

Foreword

First of all, thank you for purchasing the AF300/AE300 series Variable Frequency Drive (VFD).

The AF300/AE300 series Variable Frequency Drive adopts high performance vector control technology, which has excellent control performance such as large torque at low frequency, high stable speed accuracy, and strong overload capacity; and it has the advantages of compact structure, easy installation, high reliability, etc., suitable for driving AC induction and PM motors in different applications, especially suitable for applications with high economic, limited installation space, such as assembly lines, textile printing and dyeing machinery, packaging machinery, woodworking machinery, etc.

This user manual is used for the model selection, installation, parameters setting, commissioning and fault diagnosis of the Variable Frequency Drive.

To guarantee safe operation of the equipment, please read this manual carefully before connecting power to VFD. Keep this manual at hand and distribute it to all users for reference.

Note that this manual should be delivered to the end users. If you have any questions, please consult our technical support personnel or distributors for help.

Due to continuous improvement of products, the information provided by our company is subject to change without notice.

Safety Precautions



DANGER: Dangerous warning warns of high voltage which can cause physical injury and/or damage to the equipment, even could be lethal. Extreme care is necessary at all times when working with or adjacent to the VFD.



WARNING: General warning warns about conditions, other than those caused by electricity, which can result in physical injury and/or damage to the product.

■ USE



DANGER

- This series of VFD is used to control the operation of three-phase AC motor. It cannot be used to control single-phase motor, DC motor or for other purpose, otherwise it may cause VFD fault or fire.
- This series of VFD cannot be easily applied to applications such as medical device that are directly related to personal safety.
- This series of VFD is manufactured under strict quality management system. If an VFD fault occurs, it may cause a major accident or loss, require safety measures such as redundancy or bypass, just in case.

■ Arrival Inspection



WARNING

- The VFD cannot be installed if the VFD is damaged or missing parts, otherwise an accident may occur.

■ Installation



WARNING

- When handling and installing, please hold the bottom of the VFD. Do not hold the enclosure only, otherwise, your feet may be injured and/or the VFD may be damaged.
- The VFD should be mounted on the fire-retardant surface such as metal, and keep away from flammable objects and heat producer.
- Do not drop drilling residue into the VFD during installation work. Otherwise, the VFD may be damaged and/or trip on a fault.
- When the VFD is installed in an electrical control cabinet, the electrical control cabinet shall be equipped with a fan and ventilation port. In addition, air-cooling duct shall be designed in the cabinet to facilitate heat dissipation.

■ Wiring



DANGER

- Wiring must be performed by a qualified electrical engineer, otherwise there is a risk of electric shock or damage to the VFD.
- Must cut off the power before wiring; otherwise, there is a risk of electric shock or fire.
- The grounding terminal PE must be grounded reliably, otherwise, the VFD enclosure may become live.
- Do not touch the main circuit terminals. The main circuit terminals wiring of the VFD must not be contacted to the enclosure, otherwise, risk of electric shock may occur.
- The connection terminals of the brake resistor are “BR+” and “BR-”. Do not connect to other terminals; otherwise, risk of fire may occur.
- The leakage current of the VFD is higher than 3.5mA, and the specific value is determined by the actual conditions. For safety, the VFD and the motor must be firmly grounded.

**WARNING**

- The three-phase power supply cannot be connected to the output terminals U, V, W; otherwise, the VFD will be damaged.
- It is absolutely prohibited to connect a capacitor or phase lead LC/RC noise filter to the output terminal of the VFD, otherwise the VFD will be damaged.
- Please confirm the number of power supply phases and rated input voltage match the nameplate, otherwise the VFD may be damaged.
- The withstand voltage test cannot be performed to the VFD; otherwise, the VFD may be damaged.
- The main circuit terminal wiring and control circuit terminal wiring of the VFD should be arranged separately or vertically, otherwise the control signal will be interfered.
- Please use cable lug with insulating sleeve for the cable to main circuit terminals.
- The sectional area of input and output cables selection should according to the VFD rated current.
- When the cable length between the VFD and the motor exceeds 100 meters, please use an output reactor to avoid over-current fault caused by excessive distributed capacitance.
- The terminal connection of the main circuit must be reliable; otherwise, it may cause fire and/or short circuit.
- It is strictly prohibited to connect control terminals to AC 220V/380V voltage except TA, TB and TC terminals, otherwise there is a risk of damaging the equipment.

■ Operation

DANGER

- Do not operate the VFD with damp hands, otherwise there is a risk of electric shock.
- Only after the VFD wiring is completed and covered well, the VFD can be powered up. It is forbidden to remove the cover when the power is on; otherwise, there is a risk of electric shock.
- Before running, confirm that the mechanical installation is reliable; otherwise, it may cause physical injury and/or damage to the equipment.
- Before running, must confirm all personnel are in safe position, otherwise, it may cause physical injury and/or damage to the equipment.
- If automatic fault reset or automatic start after powered up function is active, safety isolation measures must be taken for mechanical equipment, otherwise, it may cause physical injury and/or damage to the equipment.
- After the VFD is powered, even if it is in the stop status, the terminals of the VFD are still live. It is forbidden to touch the terminals, otherwise it may cause electric shock.
- Before reset the VFD, confirm the run command has been switch off, otherwise it may cause physical injury and/or damage to the equipment.

WARNING

- Do not start or stop the VFD by turning the power supply on or off; otherwise, the VFD may be damaged.
- Before start, please confirm whether the motor and machinery are within the allowable range of use, otherwise the equipment may be damaged.
- Before start, please set the motor parameters correctly and start motor parameters auto-tune, otherwise, if the default parameter values are not match the motor will cause over-current fault or motor vibration, even damage to the equipment.
- Do not touch heat sink and brake resistor, otherwise there is a danger of burns and/or electric shock.
- When the VFD is used for lifting machine, such as crane, escalator, elevator, please also configure a mechanical brake.
- Do not change the VFD parameters at will. Most of the parameters' default value can meet the operation requirements. Just need to change some necessary parameters, and arbitrarily modify the parameters may cause damage to the mechanical equipment. Only some necessary parameters need to be set. Modify the parameters at will may result in damage to the mechanical equipment.

■ Maintenance and Inspection



DANGER

- Do not touch the terminals of the VFD while the power is on, otherwise there is a danger of electric shock.
- Make sure cut off the power supply before remove the cover.
- Wait at least 10 minutes after cut off the power, or confirm that the charging CHARGE indicator is off before performing maintenance and inspection to prevent the residual voltage of the main circuit capacitor from injuring people.
- Please designate qualified electrical engineers to do the maintenance, inspection and replace parts for the VFD.
- For VFDs stored for more than 2 years, the voltage should be gradually increased by a voltage regulator when powered on, otherwise there is a risk of electric shock or explosion.



WARNING

- There are CMOS large-scale integrated circuits on the circuit board. Do not touch the PCB with your hands to prevent static electricity from damaging the circuit board.

■ Others



DANGER

- It is forbidden to modify the VFD's hardware; otherwise, it will cause personal injury.
- The power of interphone used when close to the VFD shall not exceed 8W.
- It is forbidden to use the screws not provided by the manufacturer or specified by the manufacturer, otherwise the structural parts of the VFD or the circuit will be damaged due to factors such as too long or too large screws.

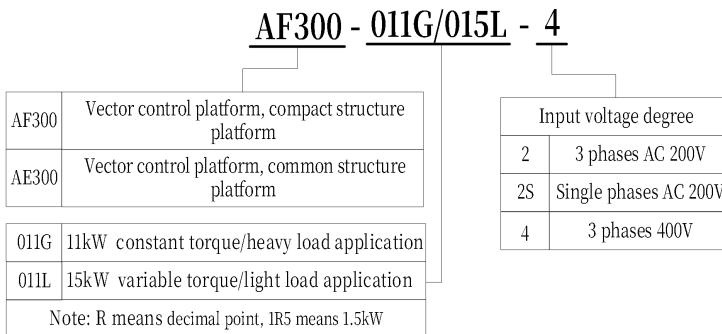
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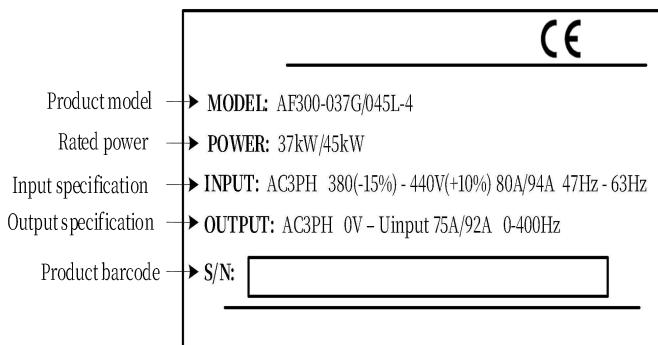
Chapter 1 AF300/AE300 Introduction

1.1 Model Description

The model field on the VFD nameplate uses numbers and letters to indicate information such as product series, input voltage, power, software version and hardware version.



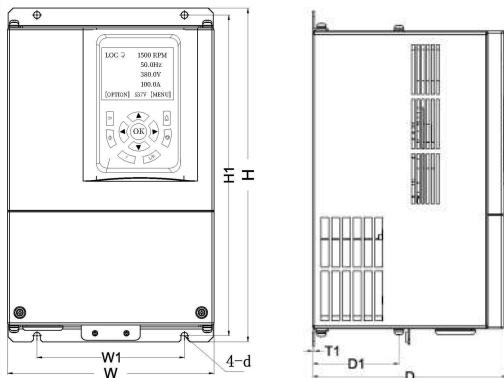
1.2 Nameplate Description



1.3 Product Series

VFD model	Constant torque			Variable torque		
	Output power (kW)	Output current (A)	Input current (A)	Output power (kW)	Output current (A)	Input current (A)
AF300-0R7G-4	0.75	2.5	3.4	/	/	/
AF300-1R5G-4	1.5	3.7	5.0	/	/	/
AF300-2R2G-4	2.2	5	5.8	/	/	/
AF300-3R7G/5R5L-4	3.7	9.5	13.5	5.5	14	19.5
AF300-5R5G/7R5L-4	5.5	14	19.5	7.5	18.5	25
AF300-7R5G/011L-4	7.5	18.5	7.5	25	25	32
AF300-011G/015L-4	11	25	11	32	32	40
AF300-015G/018L-4	15	32	15	40	38	47
AF300-018G/022L-4	18.5	38	18.5	47	45	56
AF300-022G/030L-4	22	45	22	56	60	70
AF300-030G/037L-4	30	60	30	70	75	80
AF300-037G/045L-4	37	75	37	80	92	94
AF300-045G/055L-4	45	92	45	94	115	128
AF300-055G/075L-4	55	115	55	128	150	160
AF300-075G/090L-4	75	150	75	160	180	190
AF300-090G/110L-4	90	180	90	190	215	225
AF300-110G/132L-4	110	215	110	225	260	265
AF300-132G/160L-4	132	260	132	265	305	310
AF300-160G/185L-4	160	305	160	310	340	345
AF300-185G/200L-4	185	340	185	345	380	385
AF300-200G/220L-4	200	380	200	385	425	430
AF300-220G/250L-4	220	425	220	430	480	485
AF300-250G/280L-4	250	480	250	485	530	545
AF300-280G/315L-4	280	530	280	545	600	610
AF300-315G/355L-4	315	600	315	610	650	625
AF300-355G/400L-4	355	650	355	625	720	715
AF300-400G-4	400	720	400	715	/	/
AF300-450G-4	450	820	450	840	/	/
AF300-500G-4	500	860	500	890	/	/

