuit currents at power-up due to the missing line reactor.
- power cables are not correctly connected.
- the power cables exceed the maximum permissible length.
- power unit defective.
- line phase interrupted.

Additional causes for a parallel switching device (r0108.15 = 1):

- a power unit has tripped (powered down) due to a ground fault.
- the closed-loop circulating current control is either too slow or has been set too fast.

Fault value (r0949, interpret bitwise binary):

Bit 0: Phase U.

Bit 1: Phase V.

Bit 2: Phase W.

Bit 3: Overcurrent in the DC link.

Note:  
Fault value = 0 means that the phase with overcurrent is not recognized (e.g. for blocksize device).



- Remedy:**
- check the motor data - if required, carry out commissioning.
  - check the motor circuit configuration (star/delta).
  - U/f operation: Increase up ramp.
  - U/f operation: Check the assignment of the rated currents of the motor and Motor Module.
  - infeed: Check the line supply quality.
  - infeed: Reduce the motor load.
  - infeed: Check the correct connection of the line filter and the line commutating reactor.
  - check the power cable connections.
  - check the power cables for short-circuit or ground fault.
  - check the length of the power cables.
  - replace power unit.
  - check the line supply phases.
- For a parallel switching device (r0108.15 = 1) the following additionally applies:
- check the ground fault monitoring thresholds (p0287).
  - check the setting of the closed-loop circulating current control (p7036, p7037).

<b>F30002</b>	<b>Power unit: DC link voltage overvoltage</b>
<b>Message value:</b>	%1
<b>Message class:</b>	DC link overvoltage (4)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>The power unit has detected overvoltage in the DC link.</p> <ul style="list-style-type: none"> <li>- motor regenerates too much energy.</li> <li>- device connection voltage too high.</li> <li>- when operating with a Voltage Sensing Module (VSM), the phase assignment L1, L2, L3 at the VSM differs from the phase assignment at the power unit.</li> <li>- line phase interrupted.</li> </ul> <p>Fault value (r0949, interpret decimal): DC link voltage at the time of trip [0.1 V].</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- increase the ramp-down time</li> <li>- activate the DC link voltage controller (p1240)</li> <li>- use a brake resistor or Active Line Module</li> <li>- increase the current limit of the infeed or use a larger module (for the Active Line Module)</li> <li>- check the device supply voltage</li> <li>- check and correct the phase assignment at the VSM and at the power unit</li> <li>- check the line supply phases.</li> </ul>

<b>F30003</b>	<b>Power unit: DC link voltage undervoltage</b>
<b>Message value:</b>	-
<b>Message class:</b>	Infeed faulted (13)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>The power unit has detected an undervoltage condition in the DC link.</p> <ul style="list-style-type: none"> <li>- line supply failure</li> <li>- line supply voltage below the permissible value.</li> <li>- line supply infeed failed or interrupted.</li> <li>- line phase interrupted.</li> </ul> <p>Note: The monitoring threshold for undervoltage in the DC link is indicated in r0296.</p>

## 4 Faults and alarms

### 4.2 List of faults and alarms

- Remedy:**
- check the line supply voltage
  - check the line supply infeed and observe the fault messages relating to it (if there are any)
  - check the line supply phases.
  - check the line supply voltage setting (p0210).
  - booksizes units: check the setting of p0278.
- Note:**
- The ready signal for the infeed (r0863) must be interconnected to the associated drive inputs (p0864).

---

<b>F30004</b>	<b>Power unit: Overtemperature heat sink AC inverter</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Power electronics faulted (5)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The temperature of the power unit heat sink has exceeded the permissible limit value. <ul style="list-style-type: none"><li>- insufficient cooling, fan failure.</li><li>- overload.</li><li>- ambient temperature too high.</li><li>- pulse frequency too high.</li></ul> Fault value (r0949): Temperature [1 bit = 0.01 °C].
<b>Remedy:</b>	<ul style="list-style-type: none"><li>- check whether the fan is running.</li><li>- check the fan elements.</li><li>- check whether the ambient temperature is in the permissible range.</li><li>- check the motor load.</li><li>- reduce the pulse frequency if this is higher than the rated pulse frequency.</li></ul> <p><b>Notice:</b></p> <p>This fault can only be acknowledged after this alarm threshold for alarm A05000 has been undershot.</p>

---

<b>F30005</b>	<b>Power unit: Overload I2t</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Power electronics faulted (5)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The power unit was overloaded (r0036 = 100 %). <ul style="list-style-type: none"><li>- the permissible rated power unit current was exceeded for an inadmissibly long time.</li><li>- the permissible load duty cycle was not maintained.</li></ul> Fault value (r0949, interpret decimal): I2t [100 % = 16384].
<b>Remedy:</b>	<ul style="list-style-type: none"><li>- reduce the continuous load.</li><li>- adapt the load duty cycle.</li><li>- check the motor and power unit rated currents.</li></ul>

---

<b>F30006</b>	<b>Power unit: Thyristor Control Board</b>
<b>Message value:</b>	-
<b>Message class:</b>	Power electronics faulted (5)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The Thyristor Control Board (TCB) of the Basic Line Module signals a fault. <ul style="list-style-type: none"><li>- there is no line supply voltage.</li><li>- the line contactor is not closed.</li><li>- the line supply voltage is too low.</li><li>- line supply frequency outside the permissible range (45 ... 66 Hz).</li></ul>

- there is a DC link short-circuit.
- there is a DC link short-circuit (during the pre-charging phase).
- voltage supply for the Thyristor Control Board outside the nominal range (5 ... 18 V) and line voltage >30 V.
- there is an internal fault in the Thyristor Control Board.

**Remedy:** The faults must be saved in the Thyristor Control Board and must be acknowledged. To do this, the supply voltage of the Thyristor Control Board must be switched out for at least 10 s!

- check the line supply voltage
- check or energize the line contactor.
- check the monitoring time and, if required, increase (p0857).
- if required, observe additional power unit messages/signals.
- check the DC link regarding short-circuit or ground fault.
- evaluate diagnostic LEDs for the Thyristor Control Board.

---

**F30008 Power unit: Sign-of-life error cyclic data**

**Message value:** -  
**Message class:** Internal (DRIVE-CLiQ) communication error (12)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE (OFF1, OFF2, OFF3)  
**Acknowledge:** IMMEDIATELY  
**Cause:** The Control Unit has not punctually updated the cyclic setpoint telegram. The number of consecutive sign-of-life errors has exceeded the fault threshold (p7789).  
**Remedy:**

- check the electrical cabinet design and cable routing for EMC compliance
- for projects with the VECTOR drive object, check whether p0117 = 6 has been set on the Control Unit.
- increase the fault threshold (p7789).

---

**A30010 (F) Power unit: Sign-of-life error cyclic data**

**Message value:** -  
**Message class:** Internal (DRIVE-CLiQ) communication error (12)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** A DRIVE-CLiQ communication error has occurred between the Control Unit and the power unit involved. The cyclic setpoint telegrams of the Control Unit were not received on time by the power unit for at least one clock cycle.  
**Remedy:** Check the electrical cabinet design and cable routing for EMC compliance.  
**Reaction upon F:** NONE (OFF1, OFF2, OFF3)  
**Acknowl. upon F:** IMMEDIATELY (POWER ON)

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**F30011 Power unit: Line phase failure in main circuit**

**Message value:** %1  
**Message class:** Network fault (2)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF2 (OFF1)  
**Acknowledge:** IMMEDIATELY  
**Cause:** At the power unit, the DC link voltage ripple has exceeded the permissible limit value.  
Possible causes:

- A line phase has failed.
- The 3 line phases are inadmissibly unsymmetrical.
- The capacitance of the DC link capacitor forms a resonance frequency with the line inductance and the reactor integrated in the power unit.
- the fuse of a phase of a main circuit has ruptured.
- A motor phase has failed.

**Fault value (r0949, interpret decimal):**  
Only for internal Siemens troubleshooting.

## 4 Faults and alarms

### 4.2 List of faults and alarms

**Remedy:**

- check the main circuit fuses.
- Check whether a single-phase load is distorting the line voltages.
- Detune the resonant frequency with the line inductance by using an upstream line reactor.
- Dampen the resonant frequency with the line inductance by switching over the DC link voltage compensation in the software (see p1810) – or increase the smoothing (see p1806). However, this can have a negative impact on the torque ripple at the motor output.
- check the motor feeder cables.

---

**F30012**      **Power unit: Temperature sensor heat sink wire breakage**

**Message value:**      %1

**Message class:**      Power electronics faulted (5)

**Drive object:**      DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:**      OFF1 (OFF2)

**Acknowledge:**      IMMEDIATELY

**Cause:**      The connection to a heat sink temperature sensor in the power unit is interrupted.  
Fault value (r0949, interpret hexadecimal):  
Bit 0: Module slot (electronics slot)  
Bit 1: Air intake  
Bit 2: Inverter 1  
Bit 3: Inverter 2  
Bit 4: Inverter 3  
Bit 5: Inverter 4  
Bit 6: Inverter 5  
Bit 7: Inverter 6  
Bit 8: Rectifier 1  
Bit 9: Rectifier 2

**Remedy:**      Contact the manufacturer.

---

**F30013**      **Power unit: Temperature sensor heat sink short-circuit**

**Message value:**      %1

**Message class:**      Power electronics faulted (5)

**Drive object:**      DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:**      OFF1 (OFF2)

**Acknowledge:**      IMMEDIATELY

**Cause:**      The heat sink temperature sensor in the power unit is short-circuited.  
Fault value (r0949, interpret hexadecimal):  
Bit 0: Module slot (electronics slot)  
Bit 1: Air intake  
Bit 2: Inverter 1  
Bit 3: Inverter 2  
Bit 4: Inverter 3  
Bit 5: Inverter 4  
Bit 6: Inverter 5  
Bit 7: Inverter 6  
Bit 8: Rectifier 1  
Bit 9: Rectifier 2

**Remedy:**      Contact the manufacturer.

---

**F30017**      **Power unit: Hardware current limit has responded too often**

**Message value:**      Fault cause: %1 bin

**Message class:**      Power electronics faulted (5)

**Drive object:**      DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:**      OFF2

**Acknowledge:**      IMMEDIATELY

**Cause:**      The hardware current limitation in the relevant phase (see A30031, A30032, A30033) has responded too often. The number of times the limit has been exceeded depends on the design and type of power unit.

For infeed units, the following applies:

- closed-loop control is incorrectly parameterized.
- load on the infeed is too high.
- Voltage Sensing Module incorrectly connected.
- line reactor missing or the incorrect type.
- power unit defective.

The following applies to Motor Modules:

- closed-loop control is incorrectly parameterized.
- fault in the motor or in the power cables.
- the power cables exceed the maximum permissible length.
- motor load too high
- power unit defective.

Fault value (r0949, interpret binary):

Bit 0: Phase U

Bit 1: Phase V

Bit 2: Phase W

#### Remedy:

For infeed units, the following applies:

- check the controller settings and reset and identify the controller if necessary (p0340 = 2, p3410 = 5)
- reduce the load and increase the DC-link capacitance or use a higher-rating infeed if necessary
- check the connection of the optional Voltage Sensing Module
- check the connection and technical data of the line reactor
- check the power cables for short-circuit or ground fault.
- replace power unit.

The following applies to Motor Modules:

- check the motor data and if required, recalculate the controller parameters (p0340 = 3). As an alternative, run a motor data identification (p1910 = 1, p1960 = 1).
- check the motor circuit configuration (star-delta).
- check the motor load.
- check the power cable connections.
- check the power cables for short-circuit or ground fault.
- check the length of the power cables.
- replace power unit.

<b>F30021</b>	<b>Power unit: Ground fault</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Ground fault / inter-phase short-circuit detected (7)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>The Power unit has detected a ground fault.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> <li>- ground fault in the power cables.</li> <li>- Ground fault at the motor.</li> <li>- CT defective.</li> <li>- when the brake closes, this causes the hardware DC current monitoring to respond.</li> <li>- short-circuit at the braking resistor.</li> <li>- the closed-loop circulating current control for devices connected in parallel (r0108.15 = 1) is either too slow or has been set too fast.</li> </ul> <p>Note:</p> <p>For power units, a ground fault is also emulated in r3113.5.</p>

	Fault value (r0949, interpret decimal): 0: - the hardware DC current monitoring has responded. - short-circuit at the braking resistor. > 0: Absolute value, total current amplitude [20479 = r0209 * 1.4142].
<b>Remedy:</b>	- check the power cable connections. - check the motor. - check the CT. - check the cables and contacts of the brake connection (a wire is possibly broken). - check the braking resistor. For parallel switching devices (r0108.15 = 1) the following additionally applies: - check the ground fault monitoring thresholds (p0287). - check the setting of the closed-loop circulating current control (p7036, p7037).

<b>F30022</b>	<b>Power unit: Monitoring U<sub>ce</sub></b>
<b>Message value:</b>	Fault cause: %1 bin
<b>Message class:</b>	Ground fault / inter-phase short-circuit detected (7)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	POWER ON
<b>Cause:</b>	In the power unit, the monitoring of the collector-emitter voltage (U <sub>ce</sub> ) of the semiconductor has responded. Possible causes: - fiber-optic cable interrupted. - power supply of the IGBT gating module missing. - short-circuit at the power unit output. - defective semiconductor in the power unit. Fault value (r0949, interpret binary): Bit 0: Short-circuit in phase U Bit 1: Short circuit in phase V Bit 2: Short-circuit in phase W Bit 3: Light transmitter enable defective Bit 4: U <sub>ce</sub> group fault signal interrupted See also: r0949 (Fault value)
<b>Remedy:</b>	- check the fiber-optic cable and if required, replace. - check the power supply of the IGBT gating module (24 V). - check the power cable connections. - select the defective semiconductor and replace.

<b>F30025</b>	<b>Power unit: Chip overtemperature</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Power electronics faulted (5)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The chip temperature of the semiconductor has exceeded the permissible limit value. - the permissible load duty cycle was not maintained. - insufficient cooling, fan failure. - overload. - ambient temperature too high. - pulse frequency too high. Fault value (r0949, interpret decimal): Temperature difference between the heat sink and chip [0.01 °C].

**Remedy:**

- adapt the load duty cycle.
- check whether the fan is running.
- check the fan elements.
- check whether the ambient temperature is in the permissible range.
- check the motor load.
- reduce the pulse frequency if this is higher than the rated pulse frequency.

**Notice:**  
This fault can only be acknowledged after this alarm threshold for alarm A05001 has been undershot.

<b>F30027</b>	<b>Power unit: Precharging DC link time monitoring</b>
<b>Message value:</b>	Enable signals: %1, Status: %2
<b>Message class:</b>	Infeed faulted (13)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>The power unit DC link was not able to be pre-charged within the expected time.</p> <ol style="list-style-type: none"><li>1) There is no line supply voltage connected.</li><li>2) The line contactor/line side switch has not been closed.</li><li>3) The line supply voltage is too low.</li><li>4) Line supply voltage incorrectly set (p0210).</li><li>5) The pre-charging resistors are overheated as there were too many pre-charging operations per time unit.</li><li>6) The pre-charging resistors are overheated as the DC link capacitance is too high.</li><li>7) The pre-charging resistors are overheated because when there is no "ready for operation" (r0863.0) of the infeed unit, power is taken from the DC link.</li><li>8) The pre-charging resistors are overheated as the line contactor was closed during the DC link fast discharge through the Braking Module.</li><li>9) The DC link has either a ground fault or a short-circuit.</li><li>10) The pre-charging circuit is possibly defective (only for chassis units).</li><li>11) Infeed is defective and/or fuse has ruptured in the Motor Module (only Booksize units).</li></ol> <p>Fault value (r0949, interpret binary): yyyyxxxx hex: yyyy = power unit state</p> <ol style="list-style-type: none"><li>0: Fault status (wait for OFF and fault acknowledgement).</li><li>1: Restart inhibit (wait for OFF).</li><li>2: Overvoltage condition detected -&gt; change into the fault state.</li><li>3: Undervoltage condition detected -&gt; change into the fault state.</li><li>4: Wait for bridging contactor to open -&gt; change into the fault state.</li><li>5: Wait for bridging contactor to open -&gt; change into restart inhibit.</li><li>6: Commissioning.</li><li>7: Ready for pre-charging.</li><li>8: Pre-charging started, DC link voltage less than the minimum switch-on voltage.</li><li>9: Pre-charging, DC link voltage end of pre-charging still not detected.</li><li>10: Wait for the end of the de-bounce time of the main contactor after pre-charging has been completed.</li><li>11: Pre-charging completed, ready for pulse enable.</li><li>12: It was detected that the STO terminal was energized at the power unit.</li></ol> <p>xxxx = Missing internal enable signals, power unit (inverted bit-coded, FFFF hex -&gt; all internal enable signals available)</p> <p>Bit 0: Power supply of the IGBT gating shut down. Bit 1: Ground fault detected. Bit 2: Peak current intervention. Bit 3: I2t exceeded. Bit 4: Thermal model overtemperature calculated. Bit 5: (heat sink, gating module, power unit) overtemperature measured. Bit 6: Reserved. Bit 7: Overvoltage detected. Bit 8: Power unit has completed pre-charging, ready for pulse enable.</p>

Bit 9: STO terminal missing.  
Bit 10: Overcurrent detected.  
Bit 11: Armature short-circuit active.  
Bit 12: DRIVE-CLiQ fault active.  
Bit 13: Vce fault detected, transistor de-saturated due to overcurrent/short-circuit.  
Bit 14: Undervoltage detected.

**Remedy:**

In general:

- check the line supply voltage at the input terminals.
- check the line supply voltage setting (p0210).

For booksize drive units, the following applies:

- wait (approx. 8 minutes) until the pre-charging resistors have cooled down. For this purpose, preferably disconnect the infeed unit from the line supply.

Re 5):

- carefully observe the permissible pre-charging frequency (refer to the appropriate Equipment Manual).

Re 6):

- check the total capacitance of the DC link and reduce in accordance with the maximum permissible DC-link capacitance if necessary (refer to the appropriate Equipment Manual)

Re 7):

- interconnect the ready-for-operation signal from the infeed unit (r0863.0) in the enable logic of the drives connected to this DC link

Re 8):

- check the connections of the external line contactor. The line contactor must be open during DC-link fast discharge.

Re 9):

- check the DC link for ground faults or short circuits.

Re 11):

- Check the DC link voltage of the infeed (r0070) and Motor Modules (r0070).

If the DC link voltage generated by the infeed (or external) is not displayed for the Motor Modules (r0070), then a fuse has ruptured in the Motor Module.

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**A30030****Power unit: Internal overtemperature alarm**

**Message value:** %1

**Message class:** Power electronics faulted (5)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The temperature inside the drive converter has exceeded the permissible temperature limit.

- insufficient cooling, fan failure.
- overload.
- ambient temperature too high.

Alarm value (r2124, interpret decimal):

Only for internal Siemens troubleshooting.

**Remedy:**

- possibly use an additional fan.
- check whether the ambient temperature is in the permissible range.

Notice:

This fault can only be acknowledged once the permissible temperature limit minus 5 K has been fallen below.

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**A30031****Power unit: Hardware current limiting in phase U**

**Message value:** -

**Message class:** Power electronics faulted (5)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** Hardware current limit for phase U responded. The pulsing in this phase is inhibited for one pulse period.

- closed-loop control is incorrectly parameterized.
- fault in the motor or in the power cables.
- the power cables exceed the maximum permissible length.



	<ul style="list-style-type: none"> <li>- motor load too high</li> <li>- power unit defective.</li> </ul> <p>Note:</p> <p>Alarm A30031 is always output if, for a Power Module, the hardware current limiting of phase U, V or W responds.</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check the motor data and if required, recalculate the control parameters (p0340 = 3). As an alternative, run a motor data identification (p1910 = 1, p1960 = 1).</li> <li>- check the motor circuit configuration (star/delta).</li> <li>- check the motor load.</li> <li>- check the power cable connections.</li> <li>- check the power cables for short-circuit or ground fault.</li> <li>- check the length of the power cables.</li> </ul>

<b>A30032</b>	<b>Power unit: Hardware current limiting in phase V</b>
<b>Message value:</b>	-
<b>Message class:</b>	Power electronics faulted (5)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>Hardware current limit for phase V responded. The pulsing in this phase is inhibited for one pulse period.</p> <ul style="list-style-type: none"> <li>- closed-loop control is incorrectly parameterized.</li> <li>- fault in the motor or in the power cables.</li> <li>- the power cables exceed the maximum permissible length.</li> <li>- motor load too high</li> <li>- power unit defective.</li> </ul> <p>Note:</p> <p>Alarm A30031 is always output if, for a Power Module, the hardware current limiting of phase U, V or W responds.</p>
<b>Remedy:</b>	<p>Check the motor data and if required, recalculate the control parameters (p0340 = 3). As an alternative, run a motor data identification (p1910 = 1, p1960 = 1).</p> <ul style="list-style-type: none"> <li>- check the motor circuit configuration (star/delta).</li> <li>- check the motor load.</li> <li>- check the power cable connections.</li> <li>- check the power cables for short-circuit or ground fault.</li> <li>- check the length of the power cables.</li> </ul>

<b>A30033</b>	<b>Power unit: Hardware current limiting in phase W</b>
<b>Message value:</b>	-
<b>Message class:</b>	Power electronics faulted (5)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>Hardware current limit for phase W responded. The pulsing in this phase is inhibited for one pulse period.</p> <ul style="list-style-type: none"> <li>- closed-loop control is incorrectly parameterized.</li> <li>- fault in the motor or in the power cables.</li> <li>- the power cables exceed the maximum permissible length.</li> <li>- motor load too high</li> <li>- power unit defective.</li> </ul> <p>Note:</p> <p>Alarm A30031 is always output if, for a Power Module, the hardware current limiting of phase U, V or W responds.</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check the motor data and if required, recalculate the control parameters (p0340 = 3). As an alternative, run a motor data identification (p1910 = 1, p1960 = 1).</li> <li>- check the motor circuit configuration (star/delta).</li> <li>- check the motor load.</li> <li>- check the power cable connections.</li> <li>- check the power cables for short-circuit or ground fault.</li> <li>- check the length of the power cables.</li> </ul>

<b>F30035</b>	<b>Power unit: Air intake overtemperature</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Power electronics faulted (5)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (OFF2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>The air intake in the power unit has exceeded the permissible temperature limit.</p> <p>For air-cooled power units, the temperature limit is at 55 °C.</p> <ul style="list-style-type: none"> <li>- ambient temperature too high.</li> <li>- insufficient cooling, fan failure.</li> </ul> <p>Fault value (r0949, interpret decimal):</p> <p>Temperature [0.01 °C].</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check whether the fan is running.</li> <li>- check the fan elements.</li> <li>- check whether the ambient temperature is in the permissible range.</li> </ul> <p>Notice:</p> <p>This fault can only be acknowledged after this alarm threshold for alarm A05002 has been undershot.</p>
<b>F30037</b>	<b>Power unit: Rectifier overtemperature</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Power electronics faulted (5)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>The temperature in the rectifier of the power unit has exceeded the permissible temperature limit.</p> <ul style="list-style-type: none"> <li>- insufficient cooling, fan failure.</li> <li>- overload.</li> <li>- ambient temperature too high.</li> <li>- line supply phase failure.</li> </ul> <p>Fault value (r0949, interpret decimal):</p> <p>Temperature [0.01 °C].</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check whether the fan is running.</li> <li>- check the fan elements.</li> <li>- check whether the ambient temperature is in the permissible range.</li> <li>- check the motor load.</li> <li>- check the line supply phases.</li> </ul> <p>Notice:</p> <p>This fault can only be acknowledged after this alarm threshold for alarm A05004 has been undershot.</p>
<b>F30040</b>	<b>Power unit: Undervolt 24/48 V</b>
<b>Message value:</b>	Channel: %1, voltage: %2 [0.1 V]
<b>Message class:</b>	Supply voltage fault (undervoltage) (3)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	<p>The undervoltage threshold of the 24 V power supply for the power unit was fallen below for longer than 3 ms.</p> <p>Note:</p> <ul style="list-style-type: none"> <li>- for booksize power units, the undervoltage threshold is 15 V.</li> <li>- for CU310-2, CUA31 and CUA32 the undervoltage threshold is 16 V.</li> <li>- for all other power units (e.g. S120M), the undervoltage threshold depends on the power unit, and is not displayed.</li> </ul> <p>Fault value (r0949, interpret hexadecimal):</p> <p>yyxxxx hex: yy = channel, xxxx = voltage [0.1 V]</p> <p>yy = 0: 24 V power supply</p> <p>yy = 1: 48 V power supply</p>

**Remedy:**

- Check the power supply of the power unit.
- carry out a POWER ON (power off/on) for the component.

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**A30041 (F) Power unit: Undervolt 24/48 V alarm**

**Message value:** Channel: %1, voltage: %2 [0.1 V]  
**Message class:** Supply voltage fault (undervoltage) (3)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** For the power unit power supply, the lower threshold has been violated.  
 Alarm value (r2124, interpret hexadecimal):  
 yyxxxx hex: yy = channel, xxxx = voltage [0.1 V]  
 yy = 0: 24 V power supply  
 yy = 1: 48 V power supply

**Remedy:**

- Check the power supply of the power unit.
- carry out a POWER ON (power off/on) for the component.

Reaction upon F: NONE (OFF1, OFF2)  
 Acknowl. upon F: IMMEDIATELY (POWER ON)

---

**A30042 Power unit: Fan has reached the maximum operating hours**

**Message value:** %1  
**Message class:** Power electronics faulted (5)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The maximum operating time of at least one fan will soon be reached, or has already been exceeded.  
 Fault value (r0949, interpret binary):  
 Bit 0: heat sink fan will reach the maximum operating time in 500 hours.  
 Bit 1: heat sink fan has exceeded the maximum operating time.  
 Bit 8: internal device fan will reach the maximum operating time in 500 hours.  
 Bit 9: internal device fan has exceeded the maximum operating time.  
 Note:  
 The maximum operating time of the heat sink fan in the power unit is displayed in p0252.  
 The maximum operating time of the internal device fan in the power unit is internally specified and is fixed.

**Remedy:**

For the fan involved, carry out the following:

- replace the fan.
- reset the operating hours counter (p0251, p0254).

---

**F30043 Power unit: Overvolt 24/48 V**

**Message value:** Channel: %1, voltage: %2 [0.1 V]  
**Message class:** Supply voltage fault (undervoltage) (3)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF2  
**Acknowledge:** POWER ON  
**Cause:** For the power unit power supply, the upper threshold has been violated.  
 Fault value (r0949, interpret hexadecimal):  
 yyxxxx hex: yy = channel, xxxx = voltage [0.1 V]  
 yy = 0: 24 V power supply  
 yy = 1: 48 V power supply

**Remedy:**

Check the power supply of the power unit.

<b>A30044 (F)</b>	<b>Power unit: Overvolt 24/48 V alarm</b>
<b>Message value:</b>	Channel: %1, voltage: %2 [0.1 V]
<b>Message class:</b>	Supply voltage fault (undervoltage) (3)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	For the power unit power supply, the upper threshold has been violated. Alarm value (r2124, interpret hexadecimal): yyxxxx hex: yy = channel, xxxx = voltage [0.1 V] yy = 0: 24 V power supply yy = 1: 48 V power supply
<b>Remedy:</b>	Check the power supply of the power unit.
Reaction upon F:	NONE (OFF1, OFF2, OFF3)
Acknowl. upon F:	IMMEDIATELY (POWER ON)
<b>F30045</b>	<b>Power unit: Supply undervoltage</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Supply voltage fault (undervoltage) (3)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	Power supply fault in the power unit. - The voltage monitor signals an undervoltage fault on the module. The following applies for CU31x: - the voltage monitoring on the DAC board signals an undervoltage fault on the module. For S120M, the following applies: - This message is displayed for undervoltage or overvoltage.
<b>Remedy:</b>	- Check the power supply of the power unit. - carry out a POWER ON (power off/on) for the component. - replace the module if necessary.
<b>A30046 (F)</b>	<b>Power unit: Undervoltage alarm</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Power electronics faulted (5)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	Before the last restart, a problem occurred at the power unit power supply. The voltage monitor in the internal FPGA of the PSA signals an undervoltage fault on the module. Fault value (r0949, interpret decimal): Register value of the voltage fault register.
<b>Remedy:</b>	- check the 24 V DC voltage supply to power unit. - carry out a POWER ON (power off/on) for the component. - replace the module if necessary.
Reaction upon F:	NONE (OFF1, OFF2)
Acknowl. upon F:	IMMEDIATELY (POWER ON)
<b>F30050</b>	<b>Power unit: 24 V supply overvoltage</b>
<b>Message value:</b>	-
<b>Message class:</b>	Supply voltage fault (undervoltage) (3)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	POWER ON
<b>Cause:</b>	The voltage monitor signals an overvoltage fault on the module.

**Remedy:**

- check the 24 V power supply.
- replace the module if necessary.

---

**F30051 Power unit: Motor holding brake short circuit detected**

**Message value:** %1  
**Message class:** External measured value / signal state outside the permissible range (16)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF2  
**Acknowledge:** IMMEDIATELY  
**Cause:** A short-circuit at the motor holding brake terminals has been detected.  
 Fault value (r0949, interpret decimal):  
 Only for internal Siemens troubleshooting.

**Remedy:**

- check the motor holding brake for a short-circuit.
- check the connection and cable for the motor holding brake.

---

**F30052 EEPROM data error**

**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF2  
**Acknowledge:** POWER ON  
**Cause:** EEPROM data error of the power unit module.  
 Fault value (r0949, interpret decimal):  
 0, 2, 3, 4:  
 The EEPROM data read in from the power unit module are incorrect.  
 1:  
 EEPROM data is not compatible to the firmware of the power unit application.  
 Additional values:  
 Only for internal Siemens troubleshooting.

**Remedy:**

Re fault value = 0, 2, 3, 4:  
 Replace the power unit module or update the EEPROM data.

For fault value = 1:  
 The following applies for CU31x and CUA31:  
 Update the firmware \SIEMENS\SINAMICS\CODE\SAC\cu31xi.ufw (cua31.ufw)

---

**F30053 FPGA data faulty**

**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** POWER ON  
**Cause:** The FPGA data of the power unit are faulty.

**Remedy:** Replace the power unit or update the FPGA data.

---

**F30070 Cycle requested by the power unit module not supported**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF2  
**Acknowledge:** IMMEDIATELY  
**Cause:** A cycle is requested that is not supported by the power unit.  
 Fault value (r0949, interpret hexadecimal):  
 0: The current control cycle is not supported.  
 1: The DRIVE-CLiQ cycle is not supported.  
 2: Internal timing problem (clearance between RX and TX instants too low).  
 3: Internal timing problem (TX instant too early).

## 4 Faults and alarms

### 4.2 List of faults and alarms

**Remedy:** The power unit only supports the following cycles:  
62.5 µs, 125 µs, 250 µs and 500 µs  
For fault value = 0:  
Set a permitted current control cycle.  
For fault value = 1:  
Set a permitted DRIVE-CLiQ cycle.  
Re fault value = 2, 3:  
Contact the manufacturer (you may have an incompatible firmware version).

---

#### **F30071 No new actual values received from the power unit**

**Message value:** -  
**Message class:** Internal (DRIVE-CLiQ) communication error (12)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF2  
**Acknowledge:** IMMEDIATELY  
**Cause:** The number of actual value telegrams from the power unit module that have failed has exceeded the permissible number.  
**Remedy:** Check the interface (adjustment and locking) to the power unit module.

---

#### **F30072 Setpoints are no longer being transferred to the power unit**

**Message value:** -  
**Message class:** Internal (DRIVE-CLiQ) communication error (12)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF2  
**Acknowledge:** IMMEDIATELY  
**Cause:** The following applies for CU31x and CUA31:  
More than one setpoint telegram was not able to be transferred to the power unit module.  
**Remedy:** The following applies for CU31x and CUA31:  
Check the interface (adjustment and locking) to the power unit module.

---

#### **A30073 (N) Actual value/setpoint preprocessing no longer synchronous**

**Message value:** -  
**Message class:** Internal (DRIVE-CLiQ) communication error (12)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** Communication with the power unit module is no longer in synchronism with the current control cycle.  
**Remedy:** Wait until synchronization is re-established.  
Reaction upon N: NONE  
Acknowl. upon N: NONE

---

#### **F30074 (A) Communication error between the Control Unit and Power Module**

**Message value:** %1  
**Message class:** Internal (DRIVE-CLiQ) communication error (12)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** IMMEDIATELY  
**Cause:** Communications between the Control Unit (CU) and Power Module (PM) via the interface no longer possible. The CU may have been withdrawn or is incorrectly inserted.  
Fault value (r0949, interpret hexadecimal):  
0 hex:  
- a Control Unit with external 24 V supply was withdrawn from the Power Module during operation.  
- with the Power Module switched off, the external 24 V supply for the Control unit was interrupted for some time.

1 hex:

The Control Unit was withdrawn from the Power Module during operation, although the encoderless safe motion monitoring functions are enabled. This is not supported. After re-inserting the Control Unit in operation, communications to the Power Module no longer possible.

20A hex:

The Control Unit was inserted on a Power Module, which has another code number.

20B hex:

The Control Unit was inserted on a Power Module, which although it has the same code number, has a different serial number.

601 hex:

The Control Unit was inserted on a Power Module, whose power/performance class (chassis unit) is not supported.

**Remedy:**

Reinsert the Control Unit (CU) or the Control Unit adapter (CUAxx) onto the original Power Module and continue operation. If required, carry out a POWER ON for the CU and/or the CUA.

Reaction upon A:

NONE

Acknowl. upon A:

NONE

**F30080**

**Power unit: Current increasing too quickly**

**Message value:**

Fault cause: %1 bin

**Message class:**

Power electronics faulted (5)

**Drive object:**

CU\_DC, CU\_DC\_R, CU\_DC\_R\_S, CU\_DC\_S, TM150, TM15DI\_DO, TM31

**Reaction:**

NONE

**Acknowledge:**

IMMEDIATELY

**Cause:**

The power unit has detected an excessive rate of rise in the overvoltage range.

- closed-loop control is incorrectly parameterized.
- motor has a short-circuit or fault to ground (frame).
- U/f operation: Up ramp set too low.
- U/f operation: rated current of motor much greater than that of power unit.
- infeed: High discharge and post-charging currents for voltage dip.
- infeed: High post-charging currents for overload when motoring and DC link voltage dip.
- infeed: Short-circuit currents at power-up due to the missing line reactor.
- power cables are not correctly connected.
- power cables exceed the maximum permissible length.
- power unit defective.

Additional causes for a parallel switching device (r0108.15 = 1):

- a power unit has tripped (powered down) due to a ground fault.
- the closed-loop circulating current control is either too slow or has been set too fast.

Fault value (r0949, interpret bitwise binary):

Bit 0: Phase U.

Bit 1: Phase V.

Bit 2: Phase W.

**Remedy:**

- check the motor data - if required, carry out commissioning.
  - check the motor circuit configuration (star-delta)
  - U/f operation: Increase up ramp.
  - U/f operation: Check assignment of rated currents of motor and power unit.
  - infeed: Check the line supply quality.
  - infeed: Reduce the motor load.
  - infeed: Correct connection of the line reactor.
  - check the power cable connections.
  - check the power cables for short-circuit or ground fault.
  - check the length of the power cables.
  - replace power unit.
- For a parallel switching device (r0108.15 = 1) the following additionally applies:
- check the ground fault monitoring thresholds (p0287).
  - check the setting of the closed-loop circulating current control (p7036, p7037).

<b>F30081</b>	<b>Power unit: Switching operations too frequent</b>
<b>Message value:</b>	Fault cause: %1 bin
<b>Message class:</b>	Power electronics faulted (5)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>The power unit has executed too many switching operations for current limitation.</p> <ul style="list-style-type: none"> <li>- closed-loop control is incorrectly parameterized.</li> <li>- motor has a short-circuit or fault to ground (frame).</li> <li>- U/f operation: Up ramp set too low.</li> <li>- U/f operation: rated current of motor much greater than that of power unit.</li> <li>- infeed: High discharge and post-charging currents for voltage dip.</li> <li>- infeed: High post-charging currents for overload when motoring and DC link voltage dip.</li> <li>- infeed: Short-circuit currents at power-up due to the missing line reactor.</li> <li>- power cables are not correctly connected.</li> <li>- power cables exceed the maximum permissible length.</li> <li>- power unit defective.</li> </ul> <p>Additional causes for a parallel switching device (r0108.15 = 1):</p> <ul style="list-style-type: none"> <li>- a power unit has tripped (powered down) due to a ground fault.</li> <li>- the closed-loop circulating current control is either too slow or has been set too fast.</li> </ul> <p>Fault value (r0949, interpret bitwise binary):</p> <p>Bit 0: Phase U.            Bit 1: Phase V.            Bit 2: Phase W.</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check the motor data - if required, carry out commissioning.</li> <li>- check the motor circuit configuration (star-delta)</li> <li>- U/f operation: Increase up ramp.</li> <li>- U/f operation: Check assignment of rated currents of motor and power unit.</li> <li>- infeed: Check the line supply quality.</li> <li>- infeed: Reduce the motor load.</li> <li>- infeed: Correct connection of the line reactor.</li> <li>- check the power cable connections.</li> <li>- check the power cables for short-circuit or ground fault.</li> <li>- check the length of the power cables.</li> <li>- replace power unit.</li> </ul> <p>For a parallel switching device (r0108.15 = 1) the following additionally applies:</p> <ul style="list-style-type: none"> <li>- check the ground fault monitoring thresholds (p0287).</li> <li>- check the setting of the closed-loop circulating current control (p7036, p7037).</li> </ul>
<b>F30105</b>	<b>PU: Actual value sensing fault</b>
<b>Message value:</b>	-
<b>Message class:</b>	Power electronics faulted (5)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>At least one incorrect actual value channel was detected on the Power Stack Adapter (PSA).</p> <p>The incorrect actual value channels are displayed in the following diagnostic parameters.</p>
<b>Remedy:</b>	<p>Evaluate the diagnostic parameters.</p> <p>If the actual value channel is incorrect, check the components and if required, replace.</p>



<b>N30800 (F)</b>	<b>Power unit: Group signal</b>
<b>Message value:</b>	-
<b>Message class:</b>	Power electronics faulted (5)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The power unit has detected at least one fault.
<b>Remedy:</b>	Evaluate the other messages that are presently available.
Reaction upon F:	OFF2
Acknowled. upon F:	IMMEDIATELY
<b>F30801</b>	<b>Power unit DRIVE-CLiQ: Sign-of-life missing</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	A DRIVE-CLiQ communication error has occurred from the Control Unit to the power unit concerned. The computing time load might be too high. Fault cause: 10 (= 0A hex): The sign-of-life bit in the receive telegram is not set. Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check the electrical cabinet design and cable routing for EMC compliance</li> <li>- remove DRIVE-CLiQ components that are not required.</li> <li>- de-select functions that are not required.</li> <li>- if required, increase the sampling times (p0112, p0115).</li> <li>- replace the component involved.</li> </ul>
<b>F30802</b>	<b>Power unit: Time slice overflow</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	A time slice overflow has occurred. Fault value (r0949, interpret decimal): xx: Time slice number xx
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- carry out a POWER ON (power off/on) for all components.</li> <li>- upgrade firmware to later version.</li> <li>- contact the Hotline.</li> </ul>
<b>F30804 (N, A)</b>	<b>Power unit: CRC</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2 (OFF1, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	A CRC error has occurred for the power unit.
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- carry out a POWER ON (power off/on) for all components.</li> <li>- upgrade firmware to later version.</li> <li>- contact the Hotline.</li> </ul>

## 4 Faults and alarms

### 4.2 List of faults and alarms

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

#### **F30805 Power unit: EEPROM checksum error**

**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF2  
**Acknowledge:** IMMEDIATELY  
**Cause:** Internal parameter data is corrupted.  
Fault value (r0949, interpret hexadecimal):  
01: EEPROM access error.  
02: Too many blocks in the EEPROM.  
**Remedy:** Replace the module.

---

#### **F30809 Power unit: Switching information not valid**

**Message value:** -  
**Message class:** Hardware / software error (1)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF2  
**Acknowledge:** IMMEDIATELY  
**Cause:** For 3P gating unit, the following applies:  
The last switching status word in the setpoint telegram is identified by the end ID. Such an end ID was not found.  
**Remedy:**  
- carry out a POWER ON (power off/on) for all components.  
- upgrade firmware to later version.  
- contact the Hotline.

---

#### **A30810 (F) Power unit: Watchdog timer**

**Message value:** -  
**Message class:** Hardware / software error (1)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** When booting it was detected that the cause of the previous reset was an SAC watchdog timer overflow.  
**Remedy:**  
- carry out a POWER ON (power off/on) for all components.  
- upgrade firmware to later version.  
- contact the Hotline.  
  
Reaction upon F: NONE (OFF2)  
Acknowl. upon F: IMMEDIATELY

---

#### **F30820 Power unit DRIVE-CLiQ: Telegram error**

**Message value:** Component number: %1, fault cause: %2  
**Message class:** Internal (DRIVE-CLiQ) communication error (12)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF2  
**Acknowledge:** IMMEDIATELY  
**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the power unit concerned.  
Fault cause:  
1 (= 01 hex):  
Checksum error (CRC error).  
2 (= 02 hex):  
Telegram is shorter than specified in the length byte or in the receive list.  
3 (= 03 hex):  
Telegram is longer than specified in the length byte or in the receive list.

4 (= 04 hex):  
The length of the receive telegram does not match the receive list.

5 (= 05 hex):  
The type of the receive telegram does not match the receive list.

6 (= 06 hex):  
The address of the component in the telegram and in the receive list do not match.

7 (= 07 hex):  
A SYNC telegram is expected - but the received telegram is not a SYNC telegram.

8 (= 08 hex):  
No SYNC telegram is expected - but the received telegram is one.

9 (= 09 hex):  
The error bit in the receive telegram is set.

16 (= 10 hex):  
The receive telegram is too early.

Note regarding the message value:  
The individual information is coded as follows in the message value (r0949/r2124):  
0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- carry out a POWER ON (power off/on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

---

#### **F30835 Power unit DRIVE-CLiQ: Cyclic data transfer error**

**Message value:** Component number: %1, fault cause: %2

**Message class:** Internal (DRIVE-CLiQ) communication error (12)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the power unit concerned. The nodes do not send and receive in synchronism.

Fault cause:

33 (= 21 hex):  
The cyclic telegram has not been received.

34 (= 22 hex):  
Timeout in the telegram receive list.

64 (= 40 hex):  
Timeout in the telegram send list.

Note regarding the message value:  
The individual information is coded as follows in the message value (r0949/r2124):  
0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- carry out a POWER ON.
- replace the component involved.

See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

---

#### **F30836 Power unit DRIVE-CLiQ: Send error for DRIVE-CLiQ data**

**Message value:** Component number: %1, fault cause: %2

**Message class:** Internal (DRIVE-CLiQ) communication error (12)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the power unit concerned. Data were not able to be sent.

Fault cause:

65 (= 41 hex):  
Telegram type does not match send list.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON.

#### F30837

#### Power unit DRIVE-CLiQ: Component fault

**Message value:** Component number: %1, fault cause: %2

**Message class:** Internal (DRIVE-CLiQ) communication error (12)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** Fault detected on the DRIVE-CLiQ component concerned. Faulty hardware cannot be excluded.

Fault cause:

32 (= 20 hex):

Error in the telegram header.

35 (= 23 hex):

Receive error: The telegram buffer memory contains an error.

66 (= 42 hex):

Send error: The telegram buffer memory contains an error.

67 (= 43 hex):

Send error: The telegram buffer memory contains an error.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

#### A30840

#### Power unit DRIVE-CLiQ: error below the signaling threshold

**Message value:** Component number: %1, fault cause: %2

**Message class:** Internal (DRIVE-CLiQ) communication error (12)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A DRIVE-CLiQ error has occurred below the signaling threshold.

Fault cause:

1 (= 01 hex):

Checksum error (CRC error).

2 (= 02 hex):

Telegram is shorter than specified in the length byte or in the receive list.

3 (= 03 hex):

Telegram is longer than specified in the length byte or in the receive list.

4 (= 04 hex):

The length of the receive telegram does not match the receive list.

5 (= 05 hex):

The type of the receive telegram does not match the receive list.

6 (= 06 hex):

The address of the component in the telegram and in the receive list do not match.

7 (= 07 hex):

A SYNC telegram is expected - but the received telegram is not a SYNC telegram.

8 (= 08 hex):

No SYNC telegram is expected - but the received telegram is one.

9 (= 09 hex):

The error bit in the receive telegram is set.

10 (= 0A hex):  
The sign-of-life bit in the receive telegram is not set.

11 (= 0B hex):  
Synchronization error during alternating cyclic data transfer.

16 (= 10 hex):  
The receive telegram is too early.

32 (= 20 hex):  
Error in the telegram header.

33 (= 21 hex):  
The cyclic telegram has not been received.

34 (= 22 hex):  
Timeout in the telegram receive list.

35 (= 23 hex):  
Receive error: The telegram buffer memory contains an error.

64 (= 40 hex):  
Timeout in the telegram send list.

65 (= 41 hex):  
Telegram type does not match send list.

66 (= 42 hex):  
Send error: The telegram buffer memory contains an error.

67 (= 43 hex):  
Send error: The telegram buffer memory contains an error.

Note regarding the message value:  
The individual information is coded as follows in the message value (r0949/r2124):  
0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

---

<b>F30845</b>	<b>Power unit DRIVE-CLiQ: Cyclic data transfer error</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	A DRIVE-CLiQ communication error has occurred from the Control Unit to the power unit concerned. Fault cause: 11 (= 0B hex): Synchronization error during alternating cyclic data transfer. Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause
<b>Remedy:</b>	Carry out a POWER ON (power off/on). See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

---

<b>F30850</b>	<b>Power unit: Internal software error</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (NONE, OFF2, OFF3)
<b>Acknowledge:</b>	POWER ON
<b>Cause:</b>	An internal software error has occurred in the power unit. Fault value (r0949, interpret decimal): Only for internal Siemens troubleshooting.

## 4 Faults and alarms

### 4.2 List of faults and alarms

**Remedy:**

- replace power unit.
- if required, upgrade the firmware in the power unit.
- contact the Hotline.

---

**F30851**      **Power unit DRIVE-CLiQ (CU): Sign-of-life missing**

**Message value:**      Component number: %1, fault cause: %2

**Message class:**      Internal (DRIVE-CLiQ) communication error (12)

**Drive object:**      DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:**      OFF2 (NONE, OFF1, OFF3)

**Acknowledge:**      IMMEDIATELY

**Cause:**      A DRIVE-CLiQ communication error has occurred from the power unit to the Control Unit involved.  
The DRIVE-CLiQ component did not set the sign-of-life to the Control Unit.  
Fault cause:  
10 (= 0A hex):  
The sign-of-life bit in the receive telegram is not set.  
Note regarding the message value:  
The individual information is coded as follows in the message value (r0949/r2124):  
0000yyxx hex: yy = component number, xx = error cause

**Remedy:**      Upgrade the firmware of the component involved.

---

**F30860**      **Power unit DRIVE-CLiQ (CU): Telegram error**

**Message value:**      Component number: %1, fault cause: %2

**Message class:**      Internal (DRIVE-CLiQ) communication error (12)

**Drive object:**      DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:**      OFF2

**Acknowledge:**      IMMEDIATELY

**Cause:**      A DRIVE-CLiQ communication error has occurred from the power unit to the Control Unit involved.  
Fault cause:  
1 (= 01 hex):  
Checksum error (CRC error).  
2 (= 02 hex):  
Telegram is shorter than specified in the length byte or in the receive list.  
3 (= 03 hex):  
Telegram is longer than specified in the length byte or in the receive list.  
4 (= 04 hex):  
The length of the receive telegram does not match the receive list.  
5 (= 05 hex):  
The type of the receive telegram does not match the receive list.  
6 (= 06 hex):  
The address of the power unit in the telegram and in the receive list do not match.  
9 (= 09 hex):  
The error bit in the receive telegram is set.  
16 (= 10 hex):  
The receive telegram is too early.  
17 (= 11 hex):  
CRC error and the receive telegram is too early.  
18 (= 12 hex):  
The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.  
19 (= 13 hex):  
The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.  
20 (= 14 hex):  
The length of the receive telegram does not match the receive list and the receive telegram is too early.  
21 (= 15 hex):  
The type of the receive telegram does not match the receive list and the receive telegram is too early.

22 (= 16 hex):

The address of the power unit in the telegram and in the receive list does not match and the receive telegram is too early.

25 (= 19 hex):

The error bit in the receive telegram is set and the receive telegram is too early.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- carry out a POWER ON (power off/on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

---

**F30875**

**Power unit DRIVE-CLiQ (CU): Supply voltage failed**

**Message value:**

Component number: %1, fault cause: %2

**Message class:**

Supply voltage fault (undervoltage) (3)

**Drive object:**

DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:**

OFF2

**Acknowledge:**

IMMEDIATELY

**Cause:**

The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.

Fault cause:

9 (= 09 hex):

The power supply voltage for the components has failed.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- carry out a POWER ON (power off/on).
- check the power supply voltage wiring for the DRIVE-CLiQ component (interrupted cable, contacts, ...).
- check the dimensioning of the power supply for the DRIVE-CLiQ component.

---

**F30885**

**CU DRIVE-CLiQ (CU): Cyclic data transfer error**

**Message value:**

Component number: %1, fault cause: %2

**Message class:**

Internal (DRIVE-CLiQ) communication error (12)

**Drive object:**

DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:**

OFF2

**Acknowledge:**

IMMEDIATELY

**Cause:**

A DRIVE-CLiQ communication error has occurred from the power unit to the Control Unit involved.

The nodes do not send and receive in synchronism.

Fault cause:

26 (= 1A hex):

Sign-of-life bit in the receive telegram not set and the receive telegram is too early.

33 (= 21 hex):

The cyclic telegram has not been received.

34 (= 22 hex):

Timeout in the telegram receive list.

64 (= 40 hex):

Timeout in the telegram send list.

98 (= 62 hex):

Error at the transition to cyclic operation.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- check the power supply voltage of the component involved.
- carry out a POWER ON.
- replace the component involved.

See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

---

**F30886**      **PU DRIVE-CLiQ (CU): Error when sending DRIVE-CLiQ data**

**Message value:**      Component number: %1, fault cause: %2

**Message class:**      Internal (DRIVE-CLiQ) communication error (12)

**Drive object:**      DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:**      OFF2

**Acknowledge:**      IMMEDIATELY

**Cause:**      A DRIVE-CLiQ communication error has occurred from the power unit to the Control Unit involved.  
Data were not able to be sent.  
Fault cause:  
65 (= 41 hex):  
Telegram type does not match send list.  
Note regarding the message value:  
The individual information is coded as follows in the message value (r0949/r2124):  
0000yyxx hex: yy = component number, xx = error cause

**Remedy:**      Carry out a POWER ON.

---

**F30887**      **Power unit DRIVE-CLiQ (CU): Component fault**

**Message value:**      Component number: %1, fault cause: %2

**Message class:**      Internal (DRIVE-CLiQ) communication error (12)

**Drive object:**      DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:**      OFF2

**Acknowledge:**      IMMEDIATELY

**Cause:**      Fault detected on the DRIVE-CLiQ component (power unit) involved. Faulty hardware cannot be excluded.  
Fault cause:  
32 (= 20 hex):  
Error in the telegram header.  
35 (= 23 hex):  
Receive error: The telegram buffer memory contains an error.  
66 (= 42 hex):  
Send error: The telegram buffer memory contains an error.  
67 (= 43 hex):  
Send error: The telegram buffer memory contains an error.  
96 (= 60 hex):  
Response received too late during runtime measurement.  
97 (= 61 hex):  
Time taken to exchange characteristic data too long.  
Note regarding the message value:  
The individual information is coded as follows in the message value (r0949/r2124):  
0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.



<b>F30895</b>	<b>PU DRIVE-CLiQ (CU): Alternating cyclic data transfer error</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	A DRIVE-CLiQ communication error has occurred from the power unit to the Control Unit involved. Fault cause: 11 (= 0B hex): Synchronization error during alternating cyclic data transfer. Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause
<b>Remedy:</b>	Carry out a POWER ON. See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)
<b>F30896</b>	<b>Power unit DRIVE-CLiQ (CU): Inconsistent component properties</b>
<b>Message value:</b>	Component number: %1
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The properties of the DRIVE-CLiQ component (power unit), specified by the fault value, have changed in an incompatible fashion with respect to the properties when booted. One cause can be, e.g. that a DRIVE-CLiQ cable or DRIVE-CLiQ component has been replaced. Fault value (r0949, interpret decimal): Component number.
<b>Remedy:</b>	- carry out a POWER ON. - when a component is replaced, the same component type and if possible the same firmware version should be used. - when a cable is replaced, only cables whose length is the same as or as close as possible to the length of the original cables should be used (ensure compliance with the maximum cable length).
<b>F30899 (N, A)</b>	<b>Power unit: Unknown fault</b>
<b>Message value:</b>	New message: %1
<b>Message class:</b>	Power electronics faulted (5)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	A fault occurred on the power unit that cannot be interpreted by the Control Unit firmware. This can occur if the firmware on this component is more recent than the firmware on the Control Unit. Fault value (r0949, interpret decimal): Fault number. Note: If required, the significance of this new fault can be read about in a more recent description of the Control Unit.
<b>Remedy:</b>	- replace the firmware on the power unit by an older firmware version (r0128). - upgrade the firmware on the Control Unit (r0018).
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

---

#### **F30903      Power unit: I2C bus error occurred**

**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)  
**Acknowledge:** IMMEDIATELY  
**Cause:** Communications error with an EEPROM or A/D converter.  
 Fault value (r0949, interpret hexadecimal):  
 80000000 hex:  
 - internal software error.  
 00000001 hex ... 0000FFFF hex:  
 - module fault.  
**Remedy:** Re fault value = 80000000 hex:  
 - upgrade firmware to later version.  
 Re fault value = 00000001 hex ... 0000FFFF hex:  
 - replace the module.

---

#### **F30907      Power unit: FPGA configuration unsuccessful**

**Message value:** -  
**Message class:** Hardware / software error (1)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)  
**Acknowledge:** IMMEDIATELY  
**Cause:** During initialization within the power unit, an internal software error has occurred.  
**Remedy:** - if required, upgrade the firmware in the power unit.  
 - replace power unit.  
 - contact the Hotline.

---

#### **A30920 (F)      Power unit: Temperature sensor fault**

**Message value:** %1  
**Message class:** Power electronics faulted (5)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** When evaluating the temperature sensor, an error occurred.  
 Alarm value (r2124, interpret decimal):  
 1: Wire breakage or sensor not connected (KTY: R > 1630 Ohm, PT100: R > 375 Ohm).  
 2: Measured resistance too low (PTC: R < 20 Ohm, KTY: R < 50 Ohm, PT100: R < 30 Ohm).  
 Note:  
 A temperature sensor is connected to the following terminals:  
 - "Booksize" format: X21.1/.2 or X22.1/.2  
 - "Chassis" format: X41.4/.3  
 Information on temperature sensors is provided in the following literature for example:  
 SINAMICS S120 Function Manual Drive Functions  
**Remedy:** - make sure that the sensor is connected correctly.  
 - replace the sensor.  
 Reaction upon F: NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)  
 Acknowled. upon F: IMMEDIATELY

<b>A30999 (F, N)</b>	<b>Power unit: Unknown alarm</b>
<b>Message value:</b>	New message: %1
<b>Message class:</b>	Power electronics faulted (5)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	An alarm occurred on the power unit that cannot be interpreted by the Control Unit firmware. This can occur if the firmware on this component is more recent than the firmware on the Control Unit. Alarm value (r2124, interpret decimal): Alarm number. Note: If required, the significance of this new alarm can be read about in a more recent description of the Control Unit.
<b>Remedy:</b>	- replace the firmware on the power unit by an older firmware version (r0128). - upgrade the firmware on the Control Unit (r0018).
Reaction upon F:	NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>F31100 (N, A)</b>	<b>Encoder 1: Zero mark distance error</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	The measured zero mark distance does not correspond to the parameterized zero mark distance. For distance-coded encoders, the zero mark distance is determined from zero marks detected pairs. This means that if a zero mark is missing, depending on the pair generation, this cannot result in a fault and also has no effect in the system. The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder). Fault value (r0949, interpret decimal): Last measured zero mark distance in increments (4 increments = 1 encoder pulse). The sign designates the direction of motion when detecting the zero mark distance. See also: p0491 (Motor encoder fault response ENCODER)
<b>Remedy:</b>	- check that the encoder cables are routed in compliance with EMC. - check the plug connections. - check the encoder type (encoder with equidistant zero marks). - adapt the parameter for the distance between zero marks (p0424, p0425). - if message output above speed threshold, reduce filter time if necessary (p0438). - replace the encoder or encoder cable.
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE
<b>F31101 (N, A)</b>	<b>Encoder 1: Zero mark failed</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	The 1.5 x parameterized zero mark distance was exceeded. The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).