1.4 Mounting Dimensions



AF300 series product mounting dimensions

Model	Outline and mounting dimensions (mm)					
	H	W	D	H1	W1	Installation hole
AF300-0R7G/1R5L-4	230	80	165	215	52	M5
AF300-1R5G/2R2L-4						
AF300-2R2G/3R7L-4						
AF300-3R7G/5R5L-4						
AF300-5R5G/7R5L-4	255	90	165	245	50	M5
AF300-7R5G/011L-4						
AF300-011G/015L-4	300	100	205	290	70	M6
AF300-015G/018L-4						
AF300-018G/022L-4	350	120	230	340	70	M6
AF300-022G/030L-4						
AF300-030G/037L-4	465	150	250	455	90	M6
AF300-037G/045L-4						

AE300 series product mounting dimensions

Model	Outline and mounting dimensions (mm)					
	H	W	D	H1	W1	Installation hole
AE300-0R7G-4	165	90	125	155	75	M5
AE300-1R5G-4						
AE300-2R2G-4						
AE300-3R7G/5R5L-4	185	95	135	175	85	M5
AE300-5R5G/7R5L-4						
AE300-7R5G/011L-4	255	145	190	240	130	M5
AE300-011G/015L-4						
AE300-015G/018L-4	320	170	205	305	150	M5
AE300-018G/022L-4						
AE300-022G/030L-4	360	220	210	340	130	M7
AE300-030G/037L-4						
AE300-037G/045L-4	415	270	250	400	215	M7
AE300-045G/055L-4						
AE300-055G/075L-4	610	260	300	590	175	M7
AE300-075G/090L-4						
AE300-090G/110L-4	640	290	330	620	190	M7
AE300-110G/132L-4						
AE300-132G/160L-4	720	310	405	700	205	M8
AE300-160G/185L-4						
AE300-185G/200L-4						
AE300-200G/220L-4	930	310	405	875	205	M9
AE300-220G/250L-4						
AE300-250G/280L-4						
AE300-280G/315L-4	1000	460	480	940	380	M10
AE300-315G/355L-4						
AE300-355G/400L-4						
AE300-400G-4						
AE300-450G-4	1060	650	350	960	450	M10
AE300-500G-4						

Chapter 2 Mechanical Installation

2.1 Environment

- Install the Variable Frequency Drive in an area without dust, metal powder, oil, water, or other unwanted materials.
- Install the Variable Frequency Drive in an area without oil mist, corrosive gas, or flammable gas, explosive gas.
- Install the Variable Frequency Drive in an area without radioactive or flammable materials; keep wood and other flammable materials away from the Variable Frequency Drive.
- Install the Variable Frequency Drive in an area without harmful gas or fluids.
- Install the Variable Frequency Drive in an area without salt.
- Install the Variable Frequency Drive in an area without direct sunlight.
- Do not leave drilling residues inside the Variable Frequency Drive when installation.
- Install the Variable Frequency Drive vertically for sufficient airflow to cool the Variable Frequency Drive in the electric control cabinet, use a cooling fan or air conditioner to keep the internal air temperature in the permitted range.
- It is recommended to install the heat sink outside the cabinet for harsh installation environments.

2.2 Direction and Clearances

As shown in the following figure, please install the Variable Frequency Drive vertically to obtain sufficient airflow for cooling. Ensure there is sufficient space for wiring and airflow to cool the Variable Frequency Drive.

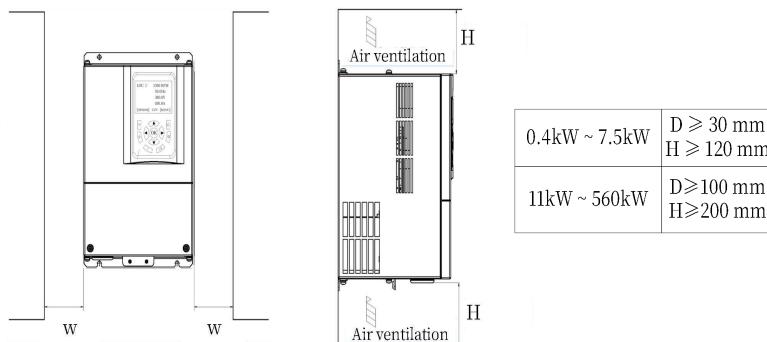


Figure2-1 Space for wiring and airflow

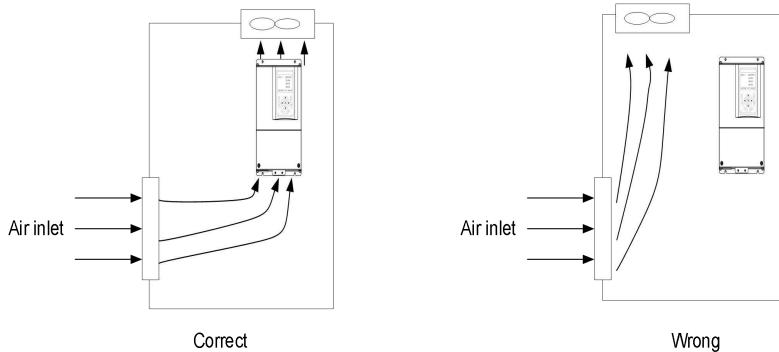


Figure 2-2 Vertical installation

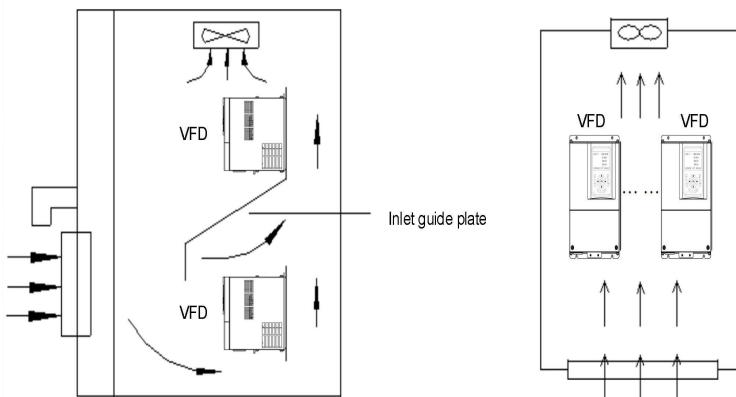


Figure 2-3 Parallel installation

Chapter 3 Electrical Installation

3.1 Peripheral Devices Connection

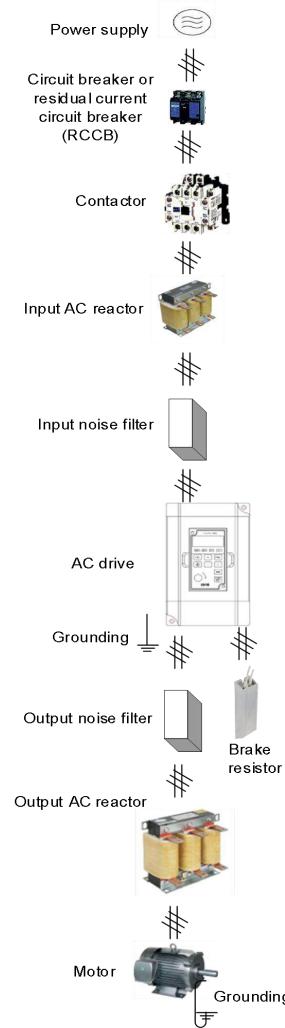


Figure 3-1 Connection diagram of the product and peripheral devices

3.2 Peripheral Devices Description

Device	Model selection reference
Circuit breaker	The circuit breaker capacity should be 1.5 to 2 times of the VFD rated current. The time characteristics of the circuit breaker must fully consider the time characteristics of the VFD overload protection.
RCCB	Residual current circuit breaker. The VFD output is high-frequency pulse so as generates leakage current to ground. When a RCCB is installed at the input end, please use a specialized RCCB. It is suggested to choose type B RCCB and set the leakage current higher than 300mA.
Contactor	Frequent contactor action will cause VFD failure, the maximum frequency for the open and close the contactor shall not exceed 10 times/min. When using brake resistor and/or external brake chopper, a protective function should be installed to protect the brake resistor and/or chopper. Once a fault occurs, the power contactor should be disconnected.
Input AC reactor	When there are the following requirements, an AC reactor should be installed on the input side of the VFD. <ol style="list-style-type: none"> 1. The supply capacity is more than 600kVA or 10 times of the VFD capacity. 2. If there is switch type reactive power compensation capacitors or thyristor phase-controlled load on the same power node. There will be a large peak current flowing into the VFD, which will cause damage to the rectifier. 3. When the voltage imbalance of VFD's three-phase power supply exceeds 3%, it may cause interference to the system or cause damage to the rectifier. 4. The input power factor of the VFD is required higher than 90%, and the input AC reactor can improve the power factor of the input side. 5. Improve the input side of the high-order harmonic; prevent distortion of voltage waveform from causing damage to other equipment. 6. Improve the impact of high order harmonics on the input side of the VFD and reduce external conducted and radiated interference.
Input noise filter	It can reduce the interference from power supply to the VFD and improve the anti-interference ability of the VFD. It can reduce the external conduction and radiation interference of the VFD.
Thermal protection relay	Although the VFD has its own motor overload protection function, when an VFD drives two or more motors or drives a multi-poles motor, a thermal protection relay shall be installed between the VFD and each motor.
Output noise filter	It can reduce the external conduction and radiation interference of the VFD.
Output AC reactor	When the cable from the VFD to the motor exceeds 100 meters, an AC output reactor should be installed to suppress high-frequency oscillation, avoid motor insulation damage, prevent excessive leakage current and VFD protection.

3.3 Main Circuit Terminal

Symbol	Description
R, S, T	Power supply AC input terminals
PB, P+	Brake resistor connecting terminals
P+, —	DC bus
U, V, W	Three-phase AC output terminals
	Grounding terminal PE

Figure 3-2 Main circuit terminals

3.4 Attention for Main Circuit Wiring

3.4.1 Power Supply Wiring

- ◆ Do not connect the power supply to VFD output terminal; otherwise, the VFD will be damaged.
- ◆ For input side over-current protection and maintenance conveniently, the VFD should connected to the power supply through a breaker or RCCB and contactor.
- ◆ Please confirm the power supply phases and rated voltage are consistent with the nameplate of the VFD, otherwise the VFD may be damaged.

3.4.2 Motor Wiring

- ◆ Do not connect output terminals to the GND or short to earth. the VFD will be damaged or serious injury or death.
- ◆ Avoid output cables (U/V/W) short circuit or short circuit to enclosure, otherwise there is a risk of electric shock.
- ◆ It is strictly prohibited to connect a capacitor or phase lead LC/RC noise filter to the output of the VFD, otherwise the VFD will be damaged.
- ◆ When a contactor is installed between the VFD and the motor, the contactor cannot switch ON or OFF when the Variable Frequency Drive running, otherwise may occur over-current fault, even damage to the Variable Frequency Drive.
- ◆ When the cable between the VFD and the motor is too long, the high-order harmonic leakage current at the output will adversely affect the VFD and peripheral devices. It is recommended to install an output AC reactor when the motor cable exceeds 100 meters, and contact the manufacturer to inquire whether require change the carrier frequency.

Cable length between VFD and motor	< 50 m	<100 m	> 100 m
PWM frequency	<15kHz	<10kHz	<5kHz

3.4.3 Ground wiring

- The VFD generates leakage current, and the higher the carrier frequency, the more the leakage current. The leakage current of the VFD is higher than 3.5mA. The leakage current is determined by the conditions of use. To ensure safety, the VFD and motor must be grounded.
- The grounding resistance should less than 10Ω . For the wire diameter requirements of the grounding cable.
- Do not share the grounding wire with welding machines and other power equipment.
- When using two or more VFDs, the grounding wire should not form a loop.

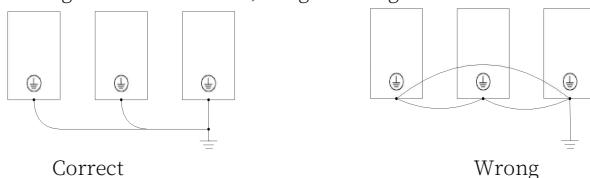


Figure 3-3 Grounding wiring

3.4.4 Countermeasures for Conduction and Radiation Interference

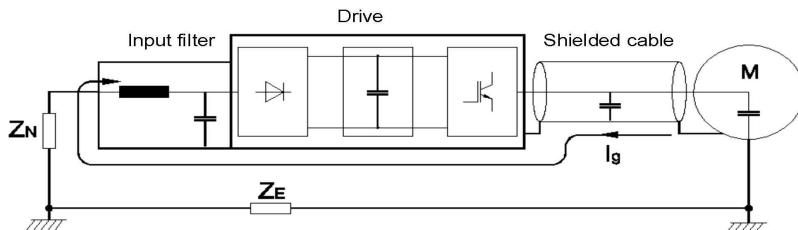


Figure 3-4 Noise current illustration

- If an input noise filter is installed, the wiring from the filter to the input power supply of the VFD should be as short as possible.
- The outer casing of the filter and the mounting cabinet should be reliably connected over a large area to reduce the return impedance of the noise current I_g .
- The cable distance between the VFD and the motor should be as short as possible, and the motor cable should use 4-core cable. One end of the ground cable is grounded to the VFD side, the other end is connected to the motor enclosure, and the motor cable is inserted into a metal tube.
- The input power cable and output motor cable should be as far away as possible.
- The susceptible equipment and signal cables should be installed as far away as possible from the VFD.

- ◆ Critical signal cables should use shielded cables. It is recommended that the shield layer be grounded by a 360-degree grounding method and inserted into the metal tube. Keep away from the input power cable and output motor cable. If a signal cable must cross the input power cable or the output motor cable, they should be orthogonal.
- ◆ When the frequency reference source is analog input (voltage or current signal), use a double-stranded shielded cable and connect the shield layer to the grounding terminal PE of the VFD. The signal cable length must less than 50 meters.
- ◆ The wiring of the control circuit relay output signal (TA/TB/TC) and other control circuit signal should be separate.
- ◆ It is strictly forbidden to short-circuit the shield layer with other signal cables and equipment.
- ◆ When the VFD is connected to an inductive load device (magnetic contactor, relay, solenoid valve, etc.), be sure to use a surge suppressor on the load device coil as shown below.

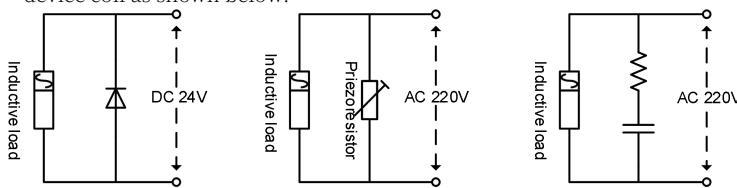


Figure 3-5 Application of inductive load surge suppressor

3.5 Terminal Wiring

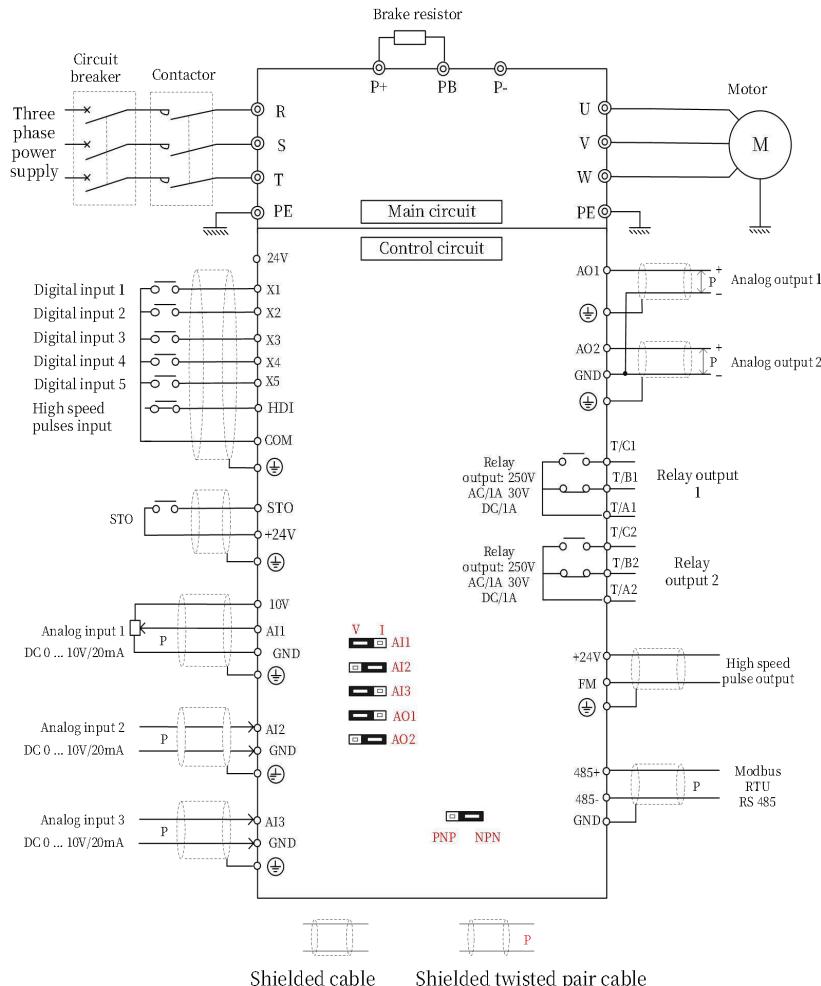


Figure3-6 AF300 Terminal wiring diagram

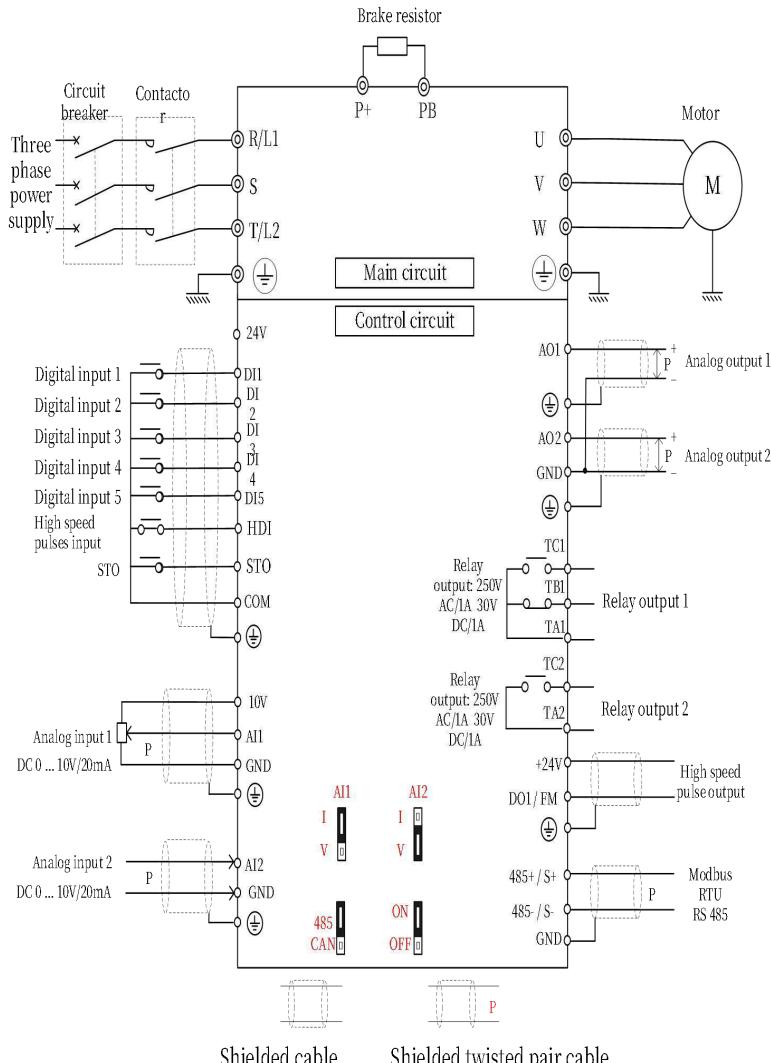


Figure3-7 AE300 series product terminal wiring diagram

3.6 Control Circuit Description

Terminal	Symbol	Function description	Technical specifications
AI & AO	10V	+10V power supply	Maximum output current: 10mA
	GND	GND	GND of 10V and analog
	AI1	Analog input 1	0V ... 10V/20mA, selected by jumper
	AI2	Analog input 2	0V ... 10V/20mA, selected by jumper
	AO1	Analog output 1	0 ... 10V
	AO2	Analog output 2	0 ... 20mA
DI & DO	24V	+24V power supply	Maximum output current: 50mA
	COM	COM	24V GND
	DI1 ... DI5	Digital inputs 1 ... 5	
	HDI	High-speed pulse input	High speed pulse input: 0.10~50.00 KHz
	STO	Safe torque off	
Relay outputs	TA1	Programmable relay output	Capacity: 250VAC/1A, 30VDC/1A, resistive load
	TB1		
	TC1		
	TA2	Programmable relay output	Capacity: 250VAC/1A, 30VDC/1A, resistive load
	TC2		
High speed pulses output	DO1 / FM	Programmable high speed digital output	Pulses output: 0.1kHz ... 50kHz Voltage range: 24V ± 20%.
RS485	S+ / 485+	RS485 positive end	● Modbus RTU format
	S- / 485-	RS485 negative end	● Baud rate: 4800, 9600, 1920 ~ 921600bps

1. The arrangement sequence of the control circuit terminals is as follows:



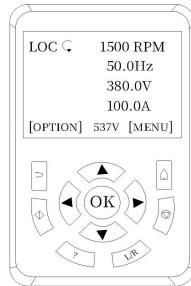
2. Control Circuit Peripheral Devices

Terminal number	Terminal screw	Tightening torque (N·m)	Cable mm ²	Cable type
10V, AI1, AI2, 485+, 485-, AO1, GND	M3	0.5 ... 0.6	0.75	Shielded twisted pair cable
+24V, COM, DI1, DI2, DI3, DI4, DI5, STO, HDI, FM, TA1, TB1, TC1, TA2, TC2	M3	0.5 ... 0.6	0.75	Shielded cable

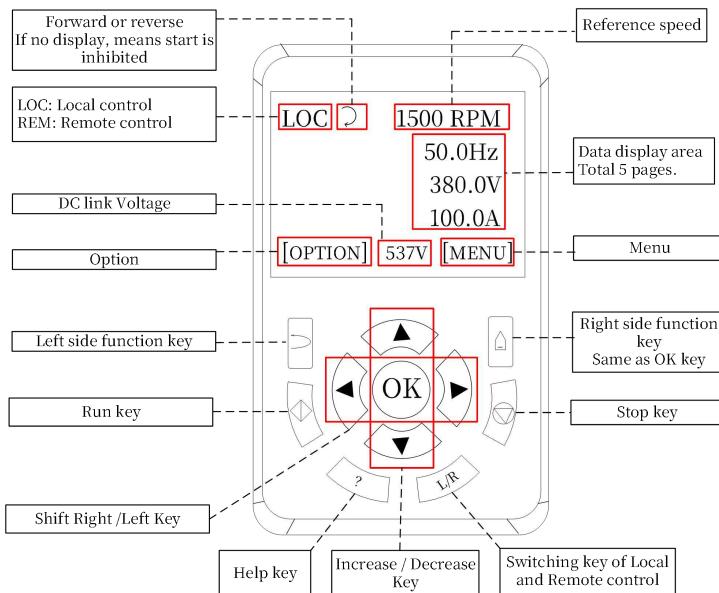
Chapter 4 Control Panel

4.1 Control Panel Description

This chapter describes the displays, keys and operations of the control panel. The control panel can be used to control drives, read status data, and set the parameters.