Fault value (r0949, interpret decimal):  
 Number of increments after POWER ON or since the last zero mark that was detected (4 increments = 1 encoder pulse).  
 See also: p0491 (Motor encoder fault response ENCODER)

**Remedy:**

- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the clearance between zero marks (p0425).
- if message output above speed threshold, reduce filter time if necessary (p0438).
- when p0437.1 is active, check p4686.
- replace the encoder or encoder cable.

Reaction upon N: NONE  
 Acknowl. upon N: NONE  
 Reaction upon A: NONE  
 Acknowl. upon A: NONE

---

#### **F31103 (N, A) Encoder 1: Amplitude error track R**

**Message value:** R track: %1  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** ENCODER (IASC/DCBRK, NONE)  
**Acknowledge:** PULSE INHIBIT  
**Cause:**

The amplitude of the reference track signal (track R) does not lie within the tolerance bandwidth for encoder 1.  
 The fault can be initiated when the unipolar voltage level is exceeded (RP/RN) or if the differential amplitude is undershot.

Fault value (r0949, interpret hexadecimal):

yyyyxxxx hex: yyyy = 0, xxxx = Signal level, track R (16 bits with sign)

The response thresholds of the unipolar signal levels of the encoder are between < 1400 mV and > 3500 mV.

The response threshold for the differential signal level of the encoder is < -1600 mV.

A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.

Note:

The analog value of the amplitude error is not measured at the same time with the hardware fault output by the Sensor Module.

The fault value can only be represented between -32768 ... 32767 dec (-770 ... 770 mV).

The signal level is not evaluated unless the following conditions are satisfied:

- Sensor Module properties available (r0459.31 = 1).
- Monitoring active (p0437.31 = 1).

See also: p0491 (Motor encoder fault response ENCODER)

**Remedy:**

- check the speed range; frequency characteristic (amplitude characteristic) of the measuring equipment might not be sufficient for the speed range
- check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections and contacts of the encoder cable.
- check the encoder type (encoder with zero marks).
- check whether the zero mark is connected and the signal cables RP and RN have been connected correctly.
- replace the encoder cable.
- if the coding disk is soiled or the lighting aged, replace the encoder.

Reaction upon N: NONE  
 Acknowl. upon N: NONE  
 Reaction upon A: NONE  
 Acknowl. upon A: NONE

<b>F31110 (N, A)</b>	<b>Encoder 1: Serial communications error</b>
<b>Message value:</b>	Fault cause: %1 bin
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	<p>Serial communication protocol transfer error between the encoder and evaluation module.</p> <p>Fault value (r0949, interpret binary):</p> <p>Bit 0: Alarm bit in the position protocol.</p> <p>Bit 1: Incorrect quiescent level on the data line.</p> <p>Bit 2: Encoder does not respond (does not supply a start bit within 50 ms).</p> <p>Bit 3: CRC error: The checksum in the protocol from the encoder does not match the data.</p> <p>Bit 4: Encoder acknowledgement error: The encoder incorrectly understood the task (request) or cannot execute it.</p> <p>Bit 5: Internal error in the serial driver: An illegal mode command was requested.</p> <p>Bit 6: Timeout when cyclically reading.</p> <p>Bit 7: Timeout for the register communication.</p> <p>Bit 8: Protocol is too long (e.g. &gt; 64 bits).</p> <p>Bit 9: Receive buffer overflow.</p> <p>Bit 10: Frame error when reading twice.</p> <p>Bit 11: Parity error.</p> <p>Bit 12: Data line signal level error during the monoflop time.</p> <p>Bit 13: Data line incorrect.</p> <p>Bit 14: Fault for the register communication.</p> <p>Bit 15: Internal communication error.</p> <p>Note:</p> <p>For an EnDat 2.2 encoder, the significance of the fault value for F3x135 (x = 1, 2, 3) is described.</p>
<b>Remedy:</b>	<p>Re fault value, bit 0 = 1:</p> <ul style="list-style-type: none"> <li>- Enc defect F31111 may provide additional details.</li> </ul> <p>Re fault value, bit 1 = 1:</p> <ul style="list-style-type: none"> <li>- Incorrect encoder type / replace the encoder or encoder cable.</li> </ul> <p>Re fault value, bit 2 = 1:</p> <ul style="list-style-type: none"> <li>- Incorrect encoder type / replace the encoder or encoder cable.</li> </ul> <p>Re fault value, bit 3 = 1:</p> <ul style="list-style-type: none"> <li>- EMC / connect the cable shield, replace the encoder or encoder cable.</li> </ul> <p>Re fault value, bit 4 = 1:</p> <ul style="list-style-type: none"> <li>- EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.</li> </ul> <p>Re fault value, bit 5 = 1:</p> <ul style="list-style-type: none"> <li>- EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.</li> </ul> <p>Re fault value, bit 6 = 1:</p> <ul style="list-style-type: none"> <li>- Update Sensor Module firmware.</li> </ul> <p>Re fault value, bit 7 = 1:</p> <ul style="list-style-type: none"> <li>- Incorrect encoder type / replace the encoder or encoder cable.</li> </ul> <p>Re fault value, bit 8 = 1:</p> <ul style="list-style-type: none"> <li>- Check parameterization (p0429.2).</li> </ul> <p>Re fault value, bit 9 = 1:</p> <ul style="list-style-type: none"> <li>- EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.</li> </ul> <p>Re fault value, bit 10 = 1:</p> <ul style="list-style-type: none"> <li>- Check parameterization (p0429.2, p0449).</li> </ul> <p>Re fault value, bit 11 = 1:</p> <ul style="list-style-type: none"> <li>- Check parameterization (p0436).</li> </ul> <p>Re fault value, bit 12 = 1:</p> <ul style="list-style-type: none"> <li>- Check parameterization (p0429.6).</li> </ul> <p>Re fault value, bit 13 = 1:</p> <ul style="list-style-type: none"> <li>- Check data line.</li> </ul>

	Re fault value, bit 14 = 1:
	- Incorrect encoder type / replace the encoder or encoder cable.
Reaction upon N:	NONE
Acknowled. upon N:	NONE
Reaction upon A:	NONE
Acknowled. upon A:	NONE

<b>F31111 (N, A)</b>	<b>Encoder 1: Absolute encoder internal error</b>
<b>Message value:</b>	Fault cause: %1 bin, additional information: %2
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	<p>The absolute encoder fault word supplies fault bits that have been set.</p> <p>Fault value (r0949, interpret binary):</p> <p>yyyyxxxx hex: yyyy = supplementary information, xxxx = fault cause</p> <p>yyyy = 0:</p> <p>Bit 0: Lighting system failed.</p> <p>Bit 1: Signal amplitude too low.</p> <p>Bit 2: Position value incorrect.</p> <p>Bit 3: Encoder power supply overvoltage condition.</p> <p>Bit 4: Encoder power supply undervoltage condition.</p> <p>Bit 5: Encoder power supply overcurrent condition.</p> <p>Bit 6: The battery must be changed.</p> <p>yyyy = 1:</p> <p>Bit 0: Signal amplitude outside the control range.</p> <p>Bit 1: Error multiturn interface</p> <p>Bit 2: Internal data error (singleturn/multiturn not with single steps).</p> <p>Bit 3: Error EEPROM interface.</p> <p>Bit 4: SAR converter error.</p> <p>Bit 5: Fault for the register data transfer.</p> <p>Bit 6: Internal error identified at the error pin (nErr).</p> <p>Bit 7: Temperature threshold exceeded or fallen below.</p> <p>See also: p0491 (Motor encoder fault response ENCODER)</p>
<b>Remedy:</b>	<p>For yyyy = 0:</p> <p>Re fault value, bit 0 = 1:</p> <p>Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.</p> <p>Re fault value, bit 1 = 1:</p> <p>Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.</p> <p>Re fault value, bit 2 = 1:</p> <p>Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.</p> <p>Re fault value, bit 3 = 1:</p> <p>5 V power supply voltage fault.</p> <p>When using an SMC: Check the plug-in cable between the encoder and SMC or replace the SMC.</p> <p>When a motor encoder with a direct DRIVE-CLiQ connection is used: Replace the motor.</p> <p>Re fault value, bit 4 = 1:</p> <p>5 V power supply voltage fault.</p> <p>When using an SMC: Check the plug-in cable between the encoder and SMC or replace the SMC.</p> <p>When using a motor with DRIVE-CLiQ: Replace the motor.</p> <p>Re fault value, bit 5 = 1:</p> <p>Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.</p>

Re fault value, bit 6 = 1:  
The battery must be changed (only for encoders with battery back-up).  
For yyyy = 1:  
Encoder is defective. Replace encoder.

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

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#### **F31112 (N, A) Encoder 1: Error bit set in the serial protocol**

**Message value:** %1  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** ENCODER (IASC/DCBRK, NONE)  
**Acknowledge:** PULSE INHIBIT  
**Cause:** The encoder sends a set error bit via the serial protocol.  
Fault value (r0949, interpret binary):  
Bit 0: Fault bit in the position protocol.  
**Remedy:** For fault value, bit 0 = 1:  
In the case of an EnDat encoder, F31111 may provide further details.  
Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

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#### **F31115 (N, A) Encoder 1: Amplitude error track A or B ( $A^2 + B^2$ )**

**Message value:** A track: %1, B-track: %2  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** ENCODER (IASC/DCBRK, NONE)  
**Acknowledge:** PULSE INHIBIT  
**Cause:** The amplitude (root of  $A^2 + B^2$ ) for encoder 1 exceeds the permissible tolerance.  
Fault value (r0949, interpret hexadecimal):  
yyyyxxxx hex:  
yyyy = Signal level, track B (16 bits with sign).  
xxxx = Signal level, track A (16 bits with sign).  
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).  
The response thresholds are < 170 mV (observe the frequency response of the encoder) and > 750 mV.  
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.  
Note for Sensor Modules for resolvers (e.g. SMC10):  
The nominal signal level is at 2900 mV (2.0 Vrms). The response thresholds are < 1070 mV and > 3582 mV.  
A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec.  
Note:  
The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.  
See also: p0491 (Motor encoder fault response ENCODER)  
**Remedy:**  
- check that the encoder cables and shielding are routed in compliance with EMC.  
- check the plug connections.  
- replace the encoder or encoder cable.  
- check the Sensor Module (e.g. contacts).  
The following applies to measuring systems without their own bearing system:  
- adjust the scanning head and check the bearing system of the measuring wheel.  
The following applies for measuring systems with their own bearing system:  
- ensure that the encoder housing is not subject to any axial force.

## 4 Faults and alarms

### 4.2 List of faults and alarms

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

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<b>F31116 (N, A)</b>	<b>Encoder 1: Amplitude error monitoring track A + B</b>
<b>Message value:</b>	A track: %1, B-track: %2
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>The amplitude of the rectified encoder signals A and B and the amplitude from the roots of <math>A^2 + B^2</math> for encoder 1 are not within the tolerance bandwidth.</p> <p>Fault value (r0949, interpret hexadecimal): yyyyxxxx hex: yyyy = Signal level, track B (16 bits with sign). xxxx = Signal level, track A (16 bits with sign).</p> <p>The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %). The response thresholds are &lt; 130 mV (observe the frequency response of the encoder) and &gt; 955 mV. A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.</p> <p>Note: The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.</p> <p>See also: p0491 (Motor encoder fault response ENCODER)</p>
<b>Remedy:</b>	<ul style="list-style-type: none"><li>- check that the encoder cables and shielding are routed in compliance with EMC.</li><li>- check the plug connections.</li><li>- replace the encoder or encoder cable.</li><li>- check the Sensor Module (e.g. contacts).</li></ul>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

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<b>F31117 (N, A)</b>	<b>Encoder 1: Inversion error signals A/B/R</b>
<b>Message value:</b>	Fault cause: %1 bin
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>For a square-wave encoder (bipolar, double ended) signals A*, B* and R* are not inverted with respect to signals A, B and R.</p> <p>Fault value (r0949, interpret binary): Bits 0 ... 15: Only for internal Siemens troubleshooting. Bit 16: Error track A. Bit 17: Error track B. Bit 18: Error track R.</p> <p>Note: For SMC30 (order no.. 6SL3055-0AA00-5CA0 and 6SL3055-0AA00-5CA1 only), CUA32, and CU310, the following applies: A square-wave encoder without track R is used and track monitoring (p0405.2 = 1) is activated.</p> <p>See also: p0491 (Motor encoder fault response ENCODER)</p>



<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- Check the encoder/cable.</li> <li>- Does the encoder supply signals and the associated inverted signals?</li> </ul> <p>Note:</p> <p>For SMC30 (order no. 6SL3055-0AA00-5CA0 and 6SL3055-0AA00-5CA1 only), the following applies:</p> <ul style="list-style-type: none"> <li>- check the setting of p0405 (p0405.2 = 1 is only possible if the encoder is connected at X520).</li> </ul> <p>For a square-wave encoder without track R, the following jumpers must be set for the connection at X520 (SMC30) or X23 (CUA32, CU310):</p> <ul style="list-style-type: none"> <li>- pin 10 (reference signal R) &lt;--&gt; pin 7 (encoder power supply, ground)</li> <li>- pin 11 (reference signal R inverted) &lt;--&gt; pin 4 (encoder power supply)</li> </ul>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

<b>F31118 (N, A)</b>	<b>Encoder 1: Speed difference outside the tolerance range</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	<p>For an HTL/TTL encoder, the speed difference has exceeded the value in p0492 over several sampling cycles. The change to the averaged speed actual value - if applicable - is monitored in the current controller sampling time. Encoder 1 is used as motor encoder and can be effective has fault response to change over to encoderless operation.</p> <p>Fault value (r0949, interpret decimal):</p> <p>Only for internal Siemens troubleshooting.</p> <p>See also: p0491 (Motor encoder fault response ENCODER), p0492 (Square-wave encoder maximum speed difference per sampling cycle)</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check the tachometer feeder cable for interruptions.</li> <li>- check the grounding of the tachometer shielding.</li> <li>- if required, increase the maximum speed difference per sampling cycle (p0492).</li> </ul>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

<b>F31120 (N, A)</b>	<b>Encoder 1: Power supply voltage fault</b>
<b>Message value:</b>	Fault cause: %1 bin
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	<p>A power supply fault was detected for encoder 1.</p> <p>Fault value (r0949, interpret binary):</p> <p>Bit 0: Undervoltage condition on the sense line.</p> <p>Bit 1: Overcurrent condition for the encoder power supply.</p> <p>Bit 2: Overcurrent condition for encoder power supply on cable resolver excitation negative.</p> <p>Bit 3: Overcurrent condition for encoder power supply on cable resolver excitation positive.</p> <p>Bit 4: The 24 V power supply through the Power Module (PM) is overloaded.</p> <p>Bit 5: Overcurrent at the EnDat connection of the converter.</p> <p>Bit 6: Overvoltage at the EnDat connection of the converter.</p> <p>Bit 7: Hardware fault at the EnDat connection of the converter.</p> <p>Note:</p> <p>If the encoder cables 6FX2002-2EQ00-.... and 6FX2002-2CH00-.... are interchanged, this can result in the encoder being destroyed because the pins of the operating voltage are reversed.</p> <p>See also: p0491 (Motor encoder fault response ENCODER)</p>

<b>Remedy:</b>	Re fault value, bit 0 = 1: <ul style="list-style-type: none"><li>- correct encoder cable connected?</li><li>- check the plug connections of the encoder cable.</li><li>- SMC30: Check the parameterization (p0404.22).</li></ul> Re fault value, bit 1 = 1: <ul style="list-style-type: none"><li>- correct encoder cable connected?</li><li>- replace the encoder or encoder cable.</li></ul> Re fault value, bit 2 = 1: <ul style="list-style-type: none"><li>- correct encoder cable connected?</li><li>- replace the encoder or encoder cable.</li></ul> Re fault value, bit 3 = 1: <ul style="list-style-type: none"><li>- correct encoder cable connected?</li><li>- replace the encoder or encoder cable.</li></ul> Re fault value, bit 5 = 1: <ul style="list-style-type: none"><li>- Measuring unit correctly connected at the converter?</li><li>- Replace the measuring unit or the cable to the measuring unit.</li></ul> Re fault value, bit 6, 7 = 1: <ul style="list-style-type: none"><li>- Replace the defective EnDat 2.2 converter.</li></ul>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

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<b>F31121 (N, A)</b>	<b>Encoder 1: Coarse position error</b>
<b>Message value:</b>	-
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (NONE)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	For the actual value sensing, an error was detected on the module. As a result of this error, it must be assumed that the actual value sensing supplies an incorrect coarse position. See also: p0491 (Motor encoder fault response ENCODER)
<b>Remedy:</b>	Replace the motor with DRIVE-CLiQ or the appropriate Sensor Module.
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

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<b>F31122</b>	<b>Encoder 1: Internal power supply voltage faulty</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Supply voltage fault (undervoltage) (3)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	Fault in internal reference voltage of ASICs for encoder 1. Fault value (r0949, interpret decimal): <ul style="list-style-type: none"><li>1: Reference voltage error.</li><li>2: Internal undervoltage.</li><li>3: Internal overvoltage.</li></ul>
<b>Remedy:</b>	Replace the motor with DRIVE-CLiQ or the appropriate Sensor Module.

<b>F31123 (N, A)</b>	<b>Encoder 1: Signal level A/B unipolar outside tolerance</b>
<b>Message value:</b>	Fault cause: %1 bin
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	<p>The unipolar level (AP/AN or BP/BN) for encoder 1 is outside the permissible tolerance.</p> <p>Fault value (r0949, interpret binary):</p> <p>Bit 0 = 1: Either AP or AN outside the tolerance.</p> <p>Bit 16 = 1: Either BP or BN outside the tolerance.</p> <p>The unipolar nominal signal level of the encoder must lie in the range 2500 mV +/- 500 mV.</p> <p>The response thresholds are &lt; 1700 mV and &gt; 3300 mV.</p> <p>Note:</p> <p>The signal level is not evaluated unless the following conditions are satisfied:</p> <ul style="list-style-type: none"> <li>- Sensor Module properties available (r0459.31 = 1).</li> <li>- Monitoring active (p0437.31 = 1).</li> </ul> <p>See also: p0491 (Motor encoder fault response ENCODER)</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- make sure that the encoder cables and shielding are installed in an EMC-compliant manner.</li> <li>- check the plug connections and contacts of the encoder cable.</li> <li>- check the short-circuit of a signal cable with mass or the operating voltage.</li> <li>- replace the encoder cable.</li> </ul>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE
<b>F31125 (N, A)</b>	<b>Encoder 1: Amplitude error track A or B overcontrolled</b>
<b>Message value:</b>	A track: %1, B-track: %2
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	<p>The amplitude of track A or B for encoder 1 exceeds the permissible tolerance band.</p> <p>Fault value (r0949, interpret hexadecimal):</p> <p>yyyyxxxx hex:</p> <p>yyyy = Signal level, track B (16 bits with sign).</p> <p>xxxx = Signal level, track A (16 bits with sign).</p> <p>The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).</p> <p>The response threshold is &gt; 750 mV. This fault also occurs if the A/D converter is overcontrolled.</p> <p>A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.</p> <p>Note for Sensor Modules for resolvers (e.g. SMC10):</p> <p>The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is &gt; 3582 mV.</p> <p>A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec.</p> <p>Note:</p> <p>The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.</p> <p>See also: p0491 (Motor encoder fault response ENCODER)</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check that the encoder cables and shielding are routed in compliance with EMC.</li> <li>- replace the encoder or encoder cable.</li> </ul>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

<b>F31126 (N, A)</b>	<b>Encoder 1: Amplitude AB too high</b>
<b>Message value:</b>	Amplitude: %1, Angle: %2
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	<p>The amplitude (root of <math>A^2 + B^2</math> or <math> A  +  B </math>) for encoder 1 exceeds the permissible tolerance.</p> <p>Fault value (r0949, interpret hexadecimal):</p> <p>yyyyxxxx hex:</p> <p>yyyy = Angle</p> <p>xxxx = Amplitude, i.e. root from <math>A^2 + B^2</math> (16 bits without sign)</p> <p>The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).</p> <p>The response threshold for (<math> A  +  B </math>) is <math>&gt; 1120</math> mV or the root of <math>(A^2 + B^2) &gt; 955</math> mV.</p> <p>A signal level of 500 mV peak value corresponds to the numerical value of 299A hex = 10650 dec.</p> <p>The angle 0 ... FFFF hex corresponds to 0 ... 360 degrees of the fine position. Zero degrees is present at the negative zero crossover of track B.</p> <p>Note:</p> <p>The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.</p> <p>See also: p0491 (Motor encoder fault response ENCODER)</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check that the encoder cables and shielding are routed in compliance with EMC.</li> <li>- replace the encoder or encoder cable.</li> </ul>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE
<b>F31129 (N, A)</b>	<b>Encoder 1: Position difference hall sensor/track C/D and A/B too large</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	<p>The error for track C/D is greater than <math>\pm 15^\circ</math> mechanical or <math>\pm 60^\circ</math> electrical or the error for the Hall signals is greater than <math>\pm 60^\circ</math> electrical.</p> <p>One period of track C/D corresponds to <math>360^\circ</math> mechanical.</p> <p>One period of the Hall signal corresponds to <math>360^\circ</math> electrical.</p> <p>The monitoring responds if, for example, Hall sensors are connected as equivalent for the C/D tracks with the incorrect rotational sense or supply values that are not accurate enough.</p> <p>After the fine synchronization using one reference mark or 2 reference marks for distance-coded encoders, this fault is no longer initiated, but instead, Alarm A31429.</p> <p>Fault value (r0949, interpret decimal):</p> <p>For track C/D, the following applies:</p> <p>Measured deviation as mechanical angle (16 bits with sign, 182 dec corresponds to <math>1^\circ</math>).</p> <p>For Hall signals, the following applies:</p> <p>Measured deviation as electrical angle (16 bits with sign, 182 dec corresponds to <math>1^\circ</math>).</p> <p>See also: p0491 (Motor encoder fault response ENCODER)</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- track C or D not connected.</li> <li>- correct the direction of rotation of the Hall sensor possibly connected as equivalent for track C/D.</li> <li>- check that the encoder cables are routed in compliance with EMC.</li> <li>- check the adjustment of the Hall sensor.</li> </ul>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

<b>F31130 (N, A)</b>	<b>Encoder 1: Zero mark and position error from the coarse synchronization</b>
<b>Message value:</b>	Angular deviation, electrical: %1, angle, mechanical: %2
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	<p>After initializing the pole position using track C/D, Hall signals or pole position identification routine, the zero mark was detected outside the permissible range. For distance-coded encoders, the test is carried out after passing 2 zero marks. Fine synchronization was not carried out.</p> <p>When initializing via track C/D (p0404) then it is checked whether the zero mark occurs in an angular range of +/-18 ° mechanical.</p> <p>When initializing via Hall sensors (p0404) or pole position identification (p1982) it is checked whether the zero mark occurs in an angular range of +/-60 ° electrical.</p> <p>Fault value (r0949, interpret hexadecimal): yyyyxxxx hex yyyy: Determined mechanical zero mark position (can only be used for track C/D). xxxx: Deviation of the zero mark from the expected position as electrical angle. Scaling: 32768 dec = 180 °</p> <p>See also: p0491 (Motor encoder fault response ENCODER)</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- Check p0431 and, if necessary, correct (trigger via p1990 = 1 if necessary).</li> <li>- check that the encoder cables are routed in compliance with EMC.</li> <li>- check the plug connections.</li> <li>- if the Hall sensor is used as an equivalent for track C/D, check the connection.</li> <li>- Check the connection of track C or D.</li> <li>- replace the encoder or encoder cable.</li> </ul>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE
<b>F31131 (N, A)</b>	<b>Encoder 1: Deviation position incremental/absolute too large</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	<p>Absolute encoder:</p> <p>When cyclically reading the absolute position, an excessively high difference to the incremental position was detected. The absolute position that was read is rejected.</p> <p>Limit value for the deviation:</p> <ul style="list-style-type: none"> <li>- EnDat encoder: Is supplied from the encoder and is a minimum of 2 quadrants (e.g. EQI 1325 &gt; 2 quadrants, EQN 1325 &gt; 50 quadrants).</li> <li>- other encoders: 15 pulses = 60 quadrants.</li> </ul> <p>Incremental encoder:</p> <p>When the zero pulse is passed, a deviation in the incremental position was detected.</p> <p>For equidistant zero marks, the following applies:</p> <ul style="list-style-type: none"> <li>- The first zero mark passed supplies the reference point for all subsequent checks. The other zero marks must have n times the distance referred to the first zero mark.</li> </ul> <p>For distance-coded zero marks, the following applies:</p> <ul style="list-style-type: none"> <li>- the first zero mark pair supplies the reference point for all subsequent checks. The other zero mark pairs must have the expected distance to the first zero mark pair.</li> </ul> <p>Fault value (r0949, interpret decimal): Deviation in quadrants (1 pulse = 4 quadrants). See also: p0491 (Motor encoder fault response ENCODER)</p>

- Remedy:**
- check that the encoder cables are routed in compliance with EMC.
  - check the plug connections.
  - replace the encoder or encoder cable.
  - check whether the coding disk is dirty or there are strong ambient magnetic fields.
  - adapt the parameter for the clearance between zero marks (p0425).
  - if message output above speed threshold, reduce filter time if necessary (p0438).

Reaction upon N: NONE

Acknowled. upon N: NONE

Reaction upon A: NONE

Acknowled. upon A: NONE

#### F31135

#### Encoder 1: Fault when determining the position

**Message value:** Fault cause: %1 bin

**Message class:** Position/speed actual value incorrect or not available (11)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** ENCODER (IASC/DCBRK, NONE)

**Acknowledge:** PULSE INHIBIT

**Cause:** The encoder supplies status information bit by bit in an internal status/fault word.

Some of these bits cause this fault to be triggered. Other bits are status displays. The status/fault word is displayed in the fault value.

Note regarding the bit designation:

The first designation is valid for DRIVE-CLiQ encoders, the second for EnDat 2.2 encoders.

Fault value (r0949, interpret binary):

Bit 0: F1 (safety status display).

Bit 1: F2 (safety status display).

Bit 2: Reserved (lighting).

Bit 3: Reserved (signal amplitude).

Bit 4: Reserved (position value).

Bit 5: Reserved (overvoltage).

Bit 6: Reserved (undervoltage)/hardware fault EnDat supply (--> F3x110, x = 1, 2, 3).

Bit 7: Reserved (overcurrent)/EnDat encoder withdrawn when not in the parked state (--> F3x110, x = 1, 2, 3).

Bit 8: Reserved (battery)/overcurrent EnDat supply (--> F3x110, x = 1, 2, 3).

Bit 9: Reserved/overvoltage EnDat supply (--> F3x110, x = 1, 2, 3).

Bit 11: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).

Bit 12: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).

Bit 13: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).

Bit 14: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).

Bit 15: Internal communication error (--> F3x110, x = 1, 2, 3).

Bit 16: Lighting (--> F3x135, x = 1, 2, 3).

Bit 17: Signal amplitude (--> F3x135, x = 1, 2, 3).

Bit 18: Singleturn position 1 (--> F3x135, x = 1, 2, 3).

Bit 19: Overvoltage (--> F3x135, x = 1, 2, 3).

Bit 20: Undervoltage (--> F3x135, x = 1, 2, 3).

Bit 21: Overcurrent (--> F3x135, x = 1, 2, 3).

Bit 22: Temperature exceeded (--> F3x405, x = 1, 2, 3).

Bit 23: Singleturn position 2 (safety status display).

Bit 24: Singleturn system (--> F3x135, x = 1, 2, 3).

Bit 25: Singleturn power down (--> F3x135, x = 1, 2, 3).

Bit 26: Multiturn position 1 (--> F3x136, x = 1, 2, 3).

Bit 27: Multiturn position 2 (--> F3x136, x = 1, 2, 3).

Bit 28: Multiturn system (--> F3x136, x = 1, 2, 3).

Bit 29: Multiturn power down (--> F3x136, x = 1, 2, 3).

Bit 30: Multiturn overflow/underflow (--> F3x136, x = 1, 2, 3).

Bit 31: Multiturn battery (reserved).

**Remedy:**

- determine the detailed cause of the fault using the fault value.
- replace the encoder if necessary.

**Note:**

An EnDat 2.2 encoder may only be removed and inserted in the "Park" state.

If an EnDat 2.2 encoder was removed when not in the "Park" state, then after inserting the encoder, a POWER ON (switch-off/on) is necessary to acknowledge the fault.

### F31136

### Encoder 1: Error when determining multiturn information

**Message value:** Fault cause: %1 bin

**Message class:** Position/speed actual value incorrect or not available (11)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** ENCODER (IASC/DCBRK, NONE)

**Acknowledge:** PULSE INHIBIT

**Cause:** The encoder supplies status information bit by bit in an internal status/fault word.

Some of these bits cause this fault to be triggered. Other bits are status displays. The status/fault word is displayed in the fault value.

**Note regarding the bit designation:**

The first designation is valid for DRIVE-CLiQ encoders, the second for EnDat 2.2 encoders.

Fault value (r0949, interpret binary):

Bit 0: F1 (safety status display).

Bit 1: F2 (safety status display).

Bit 2: Reserved (lighting).

Bit 3: Reserved (signal amplitude).

Bit 4: Reserved (position value).

Bit 5: Reserved (overvoltage).

Bit 6: Reserved (undervoltage)/hardware fault EnDat supply (--> F3x110, x = 1, 2, 3).

Bit 7: Reserved (overcurrent)/EnDat encoder withdrawn when not in the parked state (--> F3x110, x = 1, 2, 3).

Bit 8: Reserved (battery)/overcurrent EnDat supply (--> F3x110, x = 1, 2, 3).

Bit 9: Reserved/overvoltage EnDat supply (--> F3x110, x = 1, 2, 3).

Bit 11: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).

Bit 12: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).

Bit 13: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).

Bit 14: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).

Bit 15: Internal communication error (--> F3x110, x = 1, 2, 3).

Bit 16: Lighting (--> F3x135, x = 1, 2, 3).

Bit 17: Signal amplitude (--> F3x135, x = 1, 2, 3).

Bit 18: Singleturn position 1 (--> F3x135, x = 1, 2, 3).

Bit 19: Overvoltage (--> F3x135, x = 1, 2, 3).

Bit 20: Undervoltage (--> F3x135, x = 1, 2, 3).

Bit 21: Overcurrent (--> F3x135, x = 1, 2, 3).

Bit 22: Temperature exceeded (--> F3x405, x = 1, 2, 3).

Bit 23: Singleturn position 2 (safety status display).

Bit 24: Singleturn system (--> F3x135, x = 1, 2, 3).

Bit 25: Singleturn power down (--> F3x135, x = 1, 2, 3).

Bit 26: Multiturn position 1 (--> F3x136, x = 1, 2, 3).

Bit 27: Multiturn position 2 (--> F3x136, x = 1, 2, 3).

Bit 28: Multiturn system (--> F3x136, x = 1, 2, 3).

Bit 29: Multiturn power down (--> F3x136, x = 1, 2, 3).

Bit 30: Multiturn overflow/underflow (--> F3x136, x = 1, 2, 3).

Bit 31: Multiturn battery (reserved).

**Remedy:**

- determine the detailed cause of the fault using the fault value.
- replace the encoder if necessary.

**Note:**

An EnDat 2.2 encoder may only be removed and inserted in the "Park" state.

If an EnDat 2.2 encoder was removed when not in the "Park" state, then after inserting the encoder, a POWER ON (switch-off/on) is necessary to acknowledge the fault.

<b>F31137</b>	<b>Encoder 1: Internal fault when determining the position</b>
<b>Message value:</b>	Fault cause: %1 bin
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	<p>A position determination fault has occurred in the DRIVE-CLiQ encoder.</p> <p>Fault value (r0949, interpret binary):</p> <p>yyxxxxxx hex: yy = encoder version, xxxxxx = bit coding of the fault cause</p> <p>For yy = 08 hex (bit 27 = 1), the following bit definition applies:</p> <p>Bit 1: Signal monitoring (sin/cos).</p> <p>Bit 8: F1 (safety status display) fault position word 1.</p> <p>Bit 9: F2 (safety status display) fault position word 2.</p> <p>Bit 16: LED monitoring iC-LG (opto ASIC).</p> <p>Bit 17: Fault in the multiturn.</p> <p>Bit 23: Temperature outside the limit values.</p> <p>Note:</p> <p>For an encoder version that is not described here, please contact the encoder manufacturer for more detailed information on the bit coding.</p>
<b>Remedy:</b>	<p>- determine the detailed cause of the fault using the fault value.</p> <p>- if required, replace the DRIVE-CLiQ encoder.</p>
<b>F31138</b>	<b>Encoder 1: Internal error when determining multiturn information</b>
<b>Message value:</b>	Fault cause: %1 bin
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	<p>A position determination fault has occurred in the DRIVE-CLiQ encoder.</p> <p>Fault value (r0949, interpret binary):</p> <p>yyxxxxxx hex: yy = encoder version, xxxxxx = bit coding of the fault cause</p> <p>For yy = 08 hex (bit 27 = 1), the following bit definition applies:</p> <p>Bit 1: Signal monitoring (sin/cos).</p> <p>Bit 8: F1 (safety status display) fault position word 1.</p> <p>Bit 9: F2 (safety status display) fault position word 2.</p> <p>Bit 16: LED monitoring iC-LG (opto ASIC).</p> <p>Bit 17: Fault in the multiturn.</p> <p>Bit 23: Temperature outside the limit values.</p> <p>Note:</p> <p>For an encoder version that is not described here, please contact the encoder manufacturer for more detailed information on the bit coding.</p>
<b>Remedy:</b>	<p>- determine the detailed cause of the fault using the fault value.</p> <p>- if required, replace the DRIVE-CLiQ encoder.</p>
<b>F31142 (N, A)</b>	<b>Encoder 1: Battery voltage fault</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	When switched-off, the encoder uses a battery to back up the multiturn information. The battery voltage is no longer sufficient to check the multiturn information.
<b>Remedy:</b>	Replace battery.
<b>Reaction upon N:</b>	NONE
<b>Acknowl. upon N:</b>	NONE



Reaction upon A: NONE  
Acknowl. upon A: NONE

---

<b>F31150 (N, A)</b>	<b>Encoder 1: Initialization error</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	Encoder functionality selected in p0404 is not operating correctly. Fault value (r0949, interpret hexadecimal): Encoder malfunction. The bit assignment corresponds to that of p0404 (e.g. bit 5 set: Error track C/D). See also: p0404 (Encoder configuration effective), p0491 (Motor encoder fault response ENCODER)
<b>Remedy:</b>	- Check that p0404 is correctly set. - check the encoder type used (incremental/absolute) and for SMCxx, the encoder cable. - if relevant, note additional fault messages that describe the fault in detail.
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

---

<b>F31151 (N, A)</b>	<b>Encoder 1: Encoder speed for initialization AB too high</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	The encoder speed is too high while initializing the Sensor Module.
<b>Remedy:</b>	Reduce the speed of the encoder accordingly during initialization. If necessary, de-activate monitoring (p0437.29). See also: p0437 (Sensor Module configuration extended)
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

---

<b>F31152 (N, A)</b>	<b>Encoder 1: Maximum input frequency exceeded</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	The maximum input frequency of the encoder evaluation has been exceeded. Fault value (r0949, interpret decimal): Actual input frequency in Hz. See also: p0408 (Rotary encoder pulse number)
<b>Remedy:</b>	- Reduce the speed. - Use an encoder with a lower pulse number (p0408).
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

---

#### **F31153 (N, A) Encoder 1: Identification error**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** IMMEDIATELY  
**Cause:** An error has occurred when identifying the encoder (waiting) p0400=10100.  
The connected encoder was not able to be identified.  
Fault value (r0949, interpret hexadecimal):  
Bit 0: Data length incorrect  
See also: p0400 (Encoder type selection)  
**Remedy:** Manually configure the encoder according to the data sheet.  
Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

#### **F31160 (N, A) Encoder 1: Analog sensor channel A failed**

**Message value:** %1  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** ENCODER (IASC/DCBRK, NONE)  
**Acknowledge:** PULSE INHIBIT  
**Cause:** The input voltage of the analog sensor is outside the permissible limits.  
Fault value (r0949, interpret decimal):  
1: Input voltage outside detectable measuring range.  
2: Input voltage outside the measuring range set in (p4673).  
3: The absolute value of the input voltage has exceeded the range limit (p4676).  
**Remedy:** For fault value = 1:  
- check the output voltage of the analog sensor.  
For fault value = 2:  
- check the voltage setting for each encoder period (p4673).  
For fault value = 3:  
- check the range limit setting and increase it if necessary (p4676).  
Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

#### **F31161 (N, A) Encoder 1: Analog sensor channel B failed**

**Message value:** %1  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** ENCODER (IASC/DCBRK, NONE)  
**Acknowledge:** PULSE INHIBIT  
**Cause:** The input voltage of the analog sensor is outside the permissible limits.  
Fault value (r0949, interpret decimal):  
1: Input voltage outside detectable measuring range.  
2: Input voltage outside the measuring range set in (p4675).  
3: The absolute value of the input voltage has exceeded the range limit (p4676).  
**Remedy:** For fault value = 1:  
- check the output voltage of the analog sensor.  
For fault value = 2:  
- check the voltage setting for each encoder period (p4675).

For fault value = 3:  
- check the range limit setting and increase it if necessary (p4676).

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

### **F31163 (N, A) Encoder 1: Analog sensor position value exceeds limit value**

**Message value:** %1  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** ENCODER (IASC/DCBRK, NONE)  
**Acknowledge:** PULSE INHIBIT  
**Cause:** The position value has exceeded the permissible range of -0.5 ... +0.5.  
Fault value (r0949, interpret decimal):  
1: Position value from the LVDT sensor.  
2: Position value from the encoder characteristic.

**Remedy:** For fault value = 1:  
- Check the LVDT ratio (p4678).  
- check the reference signal connection at track B.  
For fault value = 2:  
- check the coefficients of the characteristic (p4663 ... p4666).

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

### **A31400 (F, N) Encoder 1: Alarm threshold zero mark distance error**

**Message value:** %1  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The measured zero mark distance does not correspond to the parameterized zero mark distance.  
For distance-coded encoders, the zero mark distance is determined from zero marks detected pairs. This means that if a zero mark is missing, depending on the pair generation, this cannot result in a fault and also has no effect in the system.  
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).  
Alarm value (r2124, interpret decimal):  
Last measured zero mark distance in increments (4 increments = 1 encoder pulse).  
The sign designates the direction of motion when detecting the zero mark distance.

**Remedy:**  
- check that the encoder cables are routed in compliance with EMC.  
- check the plug connections.  
- check the encoder type (encoder with equidistant zero marks).  
- adapt the parameter for the distance between zero marks (p0424, p0425).  
- replace the encoder or encoder cable.

Reaction upon F: NONE (ENCODER, IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)  
Acknowl. upon F: IMMEDIATELY  
Reaction upon N: NONE  
Acknowl. upon N: NONE

<b>A31401 (F, N)</b>	<b>Encoder 1: Alarm threshold zero mark failed</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The 1.5 x parameterized zero mark distance was exceeded. The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder). Alarm value (r2124, interpret decimal): Number of increments after POWER ON or since the last zero mark that was detected (4 increments = 1 encoder pulse).
<b>Remedy:</b>	- check that the encoder cables are routed in compliance with EMC. - check the plug connections. - check the encoder type (encoder with equidistant zero marks). - adapt the parameter for the clearance between zero marks (p0425). - replace the encoder or encoder cable.
Reaction upon F:	NONE (ENCODER, IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>F31405 (N, A)</b>	<b>Encoder 1: Temperature in the encoder evaluation inadmissible</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Overtemperature of the electronic components (6)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	The encoder evaluation for a motor with DRIVE-CLiQ has detected an inadmissible temperature. The fault threshold is 125 ° C. Alarm value (r2124, interpret decimal): Measured board/module temperature in 0.1 °C.
<b>Remedy:</b>	Reduce the ambient temperature for the DRIVE-CLiQ connection of the motor.
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE
<b>A31407 (F, N)</b>	<b>Encoder 1: Function limit reached</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The encoder has reached one of its function limits. A service is recommended. Alarm value (r2124, interpret decimal): 1 : Incremental signals 3 : Absolute track 4 : Code connection
<b>Remedy:</b>	Perform service. Replace the encoder if necessary. Note: The actual functional reserve of an encoder can be displayed via r4651. See also: p4650 (Encoder functional reserve component number), r4651 (Encoder functional reserve)
Reaction upon F:	NONE (ENCODER, IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY

Reaction upon N: NONE  
Acknowl. upon N: NONE

---

<b>A31410 (F, N)</b>	<b>Encoder 1: Serial communications</b>
<b>Message value:</b>	Fault cause: %1 bin
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	Serial communication protocol transfer error between the encoder and evaluation module. Alarm value (r2124, interpret binary): Bit 0: Alarm bit in the position protocol. Bit 1: Incorrect quiescent level on the data line. Bit 2: Encoder does not respond (does not supply a start bit within 50 ms). Bit 3: CRC error: The checksum in the protocol from the encoder does not match the data. Bit 4: Encoder acknowledgement error: The encoder incorrectly understood the task (request) or cannot execute it. Bit 5: Internal error in the serial driver: An illegal mode command was requested. Bit 6: Timeout when cyclically reading. Bit 8: Protocol is too long (e.g. > 64 bits). Bit 9: Receive buffer overflow. Bit 10: Frame error when reading twice. Bit 11: Parity error. Bit 12: Data line signal level error during the monoflop time.
<b>Remedy:</b>	- check that the encoder cables are routed in compliance with EMC. - check the plug connections. - replace encoder.
Reaction upon F:	NONE (ENCODER, IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE

---

<b>A31411 (F, N)</b>	<b>Encoder 1: Absolute encoder signals internal alarms</b>
<b>Message value:</b>	Fault cause: %1 bin, additional information: %2
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The absolute encoder fault word includes alarm bits that have been set. Alarm value (r2124, interpret binary): yyyyxxxx hex: yyyy = supplementary information, xxxx = fault cause yyyy = 0: Bit 0: Frequency exceeded (speed too high). Bit 1: Temperature exceeded. Bit 2: Control reserve, lighting system exceeded. Bit 3: Battery discharged. Bit 4: Reference point passed. yyyy = 1: Bit 0: Signal amplitude outside the control range. Bit 1: Error multiturn interface Bit 2: Internal data error (singleturn/multiturn not with single steps). Bit 3: Error EEPROM interface. Bit 4: SAR_converter error. Bit 5: Fault for the register data transfer.

## 4 Faults and alarms

### 4.2 List of faults and alarms

	Bit 6: Internal error identified at the error pin (nErr).
	Bit 7: Temperature threshold exceeded or fallen below.
	See also: p0491 (Motor encoder fault response ENCODER)
<b>Remedy:</b>	Replace encoder.
Reaction upon F:	NONE (ENCODER, IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE

---

#### **A31412 (F, N) Encoder 1: Error bit set in the serial protocol**

<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The encoder sends a set error bit via the serial protocol. Alarm value (r2124, interpret binary): Bit 0: Fault bit in the position protocol. Bit 1: Alarm bit in the position protocol.
<b>Remedy:</b>	<ul style="list-style-type: none"><li>- carry out a POWER ON (power off/on) for all components.</li><li>- check that the encoder cables are routed in compliance with EMC.</li><li>- check the plug connections.</li><li>- replace encoder.</li></ul>
Reaction upon F:	NONE (ENCODER, IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE

---

#### **A31414 (F, N) Encoder 1: Amplitude error track C or D ( $C^2 + D^2$ )**

<b>Message value:</b>	C track: %1, D track: %2
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The amplitude ( $C^2 + D^2$ ) of track C or D of the encoder or from the Hall signals, is not within the tolerance bandwidth. Alarm value (r2124, interpret hexadecimal): yyyyxxxx hex: yyyy = Signal level, track D (16 bits with sign). xxxx = Signal level, track C (16 bits with sign). The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %). The response thresholds are < 230 mV (observe the frequency response of the encoder) and > 750 mV. A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec. Note: If the amplitude is not within the tolerance bandwidth, then it cannot be used to initialize the start position.
<b>Remedy:</b>	<ul style="list-style-type: none"><li>- check that the encoder cables are routed in compliance with EMC.</li><li>- check the plug connections.</li><li>- replace the encoder or encoder cable.</li><li>- check the Sensor Module (e.g. contacts).</li><li>- check the Hall sensor box.</li></ul>
Reaction upon F:	NONE (ENCODER, IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE

<b>N31415 (F, A)</b>	<b>Encoder 1: Amplitude alarm track A or B (<math>A^2 + B^2</math>)</b>
<b>Message value:</b>	Amplitude: %1, Angle: %2
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The amplitude (root of <math>A^2 + B^2</math>) for encoder 1 exceeds the permissible tolerance.</p> <p>Alarm value (r2124, interpret hexadecimal):</p> <p>yyyyxxxx hex:</p> <p>yyyy = Angle</p> <p>xxxx = Amplitude, i.e. root from <math>A^2 + B^2</math> (16 bits without sign)</p> <p>The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).</p> <p>The response threshold is &lt; 230 mV (observe the frequency response of the encoder).</p> <p>A signal level of 500 mV peak value corresponds to the numerical value 299A hex = 10650 dec.</p> <p>The angle 0 ... FFFF hex corresponds to 0 ... 360 degrees of the fine position. Zero degrees is present at the negative zero crossover of track B.</p> <p>Note for Sensor Modules for resolvers (e.g. SMC10):</p> <p>The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is &lt; 1414 mV (1.0 Vrms).</p> <p>A signal level of 2900 mV peak value corresponds to the numerical value 3333 hex = 13107 dec.</p> <p>Note:</p> <p>The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.</p> <p>See also: p0491 (Motor encoder fault response ENCODER)</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check the speed range, frequency characteristic (amplitude characteristic) of the measuring equipment is not sufficient for the speed range.</li> <li>- check that the encoder cables and shielding are routed in compliance with EMC.</li> <li>- check the plug connections.</li> <li>- replace the encoder or encoder cable.</li> <li>- check the Sensor Module (e.g. contacts).</li> <li>- if the coding disk is soiled or the lighting aged, replace the encoder.</li> </ul>
Reaction upon F:	NONE (ENCODER, IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon A:	NONE
Acknowl. upon A:	NONE
<b>A31418 (F, N)</b>	<b>Encoder 1: Speed difference per sampling rate exceeded</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>For an HTL/TTL encoder, the speed difference between two sampling cycles has exceeded the value in p0492.</p> <p>The change to the averaged speed actual value - if applicable - is monitored in the current controller sampling time.</p> <p>Alarm value (r2124, interpret decimal):</p> <p>Only for internal Siemens troubleshooting.</p> <p>See also: p0492 (Square-wave encoder maximum speed difference per sampling cycle)</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check the tachometer feeder cable for interruptions.</li> <li>- check the grounding of the tachometer shielding.</li> <li>- if required, increase the setting of p0492.</li> </ul>
Reaction upon F:	NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE

<b>A31419 (F, N)</b>	<b>Encoder 1: Track A or B outside tolerance</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The amplitude/phase/offset correction for track A or B is at the limit.</p> <p>Amplitude error correction: Amplitude B / Amplitude A = 0.78 ... 1.27</p> <p>Phase: &lt;84 degrees or &gt;96 degrees</p> <p>SMC20: Offset correction: +/-140 mV</p> <p>SMC10: Offset correction: +/-650 mV</p> <p>Alarm value (r2124, interpret hexadecimal):</p> <p>xxxx1: Minimum of the offset correction, track B</p> <p>xxxx2: Maximum of the offset correction, track B</p> <p>xxx1x: Minimum of the offset correction, track A</p> <p>xxx2x: Maximum of the offset correction, track A</p> <p>xx1xx: Minimum of the amplitude correction, track B/A</p> <p>xx2xx: Maximum of the amplitude correction, track B/A</p> <p>x1xxx: Minimum of the phase error correction</p> <p>x2xxx: Maximum of the phase error correction</p> <p>1xxxx: Minimum of the cubic correction</p> <p>2xxxx: Maximum of the cubic correction</p> <p>See also: p0491 (Motor encoder fault response ENCODER)</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check mechanical mounting tolerances for encoders without their own bearings (e.g. toothed-wheel encoders).</li> <li>- check the plug connections (also the transition resistance).</li> <li>- check the encoder signals.</li> <li>- replace the encoder or encoder cable.</li> </ul>
Reaction upon F:	NONE (ENCODER, IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>A31421 (F, N)</b>	<b>Encoder 1: Coarse position error</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>For the actual value sensing, an error was detected. As a result of this error, it must be assumed that the actual value sensing supplies an incorrect coarse position.</p> <p>Alarm value (r2124, interpret decimal):</p> <p>3: The absolute position of the serial protocol and track A/B differ by half an encoder pulse. The absolute position must have its zero position in the quadrants in which both tracks are negative. In the case of a fault, the position can be incorrect by one encoder pulse.</p>
<b>Remedy:</b>	<p>Re alarm value = 3:</p> <ul style="list-style-type: none"> <li>- For a standard encoder with cable, contact the manufacturer where relevant.</li> <li>- correct the assignment of the tracks to the position value that is serially transferred. To do this, the two tracks must be connected, inverted, at the Sensor Module (interchange A with A* and B with B*) or, for a programmable encoder, check the zero offset of the position.</li> </ul>
Reaction upon F:	NONE (ENCODER, IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE



<b>A31422 (F, N)</b>	<b>Encoder 1: Pulses per revolution square-wave encoder outside tolerance bandwidth</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The measured zero mark distance does not correspond to the parameterized zero mark distance.</p> <p>This alarm is triggered with active square-wave encoder PPR correction and re-parameterized fault 31131 if the accumulator contains larger values than p4683 or p4684.</p> <p>The zero mark distance for zero mark monitoring is set in p0425 (rotary encoder).</p> <p>Alarm value (r2124, interpret decimal): accumulated differential pulses in encoder pulses.</p> <p>See also: p0491 (Motor encoder fault response ENCODER)</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check that the encoder cables are routed in compliance with EMC.</li> <li>- check the plug connections.</li> <li>- check the encoder type (encoder with equidistant zero marks).</li> <li>- adapt the parameter for the distance between zero marks (p0424, p0425).</li> <li>- replace the encoder or encoder cable.</li> </ul>
Reaction upon F:	NONE (ENCODER, IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE

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<b>A31429 (F, N)</b>	<b>Encoder 1: Position difference hall sensor/track C/D and A/B too large</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The error for track C/D is greater than +/-15 ° mechanical or +/-60 ° electrical or the error for the Hall signals is greater than +/-60 ° electrical.</p> <p>One period of track C/D corresponds to 360 ° mechanical.</p> <p>One period of the Hall signal corresponds to 360 ° electrical.</p> <p>The monitoring responds if, for example, Hall sensors are connected as equivalent for the C/D tracks with the incorrect rotational sense or supply values that are not accurate enough.</p> <p>Alarm value (r2124, interpret decimal): For track C/D, the following applies: Measured deviation as mechanical angle (16 bits with sign, 182 dec corresponds to 1 °).</p> <p>For Hall signals, the following applies: Measured deviation as electrical angle (16 bits with sign, 182 dec corresponds to 1 °).</p> <p>See also: p0491 (Motor encoder fault response ENCODER)</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- track C or D not connected.</li> <li>- correct the direction of rotation of the Hall sensor possibly connected as equivalent for track C/D.</li> <li>- check that the encoder cables are routed in compliance with EMC.</li> <li>- check the adjustment of the Hall sensor.</li> </ul>
Reaction upon F:	NONE (ENCODER, IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE

<b>A31431 (F, N)</b>	<b>Encoder 1: Deviation position incremental/absolute too large</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>When the zero pulse is passed, a deviation in the incremental position was detected.</p> <p>For equidistant zero marks, the following applies:</p> <ul style="list-style-type: none"> <li>- The first zero mark passed supplies the reference point for all subsequent checks. The other zero marks must have n times the distance referred to the first zero mark.</li> </ul> <p>For distance-coded zero marks, the following applies:</p> <ul style="list-style-type: none"> <li>- the first zero mark pair supplies the reference point for all subsequent checks. The other zero mark pairs must have the expected distance to the first zero mark pair.</li> </ul> <p>Alarm value (r2124, interpret decimal):</p> <p>Deviation in quadrants (1 pulse = 4 quadrants).</p> <p>See also: p0491 (Motor encoder fault response ENCODER)</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check that the encoder cables are routed in compliance with EMC.</li> <li>- check the plug connections.</li> <li>- replace the encoder or encoder cable.</li> <li>- Clean coding disk or remove strong magnetic fields.</li> </ul>
Reaction upon F:	NONE (ENCODER, IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>A31432 (F, N)</b>	<b>Encoder 1: Rotor position adaptation corrects deviation</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>For track A/B, pulses have been lost or too many have been counted. These pulses are presently being corrected.</p> <p>Alarm value (r2124, interpret decimal):</p> <p>Last measured deviation of zero mark in increments (4 increments = 1 encoder pulse).</p> <p>The sign designates the direction of motion when detecting the zero mark distance.</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check that the encoder cables are routed in compliance with EMC.</li> <li>- check the plug connections.</li> <li>- replace the encoder or encoder cable.</li> <li>- check encoder limit frequency.</li> <li>- adapt the parameter for the distance between zero marks (p0424, p0425).</li> </ul>
Reaction upon F:	NONE (ENCODER, IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>A31442 (F, N)</b>	<b>Encoder 1: Battery voltage pre-alarm</b>
<b>Message value:</b>	-
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	When switched-off, the encoder uses a battery to back up the multiturn information. The multiturn information can no longer be buffered if the battery voltage drops even further.
<b>Remedy:</b>	Replace battery.

Reaction upon F: NONE (ENCODER, IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)  
Acknowl. upon F: IMMEDIATELY  
Reaction upon N: NONE  
Acknowl. upon N: NONE

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**A31443 (F, N) Encoder 1: Unipolar CD signal level outside specification**

**Message value:** Fault cause: %1 bin  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The unipolar level (CP/CN or DP/DN) for encoder 1 is outside the permissible tolerance.  
Alarm value (r2124, interpret binary):  
Bit 0 = 1: Either CP or CN outside the tolerance.  
Bit 16 = 1: Either DP or DN outside the tolerance.  
The unipolar nominal signal level of the encoder must lie in the range 2500 mV +/- 500 mV.  
The response thresholds are < 1700 mV and > 3300 mV.  
Note:

The signal level is not evaluated unless the following conditions are satisfied:  
- Sensor Module properties available (r0459.31 = 1).  
- Monitoring active (p0437.31 = 1).  
See also: p0491 (Motor encoder fault response ENCODER)  
**Remedy:**  
- check that the encoder cables and shielding are routed in compliance with EMC.  
- check the plug connections and contacts of the encoder cable.  
- are the C/D tracks connected correctly (have the signal lines CP and CN or DP and DN been interchanged)?  
- replace the encoder cable.

Reaction upon F: NONE (ENCODER, IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)  
Acknowl. upon F: IMMEDIATELY  
Reaction upon N: NONE  
Acknowl. upon N: NONE

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**A31460 (N) Encoder 1: Analog sensor channel A failed**

**Message value:** %1  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The input voltage of the analog sensor is outside the permissible limits.  
Alarm value (r2124, interpret decimal):  
1: Input voltage outside detectable measuring range.  
2: Input voltage outside measuring range set in p4673.  
3: The absolute value of the input voltage has exceeded the range limit (p4676).

**Remedy:**  
Re alarm value = 1:  
- check the output voltage of the analog sensor.  
Re alarm value = 2:  
- check the voltage setting for each encoder period (p4673).  
Re alarm value = 3:  
- check the range limit setting and increase it if necessary (p4676).

Reaction upon N: NONE  
Acknowl. upon N: NONE

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#### **A31461 (N) Encoder 1: Analog sensor channel B failed**

<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The input voltage of the analog sensor is outside the permissible limits. Alarm value (r2124, interpret decimal): 1: Input voltage outside detectable measuring range. 2: Input voltage outside the measuring range set in (p4675). 3: The absolute value of the input voltage has exceeded the range limit (p4676).
<b>Remedy:</b>	Re alarm value = 1: - check the output voltage of the analog sensor. Re alarm value = 2: - check the voltage setting for each encoder period (p4675). Re alarm value = 3: - check the range limit setting and increase it if necessary (p4676).
Reaction upon N:	NONE
Acknowled. upon N:	NONE

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#### **A31462 (N) Encoder 1: Analog sensor no channel active**

<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	Channel A and B are not activated for the analog sensor.
<b>Remedy:</b>	- activate channel A and/or channel B (p4670). - check the encoder configuration (p0404.17).
Reaction upon N:	NONE
Acknowled. upon N:	NONE

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#### **A31463 (N) Encoder 1: Analog sensor position value exceeds limit value**

<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The position value has exceeded the permissible range of -0.5 ... +0.5. Alarm value (r2124, interpret decimal): 1: Position value from the LVDT sensor. 2: Position value from the encoder characteristic.
<b>Remedy:</b>	Re alarm value = 1: - Check the LVDT ratio (p4678). - check the reference signal connection at track B. Re alarm value = 2: - check the coefficients of the characteristic (p4663 ... p4666).
Reaction upon N:	NONE
Acknowled. upon N:	NONE

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<b>A31470 (F, N)</b>	<b>Encoder 1: Soiling detected</b>
<b>Message value:</b>	-
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	In the case of the alternative encoder system interface on the Sensor Module Cabinet 30 (SMC30), encoder soiling is signaled via a 0 signal at terminal X521.7.
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check the plug connections.</li> <li>- replace the encoder or encoder cable.</li> </ul>
Reaction upon F:	NONE (ENCODER, IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>F31500 (N, A)</b>	<b>Encoder 1: Position tracking traversing range exceeded</b>
<b>Message value:</b>	-
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (NONE, OFF2, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>For a configured linear axis without modulo correction, the drive/encoder has exceeded the maximum possible traversing range. The value should be read in p0412 and interpreted as the number of motor revolutions.</p> <p>For p0411.0 = 1, the maximum traversing range for the configured linear axis is defined to be 64x (+/- 32x) of p0421.</p> <p>For p0411.3 = 1, the maximum traversing range for the configured linear axis is pre-set (default value) to the highest possible value and is +/-p0412/2 (rounded off to complete revolutions). The highest possible value depends on the pulse number (p0408) and the fine resolution (p0419).</p>
<b>Remedy:</b>	<p>The fault should be resolved as follows:</p> <ul style="list-style-type: none"> <li>- select encoder commissioning (p0010 = 4).</li> <li>- reset the position tracking as follows (p0411.2 = 1).</li> <li>- de-select encoder commissioning (p0010 = 0).</li> </ul> <p>The fault should then be acknowledged and the absolute encoder adjusted.</p>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE
<b>F31501 (N, A)</b>	<b>Encoder 1: Position tracking encoder position outside tolerance window</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (NONE, OFF2, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>When powered down, the drive/encoder was moved through a distance greater than was parameterized in the tolerance window. It is possible that there is no longer any reference between the mechanical system and encoder.</p> <p>Fault value (r0949, interpret decimal):</p> <p>Deviation (difference) to the last encoder position in increments of the absolute value.</p> <p>The sign designates the traversing direction.</p> <p>Note:</p> <p>The deviation (difference) found is also displayed in r0477.</p> <p>See also: p0413 (Measuring gear position tracking tolerance window), r0477 (Measuring gear position difference)</p>

<b>Remedy:</b>	Reset the position tracking as follows: - select encoder commissioning (p0010 = 4). - reset the position tracking as follows (p0411.2 = 1). - de-select encoder commissioning (p0010 = 0). The fault should then be acknowledged and, if necessary, the absolute encoder adjusted (p2507). See also: p0010
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

<b>F31502 (N, A)</b>	<b>Encoder 1: Encoder with measuring gear without valid signals</b>
<b>Message value:</b>	-
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (OFF2, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The encoder with measuring gear no longer provides any valid signals.
<b>Remedy:</b>	It must be ensured that all of the encoders, with mounted measuring gear, provide valid actual values in operation.
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

<b>F31503 (N, A)</b>	<b>Encoder 1: Position tracking cannot be reset</b>
<b>Message value:</b>	-
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (NONE, OFF2, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The position tracking for the measuring gear cannot be reset.
<b>Remedy:</b>	The fault should be resolved as follows: - select encoder commissioning (p0010 = 4). - reset the position tracking as follows (p0411.2 = 1). - de-select encoder commissioning (p0010 = 0). The fault should then be acknowledged and the absolute encoder adjusted.
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

<b>A31700</b>	<b>Encoder 1: Effectivity test does not supply the expected value</b>
<b>Message value:</b>	Fault cause: %1 bin
<b>Message class:</b>	Safety monitoring channel has identified an error (10)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The DRIVE-CLiQ encoder fault word supplies fault bits that have been set. Fault value (r0949, interpret binary): Bit x = 1: Effectivity test x unsuccessful.
<b>Remedy:</b>	Replace encoder.

<b>N31800 (F)</b>	<b>Encoder 1: Group signal</b>
<b>Message value:</b>	-
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE)
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The motor encoder has detected at least one fault. See also: p0491 (Motor encoder fault response ENCODER)
<b>Remedy:</b>	Evaluate the other messages that are presently available.
Reaction upon F:	ENCODER (IASC/DCBRK, NONE)
Acknowl. upon F:	IMMEDIATELY
<b>F31801 (N, A)</b>	<b>Encoder 1 DRIVE-CLiQ: Sign-of-life missing</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	A DRIVE-CLiQ communication error has occurred from the Control Unit to the encoder involved. Fault cause: 10 (= 0A hex): The sign-of-life bit in the receive telegram is not set. Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause See also: p0491 (Motor encoder fault response ENCODER)
<b>Remedy:</b>	- check the electrical cabinet design and cable routing for EMC compliance - replace the component involved. See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE
<b>F31802 (N, A)</b>	<b>Encoder 1: Time slice overflow</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	A time slice overflow has occurred in encoder 1. Fault value (r0949, interpret hexadecimal): yx hex: y = function involved (Siemens-internal fault diagnostics), x = time slice involved x = 9: Time slice overflow of the fast (current controller clock cycle) time slice. x = A: Time slice overflow of the average time slice. x = C: Time slice overflow of the slow time slice. yx = 3E7: Timeout when waiting for SYNO (e.g. unexpected return to non-cyclic operation). See also: p0491 (Motor encoder fault response ENCODER)
<b>Remedy:</b>	Increase the current controller sampling time Note: For a current controller sampling time = 31.25 µs, use an SMx20 with order number 6SL3055-0AA00-5xA3.

## 4 Faults and alarms

### 4.2 List of faults and alarms

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

#### **F31804 (N, A) Encoder 1: Checksum error**

**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** ENCODER (IASC/DCBRK, NONE)  
**Acknowledge:** POWER ON (IMMEDIATELY)  
**Cause:** A checksum error has occurred when reading-out the program memory on the Sensor Module.  
Fault value (r0949, interpret hexadecimal):  
yyyyxxxx hex  
yyyy: Memory area involved.  
xxxx: Difference between the checksum at POWER ON and the actual checksum.  
See also: p0491 (Motor encoder fault response ENCODER)  
**Remedy:**  
- carry out a POWER ON (power off/on).  
- upgrade firmware to later version (>= V2.6 HF3, >= V4.3 SP2, >= V4.4).  
- check whether the permissible ambient temperature for the component is maintained.  
- replace the Sensor Module.

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

#### **F31805 (N, A) Encoder 1: EEPROM checksum error**

**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** ENCODER (IASC/DCBRK, NONE)  
**Acknowledge:** IMMEDIATELY  
**Cause:** Internal parameter data is corrupted.  
Fault value (r0949, interpret hexadecimal):  
01: EEPROM access error.  
02: Too many blocks in the EEPROM.  
See also: p0491 (Motor encoder fault response ENCODER)  
**Remedy:** Replace the module.

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

#### **F31806 (N, A) Encoder 1: Initialization error**

**Message value:** %1  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** ENCODER (IASC/DCBRK, NONE)  
**Acknowledge:** PULSE INHIBIT  
**Cause:** The encoder was not successfully initialized.  
Fault value (r0949, interpret hexadecimal):  
Bit 0, 1: Encoder initialization with the motor rotating has failed (deviation involving coarse and fine position in encoder pulses/4).  
Bit 2: Mid-voltage matching for track A unsuccessful.  
Bit 3: Mid-voltage matching for track B unsuccessful.  
Bit 4: Mid-voltage matching for acceleration input unsuccessful.



Bit 5: Mid-voltage matching for track safety A unsuccessful.  
 Bit 6: Mid-voltage matching for track safety B unsuccessful.  
 Bit 7: Mid-voltage matching for track C unsuccessful.  
 Bit 8: Mid-voltage matching for track D unsuccessful.  
 Bit 9: Mid-voltage matching for track R unsuccessful.  
 Bit 10: The difference in mid-voltages between A and B is too great ( $> 0.5 \text{ V}$ )  
 Bit 11: The difference in mid-voltages between C and D is too great ( $> 0.5 \text{ V}$ )  
 Bit 12: The difference in mid-voltages between safety A and safety B is too great ( $> 0.5 \text{ V}$ )  
 Bit 13: The difference in mid-voltages between A and safety B is too great ( $> 0.5 \text{ V}$ )  
 Bit 14: The difference in mid-voltages between B and safety A is too great ( $> 0.5 \text{ V}$ )  
 Bit 15: The standard deviation of the calculated mid-voltages is too great ( $> 0.3 \text{ V}$ )  
 Bit 16: Internal fault - fault when reading a register (CAFE)  
 Bit 17: Internal fault - fault when writing a register (CAFE)  
 Bit 18: Internal fault: No mid-voltage matching available  
 Bit 19: Internal error - ADC access error.  
 Bit 20: Internal error - no zero crossover found.  
 Bit 28: Error while initializing the EnDat 2.2 measuring unit.  
 Bit 29: Error when reading out the data from the EnDat 2.2 measuring unit.  
 Bit 30: EEPROM checksum of the EnDat 2.2 measuring unit incorrect.  
 Bit 31: Data of the EnDat 2.2 measuring unit inconsistent.

Note:

Bit 0, 1: Up to 6SL3055-0AA00-5\*A0

Bits 2 ... 20: 6SL3055-0AA00-5\*A1 and higher

See also: p0491 (Motor encoder fault response ENCODER)

**Remedy:**

Acknowledge fault.

If the fault cannot be acknowledged:

Bits 2 ... 9: Check encoder power supply.

Bits 2 ... 14: Check the corresponding cable.

Bit 15 with no other bits: Check track R, check settings in p0404.

Bit 28: Check the cable between the EnDat 2.2 converter and the measuring unit.

Bit 29 ... 31: Replace the defective measuring unit.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

---

**A31811 (F, N) Encoder 1: Encoder serial number changed**

**Message value:** -

**Message class:** Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The serial number of the motor encoder of a synchronous motor has changed. The change was only checked for encoders with serial number (e.g. EnDat encoders) and build-in motors (e.g. p0300 = 401) or third-party motors (p0300 = 2).

Cause 1:

- The encoder was replaced.

Cause 2:

- A third-party, built-in or linear motor was re-commissioned.

Cause 3:

- The motor with integrated and adjusted encoder was replaced.

Cause 4:

- The firmware was updated to a version that checks the encoder serial number.

**Note:**

With closed-loop position control, the serial number is accepted when starting the adjustment (p2507 = 2).

When the encoder is adjusted (p2507 = 3), the serial number is checked for changes and if required, the adjustment is reset (p2507 = 1).

Proceed as follows to hide serial number monitoring:

- set the following serial numbers for the corresponding Encoder Data Set: p0441= FF, p0442 = 0, p0443 = 0, p0444 = 0, p0445 = 0.

- parameterize F07414 as message type N (p2118, p2119).

See also: p0491 (Motor encoder fault response ENCODER)

**Remedy:**

Re causes 1, 2:

Carry out an automatic adjustment using the pole position identification routine. Acknowledge fault. Initiate the pole position identification routine with p1990 = 1. Then check that the pole position identification routine is correctly executed.

**SERVO:**

If a pole position identification technique is selected in p1980, and if p0301 does not contain a motor type with an encoder adjusted in the factory, then p1990 is automatically activated.

or

Set the adjustment via p0431. In this case, the new serial number is automatically accepted.

or

Mechanically adjust the encoder. Accept the new serial number with p0440 = 1.

Re causes 3, 4:

Accept the new serial number with p0440 = 1.

Reaction upon F: NONE (ENCODER, OFF2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

---

#### **F31812 (N, A) Encoder 1: Requested cycle or RX-/TX timing not supported**

**Message value:** %1

**Message class:** Error in the parameterization / configuration / commissioning procedure (18)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** A cycle requested from the Control Unit or RX/TX timing is not supported.

Fault value (r0949, interpret decimal):

0: Application cycle is not supported.

1: DRIVE-CLiQ cycle is not supported.

2: Distance between RX and TX instants in time too low.

3: TX instant in time too early.

**Remedy:** Carry out a POWER ON (power off/on) for all components.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

---

#### **F31813 Encoder 1: Hardware logic unit failed**

**Message value:** Fault cause: %1 bin

**Message class:** Hardware / software error (1)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** ENCODER (IASC/DCBRK, NONE)

**Acknowledge:** PULSE INHIBIT

**Cause:** The DRIVE-CLiQ encoder fault word supplies fault bits that have been set.

Fault value (r0949, interpret binary):

Bit 0: ALU watchdog has responded.

Bit 1: ALU has detected a sign-of-life error.

**Remedy:** Replace encoder.

<b>F31820 (N, A)</b>	<b>Encoder 1 DRIVE-CLiQ: Telegram error</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>A DRIVE-CLiQ communication error has occurred from the Control Unit to the encoder concerned.</p> <p>Fault cause:</p> <p>1 (= 01 hex): Checksum error (CRC error).</p> <p>2 (= 02 hex): Telegram is shorter than specified in the length byte or in the receive list.</p> <p>3 (= 03 hex): Telegram is longer than specified in the length byte or in the receive list.</p> <p>4 (= 04 hex): The length of the receive telegram does not match the receive list.</p> <p>5 (= 05 hex): The type of the receive telegram does not match the receive list.</p> <p>6 (= 06 hex): The address of the component in the telegram and in the receive list do not match.</p> <p>7 (= 07 hex): A SYNC telegram is expected - but the received telegram is not a SYNC telegram.</p> <p>8 (= 08 hex): No SYNC telegram is expected - but the received telegram is one.</p> <p>9 (= 09 hex): The error bit in the receive telegram is set.</p> <p>16 (= 10 hex): The receive telegram is too early.</p> <p>Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause See also: p0491 (Motor encoder fault response ENCODER)</p>
<b>Remedy:</b>	<p>- carry out a POWER ON (power off/on).</p> <p>- check the electrical cabinet design and cable routing for EMC compliance</p> <p>- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).</p> <p>See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)</p>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE
<b>F31835 (N, A)</b>	<b>Encoder 1 DRIVE-CLiQ: Cyclic data transfer error</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>A DRIVE-CLiQ communication error has occurred from the Control Unit to the encoder concerned. The nodes do not send and receive in synchronism.</p> <p>Fault cause:</p> <p>33 (= 21 hex): The cyclic telegram has not been received.</p> <p>34 (= 22 hex): Timeout in the telegram receive list.</p>

	<p>64 (= 40 hex): Timeout in the telegram send list. Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause See also: p0491 (Motor encoder fault response ENCODER)</p>
<b>Remedy:</b>	<p>- carry out a POWER ON. - replace the component involved. See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)</p>
Reaction upon N:	NONE
Acknowled. upon N:	NONE
Reaction upon A:	NONE
Acknowled. upon A:	NONE

---

<b>F31836 (N, A)</b>	<b>Encoder 1 DRIVE-CLiQ: Send error for DRIVE-CLiQ data</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>A DRIVE-CLiQ communication error has occurred from the Control Unit to the encoder involved. Data were not able to be sent. Fault cause: 65 (= 41 hex): Telegram type does not match send list. Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause See also: p0491 (Motor encoder fault response ENCODER)</p>
<b>Remedy:</b>	Carry out a POWER ON.
Reaction upon N:	NONE
Acknowled. upon N:	NONE
Reaction upon A:	NONE
Acknowled. upon A:	NONE

---

<b>F31837 (N, A)</b>	<b>Encoder 1 DRIVE-CLiQ: Component fault</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>Fault detected on the DRIVE-CLiQ component concerned. Faulty hardware cannot be excluded. Fault cause: 32 (= 20 hex): Error in the telegram header. 35 (= 23 hex): Receive error: The telegram buffer memory contains an error. 66 (= 42 hex): Send error: The telegram buffer memory contains an error. 67 (= 43 hex): Send error: The telegram buffer memory contains an error. Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause See also: p0491 (Motor encoder fault response ENCODER)</p>

**Remedy:**

- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

### **A31840 Encoder 1 DRIVE-CLiQ: error below the signaling threshold**

**Message value:** Component number: %1, fault cause: %2  
**Message class:** Internal (DRIVE-CLiQ) communication error (12)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** A DRIVE-CLiQ error has occurred below the signaling threshold.  
 Fault cause:  
 1 (= 01 hex):  
 Checksum error (CRC error).  
 2 (= 02 hex):  
 Telegram is shorter than specified in the length byte or in the receive list.  
 3 (= 03 hex):  
 Telegram is longer than specified in the length byte or in the receive list.  
 4 (= 04 hex):  
 The length of the receive telegram does not match the receive list.  
 5 (= 05 hex):  
 The type of the receive telegram does not match the receive list.  
 6 (= 06 hex):  
 The address of the component in the telegram and in the receive list do not match.  
 7 (= 07 hex):  
 A SYNC telegram is expected - but the received telegram is not a SYNC telegram.  
 8 (= 08 hex):  
 No SYNC telegram is expected - but the received telegram is one.  
 9 (= 09 hex):  
 The error bit in the receive telegram is set.  
 10 (= 0A hex):  
 The sign-of-life bit in the receive telegram is not set.  
 11 (= 0B hex):  
 Synchronization error during alternating cyclic data transfer.  
 16 (= 10 hex):  
 The receive telegram is too early.  
 32 (= 20 hex):  
 Error in the telegram header.  
 33 (= 21 hex):  
 The cyclic telegram has not been received.  
 34 (= 22 hex):  
 Timeout in the telegram receive list.  
 35 (= 23 hex):  
 Receive error: The telegram buffer memory contains an error.  
 64 (= 40 hex):  
 Timeout in the telegram send list.  
 65 (= 41 hex):  
 Telegram type does not match send list.  
 66 (= 42 hex):  
 Send error: The telegram buffer memory contains an error.

67 (= 43 hex):

Send error: The telegram buffer memory contains an error.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- check the electrical cabinet design and cable routing for EMC compliance

- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

#### **F31845 (N, A)**

#### **Encoder 1 DRIVE-CLiQ: Cyclic data transfer error**

**Message value:**

Component number: %1, fault cause: %2

**Message class:**

Internal (DRIVE-CLiQ) communication error (12)

**Drive object:**

DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:**

ENCODER (IASC/DCBRK, NONE)

**Acknowledge:**

IMMEDIATELY

**Cause:**

A DRIVE-CLiQ communication error has occurred from the Control Unit to the encoder involved.

Fault cause:

11 (= 0B hex):

Synchronization error during alternating cyclic data transfer.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

See also: p0491 (Motor encoder fault response ENCODER)

**Remedy:**

Carry out a POWER ON (power off/on).

See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

Reaction upon N:

NONE

Acknowl. upon N:

NONE

Reaction upon A:

NONE

Acknowl. upon A:

NONE

#### **F31850 (N, A)**

#### **Encoder 1: Encoder evaluation internal software error**

**Message value:**

%1

**Message class:**

Hardware / software error (1)

**Drive object:**

DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:**

ENCODER (IASC/DCBRK, NONE)

**Acknowledge:**

POWER ON

**Cause:**

An internal software error has occurred in the Sensor Module of encoder 1.

Fault value (r0949, interpret decimal):

1: Background time slice is blocked.

2: Checksum over the code memory is not OK.

10000: OEM memory of the EnDat encoder contains data that cannot be interpreted.

11000 ... 11499: Descriptive data from EEPROM incorrect.

11500 ... 11899: Calibration data from EEPROM incorrect.

11900 ... 11999: Configuration data from EEPROM incorrect.

12000 ... 12008: Communication with AD converter faulted.

16000: DRIVE-CLiQ encoder initialization application error.

16001: DRIVE-CLiQ encoder initialization ALU error.

16002: DRIVE-CLiQ encoder HISI / SISI initialization error.

16003: DRIVE-CLiQ encoder safety initialization error.

16004: DRIVE-CLiQ encoder internal system error.

See also: p0491 (Motor encoder fault response ENCODER)

**Remedy:**

- replace the Sensor Module.

- if required, upgrade the firmware in the Sensor Module.

- contact the Hotline.

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

<b>F31851 (N, A)</b>	<b>Encoder 1 DRIVE-CLiQ (CU): Sign-of-life missing</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	A DRIVE-CLiQ communication error has occurred from the Sensor Module (encoder 1) involved to the Control Unit. The DRIVE-CLiQ component did not set the sign-of-life to the Control Unit. Fault cause: 10 (= 0A hex): The sign-of-life bit in the receive telegram is not set. Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause
<b>Remedy:</b>	- Upgrade the firmware of the component involved. - carry out a POWER ON (power off/on) for the component involved.
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

---

<b>F31860 (N, A)</b>	<b>Encoder 1 DRIVE-CLiQ (CU): Telegram error</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	A DRIVE-CLiQ communication error has occurred from the Sensor Module (encoder 1) involved to the Control Unit. Fault cause: 1 (= 01 hex): Checksum error (CRC error). 2 (= 02 hex): Telegram is shorter than specified in the length byte or in the receive list. 3 (= 03 hex): Telegram is longer than specified in the length byte or in the receive list. 4 (= 04 hex): The length of the receive telegram does not match the receive list. 5 (= 05 hex): The type of the receive telegram does not match the receive list. 6 (= 06 hex): The address of the power unit in the telegram and in the receive list do not match. 9 (= 09 hex): The error bit in the receive telegram is set. 16 (= 10 hex): The receive telegram is too early. 17 (= 11 hex): CRC error and the receive telegram is too early. 18 (= 12 hex): The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.

19 (= 13 hex):

The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.

20 (= 14 hex):

The length of the receive telegram does not match the receive list and the receive telegram is too early.

21 (= 15 hex):

The type of the receive telegram does not match the receive list and the receive telegram is too early.

22 (= 16 hex):

The address of the power unit in the telegram and in the receive list does not match and the receive telegram is too early.

25 (= 19 hex):

The error bit in the receive telegram is set and the receive telegram is too early.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

#### Remedy:

- carry out a POWER ON (power off/on).
  - check the electrical cabinet design and cable routing for EMC compliance
  - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

---

#### **F31875 (N, A) Encoder 1 DRIVE-CLiQ (CU): Supply voltage failed**

**Message value:** Component number: %1, fault cause: %2

**Message class:** Supply voltage fault (undervoltage) (3)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** ENCODER (IASC/DCBRK, NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.

Fault cause:

9 (= 09 hex):

The power supply voltage for the components has failed.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

#### Remedy:

- carry out a POWER ON (power off/on).
- check the power supply voltage wiring for the DRIVE-CLiQ component (interrupted cable, contacts, ...).
- check the dimensioning of the power supply for the DRIVE-CLiQ component.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

---

#### **F31885 (N, A) Encoder 1 DRIVE-CLiQ (CU): Cyclic data transfer error**

**Message value:** Component number: %1, fault cause: %2

**Message class:** Internal (DRIVE-CLiQ) communication error (12)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** ENCODER (IASC/DCBRK, NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Sensor Module (encoder 1) involved to the Control Unit. The nodes do not send and receive in synchronism.

Fault cause:

26 (= 1A hex):

Sign-of-life bit in the receive telegram not set and the receive telegram is too early.



33 (= 21 hex):  
The cyclic telegram has not been received.  
34 (= 22 hex):  
Timeout in the telegram receive list.  
64 (= 40 hex):  
Timeout in the telegram send list.  
98 (= 62 hex):  
Error at the transition to cyclic operation.  
Note regarding the message value:  
The individual information is coded as follows in the message value (r0949/r2124):  
0000yyxx hex: yy = component number, xx = error cause  
- check the power supply voltage of the component involved.  
- carry out a POWER ON.  
- replace the component involved.  
See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

**Remedy:**

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

**F31886 (N, A) Encoder 1 DRIVE-CLiQ (CU): Error when sending DRIVE-CLiQ data**

**Message value:** Component number: %1, fault cause: %2  
**Message class:** Internal (DRIVE-CLiQ) communication error (12)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** ENCODER (IASC/DCBRK, NONE)  
**Acknowledge:** IMMEDIATELY  
**Cause:** A DRIVE-CLiQ communication error has occurred from the Sensor Module (encoder 1) involved to the Control Unit.  
Data were not able to be sent.  
Fault cause:  
65 (= 41 hex):  
Telegram type does not match send list.  
Note regarding the message value:  
The individual information is coded as follows in the message value (r0949/r2124):  
0000yyxx hex: yy = component number, xx = error cause  
**Remedy:**  
- carry out a POWER ON.  
- check whether the firmware version of the encoder (r0148) matches the firmware version of Control Unit (r0018).  
Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

**F31887 (N, A) Encoder 1 DRIVE-CLiQ (CU): Component fault**

**Message value:** Component number: %1, fault cause: %2  
**Message class:** Internal (DRIVE-CLiQ) communication error (12)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** ENCODER (IASC/DCBRK, NONE)  
**Acknowledge:** IMMEDIATELY  
**Cause:** Fault detected on the DRIVE-CLiQ component involved (Sensor Module for encoder 1). Faulty hardware cannot be excluded.  
Fault cause:  
32 (= 20 hex):  
Error in the telegram header.  
35 (= 23 hex):  
Receive error: The telegram buffer memory contains an error.

	<p>66 (= 42 hex): Send error: The telegram buffer memory contains an error.</p> <p>67 (= 43 hex): Send error: The telegram buffer memory contains an error.</p> <p>96 (= 60 hex): Response received too late during runtime measurement.</p> <p>97 (= 61 hex): Time taken to exchange characteristic data too long.</p> <p>Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).</li> <li>- check the electrical cabinet design and cable routing for EMC compliance</li> <li>- if required, use another DRIVE-CLiQ socket (p9904).</li> <li>- replace the component involved.</li> </ul>
Reaction upon N:	NONE
Acknowled. upon N:	NONE
Reaction upon A:	NONE
Acknowled. upon A:	NONE
<b>F31895 (N, A)</b>	<b>Encoder 1 DRIVE-CLiQ (CU): Alternating cyclic data transfer error</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>A DRIVE-CLiQ communication error has occurred from the Sensor Module (encoder 1) involved to the Control Unit.</p> <p>Fault cause:</p> <p>11 (= 0B hex): Synchronization error during alternating cyclic data transfer.</p> <p>Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause</p>
<b>Remedy:</b>	<p>Carry out a POWER ON.</p> <p>See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)</p>
Reaction upon N:	NONE
Acknowled. upon N:	NONE
Reaction upon A:	NONE
Acknowled. upon A:	NONE
<b>F31896 (N, A)</b>	<b>Encoder 1 DRIVE-CLiQ (CU): Inconsistent component properties</b>
<b>Message value:</b>	Component number: %1
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2 (ENCODER, IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>The properties of the DRIVE-CLiQ component (Sensor Module for encoder 1), specified by the fault value, have changed in an incompatible fashion with respect to the properties when booted. One cause can be, e.g. that a DRIVE-CLiQ cable or DRIVE-CLiQ component has been replaced.</p> <p>Fault value (r0949, interpret decimal): Component number.</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- carry out a POWER ON.</li> <li>- when a component is replaced, the same component type and if possible the same firmware version should be used.</li> <li>- when a cable is replaced, only cables whose length is the same as or as close as possible to the length of the original cables should be used (ensure compliance with the maximum cable length).</li> </ul>

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

#### **F31899 (N, A) Encoder 1: Unknown fault**

**Message value:** New message: %1  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)  
**Acknowledge:** IMMEDIATELY (POWER ON)  
**Cause:** A fault occurred on the Sensor Module for encoder 1 that cannot be interpreted by the Control Unit firmware.  
This can occur if the firmware on this component is more recent than the firmware on the Control Unit.  
Fault value (r0949, interpret decimal):  
Fault number.  
Note:  
If required, the significance of this new fault can be read about in a more recent description of the Control Unit.  
See also: p0491 (Motor encoder fault response ENCODER)  
**Remedy:** - replace the firmware on the Sensor Module by an older firmware version (r0148).  
- upgrade the firmware on the Control Unit (r0018).

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

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#### **A31902 (F, N) Encoder 1: SPI-BUS error occurred**

**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** Error when operating the internal SPI bus.  
Fault value (r0949, interpret hexadecimal):  
Only for internal Siemens troubleshooting.  
**Remedy:** - replace the Sensor Module.  
- if required, upgrade the firmware in the Sensor Module.  
- contact the Hotline.

Reaction upon F: NONE (ENCODER, IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)  
Acknowl. upon F: IMMEDIATELY  
Reaction upon N: NONE  
Acknowl. upon N: NONE

---

#### **A31903 (F, N) Encoder 1: I2C-BUS error occurred**

**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** Error when operating the internal I2C bus.  
Fault value (r0949, interpret hexadecimal):  
Only for internal Siemens troubleshooting.  
**Remedy:** - replace the Sensor Module.  
- if required, upgrade the firmware in the Sensor Module.  
- contact the Hotline.

## 4 Faults and alarms

### 4.2 List of faults and alarms

Reaction upon F:	NONE (ENCODER, IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE

<b>F31905 (N, A)</b>	<b>Encoder 1: Parameterization error</b>
<b>Message value:</b>	Parameter: %1, supplementary information: %2
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>A parameter of encoder 1 was detected as being incorrect.</p> <p>It is possible that the parameterized encoder type does not match the connected encoder.</p> <p>The parameter involved can be determined as follows:</p> <ul style="list-style-type: none"><li>- determine the parameter number using the fault value (r0949).</li><li>- determine the parameter index (p0187).</li></ul> <p>Fault value (r0949, interpret decimal):</p> <p>yyyyxxxx dec: yyyy = supplementary information, xxxx = parameter</p> <p>xxxx = 421:</p> <p>For an EnDat/SSI encoder, the absolute position in the protocol must be less than or equal to 30 bits.</p> <p>yyyy = 0:</p> <p>No information available.</p> <p>yyyy = 1:</p> <p>The component does not support HTL level (p0405.1 = 0) combined with track monitoring A/B &lt;&gt; -A/B (p0405.2 = 1).</p> <p>yyyy = 2:</p> <p>A code number for an identified encoder has been entered into p0400, however, no identification was carried out. Please start a new encoder identification.</p> <p>yyyy = 3:</p> <p>A code number for an identified encoder has been entered into p0400, however, no identification was carried out. Please select a listed encoder in p0400 with a code number &lt; 10000.</p> <p>yyyy = 4:</p> <p>This component does not support SSI encoders (p0404.9 = 1) without track A/B.</p> <p>yyyy = 5:</p> <p>For SQW encoder, value in p4686 greater than in p0425.</p> <p>yyyy = 6:</p> <p>DRIVE-CLiQ encoder cannot be used with this firmware version.</p> <p>yyyy = 7:</p> <p>For an SQW encoder, the Xact1 correction (p0437.2) is only permitted with equidistant zero marks.</p> <p>yyyy = 8:</p> <p>The motor pole pair width is not supported by the linear scale being used.</p> <p>yyyy = 9:</p> <p>The length of the position in the EnDat protocol may be a maximum of 32 bits.</p> <p>yyyy = 10:</p> <p>The connected encoder is not supported.</p> <p>yyyy = 11:</p> <p>The hardware does not support track monitoring.</p> <p>See also: p0491 (Motor encoder fault response ENCODER)</p>
<b>Remedy:</b>	<ul style="list-style-type: none"><li>- check whether the connected encoder type matches the encoder that has been parameterized.</li><li>- correct the parameter specified by the fault value (r0949) and p0187.</li><li>- re parameter number = 314:</li><li>- check the pole pair number and measuring gear ratio. The quotient of the "pole pair number" divided by the "measuring gear ratio" must be less than or equal to 1000 ((r0313 * p0433) / p0432 &lt;= 1000).</li></ul>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

<b>F31912</b>	<b>Encoder 1: Device combination is not permissible</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	<p>The selected device combination is not supported.</p> <p>Fault value (r0949, interpret decimal):</p> <p>1003: The connected measuring unit cannot be operated with the EnDat 2.2 converter. For instance, the measuring unit has a pulse number/resolution of 2^n.</p> <p>1005: The type of measuring unit (incremental) is not supported by the EnDat 2.2 converter.</p> <p>1006: The maximum duration (31.25 µs) of the EnDat transfer was exceeded.</p> <p>2001: The set combination of current controller cycle, DP cycle and Safety cycle is not supported by the EnDat 2.2 converter.</p> <p>2002: The resolution of the linear measuring unit does not match the pole pair width of the linear motor</p>
<b>Remedy:</b>	<p>Re fault value = 1003, 1005, 1006: - Use a measuring unit that is permissible.</p> <p>For fault value = 2001: - Set a permissible cycle combination (if required, use standard settings).</p> <p>For fault value = 2002: - Use a measuring unit with a lower resolution (p0422).</p>
<b>A31915 (F, N)</b>	<b>Encoder 1: Configuration error</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The configuration for encoder 1 is incorrect.</p> <p>Alarm value (r2124, interpret decimal):</p> <p>1: Re-parameterization between fault/alarm is not permissible.</p> <p>419: When the fine resolution Gx_XIST2 is configured, the encoder identifies a maximum possible absolute position actual value (r0483) that can no longer be represented within 32 bits.</p>
<b>Remedy:</b>	<p>Re alarm value = 1: No re-parameterization between fault/alarm.</p> <p>Re alarm value = 419: Reduce the fine resolution (p0419) or deactivate the monitoring (p0437.25), if the complete multiturn range is not required.</p>
Reaction upon F:	NONE (ENCODER, IASC/DCBRK)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE

#### F31916 (N, A)

#### Encoder 1: Parameterization fault

<b>Message value:</b>	Parameter: %1, supplementary information: %2
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>A parameter of encoder 1 was detected as being incorrect.</p> <p>It is possible that the parameterized encoder type does not match the connected encoder.</p> <p>The parameter involved can be determined as follows:</p> <ul style="list-style-type: none"> <li>- determine the parameter number using the fault value (r0949).</li> <li>- determine the parameter index (p0187).</li> </ul> <p>Fault value (r0949, interpret decimal):</p> <p>Parameter number.</p> <p>See also: p0491 (Motor encoder fault response ENCODER)</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check whether the connected encoder type matches the encoder that has been parameterized.</li> <li>- correct the parameter specified by the fault value (r0949) and p0187.</li> </ul>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

#### A31920 (F, N)

#### Encoder 1: Temperature sensor fault

<b>Message value:</b>	Fault cause: %1, channel number: %2
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>When evaluating the temperature sensor, an error occurred.</p> <p>Fault cause:</p> <p>1 (= 01 hex):</p> <p>Wire breakage or sensor not connected (KTY: R &gt; 1630 Ohm).</p> <p>2 (= 02 hex):</p> <p>Measured resistance too low (PTC: R &lt; 20 Ohm, KTY: R &lt; 50 Ohm).</p> <p>Additional values:</p> <p>Only for internal Siemens troubleshooting.</p> <p>Note regarding the message value:</p> <p>The individual information is coded as follows in the message value (r0949/r2124):</p> <p>0000yyxx hex: yy = channel number, xx = error cause</p> <p>See also: p0491 (Motor encoder fault response ENCODER)</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check that the encoder cable is the correct type and is correctly connected.</li> <li>- check the temperature sensor selection in p0600 to p0603.</li> <li>- replace the Sensor Module (hardware defect or incorrect calibration data).</li> </ul>
Reaction upon F:	NONE (ENCODER, IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE

<b>A31930 (N)</b>	<b>Encoder 1: Data logger has saved data</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>For the activated function "Data logger" (p0437.0 = 1) a fault has occurred with the Sensor Module. This alarm indicates that the diagnostics data corresponding to the fault was saved on the memory card.</p> <p>The diagnostics data is saved in the following folder:</p> <p>/USER/SINAMICS/DATA/SMTRC00.BIN</p> <p>...</p> <p>/USER/SINAMICS/DATA/SMTRC07.BIN</p> <p>/USER/SINAMICS/DATA/SMTRCIDX.TXT</p> <p>The following information is contained in the TXT file:</p> <ul style="list-style-type: none"> <li>- Display of the last written BIN file.</li> <li>- Number of write operations that are still possible (from 10000 downwards).</li> </ul> <p>Note:</p> <p>Only Siemens can evaluate the BIN files.</p>
<b>Remedy:</b>	<p>Not necessary.</p> <p>The alarm disappears automatically.</p> <p>The data logger is ready to record the next fault case.</p>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>A31940 (F, N)</b>	<b>Encoder 1: Spindle sensor S1 voltage incorrect</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Application / technological function faulted (17)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The voltage of analog sensor S1 is outside the permissible range.</p> <p>Fault value (r0949, interpret decimal):</p> <p>Signal level from sensor S1.</p> <p>Note:</p> <p>A signal level of 500 mV corresponds to the numerical value 500 dec.</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- Check the clamped tool.</li> <li>- Check the tolerance and if required, adapt (p5040).</li> <li>- Check the thresholds and if required, adapt (p5041).</li> <li>- Check analog sensor S1 and connections.</li> </ul>
Reaction upon F:	NONE (ENCODER, IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>F31950</b>	<b>Encoder 1: Internal software error</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	ENCODER (OFF2)
<b>Acknowledge:</b>	POWER ON
<b>Cause:</b>	<p>An internal software error has occurred.</p> <p>Fault value (r0949, interpret decimal):</p> <p>The fault value contains information regarding the fault source.</p> <p>Only for internal Siemens troubleshooting.</p>

**Remedy:**

- If necessary, upgrade the firmware in the Sensor Module to a later version.
- contact the Hotline.

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<b>A31999 (F, N)</b>	<b>Encoder 1: Unknown alarm</b>
<b>Message value:</b>	New message: %1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>A alarm has occurred on the Sensor Module for encoder 1 that cannot be interpreted by the Control Unit firmware. This can occur if the firmware on this component is more recent than the firmware on the Control Unit.</p> <p>Alarm value (r2124, interpret decimal):</p> <p>Alarm number.</p> <p>Note:</p> <p>If required, the significance of this new alarm can be read about in a more recent description of the Control Unit.</p> <p>See also: p0491 (Motor encoder fault response ENCODER)</p>
<b>Remedy:</b>	<ul style="list-style-type: none"><li>- replace the firmware on the Sensor Module by an older firmware version (r0148).</li><li>- upgrade the firmware on the Control Unit (r0018).</li></ul>
Reaction upon F:	NONE (ENCODER, IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE

---

<b>F32100 (N, A)</b>	<b>Encoder 2: Zero mark distance error</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	<p>The measured zero mark distance does not correspond to the parameterized zero mark distance.</p> <p>For distance-coded encoders, the zero mark distance is determined from zero marks detected pairs. This means that if a zero mark is missing, depending on the pair generation, this cannot result in a fault and also has no effect in the system.</p> <p>The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).</p> <p>Fault value (r0949, interpret decimal):</p> <p>Last measured zero mark distance in increments (4 increments = 1 encoder pulse).</p> <p>The sign designates the direction of motion when detecting the zero mark distance.</p>
<b>Remedy:</b>	<ul style="list-style-type: none"><li>- check that the encoder cables are routed in compliance with EMC.</li><li>- check the plug connections.</li><li>- check the encoder type (encoder with equidistant zero marks).</li><li>- adapt the parameter for the distance between zero marks (p0424, p0425).</li><li>- if message output above speed threshold, reduce filter time if necessary (p0438).</li><li>- replace the encoder or encoder cable.</li></ul>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

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<b>F32101 (N, A)</b>	<b>Encoder 2: Zero mark failed</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	<p>The 1.5 x parameterized zero mark distance was exceeded.</p> <p>The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).</p>



Fault value (r0949, interpret decimal):

Number of increments after POWER ON or since the last zero mark that was detected (4 increments = 1 encoder pulse).

**Remedy:**

- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the clearance between zero marks (p0425).
- if message output above speed threshold, reduce filter time if necessary (p0438).
- when p0437.1 is active, check p4686.
- replace the encoder or encoder cable.

Reaction upon N: NONE

Acknowled. upon N: NONE

Reaction upon A: NONE

Acknowled. upon A: NONE

**F32103 (N, A)**

**Encoder 2: Amplitude error track R**

**Message value:**

R track: %1

**Message class:**

Position/speed actual value incorrect or not available (11)

**Drive object:**

DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:**

OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)

**Acknowledge:**

IMMEDIATELY

**Cause:**

The amplitude of the reference track signal (track R) does not lie within the tolerance bandwidth for encoder 2. The fault can be initiated when the unipolar voltage level is exceeded (RP/RN) or if the differential amplitude is undershot.

Fault value (r0949, interpret hexadecimal):

yyyyxxxx hex: yyyy = 0, xxxx = Signal level, track R (16 bits with sign)

The response thresholds of the unipolar signal levels of the encoder are between < 1400 mV and > 3500 mV.

The response threshold for the differential signal level of the encoder is < -1600 mV.

A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.

Note:

The analog value of the amplitude error is not measured at the same time with the hardware fault output by the Sensor Module.

The fault value can only be represented between -32768 ... 32767 dec (-770 ... 770 mV).

The signal level is not evaluated unless the following conditions are satisfied:

- Sensor Module properties available (r0459.31 = 1).
- Monitoring active (p0437.31 = 1).

**Remedy:**

- check the speed range; frequency characteristic (amplitude characteristic) of the measuring equipment might not be sufficient for the speed range
- check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections and contacts of the encoder cable.
- check the encoder type (encoder with zero marks).
- check whether the zero mark is connected and the signal cables RP and RN have been connected correctly.
- replace the encoder cable.
- if the coding disk is soiled or the lighting aged, replace the encoder.

Reaction upon N: NONE

Acknowled. upon N: NONE

Reaction upon A: NONE

Acknowled. upon A: NONE

**F32110 (N, A)**

**Encoder 2: Serial communications error**

**Message value:**

Fault cause: %1 bin

**Message class:**

Position/speed actual value incorrect or not available (11)

**Drive object:**

DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:**

OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)

**Acknowledge:**

PULSE INHIBIT

**Cause:**

Serial communication protocol transfer error between the encoder and evaluation module.

Fault value (r0949, interpret binary):

Bit 0: Alarm bit in the position protocol.

Bit 1: Incorrect quiescent level on the data line.

Bit 2: Encoder does not respond (does not supply a start bit within 50 ms).

Bit 3: CRC error: The checksum in the protocol from the encoder does not match the data.

Bit 4: Encoder acknowledgement error: The encoder incorrectly understood the task (request) or cannot execute it.

Bit 5: Internal error in the serial driver: An illegal mode command was requested.

Bit 6: Timeout when cyclically reading.

Bit 7: Timeout for the register communication.

Bit 8: Protocol is too long (e.g. > 64 bits).

Bit 9: Receive buffer overflow.

Bit 10: Frame error when reading twice.

Bit 11: Parity error.

Bit 12: Data line signal level error during the monoflop time.

Bit 13: Data line incorrect.

Bit 14: Fault for the register communication.

Bit 15: Internal communication error.

Note:

For an EnDat 2.2 encoder, the significance of the fault value for F3x135 (x = 1, 2, 3) is described.

#### Remedy:

Re fault value, bit 0 = 1:

- Enc defect F31111 may provide additional details.

Re fault value, bit 1 = 1:

- Incorrect encoder type / replace the encoder or encoder cable.

Re fault value, bit 2 = 1:

- Incorrect encoder type / replace the encoder or encoder cable.

Re fault value, bit 3 = 1:

- EMC / connect the cable shield, replace the encoder or encoder cable.

Re fault value, bit 4 = 1:

- EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.

Re fault value, bit 5 = 1:

- EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.

Re fault value, bit 6 = 1:

- Update Sensor Module firmware.

Re fault value, bit 7 = 1:

- Incorrect encoder type / replace the encoder or encoder cable.

Re fault value, bit 8 = 1:

- Check parameterization (p0429.2).

Re fault value, bit 9 = 1:

- EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.

Re fault value, bit 10 = 1:

- Check parameterization (p0429.2, p0449).

Re fault value, bit 11 = 1:

- Check parameterization (p0436).

Re fault value, bit 12 = 1:

- Check parameterization (p0429.6).

Re fault value, bit 13 = 1:

- Check data line.

Re fault value, bit 14 = 1:

- Incorrect encoder type / replace the encoder or encoder cable.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

<b>F32111 (N, A)</b>	<b>Encoder 2: Absolute encoder internal fault</b>
<b>Message value:</b>	Fault cause: %1 bin, additional information: %2
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	<p>The absolute encoder fault word supplies fault bits that have been set.</p> <p>Fault value (r0949, interpret binary):</p> <p>yyyyxxxx hex: yyyy = supplementary information, xxxx = fault cause</p> <p>yyyy = 0:</p> <p>Bit 0: Lighting system failed.</p> <p>Bit 1: Signal amplitude too low.</p> <p>Bit 2: Position value incorrect.</p> <p>Bit 3: Encoder power supply overvoltage condition.</p> <p>Bit 4: Encoder power supply undervoltage condition.</p> <p>Bit 5: Encoder power supply overcurrent condition.</p> <p>Bit 6: The battery must be changed.</p> <p>yyyy = 1:</p> <p>Bit 0: Signal amplitude outside the control range.</p> <p>Bit 1: Error multiturn interface</p> <p>Bit 2: Internal data error (singleturn/multiturn not with single steps).</p> <p>Bit 3: Error EEPROM interface.</p> <p>Bit 4: SAR converter error.</p> <p>Bit 5: Fault for the register data transfer.</p> <p>Bit 6: Internal error identified at the error pin (nErr).</p> <p>Bit 7: Temperature threshold exceeded or fallen below.</p>
<b>Remedy:</b>	<p>For yyyy = 0:</p> <p>Re fault value, bit 0 = 1:</p> <p>Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.</p> <p>Re fault value, bit 1 = 1:</p> <p>Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.</p> <p>Re fault value, bit 2 = 1:</p> <p>Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.</p> <p>Re fault value, bit 3 = 1:</p> <p>5 V power supply voltage fault.</p> <p>When using an SMC: Check the plug-in cable between the encoder and SMC or replace the SMC.</p> <p>When a motor encoder with a direct DRIVE-CLiQ connection is used: Replace the motor.</p> <p>Re fault value, bit 4 = 1:</p> <p>5 V power supply voltage fault.</p> <p>When using an SMC: Check the plug-in cable between the encoder and SMC or replace the SMC.</p> <p>When using a motor with DRIVE-CLiQ: Replace the motor.</p> <p>Re fault value, bit 5 = 1:</p> <p>Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.</p> <p>Re fault value, bit 6 = 1:</p> <p>The battery must be changed (only for encoders with battery back-up).</p> <p>For yyyy = 1:</p> <p>Encoder is defective. Replace encoder.</p>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

<b>F32112 (N, A)</b>	<b>Encoder 2: Error bit set in the serial protocol</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	The encoder sends a set error bit via the serial protocol. Fault value (r0949, interpret binary): Bit 0: Fault bit in the position protocol.
<b>Remedy:</b>	For fault value, bit 0 = 1: In the case of an EnDat encoder, F31111 may provide further details.
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE
<b>F32115 (N, A)</b>	<b>Encoder 2: Amplitude error track A or B (<math>A^2 + B^2</math>)</b>
<b>Message value:</b>	A track: %1, B-track: %2
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	The amplitude (root of $A^2 + B^2$ ) for encoder 2 exceeds the permissible tolerance. Fault value (r0949, interpret hexadecimal): yyyyxxxx hex: yyyy = Signal level, track B (16 bits with sign). xxxx = Signal level, track A (16 bits with sign). The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %). The response thresholds are < 170 mV (observe the frequency response of the encoder) and > 750 mV. A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec. Note for Sensor Modules for resolvers (e.g. SMC10): The nominal signal level is at 2900 mV (2.0 Vrms). The response thresholds are < 1070 mV and > 3582 mV. A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec. Note: The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.
<b>Remedy:</b>	- check that the encoder cables and shielding are routed in compliance with EMC. - check the plug connections. - replace the encoder or encoder cable. - check the Sensor Module (e.g. contacts). The following applies to measuring systems without their own bearing system: - adjust the scanning head and check the bearing system of the measuring wheel. The following applies for measuring systems with their own bearing system: - ensure that the encoder housing is not subject to any axial force.
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

<b>F32116 (N, A)</b>	<b>Encoder 2: Amplitude error monitoring track A + B</b>
<b>Message value:</b>	A track: %1, B-track: %2
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>The amplitude of the rectified encoder signals A and B and the amplitude from the roots of <math>A^2 + B^2</math> for encoder 2 are not within the tolerance bandwidth.</p> <p>Fault value (r0949, interpret hexadecimal):</p> <p>yyyyxxxx hex:</p> <p>yyyy = Signal level, track B (16 bits with sign).</p> <p>xxxx = Signal level, track A (16 bits with sign).</p> <p>The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).</p> <p>The response thresholds are &lt; 130 mV (observe the frequency response of the encoder) and &gt; 955 mV.</p> <p>A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.</p> <p>Note:</p> <p>The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check that the encoder cables and shielding are routed in compliance with EMC.</li> <li>- check the plug connections.</li> <li>- replace the encoder or encoder cable.</li> <li>- check the Sensor Module (e.g. contacts).</li> </ul>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE
<b>F32117 (N, A)</b>	<b>Encoder 2: Inversion error signals A/B/R</b>
<b>Message value:</b>	Fault cause: %1 bin
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>For a square-wave encoder (bipolar, double ended) signals A*, B* and R* are not inverted with respect to signals A, B and R.</p> <p>Fault value (r0949, interpret binary):</p> <p>Bits 0 ... 15: Only for internal Siemens troubleshooting.</p> <p>Bit 16: Error track A.</p> <p>Bit 17: Error track B.</p> <p>Bit 18: Error track R.</p> <p>Note:</p> <p>For SMC30 (order no.. 6SL3055-0AA00-5CA0 and 6SL3055-0AA00-5CA1 only), CUA32, and CU310, the following applies:</p> <p>A square-wave encoder without track R is used and track monitoring (p0405.2 = 1) is activated.</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- Check the encoder/cable.</li> <li>- Does the encoder supply signals and the associated inverted signals?</li> </ul> <p>Note:</p> <p>For SMC30 (order no. 6SL3055-0AA00-5CA0 and 6SL3055-0AA00-5CA1 only), the following applies:</p> <ul style="list-style-type: none"> <li>- check the setting of p0405 (p0405.2 = 1 is only possible if the encoder is connected at X520).</li> </ul> <p>For a square-wave encoder without track R, the following jumpers must be set for the connection at X520 (SMC30) or X23 (CUA32, CU310):</p> <ul style="list-style-type: none"> <li>- pin 10 (reference signal R) &lt;--&gt; pin 7 (encoder power supply, ground)</li> <li>- pin 11 (reference signal R inverted) &lt;--&gt; pin 4 (encoder power supply)</li> </ul>
Reaction upon N:	NONE
Acknowl. upon N:	NONE

## 4 Faults and alarms

### 4.2 List of faults and alarms

Reaction upon A: NONE  
Acknowl. upon A: NONE

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#### **F32118 (N, A) Encoder 2: Speed difference outside the tolerance range**

**Message value:** %1  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)  
**Acknowledge:** PULSE INHIBIT  
**Cause:** For an HTL/TTL encoder, the speed difference has exceeded the value in p0492 over several sampling cycles.  
The change to the averaged speed actual value - if applicable - is monitored in the current controller sampling time.  
Fault value (r0949, interpret decimal):  
Only for internal Siemens troubleshooting.  
See also: p0492 (Square-wave encoder maximum speed difference per sampling cycle)  
**Remedy:**  
- check the tachometer feeder cable for interruptions.  
- check the grounding of the tachometer shielding.  
- if required, increase the maximum speed difference per sampling cycle (p0492).

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

#### **F32120 (N, A) Encoder 2: Power supply voltage fault**

**Message value:** Fault cause: %1 bin  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)  
**Acknowledge:** PULSE INHIBIT  
**Cause:** A power supply fault was detected for encoder 2.  
Fault value (r0949, interpret binary):  
Bit 0: Undervoltage condition on the sense line.  
Bit 1: Overcurrent condition for the encoder power supply.  
Bit 2: Overcurrent condition for encoder power supply on cable resolver excitation negative.  
Bit 3: Overcurrent condition for encoder power supply on cable resolver excitation positive.  
Bit 4: The 24 V power supply through the Power Module (PM) is overloaded.  
Bit 5: Overcurrent at the EnDat connection of the converter.  
Bit 6: Overvoltage at the EnDat connection of the converter.  
Bit 7: Hardware fault at the EnDat connection of the converter.  
**Note:**  
If the encoder cables 6FX2002-2EQ00-.... and 6FX2002-2CH00-.... are interchanged, this can result in the encoder being destroyed because the pins of the operating voltage are reversed.  
**Remedy:**  
Re fault value, bit 0 = 1:  
- correct encoder cable connected?  
- check the plug connections of the encoder cable.  
- SMC30: Check the parameterization (p0404.22).  
Re fault value, bit 1 = 1:  
- correct encoder cable connected?  
- replace the encoder or encoder cable.  
Re fault value, bit 2 = 1:  
- correct encoder cable connected?  
- replace the encoder or encoder cable.  
Re fault value, bit 3 = 1:  
- correct encoder cable connected?  
- replace the encoder or encoder cable.

Re fault value, bit 5 = 1:  
- Measuring unit correctly connected at the converter?  
- Replace the measuring unit or the cable to the measuring unit.  
Re fault value, bit 6, 7 = 1:  
- Replace the defective EnDat 2.2 converter.