4.2 Display and Keys



4.3 Control Panel Operation

Basic operation of the drive

Task	Actions
Set the language	 <p>In home view, press  key</p>  <p>In menu view, press  key move to 8, and press  key</p>
	 <p>In SETTING view, press  key move to 1 and press </p>  <p>1= English 2=Chinese</p>
Switch between local and remote control.	Press the  key. Remote-control mode will show the words REM on the left side of status bar and Local control mode will show the words LOC on the left side of status bar.
Start and stop the drive.	<p>In local control, press  key to start the drive and  key to stop the drive.</p> <p>Note: this function is locked when the drive is running. Using the parameter <i>1600 Local lock</i> to disable the drive to enter the local control mode.</p>
Set the reference in the home view.	<p>In local control:</p> <ol style="list-style-type: none"> ① Press  key and  to change the speed directly. ② Go to OPTION → Reference, set the reference with the arrow keys.
Change the direction of motor rotation.	<p>In local control:</p> <ol style="list-style-type: none"> ① Press  key or  key to change the speed direction directly. ② Go to OPTION > Direction, set the direction via  key or .
Add parameters to home view	Go to OPTION → Edit home view
View/edit parameters	Go to MENU → Parameters to view parameters.
Restore to default value.	Go to MENU → Settings → Reset to defaults
View the modified parameters	Go to Menu → Parameters → Changed params.

Initially, the control keyboard is in the main interface. The upper right corner of the LCD shows the current given value. The LCD shows up to 3 signals in one page for real time monitoring to the drive. 3 signals constitute one monitoring page. Up to 8 pages, totally 24 signals can show. Each signal can be flexibly indicated to any of the parameters of the drive.

When a fault or warning occurs, the information of fault or warning pop-up, as shown in the figure, Press the left function key to reset the fault. Then the right function key loses its effect. Press the navigation keys (up and down for four direction keys), you can hide faults or warning messages. If it lasts 3 seconds (fault) or 30 seconds (alarm) and no keys act, the fault or warning message will pop up again. Meanwhile, the warning messages will disappear automatically after the warning disappears.

In the main interface, press the **right function key**  to enter the main menu. There are 8 submenus in the main menu including: parameters, modified parameters, fault logs, parameters change log, assistant, parameter backup, system information and settings.

In the main interface, press the **left function key**  to enter the options menu. There is a total of 3 submenus in the option menu: interface. Thereinto, the local given is used to modify the local given value, motor rotation direction for switching the motor steering; edit main interface for selecting the monitoring signal of the main interface.

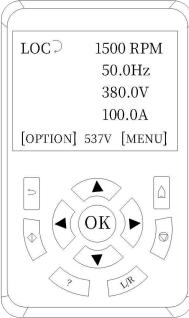
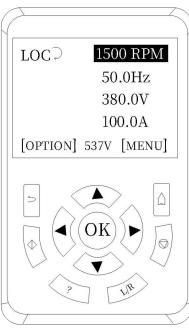
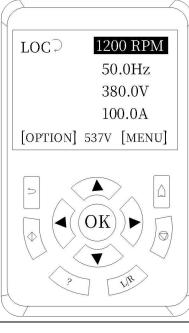
LOC	MESSAGE
FAULT	02
	Over current
	1.0A

LOC ↴	MAIN MENU 1
Parameters	
Changed params	
Fault logs	
Param change logs	
[EXIT]	537V [ENTER]

LOC ↴	OPTIONS 1
Reference	
Direction	
Edit home view	
[EXIT]	537V [ENTER]

Main Interface Mode

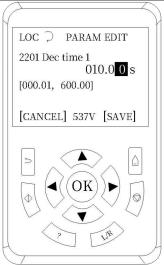
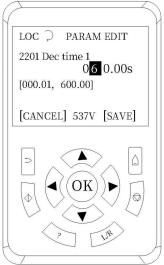
How to modify the speed, frequency or torque given value

Step	Action	Display
1	If it is not in the main interface, press the left functional key again till the return to the main interface.	
2	If the given value is not in the highlighted status, it indicates that the given value cannot be modified. At this point, you can switch to the local control mode or modify the given source to keypad.	
3	Press the up arrow to increase the given value, press the down arrow to reduce the given value. Press one of the two and keep not to loose, the settings will change quickly and the modified value will take effect immediately. The given value will be saved to the permanent memory of the drive, and will automatically recover after the power is turned off.	

How to select a parameter and views its value

Step	Action	Display
1	If in the options menu, press or hold down the left function keys to return to the main interface.	
2	If in the main interface, press the right function button to enter the main menu, otherwise press the left function key repeatedly until the return to the main menu. Use the navigation keys (up and down or so four direction keys) and select the parameter list, press the right function key or the OK key to enter the submenu of the parameters.	
3	The first two-digit numbers of each line that displayed in the central part of the LCD are the parameters set number. Initially, the first set of parameters is selected (highlighted). Using the navigation keys (up and down or so four direction keys) to select the specified parameter group of parameters, then press the right function key or the OK bottom to enter the parameter view mode.	
4	The first four-digit numbers of each line that displayed in the central part of the LCD are the parameters address. Initially, the first parameter is selected, and the current value of this parameter is displayed next (highlighted). Use the navigation keys (up and down or so four direction keys) to select the appropriate parameters to view its values.	

How to modify values of numeric type parameters

Step	Action	Display
1	Select a numeric type parameter and then press the right function key or the OK button to enter the parameters edit mode. For this type of parameter, the first line of the central LCD shows its address and name, the second line shows its current value and unit, while the third line shows its range.	
2	Use the up and down arrow keys to modify the value of the selected parameter, while pressing the two keys can restore its default value. The initial cursor is located in the unit position of the parameter value (highlighted), press the left and right arrow keys to move the cursor. Press the up and down arrow keys, the parameter values change quickly.	
3	To save the modification to make the new value valid, press the right function key or the OK button. To discard the modification and keep the original value, press the left function key.	

Chapter 5 Parameters list

Description of each meaning in the parameters list

Item	Explanation											
No.	Indicates the number of the parameter, such as 0100.											
Name/Value	The name of parameter, which explains the parameter's meanings.											
Value	Allowable setting range. Value type: <ul style="list-style-type: none"> ● 16 bits signed integer, the value range of [-32768, 32767]. ● 216bits unsigned integer, the value range of [0, 65535]. ● Enumeration, a list of several options. ● Bits, a collection of up to 16 Boolean variables. ● Value pointer: Pointer to another parameter, taking the value of another parameter as its own value. <table border="1" style="margin-top: 10px; width: 100%;"> <tr> <td style="width: 33%;">Bit15 … bit8</td> <td style="width: 33%;">Bit7 … bit0</td> </tr> <tr> <td>Group number</td> <td>Index</td> </tr> </table> For example, if we want the pointer to point to parameter 0302, please set the pointer to P.03.02. ● Bit pointer: A pointer to one binary bit of another parameter, which takes the value of one binary bit of another parameter as its own value. <table border="1" style="margin-top: 10px; width: 100%;"> <tr> <td style="width: 33%;">Bit15 … bit10</td> <td style="width: 33%;">Bit9 … bit4</td> <td style="width: 33%;">Bit3 … bit0</td> </tr> <tr> <td>Group number</td> <td>Index</td> <td>Bit field</td> </tr> </table> For example, if we want the pointer to point to bit6 of parameter 0600, please set the pointer to P.06.00.06 		Bit15 … bit8	Bit7 … bit0	Group number	Index	Bit15 … bit10	Bit9 … bit4	Bit3 … bit0	Group number	Index	Bit field
Bit15 … bit8	Bit7 … bit0											
Group number	Index											
Bit15 … bit10	Bit9 … bit4	Bit3 … bit0										
Group number	Index	Bit field										
Description	Describe the parameters and values.											
Default	The parameter value after reset the default value											

01 Operating Data

No.	Name	Description	Unit
0100	Motor speed	The filtered motor speed	0.1RPM
0101	Output freq	Actual output frequency	0.1Hz
0102	DC bus volt	DC link voltage	0.1V
0103	Motor current	Actual motor current	0.1A
0104	Mot current %	Motor current, 100.0% = motor rated current	0.1%
0105	Heat sink temp.	Heat sink temperature	0.1°C
0106	Rectifier temp.	Rectifier temperature.	0.1°C
0107	CPU temperature	reserved	0.1°C
0108	IGBT Tjc est	reserved	0.1°C
0109	IGBT Tj	IGBT chip temperature	0.1°C
0110	IGBT power loss	IGBT loss power	0.001kW
0111	CPU usage	CPU usage	0.1%
0112	Motor slip est	Motor slip frequency	0.01Hz
0113	Motor flux est	Estimated value of motor magnetic flux	0.1%
0114	Encoder counter		/
0115	Pulse counter		/
0116	Z mark latch		/
0117	Pos ref raw		/
0118	Actual position		/
0119	PLL freq	Measured back EMF frequency of PM motor	0.01Hz
0120	PLL volt	Measured back EMF voltage of PM motor	0.1V
0121	Output volt	Actual output voltage	0.1V
0122	Motor torque	100.0 % = motor rated torque	0.1%
0123	Motor temperature	Motor temperature	0.1°C
0124	Encoder speed	Actual motor speed measured by encoder	0.1RPM
0125	Udc ripple		1V
0126	Spd refl gain	Gain of the speed reference 1 used only in the PID mode	/
0127	Power factor		0.001
0128	Output power		0.1kW
0129	Temp chg rate	Temperature change rate	0.1°C
0130	Modulation depth		0.1%
0131	LOS cnt		/
0132	DOS cnt		/
0133	LOT cnt		/
0134	PM elect angle err		0.1deg

No.	Name	Description	Unit
0135	Ambient temp		0.1°C
0136	IGBT pla temp	Reserved	0.1°C
0137	Encoder turns	Reserved	/
0138	New added param	reserved	/
0139	New added param	reserved	/
0140	New added param	reserved	/
0141	New added param	reserved	0.1
0142	New added param	reserved	/
0143	New added param	reserved	0.1

02 DI & DO & AI & AO

No.	Name	Description	Unit
0200	DI status	BIT6 ~ BIT0: DI7 ~DI1	/
0201	DO status	BIT3 ~ BIT0: RO2, RO1, DO2, DO1	/
0202	AI1 actual		0.001V
0203	AI1 scaled		/
0204	AI2 actual		0.001V / 0.001mA
0205	AI2 scaled		/
0206	AI2 actual		0.001V / 0.001mA
0207	AI2 scaled		/
0208	AO1 actual		0.001V / 0.001mA
0209	AO2 actual		0.001V / 0.001mA
0210	HDI actual		Hz
0211	HDI scaled	CPU usage	-
0212	HDO actual	Motor slip frequency	1Hz
0213	Control panel ref1	Estimated value of motor magnetic flux	0.1%
0214	Control panel ref2		1RPM
0215	Fieldbus ref1		1RPM
0215	Fieldbus ref2		0.1%
0217	Speed ffwd		1RPM