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

**F32121 (N, A) Encoder 2: Coarse position error**

**Message value:** -  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF1 (NONE, OFF2, OFF3)  
**Acknowledge:** PULSE INHIBIT  
**Cause:** For the actual value sensing, an error was detected on the module.  
As a result of this error, it must be assumed that the actual value sensing supplies an incorrect coarse position.  
**Remedy:** Replace the motor with DRIVE-CLiQ or the appropriate Sensor Module.  
Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

**F32122 Encoder 2: Internal power supply voltage faulty**

**Message value:** %1  
**Message class:** Supply voltage fault (undervoltage) (3)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF1  
**Acknowledge:** IMMEDIATELY  
**Cause:** Fault in internal reference voltage of ASICs for encoder 2.  
Fault value (r0949, interpret decimal):  
1: Reference voltage error.  
2: Internal undervoltage.  
3: Internal overvoltage.  
**Remedy:** Replace the motor with DRIVE-CLiQ or the appropriate Sensor Module.

---

**F32123 (N, A) Encoder 2: Signal level A/B unipolar outside tolerance**

**Message value:** Fault cause: %1 bin  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)  
**Acknowledge:** IMMEDIATELY  
**Cause:** The unipolar level (AP/AN or BP/BN) for encoder 2 is outside the permissible tolerance.  
Fault value (r0949, interpret binary):  
Bit 0 = 1: Either AP or AN outside the tolerance.  
Bit 16 = 1: Either BP or BN outside the tolerance.  
The unipolar nominal signal level of the encoder must lie in the range 2500 mV +/- 500 mV.  
The response thresholds are < 1700 mV and > 3300 mV.  
**Note:**  
The signal level is not evaluated unless the following conditions are satisfied:  
- Sensor Module properties available (r0459.31 = 1).  
- Monitoring active (p0437.31 = 1).

**Remedy:**

- make sure that the encoder cables and shielding are installed in an EMC-compliant manner.
- check the plug connections and contacts of the encoder cable.
- check the short-circuit of a signal cable with mass or the operating voltage.
- replace the encoder cable.

Reaction upon N: NONE

Acknowled. upon N: NONE

Reaction upon A: NONE

Acknowled. upon A: NONE

---

#### **F32125 (N, A) Encoder 2: Amplitude error track A or B overcontrolled**

**Message value:** A track: %1, B-track: %2

**Message class:** Position/speed actual value incorrect or not available (11)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)

**Acknowledge:** PULSE INHIBIT

**Cause:** The amplitude of track A or B for encoder 2 exceeds the permissible tolerance band.

Fault value (r0949, interpret hexadecimal):

yyyyxxxx hex:

yyyy = Signal level, track B (16 bits with sign).

xxxx = Signal level, track A (16 bits with sign).

The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).

The response threshold is > 750 mV. This fault also occurs if the A/D converter is overcontrolled.

A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.

Note for Sensor Modules for resolvers (e.g. SMC10):

The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is > 3582 mV.

A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec.

Note:

The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.

**Remedy:**

- check that the encoder cables and shielding are routed in compliance with EMC.
- replace the encoder or encoder cable.

Reaction upon N: NONE

Acknowled. upon N: NONE

Reaction upon A: NONE

Acknowled. upon A: NONE

---

#### **F32126 (N, A) Encoder 2: Amplitude AB too high**

**Message value:** Amplitude: %1, Angle: %2

**Message class:** Position/speed actual value incorrect or not available (11)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)

**Acknowledge:** PULSE INHIBIT

**Cause:** The amplitude (root of  $A^2 + B^2$  or  $|A| + |B|$ ) for encoder 2 exceeds the permissible tolerance.

Fault value (r0949, interpret hexadecimal):

yyyyxxxx hex:

yyyy = Angle

xxxx = Amplitude, i.e. root from  $A^2 + B^2$  (16 bits without sign)

The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).

The response threshold for  $(|A| + |B|)$  is > 1120 mV or the root of  $(A^2 + B^2)$  > 955 mV.

A signal level of 500 mV peak value corresponds to the numerical value of 299A hex = 10650 dec.

The angle 0 ... FFFF hex corresponds to 0 ... 360 degrees of the fine position. Zero degrees is present at the negative zero crossover of track B.

Note:

The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.



**Remedy:**

- check that the encoder cables and shielding are routed in compliance with EMC.
- replace the encoder or encoder cable.

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

**F32129 (N, A) Encoder 2: Position difference hall sensor/track C/D and A/B too large**

**Message value:** %1  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)  
**Acknowledge:** PULSE INHIBIT  
**Cause:** The error for track C/D is greater than  $\pm 15^\circ$  mechanical or  $\pm 60^\circ$  electrical or the error for the Hall signals is greater than  $\pm 60^\circ$  electrical.  
 One period of track C/D corresponds to  $360^\circ$  mechanical.  
 One period of the Hall signal corresponds to  $360^\circ$  electrical.  
 The monitoring responds if, for example, Hall sensors are connected as equivalent for the C/D tracks with the incorrect rotational sense or supply values that are not accurate enough.  
 After the fine synchronization using one reference mark or 2 reference marks for distance-coded encoders, this fault is no longer initiated, but instead, Alarm A32429.  
 Fault value (r0949, interpret decimal):  
 For track C/D, the following applies:  
 Measured deviation as mechanical angle (16 bits with sign, 182 dec corresponds to  $1^\circ$ ).  
 For Hall signals, the following applies:  
 Measured deviation as electrical angle (16 bits with sign, 182 dec corresponds to  $1^\circ$ ).  
**Remedy:**

- track C or D not connected.
- correct the direction of rotation of the Hall sensor possibly connected as equivalent for track C/D.
- check that the encoder cables are routed in compliance with EMC.
- check the adjustment of the Hall sensor.

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

**F32130 (N, A) Encoder 2: Zero mark and position error from the coarse synchronization**

**Message value:** Angular deviation, electrical: %1, angle, mechanical: %2  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)  
**Acknowledge:** PULSE INHIBIT  
**Cause:** After initializing the pole position using track C/D, Hall signals or pole position identification routine, the zero mark was detected outside the permissible range. For distance-coded encoders, the test is carried out after passing 2 zero marks. Fine synchronization was not carried out.  
 When initializing via track C/D (p0404) then it is checked whether the zero mark occurs in an angular range of  $\pm 18^\circ$  mechanical.  
 When initializing via Hall sensors (p0404) or pole position identification (p1982) it is checked whether the zero mark occurs in an angular range of  $\pm 60^\circ$  electrical.  
 Fault value (r0949, interpret hexadecimal):  
 yyyxxxx hex  
 yyyy: Determined mechanical zero mark position (can only be used for track C/D).  
 xxxx: Deviation of the zero mark from the expected position as electrical angle.  
 Scaling: 32768 dec =  $180^\circ$

## 4 Faults and alarms

### 4.2 List of faults and alarms

- Remedy:**
- check that the encoder cables are routed in compliance with EMC.
  - check the plug connections.
  - if the Hall sensor is used as an equivalent for track C/D, check the connection.
  - Check the connection of track C or D.
  - replace the encoder or encoder cable.

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

#### **F32131 (N, A) Encoder 2: Deviation position incremental/absolute too large**

**Message value:** %1  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)  
**Acknowledge:** PULSE INHIBIT  
**Cause:** Absolute encoder:  
When cyclically reading the absolute position, an excessively high difference to the incremental position was detected. The absolute position that was read is rejected.  
Limit value for the deviation:  
- EnDat encoder: Is supplied from the encoder and is a minimum of 2 quadrants (e.g. EQI 1325 > 2 quadrants, EQN 1325 > 50 quadrants).  
- other encoders: 15 pulses = 60 quadrants.  
Incremental encoder:  
When the zero pulse is passed, a deviation in the incremental position was detected.  
For equidistant zero marks, the following applies:  
- The first zero mark passed supplies the reference point for all subsequent checks. The other zero marks must have n times the distance referred to the first zero mark.  
For distance-coded zero marks, the following applies:  
- the first zero mark pair supplies the reference point for all subsequent checks. The other zero mark pairs must have the expected distance to the first zero mark pair.  
Fault value (r0949, interpret decimal):  
Deviation in quadrants (1 pulse = 4 quadrants).

- Remedy:**
- check that the encoder cables are routed in compliance with EMC.
  - check the plug connections.
  - replace the encoder or encoder cable.
  - check whether the coding disk is dirty or there are strong ambient magnetic fields.
  - adapt the parameter for the clearance between zero marks (p0425).
  - if message output above speed threshold, reduce filter time if necessary (p0438).

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

#### **F32135 Encoder 2: Fault when determining the position**

**Message value:** Fault cause: %1 bin  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)  
**Acknowledge:** PULSE INHIBIT  
**Cause:** The encoder supplies status information bit by bit in an internal status/fault word.  
Some of these bits cause this fault to be triggered. Other bits are status displays. The status/fault word is displayed in the fault value.  
Note regarding the bit designation:  
The first designation is valid for DRIVE-CLiQ encoders, the second for EnDat 2.2 encoders.

Fault value (r0949, interpret binary):

Bit 0: F1 (safety status display).

Bit 1: F2 (safety status display).

Bit 2: Reserved (lighting).

Bit 3: Reserved (signal amplitude).

Bit 4: Reserved (position value).

Bit 5: Reserved (overvoltage).

Bit 6: Reserved (undervoltage)/hardware fault EnDat supply (--> F3x110, x = 1, 2, 3).

Bit 7: Reserved (overcurrent)/EnDat encoder withdrawn when not in the parked state (--> F3x110, x = 1, 2, 3).

Bit 8: Reserved (battery)/overcurrent EnDat supply (--> F3x110, x = 1, 2, 3).

Bit 9: Reserved/overvoltage EnDat supply (--> F3x110, x = 1, 2, 3).

Bit 11: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).

Bit 12: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).

Bit 13: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).

Bit 14: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).

Bit 15: Internal communication error (--> F3x110, x = 1, 2, 3).

Bit 16: Lighting (--> F3x135, x = 1, 2, 3).

Bit 17: Signal amplitude (--> F3x135, x = 1, 2, 3).

Bit 18: Singleturn position 1 (--> F3x135, x = 1, 2, 3).

Bit 19: Overvoltage (--> F3x135, x = 1, 2, 3).

Bit 20: Undervoltage (--> F3x135, x = 1, 2, 3).

Bit 21: Overcurrent (--> F3x135, x = 1, 2, 3).

Bit 22: Temperature exceeded (--> F3x405, x = 1, 2, 3).

Bit 23: Singleturn position 2 (safety status display).

Bit 24: Singleturn system (--> F3x135, x = 1, 2, 3).

Bit 25: Singleturn power down (--> F3x135, x = 1, 2, 3).

Bit 26: Multiturn position 1 (--> F3x136, x = 1, 2, 3).

Bit 27: Multiturn position 2 (--> F3x136, x = 1, 2, 3).

Bit 28: Multiturn system (--> F3x136, x = 1, 2, 3).

Bit 29: Multiturn power down (--> F3x136, x = 1, 2, 3).

Bit 30: Multiturn overflow/underflow (--> F3x136, x = 1, 2, 3).

Bit 31: Multiturn battery (reserved).

#### Remedy:

- determine the detailed cause of the fault using the fault value.

- replace the encoder if necessary.

Note:

An EnDat 2.2 encoder may only be removed and inserted in the "Park" state.

If an EnDat 2.2 encoder was removed when not in the "Park" state, then after inserting the encoder, a POWER ON (switch-off/on) is necessary to acknowledge the fault.

#### F32136

#### Encoder 2: Error when determining multiturn information

Message value:

Fault cause: %1 bin

Message class:

Position/speed actual value incorrect or not available (11)

Drive object:

DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

Reaction:

OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)

Acknowledge:

PULSE INHIBIT

Cause:

The encoder supplies status information bit by bit in an internal status/fault word.

Some of these bits cause this fault to be triggered. Other bits are status displays. The status/fault word is displayed in the fault value.

Note regarding the bit designation:

The first designation is valid for DRIVE-CLiQ encoders, the second for EnDat 2.2 encoders.

Fault value (r0949, interpret binary):

Bit 0: F1 (safety status display).

Bit 1: F2 (safety status display).

Bit 2: Reserved (lighting).

Bit 3: Reserved (signal amplitude).

Bit 4: Reserved (position value).  
 Bit 5: Reserved (overvoltage).  
 Bit 6: Reserved (undervoltage)/hardware fault EnDat supply (--> F3x110, x = 1, 2, 3).  
 Bit 7: Reserved (overcurrent)/EnDat encoder withdrawn when not in the parked state (--> F3x110, x = 1, 2, 3).  
 Bit 8: Reserved (battery)/overcurrent EnDat supply (--> F3x110, x = 1, 2, 3).  
 Bit 9: Reserved/overvoltage EnDat supply (--> F3x110, x = 1, 2, 3).  
 Bit 11: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).  
 Bit 12: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).  
 Bit 13: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).  
 Bit 14: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).  
 Bit 15: Internal communication error (--> F3x110, x = 1, 2, 3).  
 Bit 16: Lighting (--> F3x135, x = 1, 2, 3).  
 Bit 17: Signal amplitude (--> F3x135, x = 1, 2, 3).  
 Bit 18: Singleturn position 1 (--> F3x135, x = 1, 2, 3).  
 Bit 19: Overvoltage (--> F3x135, x = 1, 2, 3).  
 Bit 20: Undervoltage (--> F3x135, x = 1, 2, 3).  
 Bit 21: Overcurrent (--> F3x135, x = 1, 2, 3).  
 Bit 22: Temperature exceeded (--> F3x405, x = 1, 2, 3).  
 Bit 23: Singleturn position 2 (safety status display).  
 Bit 24: Singleturn system (--> F3x135, x = 1, 2, 3).  
 Bit 25: Singleturn power down (--> F3x135, x = 1, 2, 3).  
 Bit 26: Multiturn position 1 (--> F3x136, x = 1, 2, 3).  
 Bit 27: Multiturn position 2 (--> F3x136, x = 1, 2, 3).  
 Bit 28: Multiturn system (--> F3x136, x = 1, 2, 3).  
 Bit 29: Multiturn power down (--> F3x136, x = 1, 2, 3).  
 Bit 30: Multiturn overflow/underflow (--> F3x136, x = 1, 2, 3).  
 Bit 31: Multiturn battery (reserved).

**Remedy:**  
 - determine the detailed cause of the fault using the fault value.  
 - replace the encoder if necessary.

**Note:**

An EnDat 2.2 encoder may only be removed and inserted in the "Park" state.

If an EnDat 2.2 encoder was removed when not in the "Park" state, then after inserting the encoder, a POWER ON (switch-off/on) is necessary to acknowledge the fault.

#### F32137

#### Encoder 2: Internal fault when determining the position

**Message value:** Fault cause: %1 bin  
**Message class:** Hardware / software error (1)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)  
**Acknowledge:** PULSE INHIBIT  
**Cause:** A position determination fault has occurred in the DRIVE-CLiQ encoder.  
 Fault value (r0949, interpret binary):  
 yyxxxxxx hex: yy = encoder version, xxxxxx = bit coding of the fault cause  
 For yy = 08 hex (bit 27 = 1), the following bit definition applies:  
 Bit 1: Signal monitoring (sin/cos).  
 Bit 8: F1 (safety status display) fault position word 1.  
 Bit 9: F2 (safety status display) fault position word 2.  
 Bit 16: LED monitoring iC-LG (opto ASIC).  
 Bit 17: Fault in the multiturn.  
 Bit 23: Temperature outside the limit values.

**Note:**

For an encoder version that is not described here, please contact the encoder manufacturer for more detailed information on the bit coding.

**Remedy:**  
 - determine the detailed cause of the fault using the fault value.  
 - if required, replace the DRIVE-CLiQ encoder.

<b>F32138</b>	<b>Encoder 2: Internal error when determining multiturn information</b>
<b>Message value:</b>	Fault cause: %1 bin
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	<p>A position determination fault has occurred in the DRIVE-CLiQ encoder.</p> <p>Fault value (r0949, interpret binary):</p> <p>yyxxxxxx hex: yy = encoder version, xxxxxx = bit coding of the fault cause</p> <p>For yy = 08 hex (bit 27 = 1), the following bit definition applies:</p> <p>Bit 1: Signal monitoring (sin/cos).</p> <p>Bit 8: F1 (safety status display) fault position word 1.</p> <p>Bit 9: F2 (safety status display) fault position word 2.</p> <p>Bit 16: LED monitoring iC-LG (opto ASIC).</p> <p>Bit 17: Fault in the multiturn.</p> <p>Bit 23: Temperature outside the limit values.</p> <p>Note:</p> <p>For an encoder version that is not described here, please contact the encoder manufacturer for more detailed information on the bit coding.</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- determine the detailed cause of the fault using the fault value.</li> <li>- if required, replace the DRIVE-CLiQ encoder.</li> </ul>
<b>F32142 (N, A)</b>	<b>Encoder 2: Battery voltage fault</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	When switched-off, the encoder uses a battery to back up the multiturn information. The battery voltage is no longer sufficient to check the multiturn information.
<b>Remedy:</b>	Replace battery.
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE
<b>F32150 (N, A)</b>	<b>Encoder 2: Initialization error</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	<p>Encoder functionality selected in p0404 is not operating correctly.</p> <p>Fault value (r0949, interpret hexadecimal):</p> <p>Encoder malfunction.</p> <p>The bit assignment corresponds to that of p0404 (e.g. bit 5 set: Error track C/D).</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- Check that p0404 is correctly set.</li> <li>- check the encoder type used (incremental/absolute) and for SMCxx, the encoder cable.</li> <li>- if relevant, note additional fault messages that describe the fault in detail.</li> </ul>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

---

#### **F32151 (N, A) Encoder 2: Encoder speed for initialization AB too high**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)  
**Acknowledge:** PULSE INHIBIT  
**Cause:** The encoder speed is too high while initializing the Sensor Module.  
**Remedy:** Reduce the speed of the encoder accordingly during initialization.  
 If necessary, de-activate monitoring (p0437.29).  
 See also: p0437 (Sensor Module configuration extended)

Reaction upon N: NONE  
 Acknowl. upon N: NONE  
 Reaction upon A: NONE  
 Acknowl. upon A: NONE

---

#### **F32152 (N, A) Encoder 2: Maximum input frequency exceeded**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)  
**Acknowledge:** PULSE INHIBIT  
**Cause:** The maximum input frequency of the encoder evaluation has been exceeded.  
 Fault value (r0949, interpret decimal):  
 Actual input frequency in Hz.  
 See also: p0408 (Rotary encoder pulse number)

**Remedy:**  
 - Reduce the speed.  
 - Use an encoder with a lower pulse number (p0408).

Reaction upon N: NONE  
 Acknowl. upon N: NONE  
 Reaction upon A: NONE  
 Acknowl. upon A: NONE

---

#### **F32153 (N, A) Encoder 2: Identification error**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** IMMEDIATELY  
**Cause:** An error has occurred when identifying the encoder (waiting) p0400=10100.  
 The connected encoder was not able to be identified.  
 Fault value (r0949, interpret hexadecimal):  
 Bit 0: Data length incorrect  
 See also: p0400 (Encoder type selection)

**Remedy:** Manually configure the encoder according to the data sheet.

Reaction upon N: NONE  
 Acknowl. upon N: NONE  
 Reaction upon A: NONE  
 Acknowl. upon A: NONE

---

### **F32160 (N, A) Encoder 2: Analog sensor channel A failed**

**Message value:** %1  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF1 (IASC/DCBRK, NONE)  
**Acknowledge:** PULSE INHIBIT  
**Cause:** The input voltage of the analog sensor is outside the permissible limits.  
 Fault value (r0949, interpret decimal):  
 1: Input voltage outside detectable measuring range.  
 2: Input voltage outside the measuring range set in (p4673).  
 3: The absolute value of the input voltage has exceeded the range limit (p4676).  
**Remedy:** For fault value = 1:  
 - check the output voltage of the analog sensor.  
 For fault value = 2:  
 - check the voltage setting for each encoder period (p4673).  
 For fault value = 3:  
 - check the range limit setting and increase it if necessary (p4676).  
 Reaction upon N: NONE  
 Acknowl. upon N: NONE  
 Reaction upon A: NONE  
 Acknowl. upon A: NONE

---

### **F32161 (N, A) Encoder 2: Analog sensor channel B failed**

**Message value:** %1  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF1 (IASC/DCBRK, NONE)  
**Acknowledge:** PULSE INHIBIT  
**Cause:** The input voltage of the analog sensor is outside the permissible limits.  
 Fault value (r0949, interpret decimal):  
 1: Input voltage outside detectable measuring range.  
 2: Input voltage outside the measuring range set in (p4675).  
 3: The absolute value of the input voltage has exceeded the range limit (p4676).  
**Remedy:** For fault value = 1:  
 - check the output voltage of the analog sensor.  
 For fault value = 2:  
 - check the voltage setting for each encoder period (p4675).  
 For fault value = 3:  
 - check the range limit setting and increase it if necessary (p4676).  
 Reaction upon N: NONE  
 Acknowl. upon N: NONE  
 Reaction upon A: NONE  
 Acknowl. upon A: NONE

---

### **F32163 (N, A) Encoder 2: Analog sensor position value exceeds limit value**

**Message value:** %1  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF1 (IASC/DCBRK, NONE)  
**Acknowledge:** PULSE INHIBIT  
**Cause:** The position value has exceeded the permissible range of -0.5 ... +0.5.  
 Fault value (r0949, interpret decimal):  
 1: Position value from the LVDT sensor.  
 2: Position value from the encoder characteristic.

## 4 Faults and alarms

### 4.2 List of faults and alarms

**Remedy:** For fault value = 1:  
- Check the LVDT ratio (p4678).  
- check the reference signal connection at track B.  
For fault value = 2:  
- check the coefficients of the characteristic (p4663 ... p4666).

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

#### **A32400 (F, N) Encoder 2: Alarm threshold zero mark distance error**

**Message value:** %1

**Message class:** Position/speed actual value incorrect or not available (11)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The measured zero mark distance does not correspond to the parameterized zero mark distance.  
For distance-coded encoders, the zero mark distance is determined from zero marks detected pairs. This means that if a zero mark is missing, depending on the pair generation, this cannot result in a fault and also has no effect in the system.

The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).

Alarm value (r2124, interpret decimal):

Last measured zero mark distance in increments (4 increments = 1 encoder pulse).

The sign designates the direction of motion when detecting the zero mark distance.

**Remedy:**  
- check that the encoder cables are routed in compliance with EMC.  
- check the plug connections.  
- check the encoder type (encoder with equidistant zero marks).  
- adapt the parameter for the distance between zero marks (p0424, p0425).  
- replace the encoder or encoder cable.

Reaction upon F: NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)  
Acknowl. upon F: IMMEDIATELY  
Reaction upon N: NONE  
Acknowl. upon N: NONE

---

#### **A32401 (F, N) Encoder 2: Alarm threshold zero mark failed**

**Message value:** %1

**Message class:** Position/speed actual value incorrect or not available (11)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The 1.5 x parameterized zero mark distance was exceeded.

The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).

Alarm value (r2124, interpret decimal):

Number of increments after POWER ON or since the last zero mark that was detected (4 increments = 1 encoder pulse).

**Remedy:**  
- check that the encoder cables are routed in compliance with EMC.  
- check the plug connections.  
- check the encoder type (encoder with equidistant zero marks).  
- adapt the parameter for the clearance between zero marks (p0425).  
- replace the encoder or encoder cable.

Reaction upon F: NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)  
Acknowl. upon F: IMMEDIATELY  
Reaction upon N: NONE  
Acknowl. upon N: NONE



<b>F32405 (N, A)</b>	<b>Encoder 2: Temperature in the encoder evaluation inadmissible</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Overtemperature of the electronic components (6)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	The encoder evaluation for a motor with DRIVE-CLiQ has detected an inadmissible temperature. The fault threshold is 125 ° C. Alarm value (r2124, interpret decimal): Measured board/module temperature in 0.1 °C.
<b>Remedy:</b>	Reduce the ambient temperature for the DRIVE-CLiQ connection of the motor.
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE
<b>A32407 (F, N)</b>	<b>Encoder 2: Function limit reached</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The encoder has reached one of its function limits. A service is recommended. Alarm value (r2124, interpret decimal): 1 : Incremental signals 3 : Absolute track 4 : Code connection
<b>Remedy:</b>	Perform service. Replace the encoder if necessary. Note: The actual functional reserve of an encoder can be displayed via r4651. See also: p4650 (Encoder functional reserve component number), r4651 (Encoder functional reserve)
Reaction upon F:	NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>A32410 (F, N)</b>	<b>Encoder 2: Serial communications</b>
<b>Message value:</b>	Fault cause: %1 bin
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	Serial communication protocol transfer error between the encoder and evaluation module. Alarm value (r2124, interpret binary): Bit 0: Alarm bit in the position protocol. Bit 1: Incorrect quiescent level on the data line. Bit 2: Encoder does not respond (does not supply a start bit within 50 ms). Bit 3: CRC error: The checksum in the protocol from the encoder does not match the data. Bit 4: Encoder acknowledgement error: The encoder incorrectly understood the task (request) or cannot execute it. Bit 5: Internal error in the serial driver: An illegal mode command was requested. Bit 6: Timeout when cyclically reading. Bit 8: Protocol is too long (e.g. > 64 bits). Bit 9: Receive buffer overflow. Bit 10: Frame error when reading twice.

## 4 Faults and alarms

### 4.2 List of faults and alarms

Bit 11: Parity error.  
Bit 12: Data line signal level error during the monoflop time.

**Remedy:**

- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace encoder.

Reaction upon F: NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)  
Acknowl. upon F: IMMEDIATELY  
Reaction upon N: NONE  
Acknowl. upon N: NONE

---

#### **A32411 (F, N) Encoder 2: Absolute encoder signals internal alarms**

**Message value:** Fault cause: %1 bin, additional information: %2  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The absolute encoder fault word includes alarm bits that have been set.  
Alarm value (r2124, interpret binary):  
yyyyxxxx hex: yyyy = supplementary information, xxxx = fault cause  
yyyy = 0:  
Bit 0: Frequency exceeded (speed too high).  
Bit 1: Temperature exceeded.  
Bit 2: Control reserve, lighting system exceeded.  
Bit 3: Battery discharged.  
Bit 4: Reference point passed.  
yyyy = 1:  
Bit 0: Signal amplitude outside the control range.  
Bit 1: Error multiturn interface  
Bit 2: Internal data error (singleturn/multiturn not with single steps).  
Bit 3: Error EEPROM interface.  
Bit 4: SAR converter error.  
Bit 5: Fault for the register data transfer.  
Bit 6: Internal error identified at the error pin (nErr).  
Bit 7: Temperature threshold exceeded or fallen below.

**Remedy:** Replace encoder.

Reaction upon F: NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)  
Acknowl. upon F: IMMEDIATELY  
Reaction upon N: NONE  
Acknowl. upon N: NONE

---

#### **A32412 (F, N) Encoder 2: Error bit set in the serial protocol**

**Message value:** %1  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The encoder sends a set error bit via the serial protocol.  
Alarm value (r2124, interpret binary):  
Bit 0: Fault bit in the position protocol.  
Bit 1: Alarm bit in the position protocol.

**Remedy:**

- carry out a POWER ON (power off/on) for all components.
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace encoder.

Reaction upon F: NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)  
Acknowl. upon F: IMMEDIATELY  
Reaction upon N: NONE  
Acknowl. upon N: NONE

---

#### **A32414 (F, N) Encoder 2: Amplitude error track C or D ( $C^2 + D^2$ )**

**Message value:** C track: %1, D track: %2  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The amplitude ( $C^2 + D^2$ ) of track C or D of the encoder or from the Hall signals, is not within the tolerance bandwidth.

Alarm value (r2124, interpret hexadecimal):

yyyyxxxx hex:

yyyy = Signal level, track D (16 bits with sign).

xxxx = Signal level, track C (16 bits with sign).

The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).

The response thresholds are < 230 mV (observe the frequency response of the encoder) and > 750 mV.

A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.

Note:

If the amplitude is not within the tolerance bandwidth, then it cannot be used to initialize the start position.

#### **Remedy:**

- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the Sensor Module (e.g. contacts).
- check the Hall sensor box.

Reaction upon F: NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)  
Acknowl. upon F: IMMEDIATELY  
Reaction upon N: NONE  
Acknowl. upon N: NONE

---

#### **N32415 (F, A) Encoder 2: Amplitude alarm track A or B ( $A^2 + B^2$ )**

**Message value:** Amplitude: %1, Angle: %2  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The amplitude (root of  $A^2 + B^2$ ) for encoder 2 exceeds the permissible tolerance.

Alarm value (r2124, interpret hexadecimal):

yyyyxxxx hex:

yyyy = Angle

xxxx = Amplitude, i.e. root from  $A^2 + B^2$  (16 bits without sign)

The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).

The response threshold is < 230 mV (observe the frequency response of the encoder).

A signal level of 500 mV peak value corresponds to the numerical value 299A hex = 10650 dec.

The angle 0 ... FFFF hex corresponds to 0 ... 360 degrees of the fine position. Zero degrees is present at the negative zero crossover of track B.

Note for Sensor Modules for resolvers (e.g. SMC10):

The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is < 1414 mV (1.0 Vrms).

A signal level of 2900 mV peak value corresponds to the numerical value 3333 hex = 13107 dec.

Note:

The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.

<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check the speed range, frequency characteristic (amplitude characteristic) of the measuring equipment is not sufficient for the speed range.</li> <li>- check that the encoder cables and shielding are routed in compliance with EMC.</li> <li>- check the plug connections.</li> <li>- replace the encoder or encoder cable.</li> <li>- check the Sensor Module (e.g. contacts).</li> <li>- if the coding disk is soiled or the lighting aged, replace the encoder.</li> </ul>
Reaction upon F:	NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon A:	NONE
Acknowl. upon A:	NONE

<b>A32418 (F, N)</b>	<b>Encoder 2: Speed difference per sampling rate exceeded</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>For an HTL/TTL encoder, the speed difference between two sampling cycles has exceeded the value in p0492. The change to the averaged speed actual value - if applicable - is monitored in the current controller sampling time. Alarm value (r2124, interpret decimal):</p> <p>Only for internal Siemens troubleshooting.</p> <p>See also: p0492 (Square-wave encoder maximum speed difference per sampling cycle)</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check the tachometer feeder cable for interruptions.</li> <li>- check the grounding of the tachometer shielding.</li> <li>- if required, increase the setting of p0492.</li> </ul>
Reaction upon F:	NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE

<b>A32419 (F, N)</b>	<b>Encoder 2: Track A or B outside tolerance</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The amplitude/phase/offset correction for track A or B is at the limit.</p> <p>Amplitude error correction: <math>\text{Amplitude B} / \text{Amplitude A} = 0.78 \dots 1.27</math></p> <p>Phase: &lt;84 degrees or &gt;96 degrees</p> <p>SMC20: Offset correction: +/-140 mV</p> <p>SMC10: Offset correction: +/-650 mV</p> <p>Alarm value (r2124, interpret hexadecimal):</p> <p>xxxx1: Minimum of the offset correction, track B</p> <p>xxxx2: Maximum of the offset correction, track B</p> <p>xxx1x: Minimum of the offset correction, track A</p> <p>xxx2x: Maximum of the offset correction, track A</p> <p>xx1xx: Minimum of the amplitude correction, track B/A</p> <p>xx2xx: Maximum of the amplitude correction, track B/A</p> <p>x1xxx: Minimum of the phase error correction</p> <p>x2xxx: Maximum of the phase error correction</p> <p>1xxxx: Minimum of the cubic correction</p> <p>2xxxx: Maximum of the cubic correction</p>

**Remedy:**

- check mechanical mounting tolerances for encoders without their own bearings (e.g. toothed-wheel encoders).
- check the plug connections (also the transition resistance).
- check the encoder signals.
- replace the encoder or encoder cable.

Reaction upon F: NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

---

#### **A32421 (F, N) Encoder 2: Coarse position error**

**Message value:** %1

**Message class:** Position/speed actual value incorrect or not available (11)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** For the actual value sensing, an error was detected. As a result of this error, it must be assumed that the actual value sensing supplies an incorrect coarse position.

Alarm value (r2124, interpret decimal):

3: The absolute position of the serial protocol and track A/B differ by half an encoder pulse. The absolute position must have its zero position in the quadrants in which both tracks are negative. In the case of a fault, the position can be incorrect by one encoder pulse.

**Remedy:** Re alarm value = 3:

- For a standard encoder with cable, contact the manufacturer where relevant.
- correct the assignment of the tracks to the position value that is serially transferred. To do this, the two tracks must be connected, inverted, at the Sensor Module (interchange A with A\* and B with B\*) or, for a programmable encoder, check the zero offset of the position.

Reaction upon F: NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

---

#### **A32422 (F, N) Encoder 2: Pulses per revolution square-wave encoder outside tolerance bandwidth**

**Message value:** %1

**Message class:** Position/speed actual value incorrect or not available (11)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The measured zero mark distance does not correspond to the parameterized zero mark distance.

This alarm is triggered with active square-wave encoder PPR correction and re-parameterized fault 31131 if the accumulator contains larger values than p4683 or p4684.

The zero mark distance for zero mark monitoring is set in p0425 (rotary encoder).

Alarm value (r2124, interpret decimal):

accumulated differential pulses in encoder pulses.

- Remedy:**
- check that the encoder cables are routed in compliance with EMC.
  - check the plug connections.
  - check the encoder type (encoder with equidistant zero marks).
  - adapt the parameter for the distance between zero marks (p0424, p0425).
  - replace the encoder or encoder cable.

Reaction upon F: NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

<b>A32429 (F, N)</b>	<b>Encoder 2: Position difference hall sensor/track C/D and A/B too large</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The error for track C/D is greater than +/-15 ° mechanical or +/-60 ° electrical or the error for the Hall signals is greater than +/-60 ° electrical.</p> <p>One period of track C/D corresponds to 360 ° mechanical.</p> <p>One period of the Hall signal corresponds to 360 ° electrical.</p> <p>The monitoring responds if, for example, Hall sensors are connected as equivalent for the C/D tracks with the incorrect rotational sense or supply values that are not accurate enough.</p> <p>Alarm value (r2124, interpret decimal):</p> <p>For track C/D, the following applies:</p> <p>Measured deviation as mechanical angle (16 bits with sign, 182 dec corresponds to 1 °).</p> <p>For Hall signals, the following applies:</p> <p>Measured deviation as electrical angle (16 bits with sign, 182 dec corresponds to 1 °).</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- track C or D not connected.</li> <li>- correct the direction of rotation of the Hall sensor possibly connected as equivalent for track C/D.</li> <li>- check that the encoder cables are routed in compliance with EMC.</li> <li>- check the adjustment of the Hall sensor.</li> </ul>
Reaction upon F:	NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>A32431 (F, N)</b>	<b>Encoder 2: Deviation position incremental/absolute too large</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>When the zero pulse is passed, a deviation in the incremental position was detected.</p> <p>For equidistant zero marks, the following applies:</p> <ul style="list-style-type: none"> <li>- The first zero mark passed supplies the reference point for all subsequent checks. The other zero marks must have n times the distance referred to the first zero mark.</li> </ul> <p>For distance-coded zero marks, the following applies:</p> <ul style="list-style-type: none"> <li>- the first zero mark pair supplies the reference point for all subsequent checks. The other zero mark pairs must have the expected distance to the first zero mark pair.</li> </ul> <p>Alarm value (r2124, interpret decimal):</p> <p>Deviation in quadrants (1 pulse = 4 quadrants).</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check that the encoder cables are routed in compliance with EMC.</li> <li>- check the plug connections.</li> <li>- replace the encoder or encoder cable.</li> <li>- Clean coding disk or remove strong magnetic fields.</li> </ul>
Reaction upon F:	NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE

<b>A32432 (F, N)</b>	<b>Encoder 2: Rotor position adaptation corrects deviation</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	For track A/B, pulses have been lost or too many have been counted. These pulses are presently being corrected. Alarm value (r2124, interpret decimal): Last measured deviation of zero mark in increments (4 increments = 1 encoder pulse). The sign designates the direction of motion when detecting the zero mark distance.
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check that the encoder cables are routed in compliance with EMC.</li> <li>- check the plug connections.</li> <li>- replace the encoder or encoder cable.</li> <li>- check encoder limit frequency.</li> <li>- adapt the parameter for the distance between zero marks (p0424, p0425).</li> </ul>
Reaction upon F:	NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>A32442 (F, N)</b>	<b>Encoder 2: Battery voltage pre-alarm</b>
<b>Message value:</b>	-
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	When switched-off, the encoder uses a battery to back up the multiturn information. The multiturn information can no longer be buffered if the battery voltage drops even further.
<b>Remedy:</b>	Replace battery.
Reaction upon F:	NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>A32443 (F, N)</b>	<b>Encoder 2: Unipolar CD signal level outside specification</b>
<b>Message value:</b>	Fault cause: %1 bin
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The unipolar level (CP/CN or DP/DN) for encoder 2 is outside the permissible tolerance. Alarm value (r2124, interpret binary): Bit 0 = 1: Either CP or CN outside the tolerance. Bit 16 = 1: Either DP or DN outside the tolerance. The unipolar nominal signal level of the encoder must lie in the range 2500 mV +/- 500 mV. The response thresholds are < 1700 mV and > 3300 mV. Note: The signal level is not evaluated unless the following conditions are satisfied: <ul style="list-style-type: none"> <li>- Sensor Module properties available (r0459.31 = 1).</li> <li>- Monitoring active (p0437.31 = 1).</li> </ul>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check that the encoder cables and shielding are routed in compliance with EMC.</li> <li>- check the plug connections and contacts of the encoder cable.</li> <li>- are the C/D tracks connected correctly (have the signal lines CP and CN or DP and DN been interchanged)?</li> <li>- replace the encoder cable.</li> </ul>

## 4 Faults and alarms

### 4.2 List of faults and alarms

Reaction upon F:	NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE

---

#### **A32460 (N) Encoder 2: Analog sensor channel A failed**

<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The input voltage of the analog sensor is outside the permissible limits. Alarm value (r2124, interpret decimal): 1: Input voltage outside detectable measuring range. 2: Input voltage outside measuring range set in p4673. 3: The absolute value of the input voltage has exceeded the range limit (p4676).
<b>Remedy:</b>	Re alarm value = 1: - check the output voltage of the analog sensor. Re alarm value = 2: - check the voltage setting for each encoder period (p4673). Re alarm value = 3: - check the range limit setting and increase it if necessary (p4676).
Reaction upon N:	NONE
Acknowl. upon N:	NONE

---

#### **A32461 (N) Encoder 2: Analog sensor channel B failed**

<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The input voltage of the analog sensor is outside the permissible limits. Alarm value (r2124, interpret decimal): 1: Input voltage outside detectable measuring range. 2: Input voltage outside the measuring range set in (p4675). 3: The absolute value of the input voltage has exceeded the range limit (p4676).
<b>Remedy:</b>	Re alarm value = 1: - check the output voltage of the analog sensor. Re alarm value = 2: - check the voltage setting for each encoder period (p4675). Re alarm value = 3: - check the range limit setting and increase it if necessary (p4676).
Reaction upon N:	NONE
Acknowl. upon N:	NONE

---

#### **A32462 (N) Encoder 2: Analog sensor no channel active**

<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	Channel A and B are not activated for the analog sensor.
<b>Remedy:</b>	- activate channel A and/or channel B (p4670). - check the encoder configuration (p0404.17).



Reaction upon N: NONE  
Acknowl. upon N: NONE

---

**A32463 (N) Encoder 2: Analog sensor position value exceeds limit value**

**Message value:** %1  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The position value has exceeded the permissible range of -0.5 ... +0.5.  
 Alarm value (r2124, interpret decimal):  
 1: Position value from the LVDT sensor.  
 2: Position value from the encoder characteristic.  
**Remedy:** Re alarm value = 1:  
 - Check the LVDT ratio (p4678).  
 - check the reference signal connection at track B.  
 Re alarm value = 2:  
 - check the coefficients of the characteristic (p4663 ... p4666).

Reaction upon N: NONE  
Acknowl. upon N: NONE

---

**A32470 (F, N) Encoder 2: Soiling detected**

**Message value:** -  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** In the case of the alternative encoder system interface on the Sensor Module Cabinet 30 (SMC30), encoder soiling is signaled via a 0 signal at terminal X521.7.  
**Remedy:** - check the plug connections.  
 - replace the encoder or encoder cable.

Reaction upon F: NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)  
 Acknowl. upon F: IMMEDIATELY  
 Reaction upon N: NONE  
 Acknowl. upon N: NONE

---

**F32500 (N, A) Encoder 2: Position tracking traversing range exceeded**

**Message value:** -  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF1 (NONE, OFF2, OFF3)  
**Acknowledge:** IMMEDIATELY  
**Cause:** For a configured linear axis without modulo correction, the drive/encoder has exceeded the maximum possible traversing range. The value should be read in p0412 and interpreted as the number of motor revolutions.  
 For p0411.0 = 1, the maximum traversing range for the configured linear axis is defined to be 64x (+/- 32x) of p0421.  
 For p0411.3 = 1, the maximum traversing range for the configured linear axis is pre-set (default value) to the highest possible value and is +/-p0412/2 (rounded off to complete revolutions). The highest possible value depends on the pulse number (p0408) and the fine resolution (p0419).  
**Remedy:** The fault should be resolved as follows:  
 - select encoder commissioning (p0010 = 4).  
 - reset the position tracking as follows (p0411.2 = 1).  
 - de-select encoder commissioning (p0010 = 0).  
 The fault should then be acknowledged and the absolute encoder adjusted.

Reaction upon N: NONE  
Acknowl. upon N: NONE

## 4 Faults and alarms

### 4.2 List of faults and alarms

Reaction upon A: NONE

Acknowl. upon A: NONE

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<b>F32501 (N, A)</b>	<b>Encoder 2: Position tracking encoder position outside tolerance window</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (NONE, OFF2, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	When powered down, the drive/encoder was moved through a distance greater than was parameterized in the tolerance window. It is possible that there is no longer any reference between the mechanical system and encoder. Fault value (r0949, interpret decimal): Deviation (difference) to the last encoder position in increments of the absolute value. The sign designates the traversing direction. Note: The deviation (difference) found is also displayed in r0477. See also: p0413 (Measuring gear position tracking tolerance window), r0477 (Measuring gear position difference)
<b>Remedy:</b>	Reset the position tracking as follows: - select encoder commissioning (p0010 = 4). - reset the position tracking as follows (p0411.2 = 1). - de-select encoder commissioning (p0010 = 0). The fault should then be acknowledged and, if necessary, the absolute encoder adjusted (p2507). See also: p0010
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

---

<b>F32502 (N, A)</b>	<b>Encoder 2: Encoder with measuring gear without valid signals</b>
<b>Message value:</b>	-
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (OFF2, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The encoder with measuring gear no longer provides any valid signals.
<b>Remedy:</b>	It must be ensured that all of the encoders, with mounted measuring gear, provide valid actual values in operation.
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

---

<b>F32503 (N, A)</b>	<b>Encoder 2: Position tracking cannot be reset</b>
<b>Message value:</b>	-
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (NONE, OFF2, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The position tracking for the measuring gear cannot be reset.
<b>Remedy:</b>	The fault should be resolved as follows: - select encoder commissioning (p0010 = 4). - reset the position tracking as follows (p0411.2 = 1). - de-select encoder commissioning (p0010 = 0). The fault should then be acknowledged and the absolute encoder adjusted.
Reaction upon N:	NONE
Acknowl. upon N:	NONE

Reaction upon A: NONE  
Acknowl. upon A: NONE

---

**A32700 Encoder 2: Effectivity test does not supply the expected value**

**Message value:** Fault cause: %1 bin  
**Message class:** Safety monitoring channel has identified an error (10)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The DRIVE-CLiQ encoder fault word supplies fault bits that have been set.  
 Fault value (r0949, interpret binary):  
 Bit x = 1: Effectivity test x unsuccessful.  
**Remedy:** Replace encoder.

---

**N32800 (F) Encoder 2: Group signal**

**Message value:** -  
**Message class:** Position/speed actual value incorrect or not available (11)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)  
**Acknowledge:** NONE  
**Cause:** The motor encoder has detected at least one fault.  
**Remedy:** Evaluates other actual messages.  
 Reaction upon F: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)  
 Acknowl. upon F: IMMEDIATELY

---

**F32801 (N, A) Encoder 2 DRIVE-CLiQ: Sign-of-life missing**

**Message value:** Component number: %1, fault cause: %2  
**Message class:** Internal (DRIVE-CLiQ) communication error (12)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)  
**Acknowledge:** IMMEDIATELY  
**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the encoder involved.  
 Fault cause:  
 10 (= 0A hex):  
 The sign-of-life bit in the receive telegram is not set.  
 Note regarding the message value:  
 The individual information is coded as follows in the message value (r0949/r2124):  
 0000yyxx hex: yy = component number, xx = error cause  
**Remedy:**  
 - check the electrical cabinet design and cable routing for EMC compliance  
 - replace the component involved.  
 See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)  
 Reaction upon N: NONE  
 Acknowl. upon N: NONE  
 Reaction upon A: NONE  
 Acknowl. upon A: NONE

---

**F32802 (N, A) Encoder 2: Time slice overflow**

**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)  
**Acknowledge:** IMMEDIATELY  
**Cause:** A time slice overflow has occurred in encoder 2.

## 4 Faults and alarms

### 4.2 List of faults and alarms

	Fault value (r0949, interpret hexadecimal): yx hex: y = function involved (Siemens-internal fault diagnostics), x = time slice involved x = 9: Time slice overflow of the fast (current controller clock cycle) time slice. x = A: Time slice overflow of the average time slice. x = C: Time slice overflow of the slow time slice. yx = 3E7: Timeout when waiting for SYNO (e.g. unexpected return to non-cyclic operation).
<b>Remedy:</b>	Increase the current controller sampling time Note: For a current controller sampling time = 31.25 µs, use an SMx20 with order number 6SL3055-0AA00-5xA3.
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

<b>F32804 (N, A)</b>	<b>Encoder 2: Checksum error</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
<b>Acknowledge:</b>	POWER ON (IMMEDIATELY)
<b>Cause:</b>	A checksum error has occurred when reading-out the program memory on the Sensor Module. Fault value (r0949, interpret hexadecimal): yyyyxxxx hex yyyy: Memory area involved. xxxx: Difference between the checksum at POWER ON and the actual checksum.
<b>Remedy:</b>	- carry out a POWER ON (power off/on). - upgrade firmware to later version (>= V2.6 HF3, >= V4.3 SP2, >= V4.4). - check whether the permissible ambient temperature for the component is maintained. - replace the Sensor Module.
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

<b>F32805 (N, A)</b>	<b>Encoder 2: EEPROM checksum error</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	Internal parameter data is corrupted. Fault value (r0949, interpret hexadecimal): 01: EEPROM access error. 02: Too many blocks in the EEPROM.
<b>Remedy:</b>	Replace the module.
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

<b>F32806 (N, A)</b>	<b>Encoder 2: Initialization error</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	<p>The encoder was not successfully initialized.</p> <p>Fault value (r0949, interpret hexadecimal):</p> <p>Bit 0, 1: Encoder initialization with the motor rotating has failed (deviation involving coarse and fine position in encoder pulses/4).</p> <p>Bit 2: Mid-voltage matching for track A unsuccessful.</p> <p>Bit 3: Mid-voltage matching for track B unsuccessful.</p> <p>Bit 4: Mid-voltage matching for acceleration input unsuccessful.</p> <p>Bit 5: Mid-voltage matching for track safety A unsuccessful.</p> <p>Bit 6: Mid-voltage matching for track safety B unsuccessful.</p> <p>Bit 7: Mid-voltage matching for track C unsuccessful.</p> <p>Bit 8: Mid-voltage matching for track D unsuccessful.</p> <p>Bit 9: Mid-voltage matching for track R unsuccessful.</p> <p>Bit 10: The difference in mid-voltages between A and B is too great (&gt; 0.5 V)</p> <p>Bit 11: The difference in mid-voltages between C and D is too great (&gt; 0.5 V)</p> <p>Bit 12: The difference in mid-voltages between safety A and safety B is too great (&gt; 0.5 V)</p> <p>Bit 13: The difference in mid-voltages between A and safety B is too great (&gt; 0.5 V)</p> <p>Bit 14: The difference in mid-voltages between B and safety A is too great (&gt; 0.5 V)</p> <p>Bit 15: The standard deviation of the calculated mid-voltages is too great (&gt; 0.3 V)</p> <p>Bit 16: Internal fault - fault when reading a register (CAFE)</p> <p>Bit 17: Internal fault - fault when writing a register (CAFE)</p> <p>Bit 18: Internal fault: No mid-voltage matching available</p> <p>Bit 19: Internal error - ADC access error.</p> <p>Bit 20: Internal error - no zero crossover found.</p> <p>Bit 28: Error while initializing the EnDat 2.2 measuring unit.</p> <p>Bit 29: Error when reading out the data from the EnDat 2.2 measuring unit.</p> <p>Bit 30: EEPROM checksum of the EnDat 2.2 measuring unit incorrect.</p> <p>Bit 31: Data of the EnDat 2.2 measuring unit inconsistent.</p> <p>Note:</p> <p>Bit 0, 1: Up to 6SL3055-0AA00-5*A0</p> <p>Bits 2 ... 20: 6SL3055-0AA00-5*A1 and higher</p>
<b>Remedy:</b>	<p>Acknowledge fault.</p> <p>If the fault cannot be acknowledged:</p> <p>Bits 2 ... 9: Check encoder power supply.</p> <p>Bits 2 ... 14: Check the corresponding cable.</p> <p>Bit 15 with no other bits: Check track R, check settings in p0404.</p> <p>Bit 28: Check the cable between the EnDat 2.2 converter and the measuring unit.</p> <p>Bit 29 ... 31: Replace the defective measuring unit.</p>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

<b>A32811 (F, N)</b>	<b>Encoder 2: Encoder serial number changed</b>
<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The encoder serial number has changed. The change is only checked for encoders with serial number (e.g. EnDat encoders).</p> <p>- The encoder was replaced.</p> <p>Note:</p> <p>With closed-loop position control, the serial number is accepted when starting the adjustment (p2507 = 2).</p> <p>When the encoder is adjusted (p2507 = 3), the serial number is checked for changes and if required, the adjustment is reset (p2507 = 1).</p> <p>Proceed as follows to hide serial number monitoring:</p> <p>- set the following serial numbers for the corresponding Encoder Data Set: p0441= FF, p0442 = 0, p0443 = 0, p0444 = 0, p0445 = 0.</p>
<b>Remedy:</b>	Mechanically adjust the encoder. Accept the new serial number with p0440 = 1.
Reaction upon F:	NONE (OFF1, OFF2, OFF3)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>F32812 (N, A)</b>	<b>Encoder 2: Requested cycle or RX-/TX timing not supported</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>A cycle requested from the Control Unit or RX/TX timing is not supported.</p> <p>Fault value (r0949, interpret decimal):</p> <p>0: Application cycle is not supported.</p> <p>1: DRIVE-CLiQ cycle is not supported.</p> <p>2: Distance between RX and TX instants in time too low.</p> <p>3: TX instant in time too early.</p>
<b>Remedy:</b>	Carry out a POWER ON (power off/on) for all components.
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE
<b>F32813</b>	<b>Encoder 2: Hardware logic unit failed</b>
<b>Message value:</b>	Fault cause: %1 bin
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	<p>The DRIVE-CLiQ encoder fault word supplies fault bits that have been set.</p> <p>Fault value (r0949, interpret binary):</p> <p>Bit 0: ALU watchdog has responded.</p> <p>Bit 1: ALU has detected a sign-of-life error.</p>
<b>Remedy:</b>	Replace encoder.

<b>F32820 (N, A)</b>	<b>Encoder 2 DRIVE-CLiQ: Telegram error</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>A DRIVE-CLiQ communication error has occurred from the Control Unit to the encoder concerned.</p> <p>Fault cause:</p> <p>1 (= 01 hex): Checksum error (CRC error).</p> <p>2 (= 02 hex): Telegram is shorter than specified in the length byte or in the receive list.</p> <p>3 (= 03 hex): Telegram is longer than specified in the length byte or in the receive list.</p> <p>4 (= 04 hex): The length of the receive telegram does not match the receive list.</p> <p>5 (= 05 hex): The type of the receive telegram does not match the receive list.</p> <p>6 (= 06 hex): The address of the component in the telegram and in the receive list do not match.</p> <p>7 (= 07 hex): A SYNC telegram is expected - but the received telegram is not a SYNC telegram.</p> <p>8 (= 08 hex): No SYNC telegram is expected - but the received telegram is one.</p> <p>9 (= 09 hex): The error bit in the receive telegram is set.</p> <p>16 (= 10 hex): The receive telegram is too early.</p> <p>Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause</p>
<b>Remedy:</b>	<p>- carry out a POWER ON (power off/on).</p> <p>- check the electrical cabinet design and cable routing for EMC compliance</p> <p>- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).</p> <p>See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)</p>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE
<b>F32835 (N, A)</b>	<b>Encoder 2 DRIVE-CLiQ: Cyclic data transfer error</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>A DRIVE-CLiQ communication error has occurred from the Control Unit to the encoder concerned. The nodes do not send and receive in synchronism.</p> <p>Fault cause:</p> <p>33 (= 21 hex): The cyclic telegram has not been received.</p> <p>34 (= 22 hex): Timeout in the telegram receive list.</p> <p>64 (= 40 hex): Timeout in the telegram send list.</p>

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- carry out a POWER ON.
- replace the component involved.

See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

Reaction upon N: NONE

Acknowled. upon N: NONE

Reaction upon A: NONE

Acknowled. upon A: NONE

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#### **F32836 (N, A)**

#### **Encoder 2 DRIVE-CLiQ: Send error for DRIVE-CLiQ data**

**Message value:** Component number: %1, fault cause: %2

**Message class:** Internal (DRIVE-CLiQ) communication error (12)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the encoder involved. Data were not able to be sent.

Fault cause:

65 (= 41 hex):

Telegram type does not match send list.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

Carry out a POWER ON.

Reaction upon N: NONE

Acknowled. upon N: NONE

Reaction upon A: NONE

Acknowled. upon A: NONE

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#### **F32837 (N, A)**

#### **Encoder 2 DRIVE-CLiQ: Component fault**

**Message value:** Component number: %1, fault cause: %2

**Message class:** Internal (DRIVE-CLiQ) communication error (12)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** Fault detected on the DRIVE-CLiQ component concerned. Faulty hardware cannot be excluded.

Fault cause:

32 (= 20 hex):

Error in the telegram header.

35 (= 23 hex):

Receive error: The telegram buffer memory contains an error.

66 (= 42 hex):

Send error: The telegram buffer memory contains an error.

67 (= 43 hex):

Send error: The telegram buffer memory contains an error.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.



Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

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<b>A32840</b>	<b>Encoder 2 DRIVE-CLiQ: error below the signaling threshold</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>A DRIVE-CLiQ error has occurred below the signaling threshold.</p> <p>Fault cause:</p> <p>1 (= 01 hex): Checksum error (CRC error).</p> <p>2 (= 02 hex): Telegram is shorter than specified in the length byte or in the receive list.</p> <p>3 (= 03 hex): Telegram is longer than specified in the length byte or in the receive list.</p> <p>4 (= 04 hex): The length of the receive telegram does not match the receive list.</p> <p>5 (= 05 hex): The type of the receive telegram does not match the receive list.</p> <p>6 (= 06 hex): The address of the component in the telegram and in the receive list do not match.</p> <p>7 (= 07 hex): A SYNC telegram is expected - but the received telegram is not a SYNC telegram.</p> <p>8 (= 08 hex): No SYNC telegram is expected - but the received telegram is one.</p> <p>9 (= 09 hex): The error bit in the receive telegram is set.</p> <p>10 (= 0A hex): The sign-of-life bit in the receive telegram is not set.</p> <p>11 (= 0B hex): Synchronization error during alternating cyclic data transfer.</p> <p>16 (= 10 hex): The receive telegram is too early.</p> <p>32 (= 20 hex): Error in the telegram header.</p> <p>33 (= 21 hex): The cyclic telegram has not been received.</p> <p>34 (= 22 hex): Timeout in the telegram receive list.</p> <p>35 (= 23 hex): Receive error: The telegram buffer memory contains an error.</p> <p>64 (= 40 hex): Timeout in the telegram send list.</p> <p>65 (= 41 hex): Telegram type does not match send list.</p> <p>66 (= 42 hex): Send error: The telegram buffer memory contains an error.</p> <p>67 (= 43 hex): Send error: The telegram buffer memory contains an error.</p>

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

#### F32845 (N, A)

#### Encoder 2 DRIVE-CLiQ: Cyclic data transfer error

**Message value:** Component number: %1, fault cause: %2

**Message class:** Internal (DRIVE-CLiQ) communication error (12)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the encoder involved.

Fault cause:

11 (= 0B hex):

Synchronization error during alternating cyclic data transfer.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON (power off/on).

See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

#### F32850 (N, A)

#### Encoder 2: Encoder evaluation internal software error

**Message value:** %1

**Message class:** Hardware / software error (1)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)

**Acknowledge:** POWER ON

**Cause:** An internal software error has occurred in the Sensor Module of encoder 2.

Fault value (r0949, interpret decimal):

1: Background time slice is blocked.

2: Checksum over the code memory is not OK.

10000: OEM memory of the EnDat encoder contains data that cannot be interpreted.

11000 ... 11499: Descriptive data from EEPROM incorrect.

11500 ... 11899: Calibration data from EEPROM incorrect.

11900 ... 11999: Configuration data from EEPROM incorrect.

12000 ... 12008: Communication with AD converter faulted.

16000: DRIVE-CLiQ encoder initialization application error.

16001: DRIVE-CLiQ encoder initialization ALU error.

16002: DRIVE-CLiQ encoder HISI / SISI initialization error.

16003: DRIVE-CLiQ encoder safety initialization error.

16004: DRIVE-CLiQ encoder internal system error.

**Remedy:**

- replace the Sensor Module.
- if required, upgrade the firmware in the Sensor Module.
- contact the Hotline.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

<b>F32851 (N, A)</b>	<b>Encoder 2 DRIVE-CLiQ (CU): Sign-of-life missing</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>A DRIVE-CLiQ communication error has occurred from the Sensor Module (encoder 2) involved to the Control Unit.</p> <p>The DRIVE-CLiQ component did not set the sign-of-life to the Control Unit.</p> <p>Fault cause:</p> <p>10 (= 0A hex):</p> <p>The sign-of-life bit in the receive telegram is not set.</p> <p>Note regarding the message value:</p> <p>The individual information is coded as follows in the message value (r0949/r2124):</p> <p>0000yyxx hex: yy = component number, xx = error cause</p>
<b>Remedy:</b>	<p>- Upgrade the firmware of the component involved.</p> <p>- carry out a POWER ON (power off/on) for the component involved.</p>
Reaction upon N:	NONE
Acknowled. upon N:	NONE
Reaction upon A:	NONE
Acknowled. upon A:	NONE
<b>F32860 (N, A)</b>	<b>Encoder 2 DRIVE-CLiQ (CU): Telegram error</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>A DRIVE-CLiQ communication error has occurred from the Sensor Module (encoder 2) involved to the Control Unit.</p> <p>Fault cause:</p> <p>1 (= 01 hex):</p> <p>Checksum error (CRC error).</p> <p>2 (= 02 hex):</p> <p>Telegram is shorter than specified in the length byte or in the receive list.</p> <p>3 (= 03 hex):</p> <p>Telegram is longer than specified in the length byte or in the receive list.</p> <p>4 (= 04 hex):</p> <p>The length of the receive telegram does not match the receive list.</p> <p>5 (= 05 hex):</p> <p>The type of the receive telegram does not match the receive list.</p> <p>6 (= 06 hex):</p> <p>The address of the power unit in the telegram and in the receive list do not match.</p> <p>9 (= 09 hex):</p> <p>The error bit in the receive telegram is set.</p> <p>16 (= 10 hex):</p> <p>The receive telegram is too early.</p> <p>17 (= 11 hex):</p> <p>CRC error and the receive telegram is too early.</p> <p>18 (= 12 hex):</p> <p>The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.</p> <p>19 (= 13 hex):</p> <p>The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.</p> <p>20 (= 14 hex):</p> <p>The length of the receive telegram does not match the receive list and the receive telegram is too early.</p>

21 (= 15 hex):

The type of the receive telegram does not match the receive list and the receive telegram is too early.

22 (= 16 hex):

The address of the power unit in the telegram and in the receive list does not match and the receive telegram is too early.

25 (= 19 hex):

The error bit in the receive telegram is set and the receive telegram is too early.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

#### Remedy:

- carry out a POWER ON (power off/on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

Reaction upon N: NONE

Acknowled. upon N: NONE

Reaction upon A: NONE

Acknowled. upon A: NONE

#### F32875 (N, A)

#### Encoder 2 DRIVE-CLiQ (CU): Supply voltage failed

**Message value:** Component number: %1, fault cause: %2

**Message class:** Supply voltage fault (undervoltage) (3)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.

Fault cause:

9 (= 09 hex):

The power supply voltage for the components has failed.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

#### Remedy:

- carry out a POWER ON (power off/on).
- check the power supply voltage wiring for the DRIVE-CLiQ component (interrupted cable, contacts, ...).
- check the dimensioning of the power supply for the DRIVE-CLiQ component.

Reaction upon N: NONE

Acknowled. upon N: NONE

Reaction upon A: NONE

Acknowled. upon A: NONE

#### F32885 (N, A)

#### Encoder 2 DRIVE-CLiQ (CU): Cyclic data transfer error

**Message value:** Component number: %1, fault cause: %2

**Message class:** Internal (DRIVE-CLiQ) communication error (12)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Sensor Module (encoder 2) involved to the Control Unit. The nodes do not send and receive in synchronism.

Fault cause:

26 (= 1A hex):

Sign-of-life bit in the receive telegram not set and the receive telegram is too early.

33 (= 21 hex):

The cyclic telegram has not been received.

34 (= 22 hex):

Timeout in the telegram receive list.

64 (= 40 hex):  
Timeout in the telegram send list.  
98 (= 62 hex):  
Error at the transition to cyclic operation.  
Note regarding the message value:  
The individual information is coded as follows in the message value (r0949/r2124):  
0000yyxx hex: yy = component number, xx = error cause  
- check the power supply voltage of the component involved.  
- carry out a POWER ON.  
- replace the component involved.  
See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

**Remedy:**

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

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**F32886 (N, A) Encoder 2 DRIVE-CLiQ (CU): Error when sending DRIVE-CLiQ data**

**Message value:** Component number: %1, fault cause: %2  
**Message class:** Internal (DRIVE-CLiQ) communication error (12)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)  
**Acknowledge:** IMMEDIATELY  
**Cause:** A DRIVE-CLiQ communication error has occurred from the Sensor Module (encoder 2) involved to the Control Unit.

Data were not able to be sent.  
Fault cause:  
65 (= 41 hex):  
Telegram type does not match send list.  
Note regarding the message value:  
The individual information is coded as follows in the message value (r0949/r2124):  
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON.

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

**F32887 (N, A) Encoder 2 DRIVE-CLiQ (CU): Component fault**

**Message value:** Component number: %1, fault cause: %2  
**Message class:** Internal (DRIVE-CLiQ) communication error (12)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)  
**Acknowledge:** IMMEDIATELY  
**Cause:** Fault detected on the DRIVE-CLiQ component involved (Sensor Module for encoder 2). Faulty hardware cannot be excluded.  
Fault cause:  
32 (= 20 hex):  
Error in the telegram header.  
35 (= 23 hex):  
Receive error: The telegram buffer memory contains an error.  
66 (= 42 hex):  
Send error: The telegram buffer memory contains an error.  
67 (= 43 hex):  
Send error: The telegram buffer memory contains an error.  
96 (= 60 hex):  
Response received too late during runtime measurement.

## 4 Faults and alarms

### 4.2 List of faults and alarms

	97 (= 61 hex): Time taken to exchange characteristic data too long. Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause
<b>Remedy:</b>	<ul style="list-style-type: none"><li>- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).</li><li>- check the electrical cabinet design and cable routing for EMC compliance</li><li>- if required, use another DRIVE-CLiQ socket (p9904).</li><li>- replace the component involved.</li></ul>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

---

<b>F32895 (N, A)</b>	<b>Encoder 2 DRIVE-CLiQ (CU): Alternating cyclic data transfer error</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	A DRIVE-CLiQ communication error has occurred from the Sensor Module (encoder 2) involved to the Control Unit. Fault cause: 11 (= 0B hex): Synchronization error during alternating cyclic data transfer. Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause
<b>Remedy:</b>	Carry out a POWER ON. See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

---

<b>F32896 (N, A)</b>	<b>Encoder 2 DRIVE-CLiQ (CU): Inconsistent component properties</b>
<b>Message value:</b>	Component number: %1
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The properties of the DRIVE-CLiQ component (Sensor Module for encoder 2), specified by the fault value, have changed in an incompatible fashion with respect to the properties when booted. One cause can be, e.g. that a DRIVE-CLiQ cable or DRIVE-CLiQ component has been replaced. Fault value (r0949, interpret decimal): Component number.
<b>Remedy:</b>	<ul style="list-style-type: none"><li>- carry out a POWER ON.</li><li>- when a component is replaced, the same component type and if possible the same firmware version should be used.</li><li>- when a cable is replaced, only cables whose length is the same as or as close as possible to the length of the original cables should be used (ensure compliance with the maximum cable length).</li></ul>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

<b>F32899 (N, A)</b>	<b>Encoder 2: Unknown fault</b>
<b>Message value:</b>	New message: %1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	A fault occurred on the Sensor Module for encoder 2 that cannot be interpreted by the Control Unit firmware. This can occur if the firmware on this component is more recent than the firmware on the Control Unit. Fault value (r0949, interpret decimal): Fault number. Note: If required, the significance of this new fault can be read about in a more recent description of the Control Unit.
<b>Remedy:</b>	- replace the firmware on the Sensor Module by an older firmware version (r0148). - upgrade the firmware on the Control Unit (r0018).
Reaction upon N:	NONE
Acknowled. upon N:	NONE
Reaction upon A:	NONE
Acknowled. upon A:	NONE
<b>A32902 (F, N)</b>	<b>Encoder 2: SPI-BUS error occurred</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	Error when operating the internal SPI bus. Fault value (r0949, interpret hexadecimal): Only for internal Siemens troubleshooting.
<b>Remedy:</b>	- replace the Sensor Module. - if required, upgrade the firmware in the Sensor Module. - contact the Hotline.
Reaction upon F:	NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowled. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowled. upon N:	NONE
<b>A32903 (F, N)</b>	<b>Encoder 2: I2C-BUS error occurred</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	Error when operating the internal I2C bus. Fault value (r0949, interpret hexadecimal): Only for internal Siemens troubleshooting.
<b>Remedy:</b>	- replace the Sensor Module. - if required, upgrade the firmware in the Sensor Module. - contact the Hotline.
Reaction upon F:	NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowled. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowled. upon N:	NONE

<b>F32905 (N, A)</b>	<b>Encoder 2: Parameterization error</b>
<b>Message value:</b>	Parameter: %1, supplementary information: %2
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>A parameter of encoder 2 was detected as being incorrect.</p> <p>It is possible that the parameterized encoder type does not match the connected encoder.</p> <p>The parameter involved can be determined as follows:</p> <ul style="list-style-type: none"> <li>- determine the parameter number using the fault value (r0949).</li> <li>- determine the parameter index (p0187).</li> </ul> <p>Fault value (r0949, interpret decimal):</p> <p>yyyyxxxx dec: yyyy = supplementary information, xxxx = parameter</p> <p>xxxx = 421:</p> <p>For an EnDat/SSI encoder, the absolute position in the protocol must be less than or equal to 30 bits.</p> <p>yyyy = 0:</p> <p>No information available.</p> <p>yyyy = 1:</p> <p>The component does not support HTL level (p0405.1 = 0) combined with track monitoring A/B &lt;&gt; -A/B (p0405.2 = 1).</p> <p>yyyy = 2:</p> <p>A code number for an identified encoder has been entered into p0400, however, no identification was carried out. Please start a new encoder identification.</p> <p>yyyy = 3:</p> <p>A code number for an identified encoder has been entered into p0400, however, no identification was carried out. Please select a listed encoder in p0400 with a code number &lt; 10000.</p> <p>yyyy = 4:</p> <p>This component does not support SSI encoders (p0404.9 = 1) without track A/B.</p> <p>yyyy = 5:</p> <p>For SQW encoder, value in p4686 greater than in p0425.</p> <p>yyyy = 6:</p> <p>DRIVE-CLiQ encoder cannot be used with this firmware version.</p> <p>yyyy = 7:</p> <p>For an SQW encoder, the Xact1 correction (p0437.2) is only permitted with equidistant zero marks.</p> <p>yyyy = 8:</p> <p>The motor pole pair width is not supported by the linear scale being used.</p> <p>yyyy = 9:</p> <p>The length of the position in the EnDat protocol may be a maximum of 32 bits.</p> <p>yyyy = 10:</p> <p>The connected encoder is not supported.</p> <p>yyyy = 11:</p> <p>The hardware does not support track monitoring.</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check whether the connected encoder type matches the encoder that has been parameterized.</li> <li>- correct the parameter specified by the fault value (r0949) and p0187.</li> <li>- re parameter number = 314:</li> <li>- check the pole pair number and measuring gear ratio. The quotient of the "pole pair number" divided by the "measuring gear ratio" must be less than or equal to 1000 ((r0313 * p0433) / p0432 &lt;= 1000).</li> </ul>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE



<b>F32912</b>	<b>Encoder 2: Device combination is not permissible</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	The selected device combination is not supported. Fault value (r0949, interpret decimal): 1003: The connected measuring unit cannot be operated with the EnDat 2.2 converter. For instance, the measuring unit has a pulse number/resolution of 2 <sup>n</sup> . 1005: The type of measuring unit (incremental) is not supported by the EnDat 2.2 converter. 1006: The maximum duration (31.25 µs) of the EnDat transfer was exceeded. 2001: The set combination of current controller cycle, DP cycle and Safety cycle is not supported by the EnDat 2.2 converter. 2002: The resolution of the linear measuring unit does not match the pole pair width of the linear motor
<b>Remedy:</b>	Re fault value = 1003, 1005, 1006: - Use a measuring unit that is permissible. For fault value = 2001: - Set a permissible cycle combination (if required, use standard settings). For fault value = 2002: - Use a measuring unit with a lower resolution (p0422).
<b>A32915 (F, N)</b>	<b>Encoder 2: Configuration error</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The configuration for encoder 2 is incorrect. Alarm value (r2124, interpret decimal): 1: Re-parameterization between fault/alarm is not permissible. 419: When the fine resolution Gx_XIST2 is configured, the encoder identifies a maximum possible absolute position actual value (r0483) that can no longer be represented within 32 bits.
<b>Remedy:</b>	Re alarm value = 1: No re-parameterization between fault/alarm. Re alarm value = 419: Reduce the fine resolution (p0419) or deactivate the monitoring (p0437.25), if the complete multiturn range is not required.
Reaction upon F:	NONE (IASC/DCBRK)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE

#### F32916 (N, A)

#### Encoder 2: Parameterization fault

<b>Message value:</b>	Parameter: %1, supplementary information: %2
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>A parameter of encoder 2 was detected as being incorrect.</p> <p>It is possible that the parameterized encoder type does not match the connected encoder.</p> <p>The parameter involved can be determined as follows:</p> <ul style="list-style-type: none"> <li>- determine the parameter number using the fault value (r0949).</li> <li>- determine the parameter index (p0187).</li> </ul> <p>Fault value (r0949, interpret decimal):</p> <p>Parameter number.</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check whether the connected encoder type matches the encoder that has been parameterized.</li> <li>- correct the parameter specified by the fault value (r0949) and p0187.</li> </ul>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

#### A32920 (F, N)

#### Encoder 2: Temperature sensor fault

<b>Message value:</b>	Fault cause: %1, channel number: %2
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>When evaluating the temperature sensor, an error occurred.</p> <p>Fault cause:</p> <p>1 (= 01 hex):</p> <p>Wire breakage or sensor not connected (KTY: R &gt; 1630 Ohm).</p> <p>2 (= 02 hex):</p> <p>Measured resistance too low (PTC: R &lt; 20 Ohm, KTY: R &lt; 50 Ohm).</p> <p>Additional values:</p> <p>Only for internal Siemens troubleshooting.</p> <p>Note regarding the message value:</p> <p>The individual information is coded as follows in the message value (r0949/r2124):</p> <p>0000yyxx hex: yy = channel number, xx = error cause</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- check that the encoder cable is the correct type and is correctly connected.</li> <li>- check the temperature sensor selection in p0600 to p0603.</li> <li>- replace the Sensor Module (hardware defect or incorrect calibration data).</li> </ul>
Reaction upon F:	NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE

#### A32930 (N)

#### Encoder 2: Data logger has saved data

<b>Message value:</b>	-
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	For the activated function "Data logger" (p0437.0 = 1) a fault has occurred with the Sensor Module. This alarm indicates that the diagnostics data corresponding to the fault was saved on the memory card.

The diagnostics data is saved in the following folder:  
/USER/SINAMICS/DATA/SMTRC00.BIN  
...  
/USER/SINAMICS/DATA/SMTRC07.BIN  
/USER/SINAMICS/DATA/SMTRCIDX.TXT  
The following information is contained in the TXT file:  
- Display of the last written BIN file.  
- Number of write operations that are still possible (from 10000 downwards).  
Note:  
Only Siemens can evaluate the BIN files.

**Remedy:** Not necessary.  
The alarm disappears automatically.  
The data logger is ready to record the next fault case.

Reaction upon N: NONE  
Acknowl. upon N: NONE

---

### **A32940 (F, N) Encoder 2: Spindle sensor S1 voltage incorrect**

**Message value:** %1  
**Message class:** Application / technological function faulted (17)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The voltage of analog sensor S1 is outside the permissible range.  
Fault value (r0949, interpret decimal):  
Signal level from sensor S1.  
Note:  
A signal level of 500 mV corresponds to the numerical value 500 dec.

**Remedy:**  
- Check the clamped tool.  
- Check the tolerance and if required, adapt (p5040).  
- Check the thresholds and if required, adapt (p5041).  
- Check analog sensor S1 and connections.

Reaction upon F: NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)  
Acknowl. upon F: IMMEDIATELY  
Reaction upon N: NONE  
Acknowl. upon N: NONE

---

### **F32950 Encoder 2: Internal software error**

**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF1 (OFF2)  
**Acknowledge:** POWER ON  
**Cause:** An internal software error has occurred.  
Fault value (r0949, interpret decimal):  
Information about the fault source.  
Only for internal Siemens troubleshooting.

**Remedy:**  
- If necessary, upgrade the firmware in the Sensor Module to a later version.  
- contact the Hotline.

<b>A32999 (F, N)</b>	<b>Encoder 2: Unknown alarm</b>
<b>Message value:</b>	New message: %1
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>A alarm has occurred on the Sensor Module for encoder 2 that cannot be interpreted by the Control Unit firmware. This can occur if the firmware on this component is more recent than the firmware on the Control Unit.</p> <p>Alarm value (r2124, interpret decimal):</p> <p>Alarm number.</p> <p>Note:</p> <p>If required, the significance of this new alarm can be read about in a more recent description of the Control Unit.</p>
<b>Remedy:</b>	<p>- replace the firmware on the Sensor Module by an older firmware version (r0148).</p> <p>- upgrade the firmware on the Control Unit (r0018).</p>
Reaction upon F:	NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowled. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowled. upon N:	NONE
<b>F33125 (N, A)</b>	<b>Encoder 3: Amplitude error track A or B overcontrolled</b>
<b>Message value:</b>	A track: %1, B-track: %2
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	<p>The amplitude of track A or B for encoder 3 exceeds the permissible tolerance band.</p> <p>Fault value (r0949, interpret hexadecimal):</p> <p>yyyyxxxx hex:</p> <p>yyyy = Signal level, track B (16 bits with sign).</p> <p>xxxx = Signal level, track A (16 bits with sign).</p> <p>The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).</p> <p>The response threshold is &gt; 750 mV. This fault also occurs if the A/D converter is overcontrolled.</p> <p>A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.</p> <p>Note for Sensor Modules for resolvers (e.g. SMC10):</p> <p>The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is &gt; 3582 mV.</p> <p>A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec.</p> <p>Note:</p> <p>The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.</p>
<b>Remedy:</b>	<p>- check that the encoder cables and shielding are routed in compliance with EMC.</p> <p>- replace the encoder or encoder cable.</p>
Reaction upon N:	NONE
Acknowled. upon N:	NONE
Reaction upon A:	NONE
Acknowled. upon A:	NONE
<b>F33126 (N, A)</b>	<b>Encoder 3: Amplitude AB too high</b>
<b>Message value:</b>	Amplitude: %1, Angle: %2
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	The amplitude ( $\sqrt{A^2 + B^2}$ or $ A  +  B $ ) for encoder 3 exceeds the permissible tolerance.

Fault value (r0949, interpret hexadecimal):

yyyyxxxx hex:

yyyy = Angle

xxxx = Amplitude, i.e. root from  $A^2 + B^2$  (16 bits without sign)

The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).

The response threshold for  $(|A| + |B|)$  is  $> 1120$  mV or the root of  $(A^2 + B^2) > 955$  mV.

A signal level of 500 mV peak value corresponds to the numerical value of 299A hex = 10650 dec.

The angle 0 ... FFFF hex corresponds to 0 ... 360 degrees of the fine position. Zero degrees is present at the negative zero crossover of track B.

Note:

The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.

**Remedy:**

- check that the encoder cables and shielding are routed in compliance with EMC.
- replace the encoder or encoder cable.

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

**F33142 (N, A) Encoder 3: Battery voltage fault**

**Message value:** -  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)  
**Acknowledge:** IMMEDIATELY  
**Cause:** When switched-off, the encoder uses a battery to back up the multiturn information. The battery voltage is no longer sufficient to check the multiturn information.  
**Remedy:** Replace battery.  
Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

**F33152 (N, A) Encoder 3: Maximum input frequency exceeded**

**Message value:** %1  
**Message class:** Error in the parameterization / configuration / commissioning procedure (18)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)  
**Acknowledge:** PULSE INHIBIT  
**Cause:** The maximum input frequency of the encoder evaluation has been exceeded.  
Fault value (r0949, interpret decimal):  
Actual input frequency in Hz.  
See also: p0408 (Rotary encoder pulse number)  
**Remedy:**  
- Reduce the speed.  
- Use an encoder with a lower pulse number (p0408).  
Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

<b>A33442 (F, N)</b>	<b>Encoder 3: Battery voltage pre-alarm</b>
<b>Message value:</b>	-
<b>Message class:</b>	Position/speed actual value incorrect or not available (11)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	When switched-off, the encoder uses a battery to back up the multiturn information. The multiturn information can no longer be buffered if the battery voltage drops even further.
<b>Remedy:</b>	Replace battery.
Reaction upon F:	NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>A33700</b>	<b>Encoder 3: Effectivity test does not supply the expected value</b>
<b>Message value:</b>	Fault cause: %1 bin
<b>Message class:</b>	Safety monitoring channel has identified an error (10)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The DRIVE-CLiQ encoder fault word supplies fault bits that have been set. Fault value (r0949, interpret binary): Bit x = 1: Effectivity test x unsuccessful.
<b>Remedy:</b>	Replace encoder.
<b>A33840</b>	<b>Encoder 3 DRIVE-CLiQ: error below the signaling threshold</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	A DRIVE-CLiQ error has occurred below the signaling threshold. Fault cause: 1 (= 01 hex): Checksum error (CRC error). 2 (= 02 hex): Telegram is shorter than specified in the length byte or in the receive list. 3 (= 03 hex): Telegram is longer than specified in the length byte or in the receive list. 4 (= 04 hex): The length of the receive telegram does not match the receive list. 5 (= 05 hex): The type of the receive telegram does not match the receive list. 6 (= 06 hex): The address of the component in the telegram and in the receive list do not match. 7 (= 07 hex): A SYNC telegram is expected - but the received telegram is not a SYNC telegram. 8 (= 08 hex): No SYNC telegram is expected - but the received telegram is one. 9 (= 09 hex): The error bit in the receive telegram is set. 10 (= 0A hex): The sign-of-life bit in the receive telegram is not set. 11 (= 0B hex): Synchronization error during alternating cyclic data transfer.

16 (= 10 hex):  
The receive telegram is too early.  
32 (= 20 hex):  
Error in the telegram header.  
33 (= 21 hex):  
The cyclic telegram has not been received.  
34 (= 22 hex):  
Timeout in the telegram receive list.  
35 (= 23 hex):  
Receive error: The telegram buffer memory contains an error.  
64 (= 40 hex):  
Timeout in the telegram send list.  
65 (= 41 hex):  
Telegram type does not match send list.  
66 (= 42 hex):  
Send error: The telegram buffer memory contains an error.  
67 (= 43 hex):  
Send error: The telegram buffer memory contains an error.  
Note regarding the message value:  
The individual information is coded as follows in the message value (r0949/r2124):  
0000yyxx hex: yy = component number, xx = error cause  
**Remedy:**  
- check the electrical cabinet design and cable routing for EMC compliance  
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).  
See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

<b>F33875 (N, A)</b>	<b>Encoder 3 DRIVE-CLiQ (CU): Supply voltage failed</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Supply voltage fault (undervoltage) (3)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed. Fault cause: 9 (= 09 hex): The power supply voltage for the components has failed. Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause
<b>Remedy:</b>	- carry out a POWER ON (power off/on). - check the power supply voltage wiring for the DRIVE-CLiQ component (interrupted cable, contacts, ...). - check the dimensioning of the power supply for the DRIVE-CLiQ component.
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

<b>F33912</b>	<b>Encoder 3: Device combination is not permissible</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	OFF1 (IASC/DCBRK, NONE)
<b>Acknowledge:</b>	PULSE INHIBIT
<b>Cause:</b>	The selected device combination is not supported.

Fault value (r0949, interpret decimal):

1003:

The connected measuring unit cannot be operated with the EnDat 2.2 converter. For instance, the measuring unit has a pulse number/resolution of  $2^n$ .

1005:

The type of measuring unit (incremental) is not supported by the EnDat 2.2 converter.

1006:

The maximum duration (31.25  $\mu$ s) of the EnDat transfer was exceeded.

2001:

The set combination of current controller cycle, DP cycle and Safety cycle is not supported by the EnDat 2.2 converter.

2002:

The resolution of the linear measuring unit does not match the pole pair width of the linear motor

#### Remedy:

Re fault value = 1003, 1005, 1006:

- Use a measuring unit that is permissible.

For fault value = 2001:

- Set a permissible cycle combination (if required, use standard settings).

For fault value = 2002:

- Use a measuring unit with a lower resolution (p0422).

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#### A34840

#### VSM DRIVE-CLiQ: error below the signaling threshold

**Message value:**

Component number: %1, fault cause: %2

**Message class:**

Internal (DRIVE-CLiQ) communication error (12)

**Drive object:**

DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S

**Reaction:**

NONE

**Acknowledge:**

NONE

**Cause:**

A DRIVE-CLiQ error has occurred below the signaling threshold.

Fault cause:

1 (= 01 hex):

Checksum error (CRC error).

2 (= 02 hex):

Telegram is shorter than specified in the length byte or in the receive list.

3 (= 03 hex):

Telegram is longer than specified in the length byte or in the receive list.

4 (= 04 hex):

The length of the receive telegram does not match the receive list.

5 (= 05 hex):

The type of the receive telegram does not match the receive list.

6 (= 06 hex):

The address of the component in the telegram and in the receive list do not match.

7 (= 07 hex):

A SYNC telegram is expected - but the received telegram is not a SYNC telegram.

8 (= 08 hex):

No SYNC telegram is expected - but the received telegram is one.

9 (= 09 hex):

The error bit in the receive telegram is set.

10 (= 0A hex):

The sign-of-life bit in the receive telegram is not set.

11 (= 0B hex):

Synchronization error during alternating cyclic data transfer.

16 (= 10 hex):

The receive telegram is too early.

32 (= 20 hex):

Error in the telegram header.



33 (= 21 hex):  
The cyclic telegram has not been received.

34 (= 22 hex):  
Timeout in the telegram receive list.

35 (= 23 hex):  
Receive error: The telegram buffer memory contains an error.

64 (= 40 hex):  
Timeout in the telegram send list.

65 (= 41 hex):  
Telegram type does not match send list.

66 (= 42 hex):  
Send error: The telegram buffer memory contains an error.

67 (= 43 hex):  
Send error: The telegram buffer memory contains an error.

Note regarding the message value:  
The individual information is coded as follows in the message value (r0949/r2124):  
0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

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#### **F34851 VSM DRIVE-CLiQ (CU): Sign-of-life missing**

**Message value:** Component number: %1, fault cause: %2

**Message class:** Internal (DRIVE-CLiQ) communication error (12)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31

**Reaction:** NONE (OFF1, OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communications error has occurred from the Voltage Sensing Module involved (VSM) to the Control Unit.  
The DRIVE-CLiQ component did not set the sign-of-life to the Control Unit.  
Fault cause:  
10 (= 0A hex):  
The sign-of-life bit in the receive telegram is not set.  
Note regarding the message value:  
The individual information is coded as follows in the message value (r0949/r2124):  
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Upgrade the firmware of the component involved.

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#### **F34860 VSM DRIVE-CLiQ (CU): Telegram error**

**Message value:** Component number: %1, fault cause: %2

**Message class:** Internal (DRIVE-CLiQ) communication error (12)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31

**Reaction:** NONE (OFF1, OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communications error has occurred from the Voltage Sensing Module involved (VSM) to the Control Unit.  
Fault cause:  
1 (= 01 hex):  
Checksum error (CRC error).  
2 (= 02 hex):  
Telegram is shorter than specified in the length byte or in the receive list.  
3 (= 03 hex):  
Telegram is longer than specified in the length byte or in the receive list.  
4 (= 04 hex):  
The length of the receive telegram does not match the receive list.

5 (= 05 hex):

The type of the receive telegram does not match the receive list.

6 (= 06 hex):

The address of the power unit in the telegram and in the receive list do not match.

9 (= 09 hex):

The error bit in the receive telegram is set.

16 (= 10 hex):

The receive telegram is too early.

17 (= 11 hex):

CRC error and the receive telegram is too early.

18 (= 12 hex):

The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.

19 (= 13 hex):

The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.

20 (= 14 hex):

The length of the receive telegram does not match the receive list and the receive telegram is too early.

21 (= 15 hex):

The type of the receive telegram does not match the receive list and the receive telegram is too early.

22 (= 16 hex):

The address of the power unit in the telegram and in the receive list does not match and the receive telegram is too early.

25 (= 19 hex):

The error bit in the receive telegram is set and the receive telegram is too early.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- carry out a POWER ON (power off/on).
  - check the electrical cabinet design and cable routing for EMC compliance
  - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

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**F34875**

**VSM DRIVE-CLiQ (CU): Supply voltage failed**

**Message value:**

Component number: %1, fault cause: %2

**Message class:**

Supply voltage fault (undervoltage) (3)

**Drive object:**

DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31

**Reaction:**

OFF2

**Acknowledge:**

IMMEDIATELY

**Cause:**

The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.

Fault cause:

9 (= 09 hex):

The power supply voltage for the components has failed.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- carry out a POWER ON (power off/on).
- check the power supply voltage wiring for the DRIVE-CLiQ component (interrupted cable, contacts, ...).
- check the dimensioning of the power supply for the DRIVE-CLiQ component.

<b>F34885</b>	<b>VSM DRIVE-CLiQ (CU): Cyclic data transfer error</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE (OFF1, OFF2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>A DRIVE-CLiQ communications error has occurred from the Voltage Sensing Module involved (VSM) to the Control Unit.</p> <p>The nodes do not send and receive in synchronism.</p> <p>Fault cause:</p> <p>26 (= 1A hex):</p> <p>Sign-of-life bit in the receive telegram not set and the receive telegram is too early.</p> <p>33 (= 21 hex):</p> <p>The cyclic telegram has not been received.</p> <p>34 (= 22 hex):</p> <p>Timeout in the telegram receive list.</p> <p>64 (= 40 hex):</p> <p>Timeout in the telegram send list.</p> <p>98 (= 62 hex):</p> <p>Error at the transition to cyclic operation.</p> <p>Note regarding the message value:</p> <p>The individual information is coded as follows in the message value (r0949/r2124):</p> <p>0000yyxx hex: yy = component number, xx = error cause</p>
<b>Remedy:</b>	<p>- check the power supply voltage of the component involved.</p> <p>- carry out a POWER ON.</p> <p>- replace the component involved.</p> <p>See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)</p>
<b>F34886</b>	<b>VSM DRIVE-CLiQ (CU): Error when sending DRIVE-CLiQ data</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE (OFF1, OFF2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>A DRIVE-CLiQ communications error has occurred from the Voltage Sensing Module involved (VSM) to the Control Unit.</p> <p>Data were not able to be sent.</p> <p>Fault cause:</p> <p>65 (= 41 hex):</p> <p>Telegram type does not match send list.</p> <p>Note regarding the message value:</p> <p>The individual information is coded as follows in the message value (r0949/r2124):</p> <p>0000yyxx hex: yy = component number, xx = error cause</p>
<b>Remedy:</b>	Carry out a POWER ON.
<b>F34887</b>	<b>VSM DRIVE-CLiQ (CU): Component fault</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE (OFF1, OFF2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	Fault detected on the DRIVE-CLiQ component (Voltage Sensing Module) involved. Faulty hardware cannot be excluded.

	<p>Fault cause: 32 (= 20 hex): Error in the telegram header. 35 (= 23 hex): Receive error: The telegram buffer memory contains an error. 66 (= 42 hex): Send error: The telegram buffer memory contains an error. 67 (= 43 hex): Send error: The telegram buffer memory contains an error. 96 (= 60 hex): Response received too late during runtime measurement. 97 (= 61 hex): Time taken to exchange characteristic data too long. Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause</p>
<b>Remedy:</b>	<ul style="list-style-type: none"><li>- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).</li><li>- check the electrical cabinet design and cable routing for EMC compliance</li><li>- if required, use another DRIVE-CLiQ socket (p9904).</li><li>- replace the component involved.</li></ul>
<b>F34895</b>	<b>VSM DRIVE-CLiQ (CU): Alternating cyclic data transfer error</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE (OFF1, OFF2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>A DRIVE-CLiQ communications error has occurred from the Voltage Sensing Module involved (VSM) to the Control Unit.</p> <p>Fault cause: 11 (= 0B hex): Synchronization error during alternating cyclic data transfer.</p> <p>Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause</p>
<b>Remedy:</b>	<p>Carry out a POWER ON.</p> <p>See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)</p>
<b>F34896</b>	<b>VSM DRIVE-CLiQ (CU): Inconsistent component properties</b>
<b>Message value:</b>	Component number: %1
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>The properties of the DRIVE-CLiQ component (Voltage Sensing Module), specified by the fault value, have changed in an incompatible fashion with respect to the properties when booted. One cause can be, e.g. that a DRIVE-CLiQ cable or DRIVE-CLiQ component has been replaced.</p> <p>Fault value (r0949, interpret decimal): Component number.</p>
<b>Remedy:</b>	<ul style="list-style-type: none"><li>- carry out a POWER ON.</li><li>- when a component is replaced, the same component type and if possible the same firmware version should be used.</li><li>- when a cable is replaced, only cables whose length is the same as or as close as possible to the length of the original cables should be used (ensure compliance with the maximum cable length).</li></ul>

<b>A35200 (F, N)</b>	<b>TM: Calibration data</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	An error was detected in the calibration data of the Terminal Module. Alarm value (r2124, interpret decimal): ddcbaa dec: dd = component number, c = AI/AO, b = fault type, aa = number c = 0: analog input (AI, Analog Input) c = 1: analog output (AO, Analog Output) b = 0: No calibration data available. b = 1: Offset too high (> 100 mV).
<b>Remedy:</b>	- carry out a POWER ON (power off/on) for all components. - Replace the component if necessary.
Reaction upon F:	NONE
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>F35207 (N, A)</b>	<b>TM: Temperature fault/alarm threshold channel 0 exceeded</b>
<b>Message value:</b>	%1
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	OFF2 (NONE, OFF1, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	For the temperature evaluation via the Terminal Module (TM), at least one of the following conditions to initiate this fault is fulfilled: - alarm threshold has been exceeded longer than that set in the timer (p4102[0], p4103[0]). or - fault threshold exceeded (p4102[1]). Note: For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[0] = 1, 4), the following applies: - if r4101[0] > 1650 ohms, the temperature r4105[0] = 250 °C - if r4101[0] <= 1650 ohms, the temperature r4105[0] = -50 °C The temperature actual value is displayed via connector output r4105[0] and can be interconnected. Notice: This fault only causes the drive to shut down if there is at least one BICO interconnection between the drive and the Terminal Module. Fault value (r0949, interpret decimal): Temperature actual value at the time of initiation [0.1 °C].
<b>Remedy:</b>	- allow the temperature sensor to cool down to below p4102[1] - hysteresis (5 K, for TM150, can be set using p4118[0]). - if required, set the fault response to NONE (p2100, p2101). See also: p4102
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

<b>F35208 (N, A)</b>	<b>TM: Temperature fault/alarm threshold channel 1 exceeded</b>
<b>Message value:</b>	%1
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150
<b>Reaction:</b>	OFF2 (NONE, OFF1, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	<p>For the temperature evaluation via the Terminal Module (TM), at least one of the following conditions to initiate this fault is fulfilled:</p> <ul style="list-style-type: none"> <li>- alarm threshold has been exceeded longer than that set in the timer (p4102[2], p4103[1]).</li> </ul> <p>or</p> <ul style="list-style-type: none"> <li>- fault threshold exceeded (p4102[3]).</li> </ul> <p>Note:</p> <p>For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[1] = 1, 4), the following applies:</p> <ul style="list-style-type: none"> <li>- if r4101[1] &gt; 1650 ohms, the temperature r4105[1] = 250 °C</li> <li>- if r4101[1] &lt;= 1650 ohms, the temperature r4105[1] = -50 °C</li> </ul> <p>The temperature actual value is displayed via connector output r4105[1] and can be interconnected.</p> <p>Notice:</p> <p>This fault only causes the drive to shut down if there is at least one BICO interconnection between the drive and the Terminal Module.</p> <p>Fault value (r0949, interpret decimal):</p> <p>Temperature actual value at the time of initiation [0.1 °C].</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- allow the temperature sensor to cool down to below p4102[3] - hysteresis (5 K, for TM150, can be set using p4118[1]).</li> <li>- if required, set the fault response to NONE (p2100, p2101).</li> </ul> <p>See also: p4102</p>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE
<b>F35209 (N, A)</b>	<b>TM: Temperature fault/alarm threshold channel 2 exceeded</b>
<b>Message value:</b>	%1
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150
<b>Reaction:</b>	OFF2 (NONE, OFF1, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	<p>For the temperature evaluation via the Terminal Module (TM), at least one of the following conditions to initiate this fault is fulfilled:</p> <ul style="list-style-type: none"> <li>- alarm threshold has been exceeded longer than that set in the timer (p4102[4], p4103[2]).</li> </ul> <p>or</p> <ul style="list-style-type: none"> <li>- fault threshold exceeded (p4102[5]).</li> </ul> <p>Note:</p> <p>For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[2] = 1, 4), the following applies:</p> <ul style="list-style-type: none"> <li>- if r4101[2] &gt; 1650 ohms, the temperature r4105[2] = 250 °C</li> <li>- if r4101[2] &lt;= 1650 ohms, the temperature r4105[2] = -50 °C</li> </ul> <p>The temperature actual value is displayed via connector output r4105[2] and can be interconnected.</p> <p>Notice:</p> <p>This fault only causes the drive to shut down if there is at least one BICO interconnection between the drive and the Terminal Module.</p> <p>Fault value (r0949, interpret decimal):</p> <p>Temperature actual value at the time of initiation [0.1 °C].</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- allow the temperature sensor to cool down to below p4102[5] - hysteresis (5 K, for TM150, can be set using p4118[2]).</li> <li>- if required, set the fault response to NONE (p2100, p2101).</li> </ul> <p>See also: p4102</p>

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

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<b>F35210 (N, A)</b>	<b>TM: Temperature fault/alarm threshold channel 3 exceeded</b>
<b>Message value:</b>	%1
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150
<b>Reaction:</b>	OFF2 (NONE, OFF1, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	For the temperature evaluation via the Terminal Module (TM), at least one of the following conditions to initiate this fault is fulfilled: - alarm threshold has been exceeded longer than that set in the timer (p4102[6], p4103[3]). or - fault threshold exceeded (p4102[7]). Note: For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[3] = 1, 4), the following applies: - if r4101[3] > 1650 ohms, the temperature r4105[3] = 250 °C - if r4101[3] <= 1650 ohms, the temperature r4105[3] = -50 °C The temperature actual value is displayed via connector output r4105[3] and can be interconnected. Notice: This fault only causes the drive to shut down if there is at least one BICO interconnection between the drive and the Terminal Module. Fault value (r0949, interpret decimal): Temperature actual value at the time of initiation [0.1 °C].
<b>Remedy:</b>	- allow the temperature sensor to cool down to below p4102[7] - hysteresis (5 K, for TM150, can be set using p4118[3]). - if required, set the fault response to NONE (p2100, p2101). See also: p4102
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

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<b>A35211 (F, N)</b>	<b>TM: Temperature alarm threshold channel 0 exceeded</b>
<b>Message value:</b>	%1
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The temperature measured using the temperature sensing of the Terminal Module (TM) (r4105[0]) has exceeded the threshold value to initiate this alarm (p4102[0]). Note: For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[0] = 1, 4), the following applies: - if r4101[0] > 1650 ohms, the temperature r4105[0] = 250 °C - if r4101[0] <= 1650 ohms, the temperature r4105[0] = -50 °C Alarm value (r2124, interpret decimal): Temperature actual value at the time of initiation [0.1 °C].
<b>Remedy:</b>	- allow the temperature sensor to cool down to below p4102[0] - hysteresis (5 K); for TM150, can be set using p4118[0]. See also: p4102
Reaction upon F:	NONE
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE

<b>A35212 (F, N)</b>	<b>TM: Temperature alarm threshold channel 1 exceeded</b>
<b>Message value:</b>	%1
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The temperature measured using the temperature sensing of the Terminal Module (TM) (r4105[1]) has exceeded the threshold value to initiate this alarm (p4102[2]).</p> <p>Note:</p> <p>For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[1] = 1, 4), the following applies:</p> <ul style="list-style-type: none"> <li>- if r4101[1] &gt; 1650 ohms, the temperature r4105[1] = 250 °C</li> <li>- if r4101[1] &lt;= 1650 ohms, the temperature r4105[1] = -50 °C</li> </ul> <p>Alarm value (r2124, interpret decimal):</p> <p>Temperature actual value at the time of initiation [0.1 °C].</p>
<b>Remedy:</b>	<p>- allow the temperature sensor to cool down to below p4102[4] - hysteresis (5 K); for TM150, can be set using p4118[1].</p> <p>See also: p4102</p>
Reaction upon F:	NONE
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>A35213 (F, N)</b>	<b>TM: Temperature alarm threshold channel 2 exceeded</b>
<b>Message value:</b>	%1
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The temperature measured using the temperature sensing of the Terminal Module (TM) (r4105[2]) has exceeded the threshold value to initiate this alarm (p4102[4]).</p> <p>Note:</p> <p>For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[2] = 1, 4), the following applies:</p> <ul style="list-style-type: none"> <li>- if r4101[2] &gt; 1650 ohms, the temperature r4105[2] = 250 °C</li> <li>- if r4101[2] &lt;= 1650 ohms, the temperature r4105[2] = -50 °C</li> </ul> <p>Alarm value (r2124, interpret decimal):</p> <p>Temperature actual value at the time of initiation [0.1 °C].</p>
<b>Remedy:</b>	<p>- allow the temperature sensor to cool down to below p4102[4] - hysteresis (5 K); for TM150, can be set using p4118[2].</p> <p>See also: p4102</p>
Reaction upon F:	NONE
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>A35214 (F, N)</b>	<b>TM: Temperature alarm threshold channel 3 exceeded</b>
<b>Message value:</b>	%1
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The temperature measured using the temperature sensing of the Terminal Module (TM) (r4105[3]) has exceeded the threshold value to initiate this alarm (p4102[6]).</p> <p>Note:</p> <p>For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[3] = 1, 4), the following applies:</p> <ul style="list-style-type: none"> <li>- if r4101[3] &gt; 1650 ohms, the temperature r4105[3] = 250 °C</li> <li>- if r4101[3] &lt;= 1650 ohms, the temperature r4105[3] = -50 °C</li> </ul>



	Alarm value (r2124, interpret decimal): Temperature actual value at the time of initiation [0.1 °C].
<b>Remedy:</b>	- allow the temperature sensor to cool down to below p4102[6] - hysteresis (5 K); for TM150, can be set using p4118[3]. See also: p4102
Reaction upon F:	NONE
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE

<b>F35220 (N, A)</b>	<b>TM: Frequency limit reached for signal output</b>
<b>Message value:</b>	-
<b>Message class:</b>	Application / technological function faulted (17)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM15DI_DO, TM31
<b>Reaction:</b>	OFF1 (NONE, OFF2, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	The signals output from the Terminal Module 41 (TM41) for tracks A/B have reached the limit frequency. The output signals are no longer in synchronism with the specified setpoint. SIMOTION (p4400 = 0) operating mode: - If the TM41 has been configured as the technology project, this fault is also output in response to short-circuited A/B signals in X520. SINAMICS (p4400 = 1) operating mode: - the fine resolution of TM41 in p0418 does not match that of the connector input that was interconnected at p4420 - the encoder position actual value r0479 interconnected at connector input p4420 has an excessively high actual speed - the output signals correspond to a speed, which is greater than the maximum speed (r1082 of TM41).
<b>Remedy:</b>	SIMOTION (p4400 = 0) operating mode: - enter a lower speed setpoint (p1155). - reduce the encoder pulse number (p0408). - check track A/B for short-circuits. SINAMICS (p4400 = 1) operating mode: - enter a lower speed setpoint (p1155). - reduce the encoder pulse number (p0408). Notice: The output signal is no longer monitored after changing the message type to "Alarm" (A).
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

<b>F35221 (N, A)</b>	<b>TM: Setpoint - actual value deviation outside the tolerance range</b>
<b>Message value:</b>	-
<b>Message class:</b>	Application / technological function faulted (17)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM15DI_DO, TM31
<b>Reaction:</b>	OFF1 (NONE, OFF2, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	The deviation between the setpoint and the output signals (track A/B) exceeds the tolerance of +/-3 %. The deviation between the internal and external measured value is too high (> 1000 pulses).
<b>Remedy:</b>	- reduce the basic clock cycle (p0110, p0111). - if required, replace the component (e.g. internal short-circuit).
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

<b>A35222 (F, N)</b>	<b>TM: Encoder pulse number not permissible</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The encoder pulse number entered does not match the permissible pulse number from a hardware perspective. Fault value (r0949, interpret decimal): 1: Encoder pulse number is too high. 2: Encoder pulse number is too low. 4: Encoder pulse number is less than the zero mark offset (p4426).
<b>Remedy:</b>	- enter the encoder pulse number in the permissible range (p0408). - if necessary, replace TM41 SAC with TM41 DAC. Note: TM41 SAC: order no. = 6SL3055-0AA00-3PA0 TM41 DAC: order no. = 6SL3055-0AA00-3PA1 The following applies for TM41 SAC: - minimum/maximum value for p0408: 1000/8192 The following applies for TM41 DAC: - minimum/maximum value for p0408: 1000/16384 See also: p0408 (Rotary encoder pulse number)
Reaction upon F:	OFF1 (NONE, OFF2, OFF3)
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>A35223 (F, N)</b>	<b>TM: Zero mark offset not permissible</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Application / technological function faulted (17)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The entered zero mark offset is not permissible. Fault value (r0949, interpret decimal): 1: Zero mark offset is too high.
<b>Remedy:</b>	Enter the zero mark offset in the permissible range (p4426).
Reaction upon F:	OFF1 (NONE, OFF2, OFF3)
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>F35230</b>	<b>TM: Hardware fault</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	POWER ON
<b>Cause:</b>	The Terminal Module (TM) used has signaled internal errors. Signals from this module may not be evaluated because they are very likely to be incorrect.
<b>Remedy:</b>	If required, replace the Terminal Module.

<b>F35233</b>	<b>DRIVE-CLiQ component function not supported</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Error in the parameterization / configuration / commissioning procedure (18)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM31
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>A function requested by the Control Unit is not supported by a DRIVE-CLiQ component.</p> <p>Fault value (r0949, interpret decimal):</p> <p>1: Terminal Module 31 does not support the function "Timer for temperature evaluation" (X522.7/8, p4103 &gt; 0.000).</p> <p>4: The improved actual value resolution is not supported (p4401.4).</p> <p>5: The improved setpoint resolution is not supported (p4401.5).</p> <p>6: The residual value handling in the setpoint channel cannot be deactivated (p4401.6).</p> <p>7: Output frequencies greater than 750 kHz cannot be activated (p4401.7).</p>
<b>Remedy:</b>	<p>For fault value = 1:</p> <ul style="list-style-type: none"> <li>- De-activate timer for temperature evaluation (X522.7/8) (p4103 = 0.000).</li> <li>- Use Terminal Module 31 and the relevant firmware version to enable the "Timer for temperature evaluation" function (Order No. 6SL3055-0AA00-3AA1, firmware version 2.6 and higher).</li> </ul> <p>See also: p4103</p>
<b>F35400 (N, A)</b>	<b>TM: Temperature fault/alarm threshold channel 4 exceeded</b>
<b>Message value:</b>	%1
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150
<b>Reaction:</b>	OFF2 (NONE, OFF1, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	<p>For the temperature evaluation via the Terminal Module 150 (TM150), at least one of the following conditions to initiate this fault is fulfilled:</p> <ul style="list-style-type: none"> <li>- alarm threshold has been exceeded longer than that set in the timer (p4102[8], p4103[4]).</li> </ul> <p>or</p> <ul style="list-style-type: none"> <li>- fault threshold exceeded (p4102[9]).</li> </ul> <p>Note:</p> <p>For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[4] = 1, 4), the following applies:</p> <ul style="list-style-type: none"> <li>- if r4101[4] &gt; 1650 ohms, the temperature r4105[4] = 250 °C</li> <li>- if r4101[4] ≤ 1650 ohms, the temperature r4105[4] = -50 °C</li> </ul> <p>The temperature actual value is displayed via connector output r4105[4] and can be interconnected.</p> <p>Notice:</p> <p>This fault only causes the drive to shut down if there is at least one BICO interconnection between the drive and the Terminal Module.</p> <p>Fault value (r0949, interpret decimal):</p> <p>Temperature actual value at the time of initiation [0.1 °C].</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- allow the temperature sensor to cool down to below p4102[9] - hysteresis (p4118[4]).</li> <li>- if required, set the fault response to NONE (p2100, p2101).</li> </ul> <p>See also: p4102</p>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

<b>F35401 (N, A)</b>	<b>TM: Temperature fault/alarm threshold channel 5 exceeded</b>
<b>Message value:</b>	%1
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150
<b>Reaction:</b>	OFF2 (NONE, OFF1, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	<p>For the temperature evaluation via the Terminal Module 150 (TM150), at least one of the following conditions to initiate this fault is fulfilled:</p> <ul style="list-style-type: none"> <li>- alarm threshold has been exceeded longer than that set in the timer (p4102[10], p4103[5]).</li> </ul> <p>or</p> <ul style="list-style-type: none"> <li>- fault threshold exceeded (p4102[11]).</li> </ul> <p>Note:</p> <p>For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[5] = 1, 4), the following applies:</p> <ul style="list-style-type: none"> <li>- if r4101[5] &gt; 1650 ohms, the temperature r4105[5] = 250 °C</li> <li>- if r4101[5] ≤ 1650 ohms, the temperature r4105[5] = -50 °C</li> </ul> <p>The temperature actual value is displayed via connector output r4105[5] and can be interconnected.</p> <p>Notice:</p> <p>This fault only causes the drive to shut down if there is at least one BICO interconnection between the drive and the Terminal Module.</p> <p>Fault value (r0949, interpret decimal):</p> <p>Temperature actual value at the time of initiation [0.1 °C].</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- allow the temperature sensor to cool down to below p4102[11] - hysteresis (p4118[5]).</li> <li>- if required, set the fault response to NONE (p2100, p2101).</li> </ul> <p>See also: p4102</p>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE
<b>F35402 (N, A)</b>	<b>TM: Temperature fault/alarm threshold channel 6 exceeded</b>
<b>Message value:</b>	%1
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150
<b>Reaction:</b>	OFF2 (NONE, OFF1, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	<p>For the temperature evaluation via the Terminal Module 150 (TM150), at least one of the following conditions to initiate this fault is fulfilled:</p> <ul style="list-style-type: none"> <li>- alarm threshold has been exceeded longer than that set in the timer (p4102[12], p4103[6]).</li> </ul> <p>or</p> <ul style="list-style-type: none"> <li>- fault threshold exceeded (p4102[13]).</li> </ul> <p>Note:</p> <p>For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[6] = 1, 4), the following applies:</p> <ul style="list-style-type: none"> <li>- if r4101[6] &gt; 1650 ohms, the temperature r4105[6] = 250 °C</li> <li>- if r4101[6] ≤ 1650 ohms, the temperature r4105[6] = -50 °C</li> </ul> <p>The temperature actual value is displayed via connector output r4105[6] and can be interconnected.</p> <p>Notice:</p> <p>This fault only causes the drive to shut down if there is at least one BICO interconnection between the drive and the Terminal Module.</p> <p>Fault value (r0949, interpret decimal):</p> <p>Temperature actual value at the time of initiation [0.1 °C].</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- allow the temperature sensor to cool down to below p4102[13] - hysteresis (p4118[6]).</li> <li>- if required, set the fault response to NONE (p2100, p2101).</li> </ul> <p>See also: p4102</p>
Reaction upon N:	NONE
Acknowl. upon N:	NONE

Reaction upon A: NONE  
Acknowl. upon A: NONE

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<b>F35403 (N, A)</b>	<b>TM: Temperature fault/alarm threshold channel 7 exceeded</b>
<b>Message value:</b>	%1
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150
<b>Reaction:</b>	OFF2 (NONE, OFF1, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	<p>For the temperature evaluation via the Terminal Module 150 (TM150), at least one of the following conditions to initiate this fault is fulfilled:</p> <ul style="list-style-type: none"> <li>- alarm threshold has been exceeded longer than that set in the timer (p4102[14], p4103[7]).</li> </ul> <p>or</p> <ul style="list-style-type: none"> <li>- fault threshold exceeded (p4102[15]).</li> </ul> <p>Note:</p> <p>For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[7] = 1, 4), the following applies:</p> <ul style="list-style-type: none"> <li>- if r4101[7] &gt; 1650 ohms, the temperature r4105[7] = 250 °C</li> <li>- if r4101[7] &lt;= 1650 ohms, the temperature r4105[7] = -50 °C</li> </ul> <p>The temperature actual value is displayed via connector output r4105[7] and can be interconnected.</p> <p>Notice:</p> <p>This fault only causes the drive to shut down if there is at least one BICO interconnection between the drive and the Terminal Module.</p> <p>Fault value (r0949, interpret decimal):</p> <p>Temperature actual value at the time of initiation [0.1 °C].</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- allow the temperature sensor to cool down to below p4102[15] - hysteresis (p4118[7]).</li> <li>- if required, set the fault response to NONE (p2100, p2101).</li> </ul> <p>See also: p4102</p>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

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<b>F35404 (N, A)</b>	<b>TM: Temperature fault/alarm threshold channel 8 exceeded</b>
<b>Message value:</b>	%1
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150
<b>Reaction:</b>	OFF2 (NONE, OFF1, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	<p>For the temperature evaluation via the Terminal Module 150 (TM150), at least one of the following conditions to initiate this fault is fulfilled:</p> <ul style="list-style-type: none"> <li>- alarm threshold has been exceeded longer than that set in the timer (p4102[16], p4103[8]).</li> </ul> <p>or</p> <ul style="list-style-type: none"> <li>- fault threshold exceeded (p4102[17]).</li> </ul> <p>Note:</p> <p>For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[8] = 1, 4), the following applies:</p> <ul style="list-style-type: none"> <li>- if r4101[8] &gt; 1650 ohms, the temperature r4105[8] = 250 °C</li> <li>- if r4101[8] &lt;= 1650 ohms, the temperature r4105[8] = -50 °C</li> </ul> <p>The temperature actual value is displayed via connector output r4105[8] and can be interconnected.</p> <p>Notice:</p> <p>This fault only causes the drive to shut down if there is at least one BICO interconnection between the drive and the Terminal Module.</p> <p>Fault value (r0949, interpret decimal):</p> <p>Temperature actual value at the time of initiation [0.1 °C].</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- allow the temperature sensor to cool down to below p4102[17] - hysteresis (p4118[8]).</li> <li>- if required, set the fault response to NONE (p2100, p2101).</li> </ul> <p>See also: p4102</p>

## 4 Faults and alarms

### 4.2 List of faults and alarms

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

<b>F35405 (N, A)</b>	<b>TM: Temperature fault/alarm threshold channel 9 exceeded</b>
<b>Message value:</b>	%1
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150
<b>Reaction:</b>	OFF2 (NONE, OFF1, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	<p>For the temperature evaluation via the Terminal Module 150 (TM150), at least one of the following conditions to initiate this fault is fulfilled:</p> <ul style="list-style-type: none"><li>- alarm threshold has been exceeded longer than that set in the timer (p4102[18], p4103[9]).</li></ul> <p>or</p> <ul style="list-style-type: none"><li>- fault threshold exceeded (p4102[19]).</li></ul> <p>Note:</p> <p>For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[9] = 1, 4), the following applies:</p> <ul style="list-style-type: none"><li>- if r4101[9] &gt; 1650 ohms, the temperature r4105[9] = 250 °C</li><li>- if r4101[9] &lt;= 1650 ohms, the temperature r4105[9] = -50 °C</li></ul> <p>The temperature actual value is displayed via connector output r4105[9] and can be interconnected.</p> <p>Notice:</p> <p>This fault only causes the drive to shut down if there is at least one BICO interconnection between the drive and the Terminal Module.</p> <p>Fault value (r0949, interpret decimal):</p> <p>Temperature actual value at the time of initiation [0.1 °C].</p>
<b>Remedy:</b>	<ul style="list-style-type: none"><li>- allow the temperature sensor to cool down to below p4102[19] - hysteresis (p4118[9]).</li><li>- if required, set the fault response to NONE (p2100, p2101).</li></ul> <p>See also: p4102</p>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

<b>F35406 (N, A)</b>	<b>TM: Temperature fault/alarm threshold channel 10 exceeded</b>
<b>Message value:</b>	%1
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150
<b>Reaction:</b>	OFF2 (NONE, OFF1, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	<p>For the temperature evaluation via the Terminal Module 150 (TM150), at least one of the following conditions to initiate this fault is fulfilled:</p> <ul style="list-style-type: none"><li>- alarm threshold has been exceeded longer than that set in the timer (p4102[20], p4103[10]).</li></ul> <p>or</p> <ul style="list-style-type: none"><li>- fault threshold exceeded (p4102[21]).</li></ul> <p>Note:</p> <p>For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[10] = 1, 4), the following applies:</p> <ul style="list-style-type: none"><li>- if r4101[10] &gt; 1650 ohms, the temperature r4105[10] = 250 °C</li><li>- if r4101[10] &lt;= 1650 ohms, the temperature r4105[10] = -50 °C</li></ul> <p>The temperature actual value is displayed via connector output r4105[10] and can be interconnected.</p> <p>Notice:</p> <p>This fault only causes the drive to shut down if there is at least one BICO interconnection between the drive and the Terminal Module.</p> <p>Fault value (r0949, interpret decimal):</p> <p>Temperature actual value at the time of initiation [0.1 °C].</p>

**Remedy:**

- allow the temperature sensor to cool down to below p4102[21] - hysteresis (p4118[10]).
- if required, set the fault response to NONE (p2100, p2101).