03 Reference Value

No.	Name	Description	Unit
0300	Speed ref output	The output value of speed given module.	1rpm
0301	Motor potent out	The speed given value of the digital potentiometer, can be achieved by the terminal for the addition and subtraction of the speed given.	1rpm
0302	Const speed out	The output given value for the multi segment speed function module.	1rpm
0303	Speed ref unramp	Use the speed given value before the ramp and the forming speed.	1rpm
0304	Speed ref ramped	Ramp and forming speed given.	1rpm
0305	Control mode used	Actually implemented control mode.	-
0306	Torque ref unramp	The value of the torque given before the ramp input is the percentage of the relative maximum torque.	0.1%
0307	Torque ref ramped	Ramp torque given value, As percentage.	0.1%

04 App Values

No.	Name	Description	Unit
0400	Process act1	Process feedback1 of the process PID controller.	-
0401	Process act2	Process feedback2 of the process PID controller.	-
0402	Process act	Final process feedback for process feedback selection and modification.	-
0403	Process PID err	Process PID deviation value, that is, the difference value between the PID set point and the feedback.	-
0404	Process PID out	Output of the process PID controller.	-
0405	Line spd act	Actual value of the winding control line speed.	0. 1m/min
0406	Trq out Nm	Torque control volume of the winding control. Unit is Nm.	0. 1Nm
0407	Trq out percent	The torque control quantity of the winding control. Unit is %.	0.1%
0408	Tense ref	Tension given value of the winding control.	0. 1N
0409	Tense ref taped	Tension given value of the corrected tension taper.	0. 1N
0410	Roll dia est	Roller diameter estimated value of the winding control.	1mm
0411	Pulse counter	The external circles of signal count value used for measuring the roller diameter .	1

05 Timer & Counter

No.	Name	Description	Unit
0500	Run time: sec	Less than one hour at current running time, the parameter will return to zero automatically when accumulated to 3600.	1s
0501	Run time: hour	One or more than one hour at current running time. When the parameter 0500 accumulated to 3600, it will be incremented by 1.	1h
0502	Power on time: s	Less than one hour at current power on time. This parameter will return to zero automatically when accumulated to 3600.	1s
0503	Power on time: h	One or more than one hour at current power on time, when the parameter 0502 accumulated to 3600, it will be incremented by 1.	1h
0504	Total run time: s	Less than one hour for the cumulative running time, this parameter will return to zero automatically when accumulated to 3600.	1s
0505	Total run time: h	One or more than one hour for the cumulative running time, when the parameter 0504 accumulated to 3600, it will be incremented by 1.	1h
0506	Total power on: s	Less than one hour for the cumulative power on time, this parameter will return to zero automatically when accumulated to 3600.	1s
0507	Total power on: h	One or more than one hour for the cumulative power on time, when parameter 0506 accumulated to 3600, it will be incremented by 1.	1h
0508	Fan on time: s	Less than one hour for the cumulative fan running time, this parameter will return to zero automatically when accumulated to 3600.	1s
0509	Fan on time: h	One or more than one hour for the cumulative fan running time, when the parameter 0508 accumulated to 3600, it will be incremented by 1.	1h

No.	Name	Description	Unit
0510	EEP ROM wr tick	Less than one thousand times for the total number of writing the EEPROM memory. This parameter will return to zero automatically when accumulated to 1000.	-
0511	EEP ROM wr tick k	Reaching or exceeding one thousand times for the total number of writing the EEPROM memory. When the parameter 0510 accumulated to 1000, it will be incremented by 1.	-
0512	Max udc	The highest recorded value of the bus voltage.	0.1V
0513	Max Imag	The highest recorded value of the output current.	0.1A
0514	Max Tj	The highest recorded value of the IGBT chip temperature.	0.1 °C
0515	Max T_heat sink	The highest recorded value of the radiator temperature.	0.1 °C
0516	Max T_cpu	The highest recorded value of the CPU temperature.	0.1 °C
0517	IGBT usage hour	IGBT equivalent use time.	1h
0518	IGBT usage sec	IGBT equivalent use time.	1s
0519	P_Mot_kWh	Electric power of the built-in electric energy meter, the kWh part.	0.1 kWh
0520	P_Mot_MWh	Electric power of the built-in electric energy meter, the MWh part.	1 MWh
0521	P_Reg_kWh	Power generation of the built-in electric energy meter, the kWh part.	0.1 kWh
0522	P_Reg_MWh	Power generation of the built-in electric energy meter, the MWh part.	1 MWh

06 Drive Status

No.	Name	Description		
0600	Status word 1	Drive status word 1 .		
		Bit	Name	Information
		0	Ready	1=Drive ready to receive start command. 0=Drive not ready.
		1	Fault	1=Drive fault. 0=Drive no fault.
		2	Alarm	1=Drive warning. 0=Drive no warning.
		3	Limiting	1=Drive limited. 0= Drive unlimited.
		4	Running	1= Drive running. 0=Drive not running.
		5	Rev req	1=Drive starting reversal. 0=Drive starting forward.
		6	Start req	1=Driver received Start request. 0=Drive not received Start request.
		7	Stop req	1=Drive received shutdown request 0=Drive not received shutdown request.
		8	JOG active	1=Drive jog operation. 0=Drive jog function not activated.
		9	Int stop req	1=Drive internal forced shutdown activated. 0=Drive forced shutdown function not activated.
		10	Ext run enable	1=Drive external operation enabled. 0=Drive external operation not enabled.
		11	JOG2	1=Drive JOG2 activated. 0= Drive JOG1 activated.
		12	DC charged	1=DC high voltage capacitor charging completed. 0=DC high voltage capacitor charging not completed.
		13	Chg rly closed	1=Soft start relay ON. 0=Soft start relay OFF.
		14	Ext2	1=Control place2 activated. 0=Control place1activated.
		15	Loc ctrl	1=Drive operates in remote control mode. 0=Drive operates in the local control mode.

No.	Name	Description		
0601	Status word 2	Drive status word2		
		Bit	Name	
			Information	
		0	Data log	1 = OSC cache has been updated. 0 = OSC cache has not been updated.
		1	OFF1	1 = OFF1 (Deceleration stop) activated. 0 = OFF1 (Deceleration stop) not activated.
		2	OFF2	1 = OFF2 (EMS coast stop) activated. 0 = OFF2 (EMS coast stop) not activated.
		3	OFF3	1 = OFF3 (EMS DEC stop) activated. 0 = OFF3 (EMS DEC stop) not activated.
		4	Motor Brk	1 = activated. 0 = not activated.
		5	Ramp in zero	1 = Ramp input forced to zero. 0 = Normal operation.
		6	Ramp out zero	1 = Ramp output forced to zero. 0 = Normal operation.
		7	Ramp hold	1 = Ramp input forced to keep. 0 = Normal operation.
		8	Modulating	1 = Modulating, IGBT being controlled. 0 = No modulating.
		9	Modbus	1 = Built-in MODBUS activated. 0 = Built-in MODBUS not activated.
		10	CANopen	1 = Built-in CAN activated. 0 = Built-in CAN not activated.
		11	Profi-DP	1 = PROFIBUS-DP activated. 0 = PROFIBUS-DP not activated.
		12	Fan on	1 = Drive cooling fan is on. 0 = Drive cooling fan is off.
		13	Start block	1 = Start command not executed. 0 = Normal operation.
		14	ID run	1 = motor ID RUN is activated. 0 = None.
		15	Main power on	1 = The main power is on. 0 = The main power supply is not powered on properly or the voltage is insufficient.

No.	Name	Description	
0602	Status word 3	Drive status word 3	
		Bit	Name
		0	AC src active
			1=AC power mode activated
			0=DC power mode activated
		1	DC src active
			1=DC power mode activated
			0=DC power mode activated
		2	Start inhibit
			1 = Start inhibit
			0 = normal
		3	Spd ref limit
		4	Trqref limit
		5	Rem in local
		6	Imax limit
		7	Volt limit
		8	PM sync loss
		9	PM flux boost
		10	Zero freq
		11	Flux build
		12	Mech brake open
		13	Brake opened
		14	Brake checking
		15	Crane active

No.	Name	Description		
0603	Speed ctrl stat	Speed control status word.		
		Bit	Name	Information
		0	Zero speed	1 = Actual speed has reached zero speed limit and zero speed delay. 0 = Not enter the zero speed state.
		1	Reverse	1 = Reverse running 0 = Forward running
		2	Ramp up	1 = Ramp up, Speed absolute value increases. 0 = No acceleration.
		3	Ramp down	1 = Ramp down, speed absolute value decreases 0 = No deceleration.
		4	At set point	1 = Deviation of actual speed and ramp input in the speed window.
		5	Reserved VF	1 = VF scalar control activated. 0 = Vector control activated.
		6	Regen active	1 = Power generation operation. 0 = Jog operation.
		7	Reserved Open loop	1 = Open loop vector control activated. 0 = Open loop vector control not activated.
		8	Pos ctrl	1 = Position control activated.
		9	ACIM	1 = Asynchronous motor activated.
		10	PMSM	1 = Synchronous motor activated.
		11	SynRM	1 = Synchronous reluctance motor activated.
		12	ID run	1 = Motor parameter ID run activated.
		13	Torque limit	1 = Torque limiting
		14	Speed limit	1 = Speed limiting
		15	Exc active	1 = Pre-excitation of induction motor
0604	Infeed ctrl word	reserved		

No.	Name	Description		
0605	Fieldbus CW	Field bus control word		
		Bit	Name	Information
		0	Stop	1=Drive stop. 0=Maintain current status.
				1=Drive start. 0= Maintain current status.
		1	Start	1=Drive start. 0= Maintain current status.
		2	StopMode OFF2	1 = EMS stop mode.
		3	StopMode OFF3	1 = EMS coast stop mode.
		4	Local ctrl	1 = Request for local control.
		5	StopMode ramp	1 = Deceleration stop mode.
		6	StopMode coast	1 = Coast stop mode.
		7	Run enable	1 = Run enable. 0 = Run inhibit.
		8	Reset	0->1 = Reset drive fault.
		9	Jog1	1 = Jog 1 start.
		10	Jog2	1 = Jog 2 start.
		11	Remote	1 = Request for remote control.
		12	Ramp in 0	1 = Force the input of reference ramp generator as 0.
		13	Ramp hold	1 = Force the output of reference ramp generator to remain constant.
		14	Ramp out 0	1 = Force the output of reference ramp generator as 0.
		15	Ext2 sel	1 = Select external control location 2 (EXT2).