See also: p4102

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

#### **F35407 (N, A) TM: Temperature fault/alarm threshold channel 11 exceeded**

**Message value:** %1  
**Message class:** External measured value / signal state outside the permissible range (16)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150  
**Reaction:** OFF2 (NONE, OFF1, OFF3)  
**Acknowledge:** IMMEDIATELY (POWER ON)  
**Cause:** For the temperature evaluation via the Terminal Module 150 (TM150), at least one of the following conditions to initiate this fault is fulfilled:

- alarm threshold has been exceeded longer than that set in the timer (p4102[22], p4103[11]).

or

- fault threshold exceeded (p4102[23]).

**Note:**

For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[11] = 1, 4), the following applies:

- if r4101[11] > 1650 ohms, the temperature r4105[11] = 250 °C
- if r4101[11] <= 1650 ohms, the temperature r4105[11] = -50 °C

The temperature actual value is displayed via connector output r4105[11] and can be interconnected.

**Notice:**

This fault only causes the drive to shut down if there is at least one BICO interconnection between the drive and the Terminal Module.

Fault value (r0949, interpret decimal):

Temperature actual value at the time of initiation [0.1 °C].

**Remedy:**

- allow the temperature sensor to cool down to below p4102[23] - hysteresis (p4118[11]).
- if required, set the fault response to NONE (p2100, p2101).

See also: p4102

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

#### **A35410 (F, N) TM: Temperature alarm threshold channel 4 exceeded**

**Message value:** %1  
**Message class:** External measured value / signal state outside the permissible range (16)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The temperature (r4105[4]) measured using the temperature sensing of the Terminal Module 150 (TM150) has exceeded the threshold value to initiate this alarm (p4102[8]).

**Note:**

For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[4] = 1, 4), the following applies:

- if r4101[4] > 1650 ohms, the temperature r4105[4] = 250 °C
- if r4101[4] <= 1650 ohms, the temperature r4105[4] = -50 °C

Alarm value (r2124, interpret decimal):

Temperature actual value at the time of initiation [0.1 °C].

**Remedy:**

Allow the temperature sensor to cool down to below p4102[8] - hysteresis (p4118[4]).

See also: p4102

Reaction upon F: NONE  
Acknowl. upon F: IMMEDIATELY (POWER ON)

## 4 Faults and alarms

### 4.2 List of faults and alarms

Reaction upon N: NONE

Acknowled. upon N: NONE

---

#### **A35411 (F, N) TM: Temperature alarm threshold channel 5 exceeded**

**Message value:** %1

**Message class:** External measured value / signal state outside the permissible range (16)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The temperature (r4105[5]) measured using the temperature sensing of the Terminal Module 150 (TM150) has exceeded the threshold value to initiate this alarm (p4102[10]).

Note:

For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[5] = 1, 4), the following applies:

- if r4101[5] > 1650 ohms, the temperature r4105[5] = 250 °C

- if r4101[5] <= 1650 ohms, the temperature r4105[5] = -50 °C

Alarm value (r2124, interpret decimal):

Temperature actual value at the time of initiation [0.1 °C].

**Remedy:** Allow the temperature sensor to cool down to below p4102[10] - hysteresis (p4118[5]).

See also: p4102

Reaction upon F: NONE

Acknowled. upon F: IMMEDIATELY (POWER ON)

Reaction upon N: NONE

Acknowled. upon N: NONE

---

#### **A35412 (F, N) TM: Temperature alarm threshold channel 6 exceeded**

**Message value:** %1

**Message class:** External measured value / signal state outside the permissible range (16)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The temperature (r4105[6]) measured using the temperature sensing of the Terminal Module 150 (TM150) has exceeded the threshold value to initiate this alarm (p4102[12]).

Note:

For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[6] = 1, 4), the following applies:

- if r4101[6] > 1650 ohms, the temperature r4105[6] = 250 °C

- if r4101[6] <= 1650 ohms, the temperature r4105[6] = -50 °C

Alarm value (r2124, interpret decimal):

Temperature actual value at the time of initiation [0.1 °C].

**Remedy:** Allow the temperature sensor to cool down to below p4102[12] - hysteresis (p4118[6]).

See also: p4102

Reaction upon F: NONE

Acknowled. upon F: IMMEDIATELY (POWER ON)

Reaction upon N: NONE

Acknowled. upon N: NONE

---

#### **A35413 (F, N) TM: Temperature alarm threshold channel 7 exceeded**

**Message value:** %1

**Message class:** External measured value / signal state outside the permissible range (16)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The temperature (r4105[7]) measured using the temperature sensing of the Terminal Module 150 (TM150) has exceeded the threshold value to initiate this alarm (p4102[14]).



Note:

For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[7] = 1, 4), the following applies:

- if r4101[7] > 1650 ohms, the temperature r4105[7] = 250 °C

- if r4101[7] <= 1650 ohms, the temperature r4105[7] = -50 °C

Alarm value (r2124, interpret decimal):

Temperature actual value at the time of initiation [0.1 °C].

**Remedy:** Allow the temperature sensor to cool down to below p4102[14] - hysteresis (p4118[7]).

See also: p4102

Reaction upon F: NONE

Acknowl. upon F: IMMEDIATELY (POWER ON)

Reaction upon N: NONE

Acknowl. upon N: NONE

---

**A35414 (F, N) TM: Temperature alarm threshold channel 8 exceeded**

**Message value:** %1

**Message class:** External measured value / signal state outside the permissible range (16)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The temperature (r4105[8]) measured using the temperature sensing of the Terminal Module 150 (TM150) has exceeded the threshold value to initiate this alarm (p4102[16]).

Note:

For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[8] = 1, 4), the following applies:

- if r4101[8] > 1650 ohms, the temperature r4105[8] = 250 °C

- if r4101[8] <= 1650 ohms, the temperature r4105[8] = -50 °C

Alarm value (r2124, interpret decimal):

Temperature actual value at the time of initiation [0.1 °C].

**Remedy:** Allow the temperature sensor to cool down to below p4102[16] - hysteresis (p4118[8]).

See also: p4102

Reaction upon F: NONE

Acknowl. upon F: IMMEDIATELY (POWER ON)

Reaction upon N: NONE

Acknowl. upon N: NONE

---

**A35415 (F, N) TM: Temperature alarm threshold channel 9 exceeded**

**Message value:** %1

**Message class:** External measured value / signal state outside the permissible range (16)

**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The temperature (r4105[9]) measured using the temperature sensing of the Terminal Module 150 (TM150) has exceeded the threshold value to initiate this alarm (p4102[18]).

Note:

For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[9] = 1, 4), the following applies:

- if r4101[9] > 1650 ohms, the temperature r4105[9] = 250 °C

- if r4101[9] <= 1650 ohms, the temperature r4105[9] = -50 °C

Alarm value (r2124, interpret decimal):

Temperature actual value at the time of initiation [0.1 °C].

**Remedy:** Allow the temperature sensor to cool down to below p4102[18] - hysteresis (p4118[9]).

See also: p4102

Reaction upon F: NONE

Acknowl. upon F: IMMEDIATELY (POWER ON)

Reaction upon N: NONE

Acknowl. upon N: NONE

<b>A35416 (F, N)</b>	<b>TM: Temperature alarm threshold channel 10 exceeded</b>
<b>Message value:</b>	%1
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The temperature (r4105[10]) measured using the temperature sensing of the Terminal Module 150 (TM150) has exceeded the threshold value to initiate this alarm (p4102[20]). Note: For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[10] = 1, 4), the following applies: - if r4101[10] > 1650 ohms, the temperature r4105[10] = 250 °C - if r4101[10] <= 1650 ohms, the temperature r4105[10] = -50 °C Alarm value (r2124, interpret decimal): Temperature actual value at the time of initiation [0.1 °C].
<b>Remedy:</b>	Allow the temperature sensor to cool down to below p4102[20] - hysteresis (p4118[10]). See also: p4102
Reaction upon F:	NONE
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>A35417 (F, N)</b>	<b>TM: Temperature alarm threshold channel 11 exceeded</b>
<b>Message value:</b>	%1
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The temperature (r4105[11]) measured using the temperature sensing of the Terminal Module 150 (TM150) has exceeded the threshold value to initiate this alarm (p4102[22]). Note: For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[11] = 1, 4), the following applies: - if r4101[11] > 1650 ohms, the temperature r4105[11] = 250 °C - if r4101[11] <= 1650 ohms, the temperature r4105[11] = -50 °C Alarm value (r2124, interpret decimal): Temperature actual value at the time of initiation [0.1 °C].
<b>Remedy:</b>	Allow the temperature sensor to cool down to below p4102[22] - hysteresis (p4118[11]). See also: p4102
Reaction upon F:	NONE
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>N35800 (F)</b>	<b>TM: Group signal</b>
<b>Message value:</b>	-
<b>Message class:</b>	General drive fault (19)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The Terminal Module has detected at least one fault.
<b>Remedy:</b>	Evaluates other actual messages.
Reaction upon F:	OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY

<b>A35801 (F, N)</b>	<b>TM DRIVE-CLiQ: Sign-of-life missing</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	A DRIVE-CLiQ communication error has occurred between the Control Unit and the Terminal Module involved. Fault cause: 10 (= 0A hex): The sign-of-life bit in the receive telegram is not set. Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause
<b>Remedy:</b>	- check the DRIVE-CLiQ connection. - replace the component involved. See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)
Reaction upon F:	NONE
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>A35802 (F, N)</b>	<b>TM: Time slice overflow</b>
<b>Message value:</b>	-
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	A time slice overflow has occurred on the Terminal Module.
<b>Remedy:</b>	Replace the Terminal Module.
Reaction upon F:	NONE
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>A35803 (F, N)</b>	<b>TM: Memory test</b>
<b>Message value:</b>	-
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	An error has occurred during the memory test on the Terminal Module.
<b>Remedy:</b>	- check whether the permissible ambient temperature for the Terminal Module is being maintained. - replace the Terminal Module.
Reaction upon F:	NONE
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>F35804 (N, A)</b>	<b>TM: CRC</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	A checksum error has occurred when reading-out the program memory on the Terminal Module.

## 4 Faults and alarms

### 4.2 List of faults and alarms

	Fault value (r0949, interpret hexadecimal): Difference between the checksum at POWER ON and the actual checksum.
<b>Remedy:</b>	- check whether the permissible ambient temperature for the component is maintained. - replace the Terminal Module.
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

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<b>A35805 (F, N)</b>	<b>TM: EEPROM checksum error</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	Internal parameter data is corrupted. Alarm value (r2124, interpret hexadecimal): 01: EEPROM access error. 02: Too many blocks in the EEPROM.
<b>Remedy:</b>	- check whether the permissible ambient temperature for the component is maintained. - replace the Terminal Module 31 (TM31).
Reaction upon F:	NONE
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE

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<b>A35807 (F, N)</b>	<b>TM: Sequence control time monitoring</b>
<b>Message value:</b>	-
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	Error, timeout, sequence control on the Terminal Module.
<b>Remedy:</b>	Replace the Terminal Module.
Reaction upon F:	NONE
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE

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<b>F35820</b>	<b>TM DRIVE-CLiQ: Telegram error</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	OFF1 (OFF2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	A DRIVE-CLiQ communication error has occurred from the Control Unit to the Terminal Module involved. Fault cause: 1 (= 01 hex): Checksum error (CRC error). 2 (= 02 hex): Telegram is shorter than specified in the length byte or in the receive list. 3 (= 03 hex): Telegram is longer than specified in the length byte or in the receive list. 4 (= 04 hex): The length of the receive telegram does not match the receive list.

5 (= 05 hex):  
The type of the receive telegram does not match the receive list.

6 (= 06 hex):  
The address of the component in the telegram and in the receive list do not match.

7 (= 07 hex):  
A SYNC telegram is expected - but the received telegram is not a SYNC telegram.

8 (= 08 hex):  
No SYNC telegram is expected - but the received telegram is one.

9 (= 09 hex):  
The error bit in the receive telegram is set.

16 (= 10 hex):  
The receive telegram is too early.

Note regarding the message value:  
The individual information is coded as follows in the message value (r0949/r2124):  
0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- carry out a POWER ON (power off/on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

<b>F35835</b>	<b>TM DRIVE-CLiQ: Cyclic data transfer error</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	OFF1 (OFF2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	A DRIVE-CLiQ communication error has occurred from the Control Unit to the Terminal Module involved. The nodes do not send and receive in synchronism. Fault cause: 33 (= 21 hex): The cyclic telegram has not been received. 34 (= 22 hex): Timeout in the telegram receive list. 64 (= 40 hex): Timeout in the telegram send list. Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- carry out a POWER ON.</li> <li>- replace the component involved.</li> </ul> <p>See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)</p>

<b>F35836</b>	<b>TM DRIVE-CLiQ: Send error for DRIVE-CLiQ data</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	OFF1 (OFF2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	A DRIVE-CLiQ communication error has occurred between the Control Unit and the Terminal Module involved. Data were not able to be sent. Fault cause: 65 (= 41 hex): Telegram type does not match send list. Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON.

#### F35837

#### PTM DRIVE-CLiQ: Component fault

**Message value:** Component number: %1, fault cause: %2  
**Message class:** Internal (DRIVE-CLiQ) communication error (12)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31  
**Reaction:** OFF1 (OFF2)  
**Acknowledge:** IMMEDIATELY  
**Cause:** Fault detected on the DRIVE-CLiQ component concerned. Faulty hardware cannot be excluded.

Fault cause:  
 32 (= 20 hex):  
 Error in the telegram header.  
 35 (= 23 hex):  
 Receive error: The telegram buffer memory contains an error.  
 66 (= 42 hex):  
 Send error: The telegram buffer memory contains an error.  
 67 (= 43 hex):  
 Send error: The telegram buffer memory contains an error.  
 Note regarding the message value:  
 The individual information is coded as follows in the message value (r0949/r2124):  
 0000yyxx hex: yy = component number, xx = error cause  
**Remedy:**  
 - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).  
 - check the electrical cabinet design and cable routing for EMC compliance  
 - if required, use another DRIVE-CLiQ socket (p9904).  
 - replace the component involved.

#### A35840

#### TM DRIVE-CLiQ: error below the signaling threshold

**Message value:** Component number: %1, fault cause: %2  
**Message class:** Internal (DRIVE-CLiQ) communication error (12)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** A DRIVE-CLiQ error has occurred below the signaling threshold.  
 Fault cause:  
 1 (= 01 hex):  
 Checksum error (CRC error).  
 2 (= 02 hex):  
 Telegram is shorter than specified in the length byte or in the receive list.  
 3 (= 03 hex):  
 Telegram is longer than specified in the length byte or in the receive list.  
 4 (= 04 hex):  
 The length of the receive telegram does not match the receive list.  
 5 (= 05 hex):  
 The type of the receive telegram does not match the receive list.  
 6 (= 06 hex):  
 The address of the component in the telegram and in the receive list do not match.  
 7 (= 07 hex):  
 A SYNC telegram is expected - but the received telegram is not a SYNC telegram.  
 8 (= 08 hex):  
 No SYNC telegram is expected - but the received telegram is one.  
 9 (= 09 hex):  
 The error bit in the receive telegram is set.  
 10 (= 0A hex):  
 The sign-of-life bit in the receive telegram is not set.

11 (= 0B hex):  
Synchronization error during alternating cyclic data transfer.  
16 (= 10 hex):  
The receive telegram is too early.  
32 (= 20 hex):  
Error in the telegram header.  
33 (= 21 hex):  
The cyclic telegram has not been received.  
34 (= 22 hex):  
Timeout in the telegram receive list.  
35 (= 23 hex):  
Receive error: The telegram buffer memory contains an error.  
64 (= 40 hex):  
Timeout in the telegram send list.  
65 (= 41 hex):  
Telegram type does not match send list.  
66 (= 42 hex):  
Send error: The telegram buffer memory contains an error.  
67 (= 43 hex):  
Send error: The telegram buffer memory contains an error.  
Note regarding the message value:  
The individual information is coded as follows in the message value (r0949/r2124):  
0000yyxx hex: yy = component number, xx = error cause  
**Remedy:**  
- check the electrical cabinet design and cable routing for EMC compliance  
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).  
See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

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<b>F35845</b>	<b>TM DRIVE-CLiQ: Cyclic data transfer error</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	OFF1 (OFF2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	A DRIVE-CLiQ communication error has occurred between the Control Unit and the Terminal Module (TM) involved. Fault cause: 11 (= 0B hex): Synchronization error during alternating cyclic data transfer. Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause
<b>Remedy:</b>	Carry out a POWER ON. See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

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<b>F35850</b>	<b>TM: Internal software error</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	OFF1 (NONE, OFF2, OFF3)
<b>Acknowledge:</b>	POWER ON
<b>Cause:</b>	An internal software error in the Terminal Module (TM) has occurred. Fault value (r0949, interpret decimal): 1: Background time slice is blocked. 2: Checksum over the code memory is not OK.

**Remedy:**

- replace the Terminal Module (TM).
- if required, upgrade the firmware in the Terminal Module.
- contact the Hotline.

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#### **F35851 TM DRIVE-CLiQ (CU): Sign-of-life missing**

**Message value:** Component number: %1, fault cause: %2  
**Message class:** Internal (DRIVE-CLiQ) communication error (12)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31  
**Reaction:** OFF1 (OFF2)  
**Acknowledge:** IMMEDIATELY  
**Cause:** A DRIVE-CLiQ communication error has occurred from the Terminal Module involved (TM) to the Control Unit.  
The DRIVE-CLiQ component did not set the sign-of-life to the Control Unit.  
Fault cause:  
10 (= 0A hex):  
The sign-of-life bit in the receive telegram is not set.  
Note regarding the message value:  
The individual information is coded as follows in the message value (r0949/r2124):  
0000yyxx hex: yy = component number, xx = error cause  
**Remedy:** Upgrade the firmware of the component involved.

---

#### **F35860 TM DRIVE-CLiQ (CU): Telegram error**

**Message value:** Component number: %1, fault cause: %2  
**Message class:** Internal (DRIVE-CLiQ) communication error (12)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31  
**Reaction:** OFF1 (OFF2)  
**Acknowledge:** IMMEDIATELY  
**Cause:** A DRIVE-CLiQ communication error has occurred from the Terminal Module involved (TM) to the Control Unit.  
Fault cause:  
1 (= 01 hex):  
Checksum error (CRC error).  
2 (= 02 hex):  
Telegram is shorter than specified in the length byte or in the receive list.  
3 (= 03 hex):  
Telegram is longer than specified in the length byte or in the receive list.  
4 (= 04 hex):  
The length of the receive telegram does not match the receive list.  
5 (= 05 hex):  
The type of the receive telegram does not match the receive list.  
6 (= 06 hex):  
The address of the power unit in the telegram and in the receive list do not match.  
9 (= 09 hex):  
The error bit in the receive telegram is set.  
16 (= 10 hex):  
The receive telegram is too early.  
17 (= 11 hex):  
CRC error and the receive telegram is too early.  
18 (= 12 hex):  
The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.  
19 (= 13 hex):  
The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.  
20 (= 14 hex):  
The length of the receive telegram does not match the receive list and the receive telegram is too early.  
21 (= 15 hex):  
The type of the receive telegram does not match the receive list and the receive telegram is too early.



22 (= 16 hex):

The address of the power unit in the telegram and in the receive list does not match and the receive telegram is too early.

25 (= 19 hex):

The error bit in the receive telegram is set and the receive telegram is too early.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- carry out a POWER ON (power off/on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

---

**F35875**

**TM DRIVE-CLiQ (CU): Supply voltage failed**

**Message value:**

Component number: %1, fault cause: %2

**Message class:**

Supply voltage fault (undervoltage) (3)

**Drive object:**

DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31

**Reaction:**

OFF1 (OFF2)

**Acknowledge:**

IMMEDIATELY

**Cause:**

The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.

Fault cause:

9 (= 09 hex):

The power supply voltage for the components has failed.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- carry out a POWER ON (power off/on).
- check the power supply voltage wiring for the DRIVE-CLiQ component (interrupted cable, contacts, ...).
- check the dimensioning of the power supply for the DRIVE-CLiQ component.

---

**F35885**

**TM DRIVE-CLiQ (CU): Cyclic data transfer error**

**Message value:**

Component number: %1, fault cause: %2

**Message class:**

Internal (DRIVE-CLiQ) communication error (12)

**Drive object:**

DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31

**Reaction:**

OFF1 (OFF2)

**Acknowledge:**

IMMEDIATELY

**Cause:**

A DRIVE-CLiQ communication error has occurred from the Terminal Module involved (TM) to the Control Unit.

The nodes do not send and receive in synchronism.

Fault cause:

26 (= 1A hex):

Sign-of-life bit in the receive telegram not set and the receive telegram is too early.

33 (= 21 hex):

The cyclic telegram has not been received.

34 (= 22 hex):

Timeout in the telegram receive list.

64 (= 40 hex):

Timeout in the telegram send list.

98 (= 62 hex):

Error at the transition to cyclic operation.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- check the power supply voltage of the component involved.
- carry out a POWER ON.
- replace the component involved.

See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

---

**F35886****TM DRIVE-CLiQ (CU): Error when sending DRIVE-CLiQ data**

**Message value:** Component number: %1, fault cause: %2  
**Message class:** Internal (DRIVE-CLiQ) communication error (12)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31  
**Reaction:** OFF1 (OFF2)  
**Acknowledge:** IMMEDIATELY  
**Cause:** A DRIVE-CLiQ communication error has occurred from the Terminal Module involved (TM) to the Control Unit.  
Data were not able to be sent.  
Fault cause:  
65 (= 41 hex):  
Telegram type does not match send list.  
Note regarding the message value:  
The individual information is coded as follows in the message value (r0949/r2124):  
0000yyxx hex: yy = component number, xx = error cause  
**Remedy:** Carry out a POWER ON.

---

**F35887****TM DRIVE-CLiQ (CU): Component fault**

**Message value:** Component number: %1, fault cause: %2  
**Message class:** Internal (DRIVE-CLiQ) communication error (12)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31  
**Reaction:** OFF1 (OFF2)  
**Acknowledge:** IMMEDIATELY  
**Cause:** Fault detected on the DRIVE-CLiQ component (Terminal Module) involved. Faulty hardware cannot be excluded.  
Fault cause:  
32 (= 20 hex):  
Error in the telegram header.  
35 (= 23 hex):  
Receive error: The telegram buffer memory contains an error.  
66 (= 42 hex):  
Send error: The telegram buffer memory contains an error.  
67 (= 43 hex):  
Send error: The telegram buffer memory contains an error.  
96 (= 60 hex):  
Response received too late during runtime measurement.  
97 (= 61 hex):  
Time taken to exchange characteristic data too long.  
Note regarding the message value:  
The individual information is coded as follows in the message value (r0949/r2124):  
0000yyxx hex: yy = component number, xx = error cause  
**Remedy:**

- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

<b>F35895</b>	<b>TM DRIVE-CLiQ (CU): Alternating cyclic data transfer error</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	OFF1 (OFF2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	A DRIVE-CLiQ communication error has occurred from the Terminal Module involved (TM) to the Control Unit. Fault cause: 11 (= 0B hex): Synchronization error during alternating cyclic data transfer. Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause
<b>Remedy:</b>	Carry out a POWER ON. See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)
<b>F35896</b>	<b>TM DRIVE-CLiQ (CU): Inconsistent component properties</b>
<b>Message value:</b>	Component number: %1
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The properties of the DRIVE-CLiQ component (Terminal Module), specified by the fault value, have changed in an incompatible fashion with respect to the properties when booted. One cause can be, e.g. that a DRIVE-CLiQ cable or DRIVE-CLiQ component has been replaced. Fault value (r0949, interpret decimal): Component number.
<b>Remedy:</b>	- carry out a POWER ON. - when a component is replaced, the same component type and if possible the same firmware version should be used. - when a cable is replaced, only cables whose length is the same as or as close as possible to the length of the original cables should be used (ensure compliance with the maximum cable length).
<b>F35899 (N, A)</b>	<b>TM: Unknown fault</b>
<b>Message value:</b>	New message: %1
<b>Message class:</b>	General drive fault (19)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
<b>Acknowledge:</b>	IMMEDIATELY (POWER ON)
<b>Cause:</b>	A fault has occurred on the Terminal Module that cannot be interpreted by the Control Unit firmware. This can occur if the firmware on this component is more recent than the firmware on the Control Unit. Fault value (r0949, interpret decimal): Fault number. Note: If required, the significance of this new fault can be read about in a more recent description of the Control Unit.
<b>Remedy:</b>	- replace the firmware on the Terminal Module by an older firmware version (r0158). - upgrade the firmware on the Control Unit (r0018).
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

<b>A35903 (F, N)</b>	<b>TM: I2C bus error occurred</b>
<b>Message value:</b>	-
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	An error has occurred while accessing the internal I2C bus of the Terminal Module.
<b>Remedy:</b>	Replace the Terminal Module.
Reaction upon F:	NONE
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>A35904 (F, N)</b>	<b>TM: EEPROM</b>
<b>Message value:</b>	-
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	An error has occurred accessing the non-volatile memory on the Terminal Module.
<b>Remedy:</b>	Replace the Terminal Module.
Reaction upon F:	NONE
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>A35905 (F, N)</b>	<b>TM: Parameter access</b>
<b>Message value:</b>	-
<b>Message class:</b>	Hardware / software error (1)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The Control Unit attempted to write an illegal parameter value to the Terminal Module.
<b>Remedy:</b>	- check whether the firmware version of the Terminal Module (r0158) matches the firmware version of Control Unit (r0018). - if required, replace the Terminal Module.
	<b>Note:</b> The firmware versions that match each other are in the readme.txt file on the memory card.
Reaction upon F:	NONE
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>A35906 (F, N)</b>	<b>TM: 24 V power supply missing</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Supply voltage fault (undervoltage) (3)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The 24 V power supply for the digital outputs is missing. Alarm value (r2124, interpret hexadecimal): 01: TM17 24 V power supply for DI/DO 0 ... 7 missing. 02: TM17 24 V power supply for DI/DO 8 ... 15 missing. 04: TM15 24 V power supply for DI/DO 0 ... 7 (X520) missing. 08: TM15 24 V power supply for DI/DO 8 ... 15 (X521) missing.

10: TM15 24 V power supply for DI/DO 16 ... 23 (X522) missing.  
20: TM41 24 V power supply for DI/DO 0 ... 3 missing.  
**Remedy:** Check the terminals for the power supply voltage (L1+, L2+, L3+, M or +24 V\_1 for TM41).  
Reaction upon F: NONE  
Acknowl. upon F: IMMEDIATELY (POWER ON)  
Reaction upon N: NONE  
Acknowl. upon N: NONE

---

**A35907 (F, N) TM: Hardware initialization error**  
**Message value:** %1  
**Message class:** Hardware / software error (1)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The Terminal Module was not successfully initialized.  
Alarm value (r2124, interpret hexadecimal):  
01: TM17 or TM41 - incorrect configuration request.  
02: TM17 or TM41 - programming not successful.  
04: TM17 or TM41 - invalid time stamp  
**Remedy:** Carry out a POWER ON.  
Reaction upon F: NONE  
Acknowl. upon F: IMMEDIATELY (POWER ON)  
Reaction upon N: NONE  
Acknowl. upon N: NONE

---

**A35910 (F, N) TM: Module overtemperature**  
**Message value:** -  
**Message class:** Overtemperature of the electronic components (6)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The temperature in the module has exceeded the highest permissible limit.  
**Remedy:** - reduce the ambient temperature.  
- replace the Terminal Module.  
Reaction upon F: NONE  
Acknowl. upon F: IMMEDIATELY (POWER ON)  
Reaction upon N: NONE  
Acknowl. upon N: NONE

---

**A35911 (F, N) TM: Clock synchronous operation sign-of-life missing**  
**Message value:** -  
**Message class:** Communication error to the higher-level control system (9)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The maximum permissible number of errors in the master sign-of-life (clock synchronous operation) has been exceeded in cyclic operation.  
When the alarm is output, the module outputs are reset up to the next synchronization.  
**Remedy:** - check the physical bus configuration (terminating resistor, shielding, etc.).  
- check the interconnection of the master sign-of-life (r4201 via p0915).  
- check whether the master correctly sends the sign-of-life (e.g. set up a trace with r4201.12 ... r4201.15 and trigger signal r4301.9).  
- check the bus and master for utilization level (e.g. bus cycle time Tdp was set too short).  
Reaction upon F: NONE  
Acknowl. upon F: IMMEDIATELY (POWER ON)

## 4 Faults and alarms

### 4.2 List of faults and alarms

Reaction upon N: NONE  
Acknowl. upon N: NONE

---

<b>A35920 (F, N)</b>	<b>TM: Error temperature sensor channel 0</b>
<b>Message value:</b>	%1
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	When evaluating the temperature sensor, an error occurred. Alarm value (r2124, interpret decimal): 1: Wire breakage or sensor not connected. KTY84: R > 1630 Ohm (TM150: R > 2170 Ohm), PT100: R > 194 Ohm, PT1000: R > 1944 Ohm 2: Measured resistance too low. PTC thermistor: R < 20 Ohm, KTY84: R < 50 Ohm (TM150: R < 180 Ohm), PT100: R < 60 Ohm, PT1000: R < 603 Ohm
<b>Remedy:</b>	- make sure that the sensor is connected correctly. - replace the sensor.
Reaction upon F:	NONE
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE

---

<b>A35921 (F, N)</b>	<b>TM: Error temperature sensor channel 1</b>
<b>Message value:</b>	%1
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	When evaluating the temperature sensor, an error occurred. Alarm value (r2124, interpret decimal): 1: Wire breakage or sensor not connected. KTY84: R > 1630 Ohm (TM150: R > 2170 Ohm), PT100: R > 194 Ohm, PT1000: R > 1944 Ohm 2: Measured resistance too low. PTC thermistor: R < 20 Ohm, KTY84: R < 50 Ohm (TM150: R < 180 Ohm), PT100: R < 60 Ohm, PT1000: R < 603 Ohm
<b>Remedy:</b>	- make sure that the sensor is connected correctly. - replace the sensor.
Reaction upon F:	NONE
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE

---

<b>A35922 (F, N)</b>	<b>TM: Error temperature sensor channel 2</b>
<b>Message value:</b>	%1
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	When evaluating the temperature sensor, an error occurred. Alarm value (r2124, interpret decimal): 1: Wire breakage or sensor not connected. KTY84: R > 1630 Ohm (TM150: R > 2170 Ohm), PT100: R > 194 Ohm, PT1000: R > 1944 Ohm 2: Measured resistance too low. PTC thermistor: R < 20 Ohm, KTY84: R < 50 Ohm (TM150: R < 180 Ohm), PT100: R < 60 Ohm, PT1000: R < 603 Ohm

**Remedy:**

- make sure that the sensor is connected correctly.
- replace the sensor.

Reaction upon F: NONE  
Acknowl. upon F: IMMEDIATELY (POWER ON)  
Reaction upon N: NONE  
Acknowl. upon N: NONE

---

**A35923 (F, N) TM: Error temperature sensor channel 3**

**Message value:** %1  
**Message class:** External measured value / signal state outside the permissible range (16)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** When evaluating the temperature sensor, an error occurred.  
Alarm value (r2124, interpret decimal):  
1: Wire breakage or sensor not connected.  
KTY84: R > 1630 Ohm (TM150: R > 2170 Ohm), PT100: R > 194 Ohm, PT1000: R > 1944 Ohm  
2: Measured resistance too low.  
PTC thermistor: R < 20 Ohm, KTY84: R < 50 Ohm (TM150: R < 180 Ohm), PT100: R < 60 Ohm, PT1000: R < 603 Ohm

**Remedy:**

- make sure that the sensor is connected correctly.
- replace the sensor.

Reaction upon F: NONE  
Acknowl. upon F: IMMEDIATELY (POWER ON)  
Reaction upon N: NONE  
Acknowl. upon N: NONE

---

**A35924 (F, N) TM: Error temperature sensor channel 4**

**Message value:** %1  
**Message class:** External measured value / signal state outside the permissible range (16)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** When evaluating the temperature sensor, an error occurred.  
Alarm value (r2124, interpret decimal):  
1: Wire breakage or sensor not connected.  
KTY84: R > 2170 Ohm, PT100: R > 194 Ohm, PT1000: R > 1944 Ohm  
2: Measured resistance too low.  
PTC thermistor: R < 20 Ohm, KTY84: R < 180 Ohm, PT100: R < 60 Ohm, PT1000: R < 603 Ohm

**Remedy:**

- make sure that the sensor is connected correctly.
- replace the sensor.

Reaction upon F: NONE  
Acknowl. upon F: IMMEDIATELY (POWER ON)  
Reaction upon N: NONE  
Acknowl. upon N: NONE

---

**A35925 (F, N) TM: Error temperature sensor channel 5**

**Message value:** %1  
**Message class:** External measured value / signal state outside the permissible range (16)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** When evaluating the temperature sensor, an error occurred.  
Alarm value (r2124, interpret decimal):  
1: Wire breakage or sensor not connected.  
KTY84: R > 2170 Ohm, PT100: R > 194 Ohm, PT1000: R > 1944 Ohm

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	2: Measured resistance too low. PTC thermistor: R < 20 Ohm, KTY84: R < 180 Ohm, PT100: R < 60 Ohm, PT1000: R < 603 Ohm
<b>Remedy:</b>	- make sure that the sensor is connected correctly. - replace the sensor.
Reaction upon F:	NONE
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE

---

<b>A35926 (F, N)</b>	<b>TM: Error temperature sensor channel 6</b>
<b>Message value:</b>	%1
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	When evaluating the temperature sensor, an error occurred. Alarm value (r2124, interpret decimal): 1: Wire breakage or sensor not connected. KTY84: R > 2170 Ohm, PT100: R > 194 Ohm, PT1000: R > 1944 Ohm 2: Measured resistance too low. PTC thermistor: R < 20 Ohm, KTY84: R < 180 Ohm, PT100: R < 60 Ohm, PT1000: R < 603 Ohm
<b>Remedy:</b>	- make sure that the sensor is connected correctly. - replace the sensor.
Reaction upon F:	NONE
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE

---

<b>A35927 (F, N)</b>	<b>TM: Error temperature sensor channel 7</b>
<b>Message value:</b>	%1
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	When evaluating the temperature sensor, an error occurred. Alarm value (r2124, interpret decimal): 1: Wire breakage or sensor not connected. KTY84: R > 2170 Ohm, PT100: R > 194 Ohm, PT1000: R > 1944 Ohm 2: Measured resistance too low. PTC thermistor: R < 20 Ohm, KTY84: R < 180 Ohm, PT100: R < 60 Ohm, PT1000: R < 603 Ohm
<b>Remedy:</b>	- make sure that the sensor is connected correctly. - replace the sensor.
Reaction upon F:	NONE
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE

---

<b>A35928 (F, N)</b>	<b>TM: Error temperature sensor channel 8</b>
<b>Message value:</b>	%1
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	When evaluating the temperature sensor, an error occurred.



Alarm value (r2124, interpret decimal):  
1: Wire breakage or sensor not connected.  
KTY84: R > 2170 Ohm, PT100: R > 194 Ohm, PT1000: R > 1944 Ohm  
2: Measured resistance too low.  
PTC thermistor: R < 20 Ohm, KTY84: R < 180 Ohm, PT100: R < 60 Ohm, PT1000: R < 603 Ohm

**Remedy:**  
- make sure that the sensor is connected correctly.  
- replace the sensor.

Reaction upon F: NONE  
Acknowl. upon F: IMMEDIATELY (POWER ON)  
Reaction upon N: NONE  
Acknowl. upon N: NONE

---

#### **A35929 (F, N) TM: Error temperature sensor channel 9**

**Message value:** %1  
**Message class:** External measured value / signal state outside the permissible range (16)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** When evaluating the temperature sensor, an error occurred.  
Alarm value (r2124, interpret decimal):  
1: Wire breakage or sensor not connected.  
KTY84: R > 2170 Ohm, PT100: R > 194 Ohm, PT1000: R > 1944 Ohm  
2: Measured resistance too low.  
PTC thermistor: R < 20 Ohm, KTY84: R < 180 Ohm, PT100: R < 60 Ohm, PT1000: R < 603 Ohm

**Remedy:**  
- make sure that the sensor is connected correctly.  
- replace the sensor.

Reaction upon F: NONE  
Acknowl. upon F: IMMEDIATELY (POWER ON)  
Reaction upon N: NONE  
Acknowl. upon N: NONE

---

#### **A35930 (F, N) TM: Error temperature sensor channel 10**

**Message value:** %1  
**Message class:** External measured value / signal state outside the permissible range (16)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** When evaluating the temperature sensor, an error occurred.  
Alarm value (r2124, interpret decimal):  
1: Wire breakage or sensor not connected.  
KTY84: R > 2170 Ohm, PT100: R > 194 Ohm, PT1000: R > 1944 Ohm  
2: Measured resistance too low.  
PTC thermistor: R < 20 Ohm, KTY84: R < 180 Ohm, PT100: R < 60 Ohm, PT1000: R < 603 Ohm

**Remedy:**  
- make sure that the sensor is connected correctly.  
- replace the sensor.

Reaction upon F: NONE  
Acknowl. upon F: IMMEDIATELY (POWER ON)  
Reaction upon N: NONE  
Acknowl. upon N: NONE

<b>A35931 (F, N)</b>	<b>TM: Error temperature sensor channel 11</b>
<b>Message value:</b>	%1
<b>Message class:</b>	External measured value / signal state outside the permissible range (16)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	When evaluating the temperature sensor, an error occurred. Alarm value (r2124, interpret decimal): 1: Wire breakage or sensor not connected. KTY84: R > 2170 Ohm, PT100: R > 194 Ohm, PT1000: R > 1944 Ohm 2: Measured resistance too low. PTC thermistor: R < 20 Ohm, KTY84: R < 180 Ohm, PT100: R < 60 Ohm, PT1000: R < 603 Ohm
<b>Remedy:</b>	- make sure that the sensor is connected correctly. - replace the sensor.
Reaction upon F:	NONE
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>A35999 (F, N)</b>	<b>TM: Unknown alarm</b>
<b>Message value:</b>	New message: %1
<b>Message class:</b>	General drive fault (19)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	An alarm has occurred on the Terminal Module that cannot be interpreted by the Control Unit firmware. This can occur if the firmware on this component is more recent than the firmware on the Control Unit. Alarm value (r2124, interpret decimal): Alarm number. Note: If required, the significance of this new alarm can be read about in a more recent description of the Control Unit.
<b>Remedy:</b>	- replace the firmware on the Terminal Module by an older firmware version (r0158). - upgrade the firmware on the Control Unit (r0018).
Reaction upon F:	NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Acknowl. upon F:	IMMEDIATELY (POWER ON)
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>A36840</b>	<b>Hub DRIVE-CLiQ: error below the signaling threshold</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	A DRIVE-CLiQ error has occurred below the signaling threshold. Fault cause: 1 (= 01 hex): Checksum error (CRC error). 2 (= 02 hex): Telegram is shorter than specified in the length byte or in the receive list. 3 (= 03 hex): Telegram is longer than specified in the length byte or in the receive list. 4 (= 04 hex): The length of the receive telegram does not match the receive list.

5 (= 05 hex):  
The type of the receive telegram does not match the receive list.

6 (= 06 hex):  
The address of the component in the telegram and in the receive list do not match.

7 (= 07 hex):  
A SYNC telegram is expected - but the received telegram is not a SYNC telegram.

8 (= 08 hex):  
No SYNC telegram is expected - but the received telegram is one.

9 (= 09 hex):  
The error bit in the receive telegram is set.

10 (= 0A hex):  
The sign-of-life bit in the receive telegram is not set.

11 (= 0B hex):  
Synchronization error during alternating cyclic data transfer.

16 (= 10 hex):  
The receive telegram is too early.

32 (= 20 hex):  
Error in the telegram header.

33 (= 21 hex):  
The cyclic telegram has not been received.

34 (= 22 hex):  
Timeout in the telegram receive list.

35 (= 23 hex):  
Receive error: The telegram buffer memory contains an error.

64 (= 40 hex):  
Timeout in the telegram send list.

65 (= 41 hex):  
Telegram type does not match send list.

66 (= 42 hex):  
Send error: The telegram buffer memory contains an error.

67 (= 43 hex):  
Send error: The telegram buffer memory contains an error.

Note regarding the message value:  
The individual information is coded as follows in the message value (r0949/r2124):  
0000yyxx hex: yy = component number, xx = error cause

**Remedy:**  
- check the electrical cabinet design and cable routing for EMC compliance  
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).  
See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

<b>F36851</b>	<b>Hub DRIVE-CLiQ (CU): Sign-of-life missing</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	DRIVE-CLiQ communication error from DRIVE-CLiQ Hub Module in question to Control Unit. The DRIVE-CLiQ component did not set the sign-of-life to the Control Unit. Fault cause: 10 (= 0A hex): The sign-of-life bit in the receive telegram is not set. Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause
<b>Remedy:</b>	Upgrade the firmware of the component involved.

<b>F36860</b>	<b>Hub DRIVE-CLiQ (CU): Telegram error</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>DRIVE-CLiQ communication error from DRIVE-CLiQ Hub Module in question to Control Unit.</p> <p>Fault cause:</p> <p>1 (= 01 hex): Checksum error (CRC error).</p> <p>2 (= 02 hex): Telegram is shorter than specified in the length byte or in the receive list.</p> <p>3 (= 03 hex): Telegram is longer than specified in the length byte or in the receive list.</p> <p>4 (= 04 hex): The length of the receive telegram does not match the receive list.</p> <p>5 (= 05 hex): The type of the receive telegram does not match the receive list.</p> <p>6 (= 06 hex): The address of the power unit in the telegram and in the receive list do not match.</p> <p>9 (= 09 hex): The error bit in the receive telegram is set.</p> <p>16 (= 10 hex): The receive telegram is too early.</p> <p>17 (= 11 hex): CRC error and the receive telegram is too early.</p> <p>18 (= 12 hex): The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.</p> <p>19 (= 13 hex): The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.</p> <p>20 (= 14 hex): The length of the receive telegram does not match the receive list and the receive telegram is too early.</p> <p>21 (= 15 hex): The type of the receive telegram does not match the receive list and the receive telegram is too early.</p> <p>22 (= 16 hex): The address of the power unit in the telegram and in the receive list does not match and the receive telegram is too early.</p> <p>25 (= 19 hex): The error bit in the receive telegram is set and the receive telegram is too early.</p> <p>Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- carry out a POWER ON (power off/on).</li> <li>- check the electrical cabinet design and cable routing for EMC compliance</li> <li>- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).</li> </ul>
<b>F36875</b>	<b>HUB DRIVE-CLiQ (CU): Supply voltage failed</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Supply voltage fault (undervoltage) (3)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	OFF1 (OFF2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.

Fault cause:  
9 (= 09 hex):  
The power supply voltage for the components has failed.  
Note regarding the message value:  
The individual information is coded as follows in the message value (r0949/r2124):  
0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- carry out a POWER ON (power off/on).
- check the power supply voltage wiring for the DRIVE-CLiQ component (interrupted cable, contacts, ...).
- check the dimensioning of the power supply for the DRIVE-CLiQ component.

#### F36885

#### Hub DRIVE-CLiQ (CU): Cyclic data transfer error

**Message value:** Component number: %1, fault cause: %2  
**Message class:** Internal (DRIVE-CLiQ) communication error (12)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31  
**Reaction:** NONE  
**Acknowledge:** IMMEDIATELY  
**Cause:** DRIVE-CLiQ communication error from DRIVE-CLiQ Hub Module in question to the Control Unit.

The nodes do not send and receive in synchronism.  
Fault cause:  
26 (= 1A hex):  
Sign-of-life bit in the receive telegram not set and the receive telegram is too early.  
33 (= 21 hex):  
The cyclic telegram has not been received.  
34 (= 22 hex):  
Timeout in the telegram receive list.  
64 (= 40 hex):  
Timeout in the telegram send list.  
98 (= 62 hex):  
Error at the transition to cyclic operation.  
Note regarding the message value:  
The individual information is coded as follows in the message value (r0949/r2124):  
0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- check the supply voltage of the component involved.
- carry out a POWER ON.
- replace the component involved.

#### F36886

#### Hub DRIVE-CLiQ (CU): Error when sending DRIVE-CLiQ data

**Message value:** Component number: %1, fault cause: %2  
**Message class:** Internal (DRIVE-CLiQ) communication error (12)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31  
**Reaction:** NONE  
**Acknowledge:** IMMEDIATELY  
**Cause:** DRIVE-CLiQ communication error from DRIVE-CLiQ Hub Module in question to Control Unit.

Data were not able to be sent.  
Fault cause:  
65 (= 41 hex):  
Telegram type does not match send list.  
Note regarding the message value:  
The individual information is coded as follows in the message value (r0949/r2124):  
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON.

---

#### **F36887 Hub DRIVE-CLiQ (CU): Component fault**

<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>Fault detected on the DRIVE-CLiQ component (DRIVE-CLiQ Hub Module) involved. Faulty hardware cannot be excluded.</p> <p>Fault cause:</p> <p>32 (= 20 hex): Error in the telegram header.</p> <p>35 (= 23 hex): Receive error: The telegram buffer memory contains an error.</p> <p>66 (= 42 hex): Send error: The telegram buffer memory contains an error.</p> <p>67 (= 43 hex): Send error: The telegram buffer memory contains an error.</p> <p>96 (= 60 hex): Response received too late during runtime measurement.</p> <p>97 (= 61 hex): Time taken to exchange characteristic data too long.</p> <p>Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause</p>
<b>Remedy:</b>	<ul style="list-style-type: none"><li>- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).</li><li>- check the electrical cabinet design and cable routing for EMC compliance</li><li>- if required, use another DRIVE-CLiQ socket (p9904).</li><li>- replace the component involved.</li></ul>

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#### **F36895 Hub DRIVE-CLiQ (CU): Alternating cyclic data transfer error**

<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>DRIVE-CLiQ communication error from DRIVE-CLiQ Hub Module in question to Control Unit.</p> <p>Fault cause:</p> <p>11 (= 0B hex): Synchronization error during alternating cyclic data transfer.</p> <p>Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause</p>
<b>Remedy:</b>	<p>Carry out a POWER ON.</p> <p>See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)</p>

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#### **F36896 Hub DRIVE-CLiQ (CU): Inconsistent component properties**

<b>Message value:</b>	Component number: %1
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The properties of the DRIVE-CLiQ component (DRIVE-CLiQ Hub Module), specified by the fault value, have changed in an incompatible fashion with respect to the properties when booted. One cause can be, e.g. that a DRIVE-CLiQ cable or DRIVE-CLiQ component has been replaced.

Fault value (r0949, interpret decimal):

Component number.

**Remedy:**

- carry out a POWER ON.

- when a component is replaced, the same component type and if possible the same firmware version should be used.

- when a cable is replaced, only cables whose length is the same as or as close as possible to the length of the original cables should be used (ensure compliance with the maximum cable length).

---

**F40000**

**Fault at DRIVE-CLiQ socket X100**

**Message value:**

%1

**Message class:**

General drive fault (19)

**Drive object:**

All objects

**Reaction:**

NONE

**Acknowledge:**

IMMEDIATELY

**Cause:**

A fault has occurred at the drive object at the DRIVE-CLiQ socket X100.

Fault value (r0949, interpret decimal):

First fault that has occurred for this drive object.

**Remedy:**

Evaluate the fault buffer of the specified object.

---

**F40001**

**Fault at DRIVE-CLiQ socket X101**

**Message value:**

%1

**Message class:**

General drive fault (19)

**Drive object:**

All objects

**Reaction:**

NONE

**Acknowledge:**

IMMEDIATELY

**Cause:**

A fault has occurred at the drive object at the DRIVE-CLiQ socket X101.

Fault value (r0949, interpret decimal):

First fault that has occurred for this drive object.

**Remedy:**

Evaluate the fault buffer of the specified object.

---

**F40002**

**Fault at DRIVE-CLiQ socket X102**

**Message value:**

%1

**Message class:**

General drive fault (19)

**Drive object:**

DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31

**Reaction:**

NONE

**Acknowledge:**

IMMEDIATELY

**Cause:**

A fault has occurred at the drive object at the DRIVE-CLiQ socket X102.

Fault value (r0949, interpret decimal):

First fault that has occurred for this drive object.

**Remedy:**

Evaluate the fault buffer of the specified object.

---

**F40003**

**Fault at DRIVE-CLiQ socket X103**

**Message value:**

%1

**Message class:**

General drive fault (19)

**Drive object:**

DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31

**Reaction:**

NONE

**Acknowledge:**

IMMEDIATELY

**Cause:**

A fault has occurred at the drive object at the DRIVE-CLiQ socket X103.

Fault value (r0949, interpret decimal):

First fault that has occurred for this drive object.

**Remedy:**

Evaluate the fault buffer of the specified object.

---

#### **F40004      Fault at DRIVE-CLiQ socket X104**

**Message value:** %1  
**Message class:** General drive fault (19)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31  
**Reaction:** NONE  
**Acknowledge:** IMMEDIATELY  
**Cause:** A fault has occurred at the drive object at the DRIVE-CLiQ socket X104.  
               Fault value (r0949, interpret decimal):  
               First fault that has occurred for this drive object.  
**Remedy:** Evaluate the fault buffer of the specified object.

---

#### **F40005      Fault at DRIVE-CLiQ socket X105**

**Message value:** %1  
**Message class:** General drive fault (19)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31  
**Reaction:** NONE  
**Acknowledge:** IMMEDIATELY  
**Cause:** A fault has occurred at the drive object at the DRIVE-CLiQ socket X105.  
               Fault value (r0949, interpret decimal):  
               First fault that has occurred for this drive object.  
**Remedy:** Evaluate the fault buffer of the specified object.

---

#### **A40100      Alarm at DRIVE-CLiQ socket X100**

**Message value:** %1  
**Message class:** General drive fault (19)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** An alarm has occurred at the drive object at the DRIVE-CLiQ socket X100.  
               Alarm value (r2124, interpret decimal):  
               First alarm that has occurred for this drive object.  
**Remedy:** Evaluate the alarm buffer of the specified object.

---

#### **A40101      Alarm at DRIVE-CLiQ socket X101**

**Message value:** %1  
**Message class:** General drive fault (19)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** An alarm has occurred at the drive object at the DRIVE-CLiQ socket X101.  
               Alarm value (r2124, interpret decimal):  
               First alarm that has occurred for this drive object.  
**Remedy:** Evaluate the alarm buffer of the specified object.

---

#### **A40102      Alarm at DRIVE-CLiQ socket X102**

**Message value:** %1  
**Message class:** General drive fault (19)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** An alarm has occurred at the drive object at the DRIVE-CLiQ socket X102.  
               Alarm value (r2124, interpret decimal):  
               First alarm that has occurred for this drive object.  
**Remedy:** Evaluate the alarm buffer of the specified object.