No.	Name	Description		
0606	Encoder SW	Encoder status word		
		Bit	Name	Information
		0	DOS	1 = DOS fault. 0 = Normal.
			LOT	1 = LOT fault. 0 = Normal.
		2	LOS	1 = LOS fault. 0 = Normal.
		3:15	Reserved	
0607	PosCtrl SW	Position control status word		
		Bit	Designation	Information
		0	Pos sync	1 = Position synchronized. 0 = Position not synchronized.
			Pos end	1 = Position completed. 0 = Position not completed.
		1	Mark rdy	1 = Reference signal ready. 0 = Reference signal not detected.
		2	Mark load	1 = Loaded. 0 = Not loaded.
		3:15	Reserved	

08 Fault&Alarm Log

No.	Name	Description	Unit
0800	Alarm Code	Latest Alarm Code.	-
0801	Fault Code	Latest Fault Code.	-

09 System Info

No.	Name	Description	Unit
0900	Driver ID	Drive hardware code.	-
0901	Drive type	Drive type .	-
0902	Firmware version	Drive firmware version.	-
0903	Encoder type	The encoder type identified by the expansion card slot SLOT1.	-
0904	PWM freq	The actual applied carrier frequency of the system.	-
0905	App macro active	The actual applied macro of the system.	-
0906	PM phase CM	The angle accuracy is sufficient to use when the common mode signal strength identified by the synchronous motor rotor initial angle reach to 150. It is used to instruct the user to adjust the parameter <i>6011</i> of the injection current size to achieve the best search.	-
0907	PM phase DIF	The angle accuracy is sufficient to use when the differential-mode mode signal strength identified by the synchronous motor rotor initial angle reach to 150. It will cause too loud noise if inject too much current; while the insufficient current signal strength may cause search error.	-

10 Start/Stop/Dir

No.	Name	Description	Default																				
1000	Ext 1 start func	Selects the source of start, stop and direction commands for external control location 1 (EXT1). See also parameters 1001, 1002 and 1003.	In1FWD; In2 REV =[2]																				
	Not selected	The start function of EXT1 is not selected.	0																				
	In1 RUN; In2 DIR	The start/stop source is selected by the parameter <i>1001 Ext1 start in1</i> (0= Stop, 1= Start). The direction source is selected by the parameter <i>1002 Ext1 start in2</i> (0=forward, 1=Reverse).	1																				
	In1 FWD; In2 REV	The forward start signal is selected by the parameter <i>1001 Ext1 start in1</i> . The reverse start signal is selected by the parameter <i>1002 Ext1 start in2</i> . The state transition of the signal source bits is interpreted as follows:	2																				
		<table border="1"> <thead> <tr> <th>State of input 1 (1001)</th> <th>State of input 2 (1002)</th> <th>Command</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>Stop</td> </tr> <tr> <td>1</td> <td>0</td> <td>Forward start</td> </tr> <tr> <td>0</td> <td>1</td> <td>Reverse start</td> </tr> <tr> <td>1</td> <td>1</td> <td>Stop</td> </tr> </tbody> </table>	State of input 1 (1001)	State of input 2 (1002)	Command	0	0	Stop	1	0	Forward start	0	1	Reverse start	1	1	Stop						
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0	0	Stop																					
1	0	Forward start																					
0	1	Reverse start																					
1	1	Stop																					
	RUN/STOP/DIR	The start signal is selected by the parameter <i>1001 Ext1 start in1</i> . The stop signal is selected by the parameter <i>1002 Ext1 start in2</i> . The direction signal is selected by the parameter <i>1003 Ext1 start in3</i> The state transition of the signal source bits are interpreted as follows:	3																				
		<table border="1"> <thead> <tr> <th>State of input 1 (1001)</th> <th>State of input 2 (1002)</th> <th>State of input 3 (1003)</th> <th>Command</th> </tr> </thead> <tbody> <tr> <td>0 -> 1</td> <td>0</td> <td>0</td> <td>Forward start</td> </tr> <tr> <td>0 -> 1</td> <td>0</td> <td>1</td> <td>Reverse start</td> </tr> <tr> <td>-</td> <td>1</td> <td>-</td> <td>Stop</td> </tr> <tr> <td>0</td> <td>0</td> <td>-</td> <td>Change Dir</td> </tr> </tbody> </table>	State of input 1 (1001)	State of input 2 (1002)	State of input 3 (1003)	Command	0 -> 1	0	0	Forward start	0 -> 1	0	1	Reverse start	-	1	-	Stop	0	0	-	Change Dir	
State of input 1 (1001)	State of input 2 (1002)	State of input 3 (1003)	Command																				
0 -> 1	0	0	Forward start																				
0 -> 1	0	1	Reverse start																				
-	1	-	Stop																				
0	0	-	Change Dir																				

No.	Name	Description	Default																				
1000	Ext 1 start func	Selects the source of start, stop and direction commands for external control location 1 (EXT1). See also parameters 1001, 1002 and 1003.	In1FWD; In2 REV =[2]																				
	FWD/REV/STOP	<p>The forward start signal is selected by the parameter <i>1001 Ext1 start in1</i>.</p> <p>The reverse start signal is selected by the parameter <i>1002 Ext1 start in2</i>.</p> <p>The stop signal is selected by the parameter <i>1003 Ext1 start in3</i>.</p> <p>The state transition of the signal source bits are interpreted as follows:</p> <table border="1"> <thead> <tr> <th>State of input 1 (1001)</th> <th>State of input 2 (1002)</th> <th>State of input 3 (1003)</th> <th>Command</th> </tr> </thead> <tbody> <tr> <td>0 -> 1</td> <td>0</td> <td>0</td> <td>Forward start</td> </tr> <tr> <td>0</td> <td>0-> 1</td> <td>0</td> <td>Reverse start</td> </tr> <tr> <td>-</td> <td>-</td> <td>1</td> <td>Stop</td> </tr> <tr> <td>1</td> <td>1</td> <td>0</td> <td>Stop</td> </tr> </tbody> </table>	State of input 1 (1001)	State of input 2 (1002)	State of input 3 (1003)	Command	0 -> 1	0	0	Forward start	0	0-> 1	0	Reverse start	-	-	1	Stop	1	1	0	Stop	4
State of input 1 (1001)	State of input 2 (1002)	State of input 3 (1003)	Command																				
0 -> 1	0	0	Forward start																				
0	0-> 1	0	Reverse start																				
-	-	1	Stop																				
1	1	0	Stop																				
	Field bus	Start/stop and direction is controlled by field bus communication control word.	5																				
	Panel	Start/stop and direction is controlled by control panel.	6																				

No.	Name	Description	Default
1001	Ext 1 start In1	Select the input source 1 of EXT1. <i>Refer to parameter 1000 Ext1 start func.</i>	DI1 = [2048]
	P.01.00.00 (Bit pointer)	User defined pointer. 01.00.00 from left to right take two digits as a set, indicates the parameter group number, index number in the group and the bit number. The actual value is determined by the current value of the parameter.	
	CONST.FALSE	0 (always OFF).	0
	CONST.TRUE	1 (always ON).	1
	DI1	Digital input DI1 (<i>parameter 0200, DI state, bit 0</i>)	2048
	DI2	Digital input DI2	2049
	DI3	Digital input DI3	2050
	DI4	Digital input DI4	2051
	DI5	Digital input DI5	2052
1002	Ext 1 start In2	Select the input source 2 of EXT1. For the available selections, see parameter <i>1001 Ext1 start In1</i> .	DI2 = [2049]
	Ext 1 start In3	Select the input source 3 of EXT1. For the available selections, see parameter <i>1001 Ext1 start In1</i> .	CONST.FALSE = [0]
1004	Ext2 start func	Selects the source of start, stop and direction commands for external control location 2 (EXT2). For the available selections, see parameter <i>1001 Ext1 start In1</i> .	Not selected
1005	Ext2 start In1	Select the input source1 of EXT2. For the available selections, see parameter <i>1001 Ext1 start In1</i> .	CONST.FALSE = [0]
1006	Ext2 start In2	Select the input source 2 of EXT2. For the available selections, see parameter <i>1001 Ext1 start In1</i> .	CONST.FALSE = [0]
1007	Ext2 start In3	Select the input source 3 of EXT2. For the available selections, see parameter <i>1001 Ext1 start In1</i> .	CONST.FALSE = [0]

No.	Name	Description	Default
1008	JOG1 start	Select the start signal source of Jogging 1. 1 = Jogging 1 active. For the available selections, see parameter <i>1001 Ext1 start In1</i> .	CONST.FALSE = [0]
1009	JOG2 start	Select the start signal source of Jogging 2. 1 = Jogging 2 active. For the available selections, see parameter <i>1001 Ext1 start In1</i> .	CONST.FALSE = [0]
1010	JOG enable	Selects the source for a jog enable signal. 1 = Jogging is enabled. For the available selections, see parameter <i>1001 Ext1 start In1</i> .	CONST.FALSE = [0]
1011	Fault reset sel	Select the source of the fault reset signal . 0 -> 1 = Reset .For the available selections, see parameter <i>1001 Ext1 start In1</i> .	CONST.FALSE = [0]
1012	Run enable	Select the source of enable signal for operation. 1 = Running enable signal is ON. For the available selections, see parameter <i>1001 Ext1 start In1</i> .	CONST.TRUE = [1]
1013	Emergency stop	Select the source of the emergency stop signal. 0 = Emergency stop. For the available selections, see parameter <i>1001 Ext1 start In1</i> . 1 = No action.	CONST.TRUE = [1]
1014	EM stop mode	Selection of emergency stop mode.	OFF2 = [1]
	OFF1	Deceleration stop according the acceleration and deceleration time1.	0
	OFF2	Coast stop	1
	OFF3	Deceleration stop according emergency stop time.	2
1015	Start enable	Select the source of start enable signal. 1 = Start enable signal is ON. For the available selections, see parameter <i>1001 Ext1 start In1</i> .	CONST.TRUE = [1]
1016	Upper limit	Select the signal source of the upper limit, 0: Limit activated, For the available selections, see parameter <i>1001 Ext1 start In1</i> . 1: Limit not activated.	CONST.TRUE = [1]
1017	Lower limit	Select the signal source of the lower limit. 0: Limit activated, For the available selections, see parameter <i>1001 Ext1 start In1</i> . 1: Limit not activated.	CONST.TRUE = [1]

11 Start/Stop Mode

No.	Name/Value	Start Stop Mode Settings	Def
1100	Stop mode	Stop mode.	RAMP= [0]
	RAMP	Stop along the active deceleration ramp.	0
	COAST	Stop by switching off the output semiconductors of the drive. The motor coasts to a stop.	1
1101	Ext 1/Ext2 sel	Selects the source for external control location EXT1/EXT2 selection. 0 = EXT1 1 = EXT2	CONST.FALSE =[0]
		P.01.00.00	User defined pointer (parameter bit pointer)
		CONST.FALSE	EXT1 (permanently selected).
		CONST.TRUE	EXT2 (permanently selected).
		DI1	Digital input DI1 (<i>0200 DI state, bit 0</i>)
		DI2	2048
		DI3	2049
		DI4	2050
		DI5	2051
		DI6	2052
		DI7	2053
			2054
1102	Ext 1 ctrl mode	Motor control mode of EXT1.	Speed = [0]
	Speed	Speed mode	0
	Torque	Torque mode	1
	Min	Speed and torque mode, take the minimum value of speed loop output or the torque reference.	2
	Max	Speed and torque mode, take the maximum value of speed loop output or the torque reference.	3
	Add	Speed and torque mode, take the sum of the speed loop output and the torque reference.	4
	Position	Point to point position control mode.	5
	Homing	Position control mode with origin regression.	6
	Profvel	Position control mode with trajectory planning.	7
1103	Ext2 ctrl mode	Motor control mode of EXT2. For the available selections, see parameter <i>1102 Ext 1 ctrl mode</i> .	Speed = [0]