<b>A40103</b>	<b>Alarm at DRIVE-CLiQ socket X103</b>
<b>Message value:</b>	%1
<b>Message class:</b>	General drive fault (19)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	An alarm has occurred at the drive object at the DRIVE-CLiQ socket X103. Alarm value (r2124, interpret decimal): First alarm that has occurred for this drive object.
<b>Remedy:</b>	Evaluate the alarm buffer of the specified object.
<b>A40104</b>	<b>Alarm at DRIVE-CLiQ socket X104</b>
<b>Message value:</b>	%1
<b>Message class:</b>	General drive fault (19)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	An alarm has occurred at the drive object at the DRIVE-CLiQ socket X104. Alarm value (r2124, interpret decimal): First alarm that has occurred for this drive object.
<b>Remedy:</b>	Evaluate the alarm buffer of the specified object.
<b>A40105</b>	<b>Alarm at DRIVE-CLiQ socket X105</b>
<b>Message value:</b>	%1
<b>Message class:</b>	General drive fault (19)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	An alarm has occurred at the drive object at the DRIVE-CLiQ socket X105. Alarm value (r2124, interpret decimal): First alarm that has occurred for this drive object.
<b>Remedy:</b>	Evaluate the alarm buffer of the specified object.
<b>F40799</b>	<b>CX32: Configured transfer end time exceeded</b>
<b>Message value:</b>	-
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The configured transfer end time when transferring the cyclic actual values was exceeded.
<b>Remedy:</b>	- carry out a POWER ON (power off/on) for all components. - contact the Hotline.
<b>F40801</b>	<b>CX32 DRIVE-CLiQ: Sign-of-life missing</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	A DRIVE-CLiQ communications error has occurred from the Control Unit to the controller extension involved. Fault cause: 10 (= 0A hex): The sign-of-life bit in the receive telegram is not set.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- carry out a POWER ON (power off/on).

- replace the component involved.

See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

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**F40820**

**CX32 DRIVE-CLiQ: Telegram error**

**Message value:**

Component number: %1, fault cause: %2

**Message class:**

Internal (DRIVE-CLiQ) communication error (12)

**Drive object:**

DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31

**Reaction:**

OFF2

**Acknowledge:**

IMMEDIATELY

**Cause:**

A DRIVE-CLiQ communications error has occurred from the Control Unit to the controller extension involved.

Fault cause:

1 (= 01 hex):

Checksum error (CRC error).

2 (= 02 hex):

Telegram is shorter than specified in the length byte or in the receive list.

3 (= 03 hex):

Telegram is longer than specified in the length byte or in the receive list.

4 (= 04 hex):

The length of the receive telegram does not match the receive list.

5 (= 05 hex):

The type of the receive telegram does not match the receive list.

6 (= 06 hex):

The address of the component in the telegram and in the receive list do not match.

7 (= 07 hex):

A SYNC telegram is expected - but the received telegram is not a SYNC telegram.

8 (= 08 hex):

No SYNC telegram is expected - but the received telegram is one.

9 (= 09 hex):

The error bit in the receive telegram is set.

16 (= 10 hex):

The receive telegram is too early.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- carry out a POWER ON (power off/on).

- check the electrical cabinet design and cable routing for EMC compliance

- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

---

**F40825**

**CX32 DRIVE-CLiQ: Supply voltage failed**

**Message value:**

Component number: %1, fault cause: %2

**Message class:**

Supply voltage fault (undervoltage) (3)

**Drive object:**

All objects

**Reaction:**

OFF1 (OFF2)

**Acknowledge:**

IMMEDIATELY

**Cause:**

The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.

Fault cause:

9 (= 09 hex):

The power supply voltage for the components has failed.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- carry out a POWER ON (power off/on).
- check the supply voltage wiring of the DRIVE-CLiQ component (interrupted cable, contacts, ...).
- check the dimensioning of the DRIVE-CLiQ component power supply.

**F40835**

**CX32 DRIVE-CLiQ: Cyclic data transfer error**

**Message value:**

Component number: %1, fault cause: %2

**Message class:**

Internal (DRIVE-CLiQ) communication error (12)

**Drive object:**

DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31

**Reaction:**

OFF2

**Acknowledge:**

IMMEDIATELY

**Cause:**

A DRIVE-CLiQ communications error has occurred from the Control Unit to the controller extension involved. The nodes do not send and receive in synchronism.

Fault cause:

33 (= 21 hex):

The cyclic telegram has not been received.

34 (= 22 hex):

Timeout in the telegram receive list.

64 (= 40 hex):

Timeout in the telegram send list.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- carry out a POWER ON (power off/on).
  - replace the component involved.
- See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

**F40836**

**CX32 DRIVE-CLiQ: Send error for DRIVE-CLiQ data**

**Message value:**

Component number: %1, fault cause: %2

**Message class:**

Internal (DRIVE-CLiQ) communication error (12)

**Drive object:**

DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31

**Reaction:**

OFF2

**Acknowledge:**

IMMEDIATELY

**Cause:**

A DRIVE-CLiQ communications error has occurred from the Control Unit to the controller extension involved. Data were not able to be sent.

Fault cause:

65 (= 41 hex):

Telegram type does not match send list.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

Carry out a POWER ON (power off/on).

**F40837**

**CX32 DRIVE-CLiQ: Component fault**

**Message value:**

Component number: %1, fault cause: %2

**Message class:**

Internal (DRIVE-CLiQ) communication error (12)

**Drive object:**

DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31

**Reaction:**

OFF2

**Acknowledge:**

IMMEDIATELY

**Cause:**

Fault detected on the DRIVE-CLiQ component concerned. Faulty hardware cannot be excluded.

Fault cause:

32 (= 20 hex):

Error in the telegram header.

## 4 Faults and alarms

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35 (= 23 hex):

Receive error: The telegram buffer memory contains an error.

66 (= 42 hex):

Send error: The telegram buffer memory contains an error.

67 (= 43 hex):

Send error: The telegram buffer memory contains an error.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

---

**F40845**

**CX32 DRIVE-CLiQ: Cyclic data transfer error**

**Message value:**

Component number: %1, fault cause: %2

**Message class:**

Internal (DRIVE-CLiQ) communication error (12)

**Drive object:**

DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31

**Reaction:**

OFF2

**Acknowledge:**

IMMEDIATELY

**Cause:**

A DRIVE-CLiQ communications error has occurred from the Control Unit to the controller extension involved.

Fault cause:

11 (= 0B hex):

Synchronization error during alternating cyclic data transfer.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

Carry out a POWER ON (power off/on).

See also: p9916 (DRIVE-CLiQ data transfer error shutdown threshold slave)

---

**F40851**

**CX32 DRIVE-CLiQ (CU): Sign-of-life missing**

**Message value:**

Component number: %1, fault cause: %2

**Message class:**

Internal (DRIVE-CLiQ) communication error (12)

**Drive object:**

DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31

**Reaction:**

OFF2

**Acknowledge:**

IMMEDIATELY

**Cause:**

A DRIVE-CLiQ communications error has occurred from the controller extension involved to the Control Unit.

The DRIVE-CLiQ component did not set the sign-of-life to the Control Unit.

Fault cause:

10 (= 0A hex):

The sign-of-life bit in the receive telegram is not set.

Note regarding the message value:

The individual information is coded as follows in the message value (r0949/r2124):

0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

Upgrade the firmware of the component involved.

---

**F40860**

**CX32 DRIVE-CLiQ (CU): Telegram error**

**Message value:**

Component number: %1, fault cause: %2

**Message class:**

Internal (DRIVE-CLiQ) communication error (12)

**Drive object:**

DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31

**Reaction:**

OFF2

**Acknowledge:**

IMMEDIATELY

**Cause:**

A DRIVE-CLiQ communications error has occurred from the controller extension involved to the Control Unit.

Fault cause:  
1 (= 01 hex):  
Checksum error (CRC error).  
2 (= 02 hex):  
Telegram is shorter than specified in the length byte or in the receive list.  
3 (= 03 hex):  
Telegram is longer than specified in the length byte or in the receive list.  
4 (= 04 hex):  
The length of the receive telegram does not match the receive list.  
5 (= 05 hex):  
The type of the receive telegram does not match the receive list.  
6 (= 06 hex):  
The address of the power unit in the telegram and in the receive list do not match.  
9 (= 09 hex):  
The error bit in the receive telegram is set.  
16 (= 10 hex):  
The receive telegram is too early.  
17 (= 11 hex):  
CRC error and the receive telegram is too early.  
18 (= 12 hex):  
The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.  
19 (= 13 hex):  
The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.  
20 (= 14 hex):  
The length of the receive telegram does not match the receive list and the receive telegram is too early.  
21 (= 15 hex):  
The type of the receive telegram does not match the receive list and the receive telegram is too early.  
22 (= 16 hex):  
The address of the power unit in the telegram and in the receive list does not match and the receive telegram is too early.  
25 (= 19 hex):  
The error bit in the receive telegram is set and the receive telegram is too early.  
Note regarding the message value:  
The individual information is coded as follows in the message value (r0949/r2124):  
0000yyxx hex: yy = component number, xx = error cause  
**Remedy:**  
- carry out a POWER ON (power off/on).  
- check the electrical cabinet design and cable routing for EMC compliance  
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).  
See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

---

<b>F40875</b>	<b>CX32 DRIVE-CLiQ (CU): Supply voltage failed</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Supply voltage fault (undervoltage) (3)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	OFF1 (OFF2)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed. Fault cause: 9 (= 09 hex): The power supply voltage for the components has failed. Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause

- Remedy:**
- carry out a POWER ON (power off/on).
  - check the supply voltage wiring of the DRIVE-CLiQ component (interrupted cable, contacts, ...).
  - check the dimensioning of the DRIVE-CLiQ component power supply.

---

<b>F40885</b>	<b>CX32 DRIVE-CLiQ (CU): Cyclic data transfer error</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	A DRIVE-CLiQ communications error has occurred from the controller extension involved to the Control Unit. The nodes do not send and receive in synchronism. Fault cause: 26 (= 1A hex): Sign-of-life bit in the receive telegram not set and the receive telegram is too early. 33 (= 21 hex): The cyclic telegram has not been received. 34 (= 22 hex): Timeout in the telegram receive list. 64 (= 40 hex): Timeout in the telegram send list. 98 (= 62 hex): Error at the transition to cyclic operation. Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause
<b>Remedy:</b>	<ul style="list-style-type: none"><li>- check the power supply voltage of the component involved.</li><li>- carry out a POWER ON (power off/on).</li><li>- replace the component involved.</li></ul> See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

---

<b>F40886</b>	<b>CX32 DRIVE-CLiQ (CU): Error when sending DRIVE-CLiQ data</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	A DRIVE-CLiQ communications error has occurred from the controller extension involved to the Control Unit. Data were not able to be sent. Fault cause: 65 (= 41 hex): Telegram type does not match send list. Note regarding the message value: The individual information is coded as follows in the message value (r0949/r2124): 0000yyxx hex: yy = component number, xx = error cause
<b>Remedy:</b>	Carry out a POWER ON (power off/on).

---

<b>F40887</b>	<b>CX32 DRIVE-CLiQ (CU): Component fault</b>
<b>Message value:</b>	Component number: %1, fault cause: %2
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL, DC_CTRL_R, DC_CTRL_R_S, DC_CTRL_S, TM150, TM15DI_DO, TM31
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	Fault detected on the DRIVE-CLiQ component concerned. Faulty hardware cannot be excluded.

Fault cause:  
32 (= 20 hex):  
Error in the telegram header.  
35 (= 23 hex):  
Receive error: The telegram buffer memory contains an error.  
66 (= 42 hex):  
Send error: The telegram buffer memory contains an error.  
67 (= 43 hex):  
Send error: The telegram buffer memory contains an error.  
96 (= 60 hex):  
Response received too late during runtime measurement.  
97 (= 61 hex):  
Time taken to exchange characteristic data too long.  
Note regarding the message value:  
The individual information is coded as follows in the message value (r0949/r2124):  
0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

---

**F40895 CX32 DRIVE-CLiQ (CU): Cyclic data transfer error**

**Message value:** Component number: %1, fault cause: %2  
**Message class:** Internal (DRIVE-CLiQ) communication error (12)  
**Drive object:** DC\_CTRL, DC\_CTRL\_R, DC\_CTRL\_R\_S, DC\_CTRL\_S, TM150, TM15DI\_DO, TM31  
**Reaction:** OFF2  
**Acknowledge:** IMMEDIATELY  
**Cause:** A DRIVE-CLiQ communications error has occurred from the controller extension involved to the Control Unit.  
 Fault cause:  
 11 (= 0B hex):  
 Synchronization error during alternating cyclic data transfer.  
 Note regarding the message value:  
 The individual information is coded as follows in the message value (r0949/r2124):  
 0000yyxx hex: yy = component number, xx = error cause

**Remedy:**

Carry out a POWER ON (power off/on).  
 See also: p9915 (DRIVE-CLiQ data transfer error shutdown threshold master)

---

**A50001 (F) PN/COMM BOARD: Configuration error**

**Message value:** %1  
**Message class:** Communication error to the higher-level control system (9)  
**Drive object:** All objects  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** CBE20:  
 A PROFINET controller attempts to establish a connection using an incorrect configuring telegram. The "Shared Device" function has been activated (p8829 = 2).  
 Alarm value (r2124, interpret decimal):  
 10: A CPU sends a PROFIsafe telegram.  
 11: F CPU sends a PZD telegram.  
 12: F CPU without an A CPU.  
 13: F CPU with more PROFIsafe subslots than activated with p9601.3.  
 14: F CPU with fewer PROFIsafe subslots than activated with p9601.3.  
 15: PROFIsafe telegram of the F-CPU does not match the setting in p60022.  
 See also: p8829 (CBE2x remote controller number)

## 4 Faults and alarms

### 4.2 List of faults and alarms

**Remedy:** CBE20:  
Check the configuration of the PROFINET controllers as well as the p8829 and p9601.3 setting.

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowled. upon F: IMMEDIATELY

---

**A50002 (F) COMM BOARD: Alarm 2**

**Message value:** %1

**Message class:** Communication error to the higher-level control system (9)

**Drive object:** All objects

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** CBE20 SINAMICS Link:  
A specific telegram word (send) is being used twice.  
Alarm value (r2124, interpret decimal):  
Telegram word used twice  
See also: p8871 (SINAMICS Link send telegram word PZD)

**Remedy:** CBE20 SINAMICS Link:  
Correct the parameter assignment.  
See also: p8871 (SINAMICS Link send telegram word PZD)

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowled. upon F: IMMEDIATELY

---

**A50003 (F) COMM BOARD: Alarm 3**

**Message value:** Info. 1: %1, info. 2: %2

**Message class:** Communication error to the higher-level control system (9)

**Drive object:** All objects

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** CBE20 SINAMICS Link:  
A specific telegram word (receive) is being used twice.  
Alarm value (r2124, interpret hexadecimal):  
yyyyxxxx hex: yyyy = info. 1, xxxx = info. 2  
Info. 1 (decimal) = Address of sender  
Info. 2 (decimal) = Receive telegram word  
See also: p8870 (SINAMICS Link receive telegram word PZD), p8872 (SINAMICS Link address receive PZD)

**Remedy:** CBE20 SINAMICS Link:  
Correct the parameter assignment.

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowled. upon F: IMMEDIATELY

---

**A50004 (F) COMM BOARD: Alarm 4**

**Message value:** Info. 1: %1, info. 2: %2

**Message class:** Communication error to the higher-level control system (9)

**Drive object:** All objects

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** CBE20 SINAMICS Link:  
- telegram word (receive) and address of sender inconsistent. Both values have to be either equal to zero or not equal to zero.  
- drive object number p8872 > 16 with p8811 = 16.  
Alarm value (r2124, interpret hexadecimal):  
yyyyxxxx hex: yyyy = info. 1, xxxx = info. 2  
Info. 1 (decimal) = Drive object number from p8870, p8872  
Info. 2 (decimal) = Index from p8870, p8872  
See also: p8870 (SINAMICS Link receive telegram word PZD), p8872 (SINAMICS Link address receive PZD)



**Remedy:** In the case of CBE20 SINAMICS Link:  
Correct the parameter assignment.

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowl. upon F: IMMEDIATELY

---

**A50005 (F) COMM BOARD: Alarm 5**

**Message value:** %1

**Message class:** Communication error to the higher-level control system (9)

**Drive object:** All objects

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** CBE20 SINAMICS Link:  
Sender not found on SINAMICS Link.  
Alarm value (r2124, interpret decimal):  
Address of sender that cannot be located  
See also: p8872 (SINAMICS Link address receive PZD)

**Remedy:** CBE20 SINAMICS Link:  
Check the connection to the sender.

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowl. upon F: IMMEDIATELY

---

**A50006 (F) COMM BOARD: Alarm 6**

**Message value:** Info. 1: %1, info. 2: %2

**Message class:** Communication error to the higher-level control system (9)

**Drive object:** All objects

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** CBE20 SINAMICS Link:  
The parameter assignment indicates that the sender and the receiver are one and the same. This is not permitted.  
Alarm value (r2124, interpret hexadecimal):  
yyyyxxxx hex: yyyy = info. 1, xxxx = info. 2  
Info. 1 (decimal) = Drive object number from p8872  
Info. 2 (decimal) = Index from p8872  
See also: p8836 (SINAMICS Link address), p8872 (SINAMICS Link address receive PZD)

**Remedy:** In the case of CBE20 SINAMICS Link:  
Correct the parameter assignment. All p8872[index] must be set to a value not equal to p8836.

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowl. upon F: IMMEDIATELY

---

**A50010 (F) PN/COMM BOARD: Station name invalid**

**Message value:** %1

**Message class:** Communication error to the higher-level control system (9)

**Drive object:** All objects

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** CBE20:  
PROFINET Name of Station is invalid.

**Remedy:** CBE20:  
Correct the name of the station (p8940) and activate (p8945 = 2).  
See also: p8940 (CBE2x Name of Station)

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowl. upon F: IMMEDIATELY

<b>A50020 (F)</b>	<b>PNCOMM BOARD: Second controller missing</b>
<b>Message value:</b>	-
<b>Message class:</b>	Communication error to the higher-level control system (9)
<b>Drive object:</b>	All objects
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	CBE20: The PROFINET function "Shared Device" has been activated (p8829 = 2). However, only the connection to a PROFINET controller is present. See also: p8829 (CBE2x remote controller number)
<b>Remedy:</b>	CBE20: Check the configuration of the PROFINET controllers as well as the p8829 setting.
Reaction upon F:	NONE (OFF1, OFF2, OFF3)
Acknowl. upon F:	IMMEDIATELY
<b>F60004 (N, A)</b>	<b>Armature circuit phase failure detected</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Network fault (2)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	OFF2 (NONE)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	Phase failure in armature infeed. The line voltage rms value calculated from the area of each line half-wave (rectifier average value * harmonic factor) is less than the response value for phase failure monitoring or the distance between two line zero crossings in the same phase is more than 270 degrees or the distance between two line zero crossings in different phases is not between 30 and 90 degrees. - Phase failure threshold set incorrectly (p50353) - Armature phase failed - Line contactor opened in operation - Fuse blown on three-phase side of armature circuit - Fuse blown in power unit Fault value (r0949, interpret decimal): 1: Power failure has occurred in armature infeed (UV, VW, WU) r50047[1] = 0: First power failure in armature phase UV r50047[1] = 1: First power failure in armature phase VW r50047[1] = 2: First power failure in armature phase WU r50047[2]: Incorrect voltage value as a % of p50078[0] 2: Wait time for new zero crossing has expired in one armature phase (UV, VW, WU) r50047[1] = 0: No zero crossing in armature phase UV in excess of 270 ° r50047[1] = 1: No zero crossing in armature phase VW in excess of 270 ° r50047[1] = 2: No zero crossing in armature phase WU in excess of 270 ° r50047[2]: Time without zero crossing (= duration 270 °) of armature phase r50047[1] in ms 3: Line asymmetry in armature infeed (UV, VW, WU) r50047[1]: Phase number of phase of last zero crossing (0 = UV, 1 = VW, 2 = WU) r50047[2]: Phase number of phase of last-but-one zero crossing (0 = UV, 1 = VW, 2 = WU) r50047[3]: Time of last raw zero crossing in ms r50047[4]: Time of last-but-one raw zero crossing in ms r50047[5]: Time of last positive refined zero crossing in phase UV in ms r50047[6]: Time of last negative refined zero crossing in phase UV in ms r50047[7]: Time of last positive refined zero crossing in phase VW in ms r50047[8]: Time of last negative refined zero crossing in phase VW in ms r50047[9]: Time of last positive refined zero crossing in phase WU in ms

	r50047[10]: Time of last negative refined zero crossing in phase WU in ms r50047[11]: Last good 60 ° period in ms See also: p50089 (Sequence control voltage at power unit wait time), p50095 (Sequence control DC circuit contactor wait time), p50691 (Sequence control line contactor feedback)
<b>Remedy:</b>	- Check threshold for phase failure (p50353). - Check the field supply voltage. - Check the fuses and line contactor. See also: p50089 (Sequence control voltage at power unit wait time), p50353 (Line monitoring phase failure threshold)
Reaction upon N:	NONE
Acknowled. upon N:	NONE
Reaction upon A:	NONE
Acknowled. upon A:	NONE

<b>F60005 (N, A)</b>	<b>Field circuit phase failure detected</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Network fault (2)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	OFF2 (NONE)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	A phase failure has been detected in the field circuit. The line voltage rms value calculated from the area of each line half-wave (rectifier average value * harmonic factor) is less than the response value for phase failure monitoring or the distance between two line zero crossings of the voltage for the field converter is more than 270 degrees. - Phase failure threshold set incorrectly (p50353) - Field phase failed - Line contactor opened in operation - Fuse blown in field circuit Fault value (r0949, interpret decimal): 1: Power failure in field infeed Note: r50047[1]: Incorrect voltage value as a % of p50078[1] 2: Wait time for new zero crossing has expired in the field phase. Note: r50047[1]: Time without zero crossing (= duration 270 °) of armature phase r50047[1] in ms See also: p50089 (Sequence control voltage at power unit wait time)
<b>Remedy:</b>	- Check threshold for phase failure (p50353). - Check the field supply voltage. - Check the fuses and line contactor. See also: p50089 (Sequence control voltage at power unit wait time)
Reaction upon N:	NONE
Acknowled. upon N:	NONE
Reaction upon A:	NONE
Acknowled. upon A:	NONE

<b>F60006 (N, A)</b>	<b>Line monitoring undervoltage</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Network fault (2)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	OFF2 (NONE)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The line voltage has undershot the permissible undervoltage limit for longer than the setting in p50361. Fault value (r0949, interpret decimal): 1: Armature undervoltage occurred 2: Field undervoltage occurred

## 4 Faults and alarms

### 4.2 List of faults and alarms

	Note: r50047[1] = 0: Undervoltage in armature phase UV r50047[1] = 1: Undervoltage in armature phase VW r50047[1] = 2: Undervoltage in armature phase WU r50047[1] = 3: Undervoltage in field phase r50047[2] = Incorrect voltage value as a % of p50078[0] or p50078[1]
<b>Remedy:</b>	- Check monitoring limit for armature (p50078[0] * (1 + p50351/100%)). - Check monitoring limit for field (p50078[1] * (1 + p50351/100%)). - Check monitoring time (p50361). See also: p50078 (Supply voltage rated value), p50351 (Line undervoltage threshold), p50361 (Line monitoring undervoltage delay time)
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

---

#### **F60007 (N, A) Line monitoring overvoltage**

<b>Message value:</b>	%1
<b>Message class:</b>	Network fault (2)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	OFF2 (NONE)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The line voltage has overshot the permissible overvoltage limit for longer than the setting in p50362. Fault value (r0949, interpret decimal): 1: Armature overvoltage occurred 2: Field overvoltage occurred Note: r50047[1] = 0: Overvoltage in armature phase UV r50047[1] = 1: Overvoltage in armature phase VW r50047[1] = 2: Overvoltage in armature phase WU r50047[1] = 3: Overvoltage in field phase r50047[2] = Incorrect voltage value as a % of p50078[0] or p50078[1]
<b>Remedy:</b>	- Check monitoring limit for armature (p50078[0] * (1 + p50352/100%)). - Check monitoring limit for field (p50078[1] * (1 + p50352/100%)). - Check monitoring time (p50362). See also: p50078 (Supply voltage rated value), p50352 (Line overvoltage threshold), p50362 (Line monitoring overvoltage delay time)
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

---

#### **F60008 (N, A) Line frequency less than minimum line frequency**

<b>Message value:</b>	%1
<b>Message class:</b>	Network fault (2)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	OFF2 (NONE)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The line frequency has undershot the set threshold for monitoring of the minimum line frequency for more than 40 ms. Fault value (r0949, interpret decimal): 1: Armature supply frequency less than minimum line frequency 2: Field supply frequency less than minimum line frequency Note: r50047[1]: Incorrect frequency value in Hz

**Remedy:** Check the threshold for monitoring the minimum line frequency (p50363).  
See also: p50363 (Line frequency minimum threshold)

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

**F60009 (N, A) Line frequency greater than maximum line frequency**

**Message value:** %1  
**Message class:** Network fault (2)  
**Drive object:** DC\_CTRL  
**Reaction:** OFF2 (NONE)  
**Acknowledge:** IMMEDIATELY  
**Cause:** The line frequency has overshoot the set threshold for monitoring of the maximum line frequency for more than 40 ms.  
Fault value (r0949, interpret decimal):  
1: Armature supply frequency greater than maximum line frequency  
2: Field supply frequency greater than maximum line frequency  
Note:  
r50047[1]: Incorrect frequency value in Hz

**Remedy:** Check the threshold for monitoring the maximum line frequency (p50364).  
See also: p50364 (Line frequency maximum threshold)

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

**F60010 (N, A) Armature circuit uneven current distribution**

**Message value:** %1  
**Message class:** Ground fault / inter-phase short-circuit detected (7)  
**Drive object:** DC\_CTRL  
**Reaction:** OFF2 (NONE)  
**Acknowledge:** IMMEDIATELY  
**Cause:** An uneven current distribution through the thyristors has been identified in the armature circuit.  
Significantly less current flows in one thyristor than in the others.  
Remarks:  
- This monitoring is only effective if the average current value across all thyristors is greater than 20 % of r50072[1].  
- The current in a thyristor is significantly lower, if, for a period of one second, the average value is less than 35 % of the average value across all thyristors.  
Possible causes:  
- A fuse has blown.  
- A thyristor is not fired (defective thyristor, defective pulse transformer, defective firing electronics).  
Fault value (r0949, interpret decimal):  
Number of the thyristor that is conducting the significantly lower current.  
Note:  
r50047[1]: Average current value through all armature thyristors.  
r50047[2]: Average current value through the thyristor with the excessively low current, in torque direction I.  
r50047[3]: Average current value through the thyristor with the excessively low current, in torque direction II.  
The current values as a % are referred to r50072[1].  
Note:  
Even though the response to this fault message is set to "NO" when using p2100/p2101, or the message type set to "Alarm" or "No message" when using p2118/p2119, in the case of a fault, the drive still exits the OPERATION (RUN) state and goes into state o4.1 (wait for the fuse monitoring OK message.)

**Remedy:** - Check the fuses in the power unit.  
- If required, perform a thyristor diagnostics routine (p50830).  
See also: p50830 (Thyristor diagnostics mode)

## 4 Faults and alarms

### 4.2 List of faults and alarms

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

#### **F60012 (N, A) P2P-IF: Telegram monitoring time expired**

**Message value:** -

**Message class:** Communication error to the higher-level control system (9)

**Drive object:** DC\_CTRL

**Reaction:** OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The telegram monitoring time for communication via the peer-to-peer interface (P2P-IF) has expired.  
No further valid telegrams were received during the monitoring time (p50797).

Possible causes:

- Break in connecting cable
- Electromagnetic interference on the connecting cable
- Telegram monitoring time set too short (p50797)

**Remedy:** - Check connecting cable and cable connection.  
- Check that the connecting cable has been routed in compliance with EMC.  
- Increase the telegram monitoring time if necessary (p50797).

See also: p50089 (Sequence control voltage at power unit wait time), p50790 (P2P IF operating mode), p50797 (P2P IF telegram monitoring time)

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

#### **F60014 (N, A) Parallel interface telegram monitoring time expired**

**Message value:** -

**Message class:** Communication error to the higher-level control system (9)

**Drive object:** DC\_CTRL

**Reaction:** OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The telegram monitoring time for communication via the parallel interface (Par-IF) has expired.  
No further valid telegrams were received during the monitoring time (p51807).

Possible causes:

- Break in connecting cable
- Electromagnetic interference on the connecting cable
- Telegram monitoring time set too short (p51807)

**Remedy:** - Check connecting cable and cable connection.  
- Check that the connecting cable has been routed in compliance with EMC.  
- Increase the telegram monitoring time if necessary (p51807).

See also: p51807 (Parallel interface telegram monitoring failure time), p51808 (Parallel interface signal source for F60014)

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

#### **A60018 (F, N) Digital output overloaded**

**Message value:** Fault cause: %1 bin

**Message class:** Ground fault / inter-phase short-circuit detected (7)

**Drive object:** DC\_CTRL

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** At least one digital output is overloaded or has short-circuited.

Alarm value (r2124, interpret binary):

Bit 0 = 1: CUD digital output 0 (X177.19) is overloaded

Bit 1 = 1: CUD digital output 1 (X177.20) is overloaded

Bit 2 = 1: CUD digital output 2 (X177.21) is overloaded

Bit 3 = 1: CUD digital output 3 (X177.22) is overloaded

Bit 4 = 1: CUD digital output 4 (X177.15) is overloaded

Bit 5 = 1: CUD digital output 5 (X177.16) is overloaded

Bit 6 = 1: CUD digital output 6 (X177.17) is overloaded

Bit 7 = 1: CUD digital output 7 (X177.18) is overloaded

Note:

The fault value is equal to the inverted value of parameter r53021. Information about short-circuit monitoring for the individual digital outputs for further interconnection is available here.

**Remedy:** Check the overloaded digital outputs and rectify the overload or short circuit.

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowled. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowled. upon N: NONE

---

#### **F60025 (N, A) Brush length too short**

**Message value:** -

**Message class:** General drive fault (19)

**Drive object:** DC\_CTRL

**Reaction:** OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** A motor brush length which is too short has been reported via a binector input (p50486) for a period exceeding a permanently set delay time.

Note:

This message is also reported via binector output r53120.0.

**Remedy:** - Check binector input p50486 and trace the generation of the signal back to the sensor.

- Check and if necessary update the motor's brush length.

See also: p50486 (Motor interface signal source for brush length)

Reaction upon N: NONE

Acknowled. upon N: NONE

Reaction upon A: NONE

Acknowled. upon A: NONE

---

#### **F60026 (N, A) Poor bearing condition**

**Message value:** -

**Message class:** General drive fault (19)

**Drive object:** DC\_CTRL

**Reaction:** OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** A defective motor bearing has been reported via a binector input (p50487) for a period exceeding a permanently set delay time.

Note:

This message is also reported via binector output r53120.1.

**Remedy:** - Check binector input p50487 and trace the generation of the signal back to the sensor.

- Check and if necessary restore the motor's bearing condition.

See also: p50487 (Motor interface signal source for bearing condition)

Reaction upon N: NONE

Acknowled. upon N: NONE

Reaction upon A: NONE

Acknowled. upon A: NONE

<b>F60027 (N, A)</b>	<b>Motor fan fault</b>
<b>Message value:</b>	-
<b>Message class:</b>	General drive fault (19)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	OFF2 (NONE, OFF1, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	A defective motor fan has been reported via a binector input (p50488) for a period exceeding a permanently set delay time. Note: This message is also reported via binector output r53120.2.
<b>Remedy:</b>	- Check binector input p50488 and trace the generation of the signal back to the sensor. - Check and if necessary replace the motor's fan. See also: p50488 (Motor interface signal source for motor fan)
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE
<b>F60028 (N, A)</b>	<b>Motor temperature too high</b>
<b>Message value:</b>	-
<b>Message class:</b>	Motor overload (8)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	OFF2 (NONE, OFF1, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	A motor temperature which is too high has been reported via a binector input (p50489) for a period exceeding a permanently set delay time. The motor temperature is too high. Possible causes: - Motor is overloaded - Ambient temperature of the motor is too high - Wire break or sensor not connected Note: This message is also reported via binector output r53120.3.
<b>Remedy:</b>	- Check binector input p50489 and trace the generation of the signal back to the sensor. - Reduce the motor load if necessary. - Check the ambient temperature and reduce if necessary. - Check the wiring and the sensor connection. See also: p50489 (Motor interface signal source for motor temperature)
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE
<b>F60029 (N, A)</b>	<b>Motor temperature fault</b>
<b>Message value:</b>	-
<b>Message class:</b>	Motor overload (8)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	OFF2 (NONE, OFF1, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The motor temperature is higher than the threshold set in p50491 to trigger this fault. Possible causes: - Motor is overloaded - Ambient temperature is too high



Note:  
r50047[1]: Motor temperature (in °C) for temperature sensor with continuous characteristic.  
KTY84 (p50490 = 1) or  
PT100 (p50490 = 6) or  
NTC thermistor K227 (p50490 = 7) or  
PT1000 (p50490 = 8)  
Otherwise the value = 0.  
See also: p50492 (Motor interface fault threshold for temperature monitoring)

**Remedy:**

- Check the threshold for triggering the fault (p50492).
- Reduce the motor load if necessary.
- Check the ambient temperature and reduce if necessary.

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

#### **F60031 (N, A) Excessive setpoint/actual value deviation**

**Message value:** -  
**Message class:** Motor overload (8)  
**Drive object:** DC\_CTRL  
**Reaction:** OFF2 (NONE, OFF1, OFF3)  
**Acknowledge:** IMMEDIATELY  
**Cause:** The absolute value of the set/act deviation of the speed controller has exceeded the set threshold.

Note:  
r50047[1]: n\_set (connector input p50590)  
r50047[2]: n\_act (connector input p50591)  
See also: p50388 (Messages for setpoint/actual value deviation 1 threshold), p50590 (Messages for set/act val dev 1 signal source for speed setpoint), p50591 (Messages for set/act val dev 1 signal source for speed act val)

**Remedy:**

- Optimize the speed controller (p50051).
- Check torque limiting (p50169).

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

#### **A60032 (F, N) Motor temperature alarm**

**Message value:** -  
**Message class:** Motor overload (8)  
**Drive object:** DC\_CTRL  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The motor temperature is higher than the threshold set in p50491 to trigger this alarm.

Possible causes:

- Motor is overloaded
- Ambient temperature is too high

Note:  
r50047[1]: Motor temperature (in °C) for temperature sensor with continuous characteristic.  
KTY84 (p50490 = 1) or  
PT100 (p50490 = 6) or  
NTC thermistor K227 (p50490 = 7) or  
PT1000 (p50490 = 8)  
Otherwise the value = 0.  
See also: p50491 (Motor interface alarm threshold for temperature monitoring)

## 4 Faults and alarms

### 4.2 List of faults and alarms

**Remedy:**

- Check the threshold for triggering the alarm (p50491).
- Reduce the motor load if necessary.
- Check the ambient temperature and reduce if necessary.

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

---

#### **F60035 (N, A) Motor blocked**

**Message value:** -

**Message class:** Motor overload (8)

**Drive object:** DC\_CTRL

**Reaction:** OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The fault is triggered if the following conditions prevail for longer than the time set in p50355:

- The positive or negative armature current or torque limit has been reached
- Armature current r52109 > 1.0%
- Speed actual value r52166 < p50356

Note:

r50047[1]: Stall protection monitoring time p50355

r50047[2]: Speed threshold p50356

r50047[3]: Armature current r52109

r50047[4]: Speed actual value r52166

r50047[5]: Torque limit r53150

r50047[6]: Armature current limits r53151

See also: p50355 (Stall protection monitoring time)

**Remedy:**

- Reduce the motor load.
- Increase the current or torque limit.
- Check and if necessary increase the monitoring threshold.

See also: r52109 (Armature current actual value averaged over 6 cycles), r52166 (Speed controller actual value selection absolute value), r53150 (Speed limiting controller/torque limiting state), r53151 (Current limitation state)

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

---

#### **F60036 (N, A) Armature circuit/field circuit interrupted**

**Message value:** %1

**Message class:** General drive fault (19)

**Drive object:** DC\_CTRL

**Reaction:** OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The firing angle is at the rectifier stability limit for more than 500 ms and the current is less than 1% of the rated DC current.

Fault value (r0949, interpret decimal):

1: Armature circuit

2: Field circuit

**Remedy:**

- Armature circuit or field circuit interrupted.
- Rectifier stability limit Alpha-G incorrectly set (p50150, p50250).
- Drive operates at the Alpha-G limit (e.g. due to a line undervoltage condition).
- EMF too high, because the maximum speed has been set too high.
- EMF too high, because field weakening was not activated.
- EMF too high, because the field current was set too high.

- EMF too high, because the CEMF crossover voltage was set too high (transition between normal and field weakening operation).
  - replace the ribbon cable from the Allocation Board to the power interface (connector X108).
- See also: r52116 (Armature current actual value internal absolute value), r52266 (Field current actual value internal absolute value), r53190 (Armature auto-reversing stage state), r53191 (Field auto-reversing stage state)

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

#### **A60037 (F, N) I2t monitoring alarm excessive motor temperature rise**

**Message value:** -  
**Message class:** Motor overload (8)  
**Drive object:** DC\_CTRL  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The I2t calculation shows that the motor's temperature rise is excessive.  
The alarm is triggered if the calculated motor temperature rise in r52309 > 100%.  
Note:  
r50047[1]: Temperature rise r52309  
r50047[2]: Motor rated armature current p50100  
r50047[3]: Continuous current factor r50113  
r50047[4]: Device rated current r50072[1]  
r50047[5]: Current armature current r52109  
r50047[6]: Motor thermal time constant p50114  
See also: p50114 (Motor thermal time constant), r52309 (Calculated motor temperature rise)  
**Remedy:** - Check the ambient temperature and reduce if necessary.  
- Reduce the motor load.  
See also: r52109 (Armature current actual value averaged over 6 cycles)  
Reaction upon F: NONE (OFF1, OFF2, OFF3)  
Acknowl. upon F: IMMEDIATELY  
Reaction upon N: NONE  
Acknowl. upon N: NONE

---

#### **F60038 (N, A) Overspeed threshold overshoot**

**Message value:** -  
**Message class:** Motor overload (8)  
**Drive object:** DC\_CTRL  
**Reaction:** OFF2 (NONE, OFF1, OFF3)  
**Acknowledge:** IMMEDIATELY  
**Cause:** The speed actual value has overshoot the threshold for the positive or negative maximum speed.  
Note:  
Possible cause of the fault, if p50083 = 3 (EMF as speed actual value):  
- Interrupted armature circuit (fuse blown, contactor in the DC link has not closed)  
In this particular case, the converter output voltage is not equal to the motor armature voltage, which is the reason why an incorrect speed actual value is determined.  
Note:  
r50047[1]: Maximum speed for positive direction of rotation (p50380)  
r50047[2]: Maximum speed for negative direction of rotation (p50381)  
r50047[3]: n\_act (connector input p50595)  
**Remedy:** - Reduce the speed.  
- Check the threshold for positive or negative direction of rotation and adjust if necessary (p50380, p50381).  
See also: p50380 (Messages for overspeed threshold positive direction of rotation), p50381 (Messages for overspeed threshold negative direction of rotation)  
Reaction upon N: NONE  
Acknowl. upon N: NONE

## 4 Faults and alarms

### 4.2 List of faults and alarms

Reaction upon A: NONE

Acknowled. upon A: NONE

---

#### **A60039 (F, N) I2t monitoring alarm excessive power unit temperature rise**

**Message value:** -

**Message class:** Power electronics faulted (5)

**Drive object:** DC\_CTRL

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The temperature rise of the thyristors is more than 102 % of the maximum permissible value.

**Remedy:** - Check the ambient temperature and reduce if necessary.

- Check the motor load and reduce if necessary.

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowled. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowled. upon N: NONE

---

#### **F60041 (N, A) Ramp-function generator parameter set cannot be selected**

**Message value:** -

**Message class:** Hardware/software error (1)

**Drive object:** DC\_CTRL

**Reaction:** OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** Ramp-function generator parameter sets 2 and 3 were selected simultaneously for more than 0.5 s via binector input p50637/p50638.

The ramp-function generator parameter set is not changed over. The most recently selected ramp-function generator parameter set is retained.

**Remedy:** - Check the selection of ramp-function generator parameter sets 2 and 3 and bar simultaneous selection.

- Select the required ramp-function generator parameter set (p50637, p50638).

See also: p50637 (RFG parameter set 2 selection signal source), p50638 (RFG parameter set 3 selection signal source)

Reaction upon N: NONE

Acknowled. upon N: NONE

Reaction upon A: NONE

Acknowled. upon A: NONE

---

#### **F60042 (N, A) Defective tachometer monitoring error**

**Message value:** %1

**Message class:** Actual position/speed value incorrect or not available (11)

**Drive object:** DC\_CTRL

**Reaction:** OFF2 (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** The ratio "Speed actual value/EMF actual value" (r52179/r52287) was less than +10 % for more than approx. 40 ms. This ratio is then only checked if the EMF actual value is > p50357.

- Cable break affecting tachometer or incremental encoder TTL/HTL

- Tachometer or incremental encoder TTL/HTL cable connected incorrectly

- Incremental encoder TTL/HTL power supply has failed

- Tachometer or incremental encoder TTL/HTL faulty

- Parameters for incremental encoder TTL/HTL set incorrectly (p0400).

- During operation with field reversal, the field polarity is not being reversed by the external hardware

- Polarity for speed actual value set incorrectly (p50743)

- Data for armature circuit set incorrectly (p50110 and p50111)

- If p50083 = 3 (EMF as speed actual value): Interrupted armature circuit (e.g. fuse blown).

- Device operates as slave connected in parallel.

Fault value (r0949, interpret decimal):

1: Cable break affecting tachometer or incremental encoder TTL/HTL

2: Tachometer or incremental encoder TTL/HTL polarity incorrect

Note:

r50047[1]: Speed actual value (r52179)

r50047[2]: EMF actual value (r52287)

See also: p50357 (Tachometer interruption monitoring threshold)

**Remedy:**

- Check the incremental encoder TTL/HTL's wiring, connections, and function.
- Check the power supply for the incremental encoder TTL/HTL.
- Check the parameters for the incremental encoder TTL/HTL.
- Check the polarity for the speed actual value (p50743).
- Perform an optimization run for the current controller in the armature circuit (p50051 = 25).
- Check the fuses in the armature circuit.
- If the device operates as slave connected in parallel: set p50357 = 100% (tachometer breakage not active).

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

---

### **F60043 (N, A) EMF for braking operation too high**

**Message value:**

-

**Message class:**

Motor overload (8)

**Drive object:**

DC\_CTRL

**Reaction:**

OFF2 (NONE)

**Acknowledge:**

IMMEDIATELY

**Cause:**

The EMF actual value is too high for braking operation.

This fault is triggered if a firing angle greater than 165 ° would be required in the new torque direction immediately after a torque direction change (precisely because the EMF is so high).

What this actually means is that the fault is triggered if the following 5 conditions are met for a requested torque direction change (MI or MII is to be selected):

- p50272 = 0 (fault parameterized and not alarm + field weakening)
- An additional torque-free interval which might have been parameterized (p50160 > 0) has expired.
- The parallel drive is ready for the new torque direction to be selected.
- The absolute value of the armature current requested in the new torque direction (r52118, filtered with p50190) is > 1% of r50072[1].
- The calculated firing angle (r52101) for the armature current requested in the new torque direction is > 165 ° or > p50151 if p50192 = 1.

Possible fault causes:

- "Speed-dependent field weakening" (p50081 = 0) has not been parameterized, although field weakening operation would be necessary for the required maximum speed.

Note:

With a firing angle Alpha G = 30 ° (rectifier stability limit p50150) and low armature currents, EMF values up to the peak value of the phase-to-phase line voltage can be reached when motoring.

- Setpoint EMF for field weakening operation too high (parameter p50101 set too high)
- Line voltage dip
- EMF controller or field current controller not optimized; this can lead to excessive EMF when the drive accelerates.

Note:

r50047[1]: Calculated firing angle (armature) prior to limiting (r52101)

r50047[2]: EMF actual value currently measured (r52287)

r50047[3]: Armature current controller setpoint (r52118)

**Remedy:**

- Reduce the speed.
- Activate the "Speed-dependent field weakening" function (p50081 = 1).

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

<b>F60044 (N, A)</b>	<b>Parallel interface node failure</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Communication error to the higher-level control system (9)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	OFF2 (NONE, OFF1, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>A fault involving the parallel connection of power units has occurred.</p> <p>Fault value (r0949, interpret decimal):</p> <p>1: There is a fault on one of the slaves.</p> <p>2: One of the slaves is not in the Operation state (e.g. because its enable signal is at "0")</p> <p>3: There are fewer power units connected in parallel that are active than set using p51802.</p> <p>4: There are fewer devices that are active than set using p51815.</p> <p>50: The switchover to power unit topology 2 is not possible, as this SINAMICS DCM is not equipped with option S50.</p> <p>51: The switchover to power unit topology 2 is not permissible for "n+m" operation.</p> <p>52: The parallel switching master in power unit topology 2 is not the same as in power unit topology 1.</p> <p>53: The feedback indicating the active power unit topology does not match the selected power unit topology.</p>
<b>Remedy:</b>	<p>- Check the slave with fault.</p> <p>- Check the enable signal of the slaves</p> <p>- Check the setting for the minimum number of devices (p51802, p51815).</p> <p>- Check the parameterization of the switchover of the power unit topology.</p> <p>See also: p51802 (Parallel interface number of power units)</p>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE
<b>F60045 (N, A)</b>	<b>Standstill field not permitted in operation</b>
<b>Message value:</b>	-
<b>Message class:</b>	Power electronics faulted (5)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	OFF2 (NONE)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>The standstill field was activated while the drive was operational.</p> <p>The binector input p50692 to activate the standstill field must not have a 1 signal in operation.</p> <p>See also: p50692 (CI-loop field curr ctrl sig source for inject of standst field)</p>
<b>Remedy:</b>	<p>If required, set binary input p50692 - used to activate the standstill field - to a 0 signal.</p>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE
<b>F60046 (N, A)</b>	<b>Wire break at "Main setpoint" analog input</b>
<b>Message value:</b>	-
<b>Message class:</b>	General drive fault (19)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	OFF2 (NONE, OFF1, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>A wire break has been detected at the CUD's "Main setpoint" analog input (X177.25/26).</p> <p>This fault is triggered if p50700 = 2 (unipolar monitoring of current input (+4 mA to +20 mA)) is set and an input current of less than 2 mA is flowing.</p> <p>Possible fault causes:</p> <p>- Wire break or contact problem on supply line</p> <p>- Parameter p50700 set incorrectly</p>

Note:

This fault is also indicated via binector input r53030.0.

See also: p50700 (CUD analog input 0 type)

**Remedy:**

- Check the wiring of the input terminals (X177.25/26) (cable break, contacts, etc).
- Check the parameter assignment for the "Main setpoint" analog input (p50700).

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

---

### **F60047 (N, A) Wire break at analog input 1**

**Message value:** -

**Message class:** General drive fault (19)

**Drive object:** DC\_CTRL

**Reaction:** OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** A wire break has been detected at the CUD's analog input 1 (X177.27/28).  
This fault is triggered if p50700 = 2 (unipolar monitoring of current input (+4 mA to +20 mA)) is set and an input current of less than 2 mA is flowing.

Possible fault causes:

- Wire break or contact problem on supply line
- Parameter p50710 set incorrectly

Note:

This fault is also indicated via binector output r53030.1.

See also: p50710 (CUD analog input 1 type)

**Remedy:**

- Check the wiring of the input terminals (X177.27/28) (cable break, contacts, etc).
- Check the parameter assignment for analog input 1 (p50710).

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

---

### **F60050 (N, A) Optimization run aborted due to internal cause**

**Message value:** %1

**Message class:** Hardware/software error (1)

**Drive object:** DC\_CTRL

**Reaction:** OFF2 (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** An optimization run which had been started has been interrupted due to an internal cause.

Fault value (r0949, interpret decimal):

General, not assigned to a specific optimization run:

100: Internal software error

Field current controller optimization run:

101: Alpha G limit reached when determining the Rf

102: Field current oscillation > 20 % when determining the Rf

103: Calculated field circuit resistance too high (> 4000 ohms)

104: Unable to ascertain field circuit inductance

105: Calculated field circuit inductance too high (> 1000 H)

106: Field current > 100% at start of optimization

107: Rf determination failed (Rf <= 0)

108: Internal software error

Armature current controller optimization run:

201: Alpha G limit reached when determining the Ra

202: Armature current oscillation > 20 % when determining the Ra

203: Calculated armature circuit resistance too high (> 4000 ohms)

205: Unable to determine armature circuit inductance.

206: Calculated armature circuit inductance too high (> 1000 H)

207: Armature current increased to > 120 % of r50072[1], although the firing angle was not able to be shifted any further.

Speed controller optimization run:

301: Unable to ascertain moment of inertia due to it being very small

302: Measurement of speed increase was not possible.

303: No change in speed when armature current is increased.

304: Speed remains at zero, although armature current is flowing.

EMF controller/Field characteristics optimization run:

401: Maximum permissible EMF setpoint is too small

402: Motor nominal field current is not being reached within 30 seconds

403: EMF (80 %) is not reached within set acceleration time (r50315[0]).

404: Incorrect direction of rotation

405: Negative field current setpoint limiting active

406: Field characteristic not falling uniformly

407: Torque limiting active

408: Armature current limiting active

409: Speed during measurement dropped by more than 12.5%

Field current controller friction compensation:

501: Speed not within the required tolerance bandwidth.

Optimization run for mechanical systems that can oscillate (torsional optimization):

601: speed according to p50565 is not reached within a specific time.

602: speed actual value is negative, although a positive setpoint is being input.

Converter Commutation Protector (CCP) optimization run:

701: p50790 (P2P/CCP operating mode) not set to communication with SIMOREG CCP.

702: Communication not established between SINAMICS DCM and SIMOREG CCP.

703: p51570 order number (MLFB) of the SIMOREG CCP is unknown.

704: Supply voltage of SINAMICS DCM and SIMOREG CCP do not match (p50078[0] and r51571).

705: This SINAMICS DCM is not intended for operation with SIMOREG CCP.

706: Armature circuit inductance is zero (p50111 = 0).

707: Calculated pre-charging voltage greater than the maximum achievable value for p51578.

708: Calculated chopper energy too high.

Note for fault value = 102:

- r50047[1]: Field current actual value (1 = 100 %)

- r50047[2]: Field current lower limit (1 = 100 %)

- r50047[3]: Field current upper limit (1 = 100 %)

Note for fault value = 103:

- r50047[1]: Calculated field circuit resistance in Ohm

Note for fault value = 104:

- r50047[1]: Number of valid measuring cycles

- r50047[2]: Number of required measuring cycles

Note for fault value = 105:

- r50047[1]: Calculated field circuit inductance in H

Note for fault value = 106:

- r50047[1]: Field current actual value (1 = 100 %)

Note for fault value = 107:

- r50047[1]: Calculated field circuit resistance in Ohm

Note for fault value = 202:

- r50047[1]: Armature current actual value (1 = 100 %)

- r50047[2]: Armature current lower limit (1 = 100 %)

- r50047[3]: Armature current upper limit (1 = 100 %)

Note for fault value = 203:

- r50047[1]: Calculated armature circuit resistance in Ohm



Note for fault value = 205:

- r50047[1]: Number of required measuring cycles
- r50047[2]: Number of valid measuring cycles
- r50047[3]: Measurement run

Note for fault value = 206:

- r50047[1]: Calculate armature circuit inductance in H

Note for fault value = 301:

- r50047[1]: Number of measuring points (0 to 4 are possible, at least 2 are required)

Note for fault value = 401:

- r50047[1]: Nominal EMF (max. permissible EMF setpoint) (1 = 100 %)
- r50047[1]: Ideal nominal rectifier no-load output voltage (1 = 100 %)

Note for fault value = 402:

- r50047[1]: 1 = Timeout determining nominal speed, 2 = Timeout recording field characteristic

Note for fault value = 403:

- r50047[1]: EMF setpoint (1 = 100 %)
- r50047[2]: EMF actual value (1 = 100 %)
- r50047[3]: Ramp-up monitoring time in s

Note for fault value = 404:

- r50047[1]: Speed actual value (1 = 100 %)

Note for fault value = 405:

- r50047[1]: Index in meas. table
- r50047[2]: Field current setpoint (1 = 100 %)

Note for fault value = 406:

- r50047[1]: Field current setpoint (1 = 100 %)
- r50047[2]: Flux previous measuring point (1 = 100 %)
- r50047[3]: Flux actual measuring point (1 = 100 %)

Note for fault value = 407:

- r50047[1]: Index in meas. table
- r50047[2]: Field current setpoint (1 = 100 %)

Note for fault value = 408:

- r50047[1]: Index in meas. table
- r50047[2]: Field current setpoint (1 = 100 %)

Note for fault value = 409:

- r50047[1]: Index in meas. table
- r50047[2]: Field current setpoint (1 = 100 %)

Note for fault value = 501:

- r50047[1]: Speed setpoint (1 = 100 %)
- r50047[2]: Speed actual value (1 = 100 %)
- r50047[3]: Speed, lower limit (1 = 100 %)
- r50047[4]: Speed, upper limit (1 = 100 %)
- r50047[5]: 0 = No limit active, 1 = Current limit active, 2 = Torque limit active

Note for fault value = 601:

- r50047[1]: speed setpoint (1 = 100 %) according to p50565
- r50047[2]: Speed actual value (1 = 100 %)
- r50047[3]: permissible time in s, until the speed setpoint is reached

Note for fault value = 602:

- r50047[1]: Speed actual value (1 = 100 %)

Note for fault value = 701:

- r50047[1]: P2P/CCP operating mode

Note for fault value = 703:

- r50047[1]: determined index for order number (MLFB)

Note for fault value = 704:

- r50047[1]: Rated supply voltage [V]
- r50047[2]: CCP rated supply voltage [V]
- r50047[3]: Line voltage tolerance DCM (1 = 100 %)
- r50047[4]: Line voltage tolerance CCP (1 = 100 %)

Note for fault value = 707:

- r50047[1]: Calculated pre-charging voltage [V]
- r50047[2]: Possible maximum value of the pre-charging voltage [V]

Note for fault value = 708:

- r50047[1]: Calculated chopper energy in the armature circuit [J]
- r50047[2]: CCP chopper energy [J]

#### Remedy:

For fault value = 101:

Check field circuit for interruption (e.g. due to blown fuse).

For fault value = 201:

Check armature circuit for interruption (e.g. due to blown fuse).

For fault value = 207:

Temporarily reduce the rated motor current (p50100) so that the rated motor current is significantly less than the device rated current (e.g. p50100 = 50 % of r50072[1]).

For fault value = 401:

Check the setting of p50078[0], p50100, p50101 and p50110.

For fault value = 402:

Check the optimization of the field circuit.

For fault value = 403:

Check the optimization of the speed controller.

Check the setting of the acceleration times.

Check the setting of the current and torque limits.

For fault value = 404:

Check the polarity of speed actual value sensing (incremental encoder TTL/HTL, analog tachometer).

For fault value = 405:

Check the minimum motor excitation current (p50103).

For fault value = 407:

Check the torque limiting settings.

For fault value = 408:

Check the armature current limiting settings.

For fault value = 409:

Reduce the mechanical load.

For fault value = 701:

Check the setting of p50790 (value = 6).

For fault value = 704:

Check the setting of p50078[0].

For fault value = 706:

Check the optimization of the armature circuit.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

---

#### F60051 (N, A) Optimization run limit value violated

**Message value:** %1

**Message class:** Hardware/software error (1)

**Drive object:** DC\_CTRL

**Reaction:** OFF2 (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** During the optimization run, an attempt was made to set a parameter to a value outside its valid range of values.  
The parameter value was set to the appropriate limit value.

The optimization run was completed in full.  
Recommendation:  
Check the parameter values set!  
Fault value (r0949, interpret decimal):  
Parameter number of the parameter causing the error.

Note:  
r50047[1]: Incorrect value  
r50047[2]: Limited value  
r50047[3]: Lower limit value  
r50047[4]: Upper limit value

**Remedy:** You might have to set the parameter value manually.

Reaction upon N: NONE

Acknowled. upon N: NONE

Reaction upon A: NONE

Acknowled. upon A: NONE

---

### **F60052 (N, A) Optimization run aborted due to external cause**

**Message value:** %1

**Message class:** General drive fault (19)

**Drive object:** DC\_CTRL

**Reaction:** OFF2 (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** An optimization run which had been started has been interrupted due to an external cause.

Fault value (r0949, interpret decimal):

101: ON command not set within 30 seconds

102: Following the ON command, operating state o0.x or o1.5 was not achieved within 1 minute.

103: Impermissible parameter setting for this optimization run

104: Internal software error

105: Internal software error

106: Internal software error

108: Operating state o0.x or o1.5 exited during the optimization run

109: The operating system does not allow the optimization run to access a parameter.

110: Internal software error

111: Internal software error

112: Data set changeover (DDS) during an optimization run

113: Data set changeover (CDS) during an optimization run

114: Enable for the positive direction of rotation missing.

Note for fault value = 103:

- r50047[1]: 1 = Sequence control optimization run, 2 = Field optimization run, 3 = EMF optimization run

- If r50047[1] = 1, r50047[2 to 3] are not relevant

- r50047[2]: Parameter number

- r50047[3]: Parameter value

Note for fault value = 104:

- r50047[1]: Parameter number (parameter number = 0 indicates a general fault is pending)

Note for fault value = 105:

- r50047[1]: 1 = General fault, 2 = Read parameter, 3 = Write parameter

- If r50047[1] = 1, r50047[2 to 3] are not relevant

- If r50047[1] = 2, r50047[2]: Parameter number

- If r50047[1] = 3, r50047[2]: Parameter number, r50047[3]: Parameter value

Note for fault value = 106:

- r50047[1]: 1 = Sequence control optimization run, 2 = Optimization run

- r50047[2]: OA return status word

Note for fault value = 107:

- r50047[1]: Parameter number

- r50047[2]: OA return status word

Note for fault value = 108:

- r50047[1]: New operating state

Note regarding fault value = 109: - r50047[1]: 1 = General fault, 2 = Read parameter, 3 = Write parameter, 4 = Set optimization parameter

- If r50047[1] = 1, r50047[2 to 3] are not relevant

- If r50047[1] = 2, r50047[2] is: Parameter number, r50047[2]: OA return status word, r50047[3]: List index

- If r50047[1] = 3, r50047[2]: Parameter number, r50047[3]: Parameter value, r50047[4]: OA return status word

- If r50047[1] = 4, r50047[2]: Parameter number, r50047[3]: OA return status word

Note for fault value = 110:

- r50047[1]: Parameter number

- r50047[2]: OA return status word

Note for fault value = 111:

- r50047[1]: Parameter number

- r50047[2]: OA return status word

Note for fault value = 112:

- r50047[1]: Parameter number

- r50047[2]: Old DDS (0 to 3)

- r50047[3]: New DDS (0 to 3)

Note for fault value = 113:

- r50047[1]: Parameter number

- r50047[2]: Old CDS (0 to 1)

- r50047[3]: New CDS (0 to 1)

Note for fault value = 114:

- r50047[1]: Operating state

- r50047[2]: Value of the signal selected with p50672

#### Remedy:

Interpret the fault value and rectify the fault correspondingly.

For fault value = 103:

Check the parameter entered in r50047[2].

For fault value = 109:

Possible causes for this:

- Write protection and/or know-how protection are active, see r7760

- A PROFIDRIVE telegram p922 = 3, 4 or 220 is set

Remedy:

- Temporarily withdraw write protection and/or know-how protection

- Temporarily set p922 to 999

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

#### F60055

#### Field characteristic not valid

Message value: %1

Message class: General drive fault (19)

Drive object: DC\_CTRL

Reaction: OFF2

Acknowledge: IMMEDIATELY

Cause: Field weakening in conjunction with the optimization run for field weakening has not yet been performed.

Fault value (r0949, interpret decimal):

1: Closed-loop torque control selected (p50170 = 1) but valid field characteristic not yet recorded

2: Speed-dependent field weakening selected (p50081 = 1) but valid field characteristic not yet recorded (p50117 = 0)

Remedy: Record field characteristic.

See also: p50081 (Field weakening activation), p50117 (Field characteristic status), p50170 (Selection of control type for closed-loop current/torque control)

<b>F60056</b>	<b>Important parameter not set</b>
<b>Message value:</b>	%1
<b>Message class:</b>	General drive fault (19)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>Settings required for operation have not yet been made or connected components have not yet been commissioned.</p> <p>Fault value (r0949, interpret decimal):</p> <p>1: Actual value channel for speed controller not selected (p50083)</p> <p>2: Rated armature current of the motor not set (p50100).</p> <p>3: Rated field current of the motor not set (p50102).</p> <p>Note:</p> <p>Only necessary if p50082 &gt; 0.</p> <p>4: Rated DC current for the external field device not set (p51838).</p> <p>Note:</p> <p>Only necessary if p50082 &gt;= 21.</p> <p>5: Device commissioning not performed/completed (p0009 not equal to 0).</p> <p>6: Drive commissioning not performed/completed (p0010 not equal to 0).</p> <p>7: An internal field (p50082 = 1 to 4) has been selected for a device without a field power unit (option L10)</p> <p>8: Field characteristic (p50120 ... p50139) not rising uniformly.</p> <p>9: Reference speed (p2000) not set (factory setting value must be modified)!</p> <p>10: Control Module: Connection of measurement cables for line voltage not set (p51821)</p> <p>11: Control Module: Rated armature DC current not set (p51822).</p>
<b>Remedy:</b>	Make the setting as appropriate for the fault value displayed.
<b>F60057 (N, A)</b>	<b>Armature current sensing fault</b>
<b>Message value:</b>	-
<b>Message class:</b>	Power electronics faulted (5)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	OFF2 (NONE)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>The message is triggered if there are opposing current and torque directions.</p> <p>Monitoring is active as soon as the current values overshoot the device rated current by 20%.</p> <p>Note:</p> <p>r50047[1]: Torque direction</p> <p>r50047[2]: Current scan value</p> <p>r50047[3]: Selected current sensing</p> <p>r50047[3] = 1: Current transformer phase UV</p> <p>r50047[3] = 2: Current transformer phase UW</p> <p>r50047[3] = 3: Current transformer phase VW</p> <p>r50047[3] = 4: External V-circuit</p> <p>r50047[3] = 5: External current sensing (shunt)</p> <p>r50047[3] = 6: Current sensing via analog input</p> <p>See also: p51824 (Current transformer configuration), p51852 (Current actual value sensing analog input configuration)</p>
<b>Remedy:</b>	Check current transformer/shunt.
Reaction upon N:	NONE
Acknowled. upon N:	NONE
Reaction upon A:	NONE
Acknowled. upon A:	NONE

<b>F60058</b>	<b>Parameter settings not consistent</b>
<b>Message value:</b>	%1
<b>Message class:</b>	General drive fault (19)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>Inconsistent values have been set in parameters depending on each other.</p> <p>Fault value (r0949, interpret decimal):</p> <p>0: Field weakening active (p50081 = 1) is not permissible when the EMF is used as speed setpoint (p50083 = 3).</p> <p>1: Thyristor blocking voltage calculation active (p50166 = 1) for line frequencies &gt; 65 Hz (p50364) is not permissible.</p> <p>2: Setting of p51799 does not match the setting of p51800, p51802 and p51803.</p> <p>3: For a line frequency &gt; 65 Hz, p51800 must be &lt; 10.</p> <p>4: Setting of p50075 does not match the setting of p51799 (dynamic overload capability not permissible for single-phase operation).</p> <p>5: Single-phase operation (p51799 = 1) not permissible for this device type.</p> <p>6: Thyristor blocking voltage calculation (p50166 = 1) not possible for this device.</p> <p>7: If p50083[D] = 2, p0400[0] = 0 is not permissible and if p50083[D] = 5, p0400[1] = 0 is not permissible.</p> <p>8: For p50830 &gt; 0, p51800 &gt; 1 is not permissible, except 11 and 21 (thyristor diagnostics is only permissible for a single drive and for a parallel master).</p> <p>9: For p50075 = 0, p50067 &gt; 1 is not permissible.</p> <p>10: Line frequency &gt; 120 Hz is not permissible for this power unit (p50364).</p> <p>11: For a 12-pulse parallel connection, p50153 = 2 is not permissible.</p>
<b>Remedy:</b>	Make the setting as appropriate for the fault value displayed.
<b>F60061</b>	<b>Thyristor test unsuccessful</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Power electronics faulted (5)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	OFF2
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>With the thyristor test activated (p50830), a fault was detected for at least one thyristor.</p> <p>Fault value (r0949, interpret decimal):</p> <p>1: Thyristor defective (V11 and/or V24)</p> <p>2: Thyristor defective (V12 and/or V25)</p> <p>3: Thyristor defective (V13 and/or V26)</p> <p>4: Thyristor defective (V14 and/or V21)</p> <p>5: Thyristor defective (V15 and/or V22)</p> <p>6: Thyristor defective (V16 and/or V23)</p> <p>8: Ground fault in the armature circuit</p> <p>11: Thyristor cannot be fired (V11)</p> <p>12: Thyristor cannot be fired (V12)</p> <p>13: Thyristor cannot be fired (V13)</p> <p>14: Thyristor cannot be fired (V14)</p> <p>15: Thyristor cannot be fired (V15)</p> <p>16: Thyristor cannot be fired (V16)</p> <p>17: Two or more thyristors from V11 ... V16 cannot be fired</p> <p>21: Thyristor cannot be fired (V21)</p> <p>22: Thyristor cannot be fired (V22)</p> <p>23: Thyristor cannot be fired (V23)</p> <p>24: Thyristor cannot be fired (V24)</p> <p>25: Thyristor cannot be fired (V25)</p> <p>26: Thyristor cannot be fired (V26)</p> <p>27: Two or more thyristors from V21 ... V26 cannot be fired</p> <p>31: Thyristor cannot block (V11 or V21)</p> <p>32: Thyristor cannot block (V12 or V22)</p>

- 33: Thyristor cannot block (V13 or V23)
- 34: Thyristor cannot block (V14 or V24)
- 35: Thyristor cannot block (V15 or V25)
- 36: Thyristor cannot block (V16 or V26)
- 41: Thyristor cannot be fired (V11 or V16)
- 42: Thyristor cannot be fired (V13 or V14)
- 45: Thyristor cannot be fired (V21 or V26)
- 46: Thyristor cannot be fired (V23 or V24)
- 99: Defective thyristor cannot be identified

Note 1:

If "Thyristor defective" or "Thyristor cannot block" is signaled, then the corresponding thyristor module should be replaced.

Possible reasons why thyristors could be destroyed:

- Interrupted snubber circuit.
- Current controller and precontrol not optimized (excessively high current peaks).
- Cooling not guaranteed (e.g. a fan is not running, ambient temperature too high, incorrect fan direction of rotation (incorrect rotating field), air flow too low, very dirty heat sink).
- Excessively high voltage peaks in the line supply.
- External short-circuit or ground fault present (check the armature circuit).

Note 2:

If "Thyristor cannot be fired" is signaled, then this is generally caused by a fault in the firing circuit and not by a defective thyristor.

Possible causes:

- Firing pulse cable to the thyristor involved interrupted.
- Connector X11 or X21 incorrectly inserted.
- Flat cable X108 either not correctly inserted or interrupted.
- Defective electronics module or gating module.
- Gate cable in the thyristor module internally interrupted.

Note 3:

For a Control Module, this fault can also be initiated by other fault causes.

- Incorrect assignment of the firing pulses to the thyristors.
- Incorrect current actual value sensing connection.
- Incorrect parameterization of the current actual value sensing (p51822, p51823, p51824).
- Incorrect parameterization of the power unit type (p51825).

**Remedy:**

Interpret the fault value and information and replace the appropriate thyristor.

<b>F60062 (N, A)</b>	<b>Communication error to the voltage sensing</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Internal (DRIVE-CLiQ) communication error (12)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	OFF2 (NONE, OFF1, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	Communication to one of the two voltage sensing devices is faulted or interrupted. Fault value (r0949, interpret decimal): 1: Armature voltage sensing 2: Field voltage sensing Note: r50047[1]: Counter CRC error, armature r50047[2]: Counter, communication error, armature r50047[3]: Counter, CRC error, field r50047[4]: Counter, communication error, field
<b>Remedy:</b>	Carry out a POWER ON (power off/on) for all components.
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

<b>F60063 (N, A)</b>	<b>Incorrect calibration values for analog inputs/outputs</b>
<b>Message value:</b>	%1
<b>Message class:</b>	General drive fault (19)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	OFF2 (NONE)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>The factory-set calibration values on the electronics module for the analog inputs/outputs are implausible.</p> <p>Fault value (r0949, interpret decimal):</p> <ol style="list-style-type: none"> <li>1: Analog input 0 (X177.25/26), voltage input, offset incorrect value</li> <li>2: Analog input 0 (X177.25/26), voltage input, +10 V incorrect value</li> <li>3: Analog input 0 (X177.25/26), voltage input, -10 V incorrect value</li> <li>4: Analog input 0 (X177.25/26), voltage input, reference value incorrect</li> <li>5: Analog input 0 (X177.25/26), current input, offset incorrect value</li> <li>6: Analog input 0 (X177.25/26), current input, +20 mA incorrect value</li> <li>7: Analog input 0 (X177.25/26), current input, -20 mA incorrect value</li> <li>8: Analog input 0 (X177.25/26), current input, reference value incorrect</li> <li>9: Analog input 1 (X177.27/28), voltage input, offset incorrect value</li> <li>10: Analog input 1 (X177.27/28), voltage input, +10 V incorrect value</li> <li>11: Analog input 1 (X177.27/28), voltage input, -10 V incorrect value</li> <li>12: Analog input 1 (X177.27/28), voltage input, reference value incorrect</li> <li>13: Analog input 1 (X177.27/28), current input, offset incorrect value</li> <li>14: Analog input 1 (X177.27/28), current input, +20 mA incorrect value</li> <li>15: Analog input 1 (X177.27/28), current input, -20 mA incorrect value</li> <li>16: Analog input 1 (X177.27/28), current input, reference value incorrect</li> <li>17: Analog input 2 (X177.29/30), voltage input, offset incorrect value</li> <li>18: Analog input 2 (X177.29/30), voltage input, +10 V incorrect value</li> <li>19: Analog input 2 (X177.29/30), voltage input, -10 V incorrect value</li> <li>20: Analog input 2 (X177.29/30), voltage input, reference value incorrect</li> <li>21: Analog input 3 (X177.1/2), voltage input, offset incorrect value</li> <li>22: Analog input 3 (X177.1/2), voltage input, +10 V incorrect value</li> <li>23: Analog input 3 (X177.1/2), voltage input, -10 V incorrect value</li> <li>24: Analog input 3 (X177.1/2), voltage input, reference value incorrect</li> <li>25: Analog input 4 (X177.3/4), voltage input, offset incorrect value</li> <li>26: Analog input 4 (X177.3/4), voltage input, +10 V incorrect value</li> <li>27: Analog input 4 (X177.3/4), voltage input, -10 V incorrect value</li> <li>28: Analog input 4 (X177.3/4), voltage input, reference value incorrect</li> <li>29: Analog input 5 (X177.5/6), voltage input, offset incorrect value</li> <li>30: Analog input 5 (X177.5/6), voltage input, +10 V incorrect value</li> <li>31: Analog input 5 (X177.5/6), voltage input, -10 V incorrect value</li> <li>32: Analog input 5 (X177.5/6), voltage input, reference value incorrect</li> <li>33: Analog input 6 (X177.7/8), voltage input, offset incorrect value</li> <li>34: Analog input 6 (X177.7/8), voltage input, +10 V incorrect value</li> <li>35: Analog input 6 (X177.7/8), voltage input, -10 V incorrect value</li> <li>36: Analog input 6 (X177.7/8), voltage input, reference value incorrect</li> <li>37: Analog input XT1.103/104, voltage input, offset incorrect value</li> <li>38: Analog input XT1.103/104, voltage input, +25 V incorrect value</li> <li>39: Analog input XT1.103/104, voltage input, -25 V incorrect value</li> <li>40: Analog input XT1.103/104, voltage input, reference value incorrect</li> <li>41: Analog input XT1.103/104, voltage input, offset incorrect value</li> <li>42: Analog input XT1.103/104, voltage input, +80 V incorrect value</li> <li>43: Analog input XT1.103/104, voltage input, -80 V incorrect value</li> <li>44: Analog input XT1.103/104, voltage input, reference value incorrect</li> <li>45: Analog input XT1.103/104, voltage input, offset incorrect value</li> <li>46: Analog input XT1.103/104, voltage input, +270 V incorrect value</li> </ol>



- 47: Analog input XT1.103/104, voltage input, -270 V incorrect value
- 48: Analog input XT1.103/104, voltage input, reference value incorrect
- 49: Analog output 0 (X177.49/50), offset incorrect value
- 50: Analog output 0 (X177.49/50), -10 V incorrect value
- 51: Analog output 0 (X177.49/50), +10 V incorrect value
- 52: Analog output 0 (X177.49/50), reference value incorrect
- 53: Analog output 1 (X177.51/52), offset incorrect value
- 54: Analog output 1 (X177.51/52), -10 V incorrect value
- 55: Analog output 1 (X177.51/52), +10 V incorrect value
- 56: Analog output 1 (X177.51/52), reference value incorrect

Note:

r50047[1]: Incorrect calibration value

**Remedy:** Replace the electronics module with the incorrect calibration values.

Reaction upon N: NONE

Acknowled. upon N: NONE

Reaction upon A: NONE

Acknowled. upon A: NONE

---

#### **F60064 (N, A) Error communicating with second processor TMS320**

**Message value:** -

**Message class:** Internal (DRIVE-CLiQ) communication error (12)

**Drive object:** DC\_CTRL

**Reaction:** OFF2 (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** Communication with the second processor (TMS320) has failed.

Note:

r50047[1]: Communication counter in send direction

r50047[2]: Communication counter in receive direction

**Remedy:** Carry out a POWER ON (power off/on) for all components.

Reaction upon N: NONE

Acknowled. upon N: NONE

Reaction upon A: NONE

Acknowled. upon A: NONE

---

#### **F60065 (N, A) Software update on second processor (TMS320) failed**

**Message value:** %1

**Message class:** Hardware/software error (1)

**Drive object:** DC\_CTRL

**Reaction:** OFF2 (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** The updating of the software for the second processor (TMS320) has failed.

Fault value (r0949, interpret decimal):

This value indicates the state in which the fault occurred.

2: Wait for the TMS320 bootloader to be ready.

3: Check the version of the TMS320 bootloader.

4: Check the version of the TMS320 application software.

5: Wait for the TMS320 to exit the bootloader.

6: Wait for the TMS320 to load its Flash API.

7: Wait for the TMS320 to delete its Flash EPROM.

8: Send a section of code 8 KB in size to the TMS320.

9: Wait for the TMS320 to request a new 8 KB section of code.

10: Wait until the TMS320 application software has been started.

11: Wait until the TMS320 is ready for a new command.

100: Bootloader version not compatible.

101: TMS version not compatible.

Note:

r50047[1]: Error bits. Indicate in which of the following states errors occurred.

Bit 0 = 1: Initialization

Bit 1 = 1: TMS320 status

Bit 2 = 1: Bootloader version

Bit 3 = 1: TMS320 version

Bit 4 = 1: TMS320 start

Bit 5 = 1: Load Flash interface

Bit 6 = 1: Delete Flash

Bit 7 = 1: Write Flash

Bit 8 = 1: Request code

Bit 9 = 1: TMS320 start

Bit 10 = 1: Read message

**Remedy:** Carry out a POWER ON (power off/on) for all components.

Reaction upon N: NONE

Acknowled. upon N: NONE

Reaction upon A: NONE

Acknowled. upon A: NONE

---

#### **F60066 (N, A) Error communicating with sensors**

**Message value:** %1

**Message class:** Internal (DRIVE-CLiQ) communication error (12)

**Drive object:** DC\_CTRL

**Reaction:** OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** An error occurred when polling the fan speeds and temperature sensors.

Fault value (r0949, interpret decimal):

1: Data not received

2: Fan monitoring or temperature sensors not switched over

**Remedy:** Carry out a POWER ON (power off/on) for all components.

Reaction upon N: NONE

Acknowled. upon N: NONE

Reaction upon A: NONE

Acknowled. upon A: NONE

---

#### **F60067 (N, A) Fault temperature too high**

**Message value:** %1

**Message class:** Overtemperature of the electronic components (6)

**Drive object:** DC\_CTRL

**Reaction:** OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The temperature at one of the temperature sensors has exceeded the highest permissible temperature to initiate this fault.

Fault value (r0949, interpret decimal):

1: Overtemperature at sensor 1 (sensor an XT5).

2: Overtemperature at sensor 2 (sensor an XT6).

3: Overtemperature at sensor 3 (sensor an XT7).

4: Overtemperature at the sensor control module (A7105, A7106, A7107, A7108, A7109).

Note:

r50047[1]: Temperature sensor 1

r50047[2]: Temperature sensor 2

r50047[3]: Temperature sensor 3

r50047[4]: Gating module temperature  
r50047[5]: CUD module temperature  
**Remedy:**  
- Check the ambient temperature and reduce if necessary.  
- Reduce the load.

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

**F60068 (N, A) Incorrect calibration values for power unit**

**Message value:** %1  
**Message class:** Hardware/software error (1)  
**Drive object:** DC\_CTRL  
**Reaction:** OFF2 (NONE)  
**Acknowledge:** IMMEDIATELY  
**Cause:** The calibration values for the power unit are missing or incorrect.  
Fault value (r0949, interpret decimal):  
1x: Power unit for armature  
2x: Power unit for field  
x = 1: Unable to read compensation data  
x = 2: Unknown compensation data format  
x = 3: Incorrect compensation data CRC  
x = 4: The measuring points contained in the compensation data do not rise uniformly.  
x = 5: No compensation values can be calculated from the compensation data.  
x = 6: The signal offset calculated from the compensation data is impermissibly high.

**Remedy:** Carry out a POWER ON (power off/on) for all components.  
Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

**F60069 (N, A) Invalid order number (MLFB)**

**Message value:** %1  
**Message class:** General drive fault (19)  
**Drive object:** DC\_CTRL  
**Reaction:** OFF2 (NONE)  
**Acknowledge:** IMMEDIATELY  
**Cause:** The data read from the power unit (serial number, MLFB, accessory options) is invalid.  
Fault value (r0949, interpret decimal):  
1: The serial number is invalid or missing.  
2: The order number (MLFB) is invalid or missing.  
3: The accessory options are invalid.  
4: Incorrect serial number CRC  
5: Incorrect MLFB CRC  
6: Incorrect accessory options CRC  
7: The MLFB read out is not known to the software.  
8: Unable to read data.  
9: MLFB cannot be changed in current operating state.  
Note for fault value = 1, 4:  
r50047[1]: 1st digit of serial number  
r50047[2]: 2nd digit of serial number  
...  
r50047[30]: 30th digit of serial number

Note for fault value = 2, 5, 7:

r50047[1]: 1st digit of MLFB

r50047[2]: 2nd digit of MLFB

...

r50047[30]: 30th digit of MLFB

Note for fault value = 3, 6:

r50047[1]: 1st digit of accessory options

r50047[2]: 2nd digit of accessory options

...

r50047[30]: 30th digit of accessory options

Note for fault value = 9:

r50047[1]: Operating state

**Remedy:** Send your SINAMICS DC MASTER to the manufacturer's plant or an authorized repair center.

Reaction upon N: NONE

Acknowled. upon N: NONE

Reaction upon A: NONE

Acknowled. upon A: NONE

---

#### **A60080 (F, N) Alarm temperature too high**

**Message value:** %1

**Message class:** Overtemperature of the electronic components (6)

**Drive object:** DC\_CTRL

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The temperature at one of the temperature sensors has exceeded the highest permissible temperature to initiate this alarm.

Alarm value (r2124, interpret decimal):

1: Overtemperature at sensor 1 (sensor an XT5).

2: Overtemperature at sensor 2 (sensor an XT6).

3: Overtemperature at sensor 3 (sensor an XT7).

4: Overtemperature at the sensor control module (A7105, A7106, A7107, A7108, A7109).

Note:

r50047[1]: Temperature sensor 1

r50047[2]: Temperature sensor 2

r50047[3]: Temperature sensor 3

r50047[4]: Gating module temperature

r50047[5]: CUD module temperature

**Remedy:** - Check the ambient temperature and reduce if necessary.

- Reduce the load.

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowled. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowled. upon N: NONE

---

#### **A60081 (F, N) Alarm module temperature exceeded**

**Message value:** -

**Message class:** Overtemperature of the electronic components (6)

**Drive object:** DC\_CTRL

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The temperature on the Control Unit DC MASTER (CUD) has exceeded the alarm value (temperature above 90 °C).

Note:

r50047[1]: Module temperature (in °C)

r50047[2]: Reference voltage -10 V (in volts)

r50047[3]: Reference voltage +10 V (in volts)  
r50047[4]: Temperature sensor 1 (in °C)  
**Remedy:** Check the ambient temperature and reduce if necessary.  
Reaction upon F: NONE (OFF1, OFF2, OFF3)  
Acknowl. upon F: IMMEDIATELY  
Reaction upon N: NONE  
Acknowl. upon N: NONE

---

**A60082 (F, N) Alarm derating factor K1 limit value fallen below**

**Message value:** -  
**Message class:** Overtemperature of the electronic components (6)  
**Drive object:** DC\_CTRL  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** For a drive device equipped with option L99, derating (reduced power) is calculated depending on the air intake temperature.  
The calculated derating factor K1 has fallen below the set limit value (p50066).  
Note:  
r50047[1]: air intake temperature in °C (sensor at XT6)  
r50047[2]: derating factor K1  
See also: p50066 (Power unit I2t monitoring derating factor K1 limit value)  
**Remedy:** Check the air intake temperature and reduce if necessary.  
Reaction upon F: NONE (OFF1, OFF2, OFF3)  
Acknowl. upon F: IMMEDIATELY  
Reaction upon N: NONE  
Acknowl. upon N: NONE

---

**F60090 (N, A) Fault module temperature exceeded**

**Message value:** -  
**Message class:** Overtemperature of the electronic components (6)  
**Drive object:** DC\_CTRL  
**Reaction:** OFF2 (NONE, OFF1, OFF3)  
**Acknowledge:** IMMEDIATELY  
**Cause:** The temperature on the Control Unit DC MASTER (CUD) has exceeded the fault value (temperature above 95 °C).  
Note:  
r50047[1]: Module temperature (in °C)  
r50047[2]: Supply voltage -10 V (in volts)  
r50047[3]: Supply voltage +10 V (in volts)  
r50047[4]: Temperature sensor 1 (in °C)  
**Remedy:** Check the ambient temperature and reduce if necessary.  
Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

**F60091 (N, A) Reference voltage P10 outside tolerance**

**Message value:** -  
**Message class:** General drive fault (19)  
**Drive object:** DC\_CTRL  
**Reaction:** OFF2 (NONE)  
**Acknowledge:** IMMEDIATELY  
**Cause:** The reference voltage P10 (+10 V) at terminal X177.31 lies outside the tolerance (deviation greater than +/-5%).  
Note:  
r50047[1]: Reference voltage +10 V (in volts)  
r50047[2]: Reference voltage -10 V (in volts)  
r50047[3]: Module temperature (in °C)

## 4 Faults and alarms

### 4.2 List of faults and alarms

**Remedy:** Check the power supply.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

---

#### **F60092 (N, A) Reference voltage N10 outside tolerance**

**Message value:** -

**Message class:** General drive fault (19)

**Drive object:** DC\_CTRL

**Reaction:** OFF2 (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** The reference voltage N10 (-10 V) at terminal X177.32 lies outside the tolerance (deviation greater than +/-5%).

Note:

r50047[1]: Reference voltage -10 V (in volts)

r50047[2]: Reference voltage +10 V (in volts)

r50047[3]: Module temperature (in °C)

**Remedy:** Check the power supply.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

---

#### **F60093 (N, A) Power supply P5 overloaded**

**Message value:** -

**Message class:** General drive fault (19)

**Drive object:** DC\_CTRL

**Reaction:** OFF2 (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** Power supply P5 (+5 V) at connector X179.1 is overloaded.

Note:

r50047[1]: Reference voltage +10 V (in volts)

r50047[2]: Reference voltage -10 V (in volts)

r50047[3]: Module temperature (in °C)

**Remedy:** Identify the reason for the overload and rectify the situation.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

---

#### **F60094 (N, A) Power supply P15 overloaded**

**Message value:** -

**Message class:** General drive fault (19)

**Drive object:** DC\_CTRL

**Reaction:** OFF2 (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** Power supply P15 (+15 V) at terminal X177.41 is overloaded.

Note:

r50047[1]: Reference voltage +10 V (in volts)

r50047[2]: Reference voltage -10 V (in volts)

r50047[3]: Module temperature (in °C)

**Remedy:** Identify the reason for the overload and rectify the situation.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE  
Acknowl. upon A: NONE

---

#### **F60095 (N, A) Power supply P24 overloaded**

**Message value:** -  
**Message class:** General drive fault (19)  
**Drive object:** DC\_CTRL  
**Reaction:** OFF2 (NONE)  
**Acknowledge:** IMMEDIATELY  
**Cause:** Power supply P24 (+24 V) at terminal X177.9 or X177.10 is overloaded.  
Note:  
r50047[1]: Reference voltage +10 V (in volts)  
r50047[2]: Reference voltage -10 V (in volts)  
r50047[3]: Module temperature (in °C)  
**Remedy:** Identify the reason for the overload (e.g. digital outputs) and rectify the situation.  
Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

#### **F60096 (N, A) Temperature sensor faulty**

**Message value:** %1  
**Message class:** Internal (DRIVE-CLiQ) communication error (12)  
**Drive object:** DC\_CTRL  
**Reaction:** OFF2 (NONE, OFF1, OFF3)  
**Acknowledge:** IMMEDIATELY  
**Cause:** A cable break or a short circuit has been detected on at least one temperature sensor.  
Fault value (r0949, interpret decimal):  
1: A cable break has occurred.  
2: A short circuit has occurred.  
Note:  
r50047[1] = 1: Temperature sensor 1  
r50047[1] = 2: Temperature sensor 2  
r50047[1] = 3: Temperature sensor 3  
r50047[1] = 4: Temperature sensor gating module  
r50047[1] = 5: Temperature sensor CUD module  
r50047[1] = 6: Motor temperature sensor  
r50047[2]: Value of the analog-to-digital converter  
**Remedy:** Evaluate the fault and, if the temperature sensor is faulty, run a wiring and performance check.  
Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

#### **F60097 (N, A) Power supply faulty**

**Message value:** -  
**Message class:** Power electronics faulted (5)  
**Drive object:** DC\_CTRL  
**Reaction:** OFF2 (NONE)  
**Acknowledge:** IMMEDIATELY  
**Cause:** The power supply is not working correctly.  
Note 1:  
r50047[1]: Reference voltage +10 V (in volts)  
r50047[2]: Reference voltage -10 V (in volts)  
r50047[3]: Module temperature (in °C)

## 4 Faults and alarms

### 4.2 List of faults and alarms

Note 2:

For SINAMICS DCM with 2 CUD, the following applies:

After carrying out a reset (p0972 > 0 or p0976 = 200) at a CUD, then this fault is output at the other. In this case, the fault has no significance and can be acknowledged.

**Remedy:** Check the power supply.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

---

#### **A60098 (F, N) System utilization high**

**Message value:** -

**Message class:** General drive fault (19)

**Drive object:** DC\_CTRL

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The average computing time utilization (r9976[1]) for the system is greater than 95 %.

**Remedy:** Reduce computing time utilization by.

The following options are available to do this:

- check the number of cyclically calculated blocks (DCC), and if required reduce.
- assign DCC blocks to runtime groups with a longer sampling time.
- check the number of cyclically calculated function blocks (FBLOCKS), and if required reduce.
- assign function blocks to runtime groups with a longer sampling time.
- remove DRIVE-CLiQ components that are not required.
- deactivate control blocks that are not required (p50899). This must be especially taken into account for a CUD right.

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

---

#### **F60099 (N, A) System utilization too high**

**Message value:** -

**Message class:** General drive fault (19)

**Drive object:** DC\_CTRL

**Reaction:** OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The average computing time utilization (r9976[1]) for the system is greater than 100 %.

Note:

r50047[1]: Averaged computing time utilization (in %)

r50047[2]: Maximum computing time utilization (in %)

**Remedy:** Reduce computing time utilization by.

The following options are available to do this:

- check the number of cyclically calculated blocks (DCC), and if required reduce.
- assign DCC blocks to runtime groups with a longer sampling time.
- check the number of cyclically calculated function blocks (FBLOCKS), and if required reduce.
- assign function blocks to runtime groups with a longer sampling time.
- remove DRIVE-CLiQ components that are not required.
- deactivate control blocks that are not required (p50899). This must be especially taken into account for a CUD right.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE



<b>F60104 (N, A)</b>	<b>Armature circuit line voltage not OK</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Network fault (2)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	OFF2 (NONE)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>On power-up, the time set in p50089 represents the maximum wait time for voltage at the power connections and for field current in operating states o5 and o4 combined.</p> <p>On power-up, the time set in p50095 represents the maximum wait time for "Line contactor feedback" in operating state o3.3 (if activated, see p50691).</p> <p>This fault is triggered if the above times elapse in one of these operating states.</p> <ul style="list-style-type: none"> <li>- Thresholds for the line monitoring incorrectly set (p50078, p50351, p50352, p50353, p50363, p50364).</li> <li>- Armature voltage not OK (phase failure, undervoltage/overvoltage, underfrequency/overfrequency).</li> <li>- Line contactor not picking up</li> <li>- Fuse blown on three-phase side of armature circuit</li> <li>- Fuse blown in power unit</li> <li>- Interruption affecting thyristor firing pulse cable (auxiliary cathodes at connections X12, X14, X16 are used for voltage transmission).</li> </ul> <p>Fault value (r0949, interpret decimal):</p> <p>2: Wait time set in p50089 has expired in operating state o4.0.</p> <p>3: Fuse blown on three-phase side of armature circuit</p> <p>6: Wait time set in p50095 has expired in operating state o3.3.</p> <p>Note for fault value = 2:</p> <ul style="list-style-type: none"> <li>- r50047[1]: line state (r53145)</li> </ul> <p>Bit 0 = 1: Armature supply line, overvoltage</p> <p>Bit 1 = 1: Armature supply line, undervoltage</p> <p>Bit 2 = 1: Armature supply line, overfrequency</p> <p>Bit 3 = 1: Armature supply line, underfrequency</p> <p>Bit 4 = 1: Armature supply line, phase failure</p> <p>Bit 5 = 1: Field supply line, overvoltage</p> <p>Bit 6 = 1: Field supply line, undervoltage</p> <p>Bit 7 = 1: Field supply line, overfrequency</p> <p>Bit 8 = 1: Field supply line, underfrequency</p> <p>Bit 9 = 1: Field supply line, phase failure</p> <p>Bit 10 = 1: Armature supply line OK</p> <p>Bit 11 = 1: Field supply line OK</p> <p>Bit 12 = 1: clockwise phase sequence</p> <p>Bit 13 = 1: Line symmetrical</p> <p>See also: p50089 (Sequence control voltage at power unit wait time), p50095 (Sequence control DC circuit contactor wait time), p50691 (Sequence control line contactor feedback)</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- Check the thresholds for the line monitoring (p50078, p50351, p50352, p50353, p50363, p50364).</li> <li>- Check line voltage and line contactor.</li> <li>- Check fuses for armature circuit.</li> <li>- Check thyristor firing pulse cable (X12, X14, X16).</li> </ul> <p>See also: p50089 (Sequence control voltage at power unit wait time), p50353 (Line monitoring phase failure threshold)</p>
<b>Reaction upon N:</b>	NONE
<b>Acknowl. upon N:</b>	NONE
<b>Reaction upon A:</b>	NONE
<b>Acknowl. upon A:</b>	NONE

<b>F60105 (N, A)</b>	<b>Field current monitoring fault in field circuit</b>
<b>Message value:</b>	%1
<b>Message class:</b>	Network fault (2)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	OFF2 (NONE)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>Field current monitoring has detected erroneous behavior.</p> <ul style="list-style-type: none"> <li>- Field phase failed</li> <li>- Line contactor not picking up</li> <li>- Fuse blown in field circuit</li> <li>- Field current controller and/or field current controller pre-control not optimized or optimization is very poor.</li> </ul> <p>Fault value (r0949, interpret decimal):</p> <ol style="list-style-type: none"> <li>1: The field current actual value was smaller than the percentage of the field current setpoint set in p50396.</li> <li>2: The field line voltage was not available within the time set in p50089.</li> <li>3: The field current was not available within the time set in p50089.</li> <li>4: The external field current monitoring has responded (BI: p50265 = 1/0 signal).</li> </ol> <p>Note for fault value = 1:</p> <p>r50047[1]: Setpoint at field current controller input (r52268)</p> <p>r50047[2]: Actual value at field current controller input (r52265)</p> <p>r50047[3]: External monitoring (p50265)</p> <p>r50047[4]: Operating mode (p50082)</p> <p>r50047[5]: Threshold for monitoring (p50396)</p> <p>Note for fault value = 2:</p> <ul style="list-style-type: none"> <li>- r50047[1]: line state (r53145).</li> </ul> <p>See also: r50073 (Device rated direct current field), p50082 (Field power unit operating mode), p50396 (Field current monitoring setpoint factor), p50397 (Field current monitoring fault delay time), r52265 (CI-loop field curr ctrl current controller actual value), r52268 (Closed-loop field current control current controller setpoint)</p>
<b>Remedy:</b>	<ul style="list-style-type: none"> <li>- Check field phases.</li> <li>- Check line contactor.</li> <li>- Check fuses in field current circuit.</li> <li>- Perform an optimization run for the field current controller (p50051 = 24).</li> <li>- Check the threshold and time for field current monitoring (p50396, p50397).</li> </ul> <p>See also: p50051 (Optimization run selection)</p>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE
<b>F60106 (N, A)</b>	<b>Short-circuit voltage Uk too high</b>
<b>Message value:</b>	%1
<b>Message class:</b>	General drive fault (19)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	OFF2 (NONE, OFF1, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>The per unit short-circuit voltage of the line supply is greater than 10 %.</p> <p>Permissible values are between 2 and 10 %.</p> <p>See also: r50073 (Device rated direct current field), p50082 (Field power unit operating mode), p50396 (Field current monitoring setpoint factor), p50397 (Field current monitoring fault delay time), r52265 (CI-loop field curr ctrl current controller actual value), r52268 (Closed-loop field current control current controller setpoint)</p>
<b>Remedy:</b>	<p>Check the dimensioning of the commutating reactors or the line transformer.</p> <p>See also: p50051 (Optimization run selection)</p>
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

---

### **F60137 (N, A) I2t monitoring fault excessive motor temperature rise**

<b>Message value:</b>	-
<b>Message class:</b>	Motor overload (8)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	OFF2 (NONE, OFF1, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The I2t calculation shows that the motor's temperature rise is excessive. The fault is triggered if the calculated motor temperature rise in r52309 > 110%. Note: r50047[1]: Temperature rise r52309 r50047[2]: Motor rated armature current p50100 r50047[3]: Continuous current factor r50113 r50047[4]: Device rated current r50072[1] r50047[5]: Current armature current r52109 r50047[6]: Motor thermal time constant p50114 See also: p50114 (Motor thermal time constant), r52309 (Calculated motor temperature rise)
<b>Remedy:</b>	- Check the ambient temperature and reduce if necessary. - Reduce the motor load. See also: r52109 (Armature current actual value averaged over 6 cycles)
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

---

### **F60139 (N, A) I2t monitoring fault excessive power unit temperature rise**

<b>Message value:</b>	-
<b>Message class:</b>	Overtemperature of the electronic components (6)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	OFF2 (NONE, OFF1, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	The temperature rise of the thyristors is more than 102 % of the maximum permissible value.
<b>Remedy:</b>	- Check the ambient temperature and reduce if necessary. - Check the motor load and reduce if necessary.
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

---

### **A60143 (F, N) Reduction of the field current setpoint for an excessively high EMF during braking active**

<b>Message value:</b>	-
<b>Message class:</b>	Motor overload (8)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	Reduction of the field current setpoint for an excessively high EMF during braking is active. See also: p50272 (Field current reduction activation)
<b>Remedy:</b>	Not necessary. The alarm automatically disappears after braking has expired.
Reaction upon F:	NONE (OFF2)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE

<b>A60165 (F, N)</b>	<b>Fan end of service life has been reached or exceeded</b>
<b>Message value:</b>	-
<b>Message class:</b>	Overtemperature of the electronic components (6)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	At least one device fan has reached the end of its service life - or has exceeded it.
<b>Remedy:</b>	Replace the device fan and reset the operating hours. See also: r50960 (Device fan operating hours display), p50961 (Device fan service life), p50962 (Device fan reset operating hours)
Reaction upon F:	NONE (OFF1, OFF2, OFF3)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>A60166 (F, N)</b>	<b>Alarm fan speed too slow</b>
<b>Message value:</b>	-
<b>Message class:</b>	Overtemperature of the electronic components (6)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	The fan speed is too slow. The fan is probably blocked or faulty. Note: r50047[1]: Speed fan 1 (in revolutions/s) r50047[2]: Speed fan 2 (in revolutions/s) r50047[3]: Speed fan 3 (in revolutions/s) r50047[4]: Speed fan 4 (in revolutions/s)
<b>Remedy:</b>	Check the fan and replace if necessary.
Reaction upon F:	NONE (OFF1, OFF2, OFF3)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>F60167 (N, A)</b>	<b>Fault fan speed too slow</b>
<b>Message value:</b>	-
<b>Message class:</b>	Overtemperature of the electronic components (6)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	OFF2 (NONE, OFF1, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	a) The fan speed is too slow. The fan is probably blocked or faulty. b) The AC fan was switched off in operation or before the fan run on time p50096 expired by an external fan control. Note 1: r50047[1]: Speed fan 1 (in revolutions/s) r50047[2]: Speed fan 2 (in revolutions/s) r50047[3]: Speed fan 3 (in revolutions/s) r50047[4]: Speed fan 4 (in revolutions/s) Note 2: Fault message F60167 can only be acknowledged after the fan run on time p50096 has expired!
<b>Remedy:</b>	a) Check the fan and replace if necessary. b) Use the fan control inside the device ! See function block diagram 8047 or 8049.
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE

<b>A60168 (F, N)</b>	<b>Memory card not plugged in</b>
<b>Message value:</b>	%1
<b>Message class:</b>	General drive fault (19)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	NONE
<b>Acknowledge:</b>	NONE
<b>Cause:</b>	<p>The data recorded with the recorder function could not be saved on the memory card.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> <li>- Memory card not plugged in</li> <li>- Memory card defective</li> </ul> <p>Note:</p> <p>If the save function is performed without errors, the data is saved on the memory card under "USER\SINAMICS\DATA\LOG\Tack.csv".</p> <p>Fault value (r0949, interpret decimal):</p> <ul style="list-style-type: none"> <li>1: Unable to create or open the file</li> <li>2: Unable to write to the file</li> <li>3: Unable to write all data to the file</li> </ul> <p>See also: p51700 (Signal source for connector recorder function), p51701 (Signal source for binector recorder function), p51702 (Recorder function channel selection), p51703 (Recorder function recording interval), p51704 (Recorder function save interval), p51705 (Start/stop recorder function)</p>
<b>Remedy:</b>	Plug in a functional memory card (SecureDigital card, SD card).
Reaction upon F:	NONE (OFF1, OFF2, OFF3)
Acknowl. upon F:	IMMEDIATELY
Reaction upon N:	NONE
Acknowl. upon N:	NONE
<b>F60203 (N, A)</b>	<b>External fault triggered</b>
<b>Message value:</b>	%1
<b>Message class:</b>	General drive fault (19)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	OFF2 (NONE, OFF1, OFF3)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>An external fault has been triggered via terminal 124/125 on the Control Module.</p> <p>Fault value (r0949, interpret decimal):</p> <p>Input signal which triggered the fault.</p> <p>Note:</p> <p>r50047[1]: External fault mode (p51833)</p> <p>See also: p51833 (External fault mode)</p>
<b>Remedy:</b>	Eliminate the causes of this fault.
Reaction upon N:	NONE
Acknowl. upon N:	NONE
Reaction upon A:	NONE
Acknowl. upon A:	NONE
<b>F60204 (N, A)</b>	<b>Fuse monitoring has responded</b>
<b>Message value:</b>	%1
<b>Message class:</b>	General drive fault (19)
<b>Drive object:</b>	DC_CTRL
<b>Reaction:</b>	OFF2 (NONE)
<b>Acknowledge:</b>	IMMEDIATELY
<b>Cause:</b>	<p>Fuse monitoring on the Control Module has detected at least one blown fuse.</p> <p>Fault value (r0949, interpret decimal):</p> <ul style="list-style-type: none"> <li>1: Monitoring of slot X23B (p51831[0]) has responded.</li> <li>2: Monitoring of slot X23C (p51831[1]) has responded.</li> <li>3: Monitoring of slot X23D (p51831[2]) has responded.</li> </ul>

## 4 Faults and alarms

### 4.2 List of faults and alarms

4: Monitoring of slot X23E (p51831[3]) has responded.

5: Monitoring of slot X23F (p51831[4]) has responded.

Note:

r50047[1]: Fuse number (XS1, XS2 to XS6)

See also: p51831 (Fuse monitoring activation)

**Remedy:**

- Analyze the blown fuse.

- Replace or close fuses as necessary.

Reaction upon N: NONE

Acknowl. upon N: NONE

Reaction upon A: NONE

Acknowl. upon A: NONE

---

#### **A60266 (F, N)**

#### **Alarm fan not OK**

**Message value:** %1

**Message class:** Overtemperature of the electronic components (6)

**Drive object:** DC\_CTRL

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:**

For a control module without option Z01... Z15, the following applies:

The signal at terminal 122/123 signals "Fan not OK".

The fan might be blocked or faulty.

Alarm value (r2124, interpret decimal):

Alarm value 1: Signal at terminal 122/123 signals "Fan not OK".

r50047[1]: Fan monitoring mode (p51832)

For a control module with option Z01... Z15, the following applies:

The alarm threshold for the differential pressure was fallen below.

Alarm value 2: differential pressure at LT1 fallen below

Alarm value 3: differential pressure at LT2 fallen below

r50047[1]: Fan monitoring mode (p51832)

**Remedy:**

- Check wiring of "Fan OK" message via input terminal 122/123.

- Check the setting of the mode for fan monitoring (p51832).

- Check the fan and replace if necessary.

See also: p51832 (Fan monitoring configuration), p51835 (Delay times for device fan monitoring)

Reaction upon F: NONE (OFF1, OFF2, OFF3)

Acknowl. upon F: IMMEDIATELY

Reaction upon N: NONE

Acknowl. upon N: NONE

---

#### **F60267 (N, A)**

#### **CM: Fan not OK**

**Message value:** %1

**Message class:** Overtemperature of the electronic components (6)

**Drive object:** DC\_CTRL

**Reaction:** OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:**

For a control module without option Z01... Z15, the following applies:

The signal at terminal 122/123 signals "Fan not OK".

The fan might be blocked or faulty.

Alarm value (r2124, interpret decimal):

Alarm value 1: Signal at terminal 122/123 signals "Fan not OK".

r50047[1]: Fan monitoring mode (p51832)

For a control module with option Z01... Z15, the following applies:

The fault threshold for the differential pressure was fallen below.

Alarm value 2: differential pressure at LT1 fallen below

Alarm value 3: differential pressure at LT2 fallen below

r50047[1]: Fan monitoring mode (p51832)

**Remedy:**

- Check wiring of "Fan OK" message via input terminal 122/123.

- Check the setting of the mode for fan monitoring (p51832).

- Check the fan and replace if necessary.

See also: p51832 (Fan monitoring configuration), p51835 (Delay times for device fan monitoring)

Reaction upon N: NONE

Acknowled. upon N: NONE

Reaction upon A: NONE

Acknowled. upon A: NONE

**F60300**

**Commutation failure**

**Message value:** %1

**Message class:** General drive fault (19)

**Drive object:** DC\_CTRL

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** Commutation failure or overcurrent has occurred or a test command was entered via p51583.

Possible causes of the commutation failure:

- Line voltage dip during regenerative operation.

- Armature current control loop not optimized.

Fault value (r0949, interpret decimal):

1:

Commutation was not successful because the thyristor being turned off did not accept the blocking voltage (only for p50166 = 1).

r50047[0]: Decision criterion (= 1)

r50047[1]: Thyristor state (= r53146)

r50047[2]: Fired thyristor pairs

Bit 0 = 1: Thyristor 1 in MI was fired

...

Bit 5 = 1: Thyristor 6 in MI was fired

Bit 8 = 1: Thyristor 1 in MII was fired

...

Bit 13 = 1: Thyristor 6 in MII was fired

r50047[3]: Actual armature firing angle [in degrees]

r50047[4]: Actual EMF in [in %]

2:

The current did not flow through the correct thyristor or the current cusp made a kink upwards.

r50047[0]: Decision criterion (= 2)

r50047[1]: Subcriterion

For subcriterion = 1, the following applies:

The current did not flow through the correct thyristors.

r50047[2]: Actual Ia sample value [in A]

r50047[3]: Actual Ia sample value CT 1 [in A]

r50047[4]: Actual Ia sample value CT 2 [in A]

r50047[5]: Actual Ia sample value + 20% of In [in A]

r50047[6]: Number of Ia sample values since the last firing pulse

For subcriterion = 2 , the following applies:

The current cusp has an upwards kink

r50047[2]: Actual Delta Ia [in A]

r50047[3]: Lowest Delta-Ia up until now since the last firing pulse [in A]

r50047[4]: Actual Ia sample value [in A]

r50047[5]: First Delta-Ia after the last firing pulse [in A]

r50047[6]: Actual armature firing angle [in degrees]

r50047[7]: Number of Ia sample values since the last firing pulse

3:

The magnitude of the current cusp was greater than 290% of the actual rated device armature DC current (r50072[1]).

r50047[0]: Decision criterion (= 3)

r50047[1]: Number of Delta-Ua, that Ua may still be away from the EMF

r50047[2]: Previous voltage CD [in V]

r50047[3]: Actual voltage CD [in V]

r50047[4]: Actual Delta Ua [in V]

r50047[5]: Actual armature firing angle [in degrees]

r50047[6]: Actual EMF in [in V]

r50047[7]: Actual Ia sample value [in A]

4:

A SINAMICS DCM connected in parallel has detected a commutation failure or overcurrent.

r50047[0]: Decision criterion (= 4)

5:

Test command was entered via p51583.

r50047[0]: Decision criterion (= 5)

r50047[1]: Actual voltage CD [in V]

r50047[2]: Actual armature firing angle [in degrees]

r50047[3]: Actual EMF in [in V]

r50047[4]: Actual Ia sample value [in A]

r50047[5]: Actual torque direction (0, 1 or 2)

**Remedy:**

Acknowledge the fault and switch off /switch on the drive

#### F60320 (N, A)

#### CCP not functional

**Message value:**

%1

**Message class:**

General drive fault (19)

**Drive object:**

DC\_CTRL

**Reaction:**

OFF2 (NONE, OFF1, OFF3)

**Acknowledge:**

IMMEDIATELY

**Cause:**

The SIMOREG CCP is not functional.

Possible fault causes:

- Hardware defect in the charge circuit of the turn-off capacitors.
- Fuse failure in the armature circuit, line side or motor side.
- Fuse failure in the pre-charging circuit for the chopper capacitors.
- Chopper resistors still cooling down (this is necessary)

Fault value (r0949, interpret decimal):

- 1: No voltage at the U, V, W connections of the SIMOREG CCP.
- 2: The voltage at C-D at the SIMOREG CCP does not match the voltage C-D at the SINAMICS DCM.
- 3: The turn-off capacitors of the SIMOREG CCP have not reached the setpoint voltage.
- 4: No connection between SINAMICS DCM (X165\_2, fast pulse inhibit interface) and SIMOREG CCP (X165).
- 5: No connection between SINAMICS DCM (X177) and SIMOREG CCP (X172) via the serial interface.
- 6: No connection between several SIMOREG CCPs (X29\_PAR or X30\_PAR, turn-off pulse interface).
- 7: SIMOREG CCP data invalid or not available (r51570, r51571, r51572).
- 11: The I2t value (r51575) of the voltage limiting chopper 1 is too high (> 100 %).
- 12: The I2t value (r51576) of the voltage limiting chopper 2 is too high (> 100 %).
- 20: The chopper capacitors were not able to be pre-charged within the time set in p50089.



Note:  
r50047[0]: Fault value  
r50047[1]: CCP state (extended status word + r51574)  
r50047[2]: Armature voltage  
**Remedy:** Interpret the fault value and rectify the fault correspondingly.

Reaction upon N: NONE  
Acknowl. upon N: NONE  
Reaction upon A: NONE  
Acknowl. upon A: NONE

---

**A60321 (F, N) CCP not functional**

**Message value:** %1  
**Message class:** General drive fault (19)  
**Drive object:** DC\_CTRL  
**Reaction:** NONE  
**Acknowledge:** NONE  
**Cause:** The SIMOREG CCP is not functional.  
Possible fault causes:  
- Hardware defect in the charge circuit of the turn-off capacitors.  
- Fuse failure in the armature circuit, line side or motor side.  
- Fuse failure in the pre-charging circuit for the chopper capacitors.  
- Chopper resistors still cooling down (this is necessary)  
Alarm value (r2124, interpret decimal):  
1: No voltage at the U, V, W connections of the SIMOREG CCP.  
2: The voltage at C-D at the SIMOREG CCP does not match the voltage C-D at the SINAMICS DCM.  
3: The turn-off capacitors of the SIMOREG CCP have not reached the setpoint voltage.  
4: No connection between SINAMICS DCM (X165\_2, fast pulse inhibit interface) and SIMOREG CCP (X165).  
5: No connection between SINAMICS DCM (X177) and SIMOREG CCP (X172) via the serial interface.  
6: No connection between several SIMOREG CCPs (X29\_PAR or X30\_PAR, turn-off pulse interface).  
7: SIMOREG CCP data invalid or not available (r51570, r51571, r51572).  
11: The I2t value (r51575) of the voltage limiting chopper 1 is too high (> 100 %).  
12: The I2t value (r51576) of the voltage limiting chopper 2 is too high (> 100 %).  
20: The chopper capacitors were not able to be pre-charged within the time set in p50089.  
Note:  
r50047[0]: Alarm value  
r50047[1]: CCP state (extended status word + r51574)  
r50047[2]: Armature voltage  
**Remedy:** Interpret the fault value and rectify the fault correspondingly.  
Reaction upon F: NONE  
Acknowl. upon F: IMMEDIATELY  
Reaction upon N: NONE  
Acknowl. upon N: NONE