No.	Name/Value	Start Stop Mode Settings	Def
1104	Local ctrl mode	Selects the operating mode for local control.	Speed = [0]
	Speed	Speed mode. Speed reference is defined by parameter <i>0213 Control panel ref 1</i> .	0
	Torque	Torque mode. Torque reference is defined by parameter <i>0214 Control panel ref 2</i> .	1
1105	Ext 1 trig type	Select the trigger mode for control1.	Level = [1]
	Edge	Edge trigger	0
	Level	Level trigger	1
1106	Ext2 trig type	Select the trigger mode for control2. For the available selections, see parameter <i>1105 Ext 1 trig type</i> .	Level = [1]

13 Analog & pulse input

No.	Name / Value	Description	Default
1300	AI1 input max	Maximum value of analog input AI1 . [0.000V, 10.000V]	10.000V -
1301	AI1 input min	Minimum value of analog input AI1. [0.000V, 10.000V]	0.000V -
1302	AI1 superv act	Action performed when AI1 exceeds the maximum or minimum range.	No action = [0]
	No action	No action .	0
	Fault	Report Fault.	1
	Alarm	Report Alarm.	2
1303	AI1 superv sel	Select the monitoring content of AI1 .	00b
	BIT0: AI min sup	1 = Activate monitoring whether the AI1 input is less than the value defined by parameter 1301.	0
	BIT1: AI max sup	1 = Activate monitoring whether the AI1 input is greater than the value defined by parameter 1300.	0
1304	AI1 calibration	AI1 correct selection.	No action = [0]
	No action	No action, or the action has been completed.	0
	AI_MIN_TUNE	1=Minimum value correction. 2=Maximum value correction.	1
	AI_MAX_TUNE	Before start tuning, please ensure the current analog input value is the minimum/maximum value.	2
1305	AI1 max scale	Maximum value of the converted analog AI1.	1500
	[-32768, 32767]	The maximum value of AI1 after scaled.	-
1306	AI1 min scale	The minimum value of the converted analog AI1 .	0
	[-32768, 32767]	The minimum value of AI1 after scaled.	-
1307	AI1 sim enable	A forced value parameter (1308 AI1 sim data) is provided for the AI1, and its value is applied whenever the parameter 1307 AI1 sim enable is set to "Enable" .	Disable = [0]
	Disable	The converted output of AI1 depends on the AI1 input.	0
	Enable	The converted output of AI1 depends on the parameter 1308 AI1 sim data .	1
1308	AI1 sim data	Simulation data of analog AI1.	0
	[-32768, 32767]	Set the converted output of AI1 when parameter 1307 AI1 sim Enable is set to Enable.	-
1309	AI1 filter time	Define the filtering time constant of analog AI1 .	0.10s
	[0.01s, 10.00s]	Filter time constant.	-

No.	Name / Value	Description	Default
1310	AI2 input max	Maximum value of analog input AI2. [0.000mA, 20.000mA] Range and unit are defined by parameter <i>1317 AI2 input type</i> (<i>AI2 Input type</i>). [0.000V, 10.000V]	10.000V 20.000mA
1311	AI2 input min	Minimum value of analog input AI2. [0.000mA, 20.000mA] Range and unit are defined by parameter <i>1317 AI2 input type</i> . [0.000V, 10.000V]	0.000 V 0.000mA
1312	AI2 superv act	The performed action when AI2 exceeds the maximum or minimum range. For the available selections, see parameter <i>1302 AI1 superv act</i> .	No action = [0]
1313	AI2 superv sel	Select the contents of AI2 monitoring. For the available selections, see parameter <i>1303 AI1 superv sel</i> .	00b
1314	AI2 calibration	AI2 calibration selection. For the available selections, see parameter <i>1304 AI1 calibration</i> .	No action = [0]
1315	AI2 max scale	Maximum value of the converted analog AI2.	1500
	[-32768, 32767]	The maximum value of AI2 after scaled.	-
1316	AI2 min scale	Minimum value of the converted analog AI2.	0
	[-32768, 32767]	The minimum value of AI2 after scaled.	-
1317	AI2 input type	Select the input type of analog AI2. Notes: <ul style="list-style-type: none">● Must check the DIP is in V side or I side.● When AI2 input is 4~20mA current , please set the parameter <i>1311 (AI2 input min)</i> to 4.000mA.	Voltage = [0]
	Voltage	Please move the AI2 jumper to "V" side	0
	Current	Please move the AI2 jumper to "I" side	1
1318	AI2 sim enable	Simulation enable of analog AI2. Refer to the parameter <i>1307 AI1 sim enable</i> .	Disable = [0]
1319	AI2 sim data	Simulation data of analog AI2. Refer to the parameter <i>1308 AI1 sim data</i> .	0
1320	AI2 filter time	Define the filter time constant of analog AI2.	0.10s
	[0.01s, 10.00s]	Filter time constant.	-

No.	Name / Value	Description	Default
1321	AI3 input max	Maximum value of analog input AI3. [0.000mA, 20.000mA] [0.000V, 10.000V]	10.000V 20.000mA -
		Range and unit are defined by parameter <i>1328 AI3 input type</i> .	-
1322	AI3 input min	Minimum value of analog input AI3. [0.000mA, 20.000mA] [0.000V, 10.000V]	0.000V 0.000mA -
		Range and unit are defined by parameter <i>1328 AI3 input type</i> .	-
1323	AI3 superv act	The performed action when AI3 exceeds the maximum or minimum range. For the available selections, see parameter <i>1302 AI1 superv act</i> .	No action = [0]
1324	AI3 superv sel	Select the contents of the AI3 monitor. For the available selections, see parameter <i>1303 AI1 superv sel</i> .	00b
1325	AI3 calibration	AI3 calibration selection. For the available selections, see parameter <i>1304 AI1 calibration</i> .	None = [0]
1326	AI3 max scale	Maximum value of the converted analog AI3.	1500
	[-32768, 32767]	The maximum value of AI3 after scaled.	-
1327	AI3 min scale	Minimum value of the converted analog AI3.	0
	[-32768, 32767]	The minimum value of AI3 after scaled.	-
1328	AI3 input type	Select the input type of analog AI3. Notes: <ul style="list-style-type: none">● Must check the DIP is in V side or I side.● When input is 4~20mA current input, please set the Parameter <i>1322 (AI3 input min) to 4.000mA</i>. For the available selections, see parameter <i>1317 AI2 input type</i> .	Voltage = [0]
1329	AI3 sim enable	Simulation enable of analog AI3. Refer to the parameter <i>1307 AI1 sim enable</i> .	Disable = [0]
1330	AI3 sim data	Simulation data of analog AI3. Refer to the parameter <i>1308 AI1 sim data</i> .	0
1331	AI3 filter time	Define the filter time constant of analog AI3.	0.10s
	[0.01s, 10.00s]	Filter time constant.	-

No.	Name / Value	Description	Default
1332	Freq input max	Maximum frequency of high speed pulse input. [0Hz, 60000Hz]	10000Hz -
1333	Freq input min	Minimum frequency of high speed pulse input. [0Hz, 60000Hz]	0Hz -
1334	Freq in max scale	The converted maximum output value of the frequency input.	1500
	[-32768, 32767]	The maximum value of the frequency input after scaled.	-
1335	Freq in min scale	The converted minimum output value of the frequency input.	0
	[-32768, 32767]	The minimum value of the frequency input after scaled.	-
1336	Freq in sim enable	Simulation enable of analog frequency input. Refer to the parameter 1307 AI1 sim enable.	Disable = [0]
	Disable	The frequency input conversion output depends on the actual high speed pulse input.	0
	Enable	The frequency input conversion output depends on the parameter 1337 Freq in sim data.	1
1337	Freq in sim data	Simulation data of the frequency input.	0
	[-32768, 32767]	Set the converted output of frequency input when parameter 1336 Freq in sim enable is set to Enable.	-
1338	Freq in filter time	Define the filter time constant of the frequency input.	0.10s
	[0.01s, 10.00s]	Filter time constant.	-

14 Digital I/O

No.	Name / Value	Description	Default
1400	DI1 on delay	Defines the activation delay for digital input DI1. [0, 65535 ms] Activation delay for DI1.	2ms
1401	DI1 off delay	Defines the deactivation delay for digital input DI1. [0, 65535 ms] Deactivation delay for DI1.	2ms
1402	DI2 on delay	Defines the activation delay for digital input DI2. See parameter <i>1400 DI1 on delay</i> .	2ms
1403	DI2 off delay	Defines the deactivation delay for digital input DI2. See parameter <i>1401 DI1 off delay</i> .	2ms
1404	DI3 on delay	Defines the activation delay for digital input DI3. See parameter <i>1400 DI1 on delay</i> .	2ms
1405	DI3 off delay	Defines the deactivation delay for digital input DI3. See parameter <i>1401 DI1 off delay</i> .	2ms
1406	DI4 on delay	Defines the activation delay for digital input DI4. See parameter <i>1400 DI1 on delay</i> .	2ms
1407	DI4 off delay	Defines the deactivation delay for digital input DI4. See parameter <i>1401 DI1 off delay</i> .	2ms
1408	DI5 on delay	Defines the activation delay for digital input DI5. See parameter <i>1400 DI1 on delay</i> .	2ms
1409	DI5 off delay	Defines the deactivation delay for digital input DI5. See parameter <i>1401 DI1 off delay</i> .	2ms
1410	DI6 on delay	Defines the activation delay for digital input DI6. See parameter <i>1400 DI1 on delay</i> .	2ms
1411	DI6 off delay	Defines the deactivation delay for digital input DI6. See parameter <i>1401 DI1 off delay</i> .	2ms
1412	DI7 on delay	Defines the activation delay for digital input DI7. See parameter <i>1400 DI1 on delay</i> .	2ms
1413	DI7 off delay	Defines the deactivation delay for digital input DI7. See parameter <i>1401 DI1 off delay</i> .	2ms

No.	Name / Value	Description	Default
1414	DO1 on delay	Defines the activation delay for relay output 1	0 ms
	[0, 65535 ms]	Activation delay for relay output 1.	
1415	DO1 off delay	Defines the deactivation delay for relay output 1	0 ms
	[0, 65535 ms]	Deactivation delay for relay output 1.	
1416	RO2 on delay	Defines the activation delay for relay output 2. <i>See parameter 1414 DO1 on delay.</i>	0 ms
1417	DO2 off delay	Defines the deactivation delay for relay output 2. <i>See parameter 1415 DO1 off delay.</i>	0 ms
1418	RO1 on delay	Reserved	0 ms
1419	RO1 off delay	Reserved	0 ms
1420	RO2 on delay	Reserved	0 ms
1421	RO2 off delay	Reserved	0 ms
1422	DI logic	The parameter is used to activate the inversion of digital inputs. Bits 0 ~ 6 reflect the status of DI1 ~ DI7. 0=No inversion 1= Inversion active	0000000b
1423	DI sim enable	Simulation enable of the digital input. 0=Simulation is disabled 1=Simulation is enabled	0000000b
	BIT0: DI1	1 = Force DI1 to value of bit 0 of parameter 1424	0
	BIT1: DI2	1 = Force DI2 to value of bit 0 of parameter 1424	0
	BIT2: DI3	1 = Force DI3 to value of bit 0 of parameter 1424	0
	BIT3: DI4	1 = Force DI4 to value of bit 0 of parameter 1424	0
	BIT4: DI5	1 = Force DI5 to value of bit 0 of parameter 1424	0
	BIT5: DI6	1 = Force DI6 to value of bit 0 of parameter 1424	0
	BIT6: DI7	1 = Force DI7 to value of bit 0 of parameter 1424	0
1424	DI sim data	Contains the values that the digital inputs are forced to when selected by parameter 1423 DI sim enable. <i>See parameter 1423 DI sim enable.</i>	0000000b
1425	DI status undelay	Displays the electrical status of digital inputs before the delay. The activation/deactivation delays of the inputs (if any are specified) are ignored. Bits 0 ~ 6 reflect the status of DI1~DI7	-

No.	Name / Value	Description	Default
1426	DO logic	The parameter is used to activate the inversion of digital outputs.	0000b
	BIT0: DO1	Relay 1 logic	0
	BIT1: DO2	Relay 2 logic	0
	BIT2:	Reserved	0
	BIT3:	Reserved	0
1427	DO sim enable	Digital output simulation enable. 0=Simulation is disabled 1=Simulation is enabled.	0000b
	BIT0: DO1	DO1 simulation enable or data	0
	BIT1: DO2	DO2 simulation enable or data	0
	BIT2: RO1	RO1 simulation enable or data	0
	BIT3: RO2	RO2 simulation enable or data	0
1428	DO sim data	Contains the values that the digital outputs are forced to when selected by parameter 1427 DO sim enable. See parameter 1427 DO sim enable.	0000b
1429	DO1 source	Selects a drive signal to be connected to DO1.	Running =[6148]
	P.01.00.00	User defined pointer (parameter bit pointer).	-
	CONST.FALSE	Output is not energized.	0
	CONST.TRUE	Output is energized.	1
	Ready	Ready (0600 Status word 1, bit 0)	6144
	Running	Drive running (0600 Status word 1, bit 4)	6148
	Fault	Driver fault (0600 Status word 1, bit 1)	6145
	Alarm	Drive alarm (0600 Status word 1, bit 2)	6146
	Start req	Drive received start request (0600 Status word 1, bit 6)	6150
	Ext2	Current controlled is EXT2 (0600 Status word 1, bit 14)	6158
	Loc ctrl	Drive in local control (0600 Status word 1, bit 15)	6159
	Zero speed	Drive output is 0 (0603 Speed control status word, bit 0)	6192
	Reverse	Reverse running (0603 Speed control status word, bit 1)	6193
	At setpoint	Actual speed has reached reference (0603 Speed control status word, bit 4)	6196
	Torq limit	Running in torque limit state (0603 Speed control status word, bit 13)	6205
	Speed limit	Running in speed limit state (0603 Speed control status word, bit 14)	6206

No.	Name / Value	Digital input and output	Def
1430	DO2 source	Set the signal source of DO1. For the available selections, see parameter <i>1429 DO1 source</i> .	Fault = [6145]
1431	RO1 source	Reserved	Running = [6148]
1432	RO2 source	Reserved	Fault = [6145]
1433	DO1 level type	Set DO1 signal type.	Level = [1]
	Edge	Output is edge pulse mode.	0
	Level	Output is level mode.	1
1434	DO1 edge type	Set DO1 signal type.	Rising = [0]
	Rising	Trigger the DO pulse output by rising edge.	0
	Falling	Trigger the DO pulse output by falling edge.	1
	Both	Trigger the DO pulse output by rising and falling edge.	2
1435	DO1 pulse width	Set the pulse output width of DO1.	500ms
	[0, 65535ms]		1ms
1436	DO2 level type	Set DO2 signal type.	Level = [1]
	Edge	Output is edge pulse mode.	0
	Level	Output is level mode.	1
1437	DO2 edge type	Set DO2 signal type.	Rising = [0]
	Rising	Trigger the DO pulse output by rising edge.	0
	Falling	Trigger the DO pulse output by falling edge.	1
	Both	Trigger the DO pulse output by rising and falling edge.	2
1438	DO2 pulse width	Set the pulse output width of DO2.	500ms
	[0, 65535ms]		1ms
1439 ~ 1444		Reserved	
1445	DO JOG mask	The parameter is used to disable the DO output function during jogging operation. For the available selections, see parameter <i>1426 DO logic</i> .	0

15 Analog & pulse out

No.	Name / Value	Digital input and output	Def
1500	AO1 source	Select a signal to be connected to analog output AO1.	Motor speed =[256]
	P.01.00	User defined pointer (parameter pointer).	-
	Zero	Always be 0.	0
	Motor speed	Refer to parameter <i>0100 Motor speed</i> .	256
	Output frequency	Refer to parameter <i>0101 Output frequency</i> .	257
	DC bus voltage	Refer to parameter <i>0102 DC bus voltage</i> .	258
	Motor current	Refer to parameter <i>0103 Motor current</i> .	259
	Motor current %	Refer to parameter <i>0104 Motor current %</i> .	260
	Motor slip est	Refer to parameter <i>0112 Motor slip est.</i>	268
	Output voltage	Refer to parameter <i>0121 Output voltage</i> .	277
	Motor torque	Refer to parameter <i>0122 Motor torque</i> .	278
	Motor temperature	Refer to parameter <i>0123 Motor temperature</i> .	279
	Output power	Refer to parameter <i>0128 Output power</i> .	284
1501	AO1 output max	Define the maximum AO1 output.	10.000V
	[0.000mA, 20.000mA] [0.000V, 10.000V]	The value range and the unit are determined by the parameter <i>1508 AO1 output type</i> .	-
1502	AO1 output min	Define the minimum AO1 output.	0.000V
	[0.000mA, 20.000mA] [0.000V, 10.000V]	The value range and the unit are determined by the parameter <i>1508 AO1 output type</i> .	-
1503	AO1 source max	Define the maximum value of the signal selected via the parameter <i>1500 AO1 source</i> . See parameter <i>1507 AO1 output mode</i> for corresponding output value of AO1.	15000
	[-32768, 32767]		-
1504	AO1 source min	Define the minimum value of the signal selected via the parameter <i>1500 AO1 source</i> . See parameter <i>1507 AO1 output mode</i> for corresponding output value of AO1.	0
	[-32768, 32767]		-

No.	Name / Value	Analog output and pulse output	Default
1505	AO1 sim data	Set the output voltage or current of AO1 when simulation enabled. [0mA, 20.000mA] [0V, 10.000V]	10.000V
			-
1506	AO1 sim enable	The value of the analog output can be overridden for eg. testing purposes. A forced value parameter (1505 AO1 sim data) is provided for the analog output, and its value is applied whenever the corresponding value this parameter is "Enable".	Disable = [0]
	Disable	The output voltage or current of AO1 depends on the actual value of the signal source.	0
	Enable	Force AO1 to value of parameter <i>1505 AO1 sim data</i> .	1
1507	AO1 output mode	The output mode determines the correspondence between the maximum and minimum values of the AO1 signal source and the AO1 output.	Normal = [0]
	Normal	Keep the symbol bit of the signal source. ● AO1 maximum output corresponds to the maximum value of the signal source. ● AO1 minimum output corresponds to the minimum value of the signal source.	0
	Absolute	Take the absolute value of the signal source. ● AO1 maximum output corresponds to the maximum absolute value of the maximum value and the minimum value. ● AO1 minimum output corresponds to 0.	1
1508	AO1 output type	AO1 output type, must be consistent with the jumper of the control board. Note: To achieve 4~20mA output, please set the parameter <i>1502 AO1 output min</i> to 4.000mA.	Voltage = [0]
	Voltage	Move the jumper to "V" side.	0
	Current	Move the jumper to "I" side.	1
1509	AO1 filter time	Define the filter time constant of AO1.	0.1s
	[0.01s, 10.00s]	Filter time constant.	-

No.	Name / Value	Analog output and pulse output	Default
1510	AO2 source	Select a signal to be connected to AO2. For the available selections, see parameter <i>1500 AO1 source</i> .	Motor current % = [260]
1511	AO2 output max [0.000mA, 20.000mA] [0.000V, 10.000V]	Define the maximum value of the AO2 output. The range value and the unit determined by the parameter <i>1518 AO2 output type</i> .	10.000V -
1512	AO2 output min [0.000mA, 20.000mA] [0.000V, 10.000V]	Define the minimum value of the AO2 output. The range value and the unit determined by the parameter <i>1518 AO2 output type</i> .	0.000V -
1513	AO2 source max [-32768, 32767]	Define the maximum value of the signal selected by the parameter <i>1510 AO2 source</i> . See parameter <i>1517 AO2 output mode</i> for corresponding AO2 output value.	15000 -
1514	AO2 source min [-32768, 32767]	Define the minimum value of the signal selected by the parameter <i>1510 AO2 source</i> . See parameter <i>1517 AO2 output mode</i> for corresponding AO2 output value.	0 -
1515	AO2 sim data	Simulation data of analog AO2. See parameter <i>1505 AO1 sim data</i> .	10.000V
1516	AO2 sim enable	Simulation enable of analog AO2. See parameter <i>1506 AO1 sim enable</i> .	Disable = [0]
1517	AO2 output mode	The output mode determines the correspondence between the maximum and minimum values of the AO2 signal source and the AO2 output. For the selections, see parameter <i>1507 AO1 output mode</i> .	Normal = [0]
1518	AO2 output type	AO2 output type, must be consistent with the jumper of the control board. Note: To achieve 4~20mA output, please set the parameter <i>1512 AO2 output min</i> to 4.000mA. For the available selections, see parameter <i>1508 AO1 output type</i> .	Voltage = [0]
1519	AO2 filter time [0.01s, 10.00s]	Define the filter time constant of AO2. Filter time constant.	0.1s -

No.	Name / Value	Description	Default
1520	Freq out source	Select a signal to be connected to pulse output. For the available selections, see parameter 1500 <i>A01 source</i> . Note: to use the frequency output function, user need to set the parameter 1528 <i>Freq out enable</i>	0
1521	Freq out max	Maximum frequency of high-speed pulse output.	10000Hz
	[0Hz, 60000Hz]		-
1522	Freq out min	Minimum frequency of high-speed pulse output.	0 Hz
	[0Hz, 60000Hz]		-
1523	Freq out src max	The actual signal value corresponding to the maximum frequency output value.	15000
	[-32768, 32767]		-
1524	Freq out src min	The actual signal value corresponding to the minimum frequency output value.	0
	[-32768, 32767]		-
1525	Freq out sim enable	In debugging or other applications occasion, user can enable the simulation function of the frequency output via this parameter. Note: to use this function, user need to enable the high-speed pulse output function by parameter 1528 <i>Freq out enable</i> .	Disable = [0]
	Disable	The output frequency depends on the actual signal value.	0
	Enable	The output frequency depends on the set value of the parameter 1526 <i>Freq out sim data</i> .	1
1526	Freq out sim data	When the frequency output simulation is enabled, set its output frequency.	10000 Hz
	[0Hz, 60000Hz]		-
1527	Freq out filter time	Define the filter time constant of the frequency output.	0.1s
	[0.01s, 10.00s]	Filter time constant.	-
1528	Freq out enable	User can enable the frequency output via this parameter.	Disable = [0]
	Disable	Frequency output function disabled.	0
	Enable	Frequency output function enabled.	1

16 System

No.	Name / Value	Description	Default
1600	Local lock	Select the signal source of inhibiting local control (LOC/REM button on the control panel). 0: local control permitted, 1: local control inhibited.	CONST.FALSE = [0]
	P.01.00.00	User defined pointer (parameter bit pointer).	-
	CONST.FALSE	Always be 0	0
	CONST.TRUE	Always be 1	1
	DI1	Digital input DI1 (<i>0200 DI state, bit 0</i>)	2048
	DI2	Digital input DI2	2049
	DI3	Digital input DI3	2050
	DI4	Digital input DI4	2051
	DI5	Digital input DI5	2052
	DI6	Digital input DI6	2053
	DI7	Digital input DI7	2054
1601	Parameter lock	Select the status of the parameter lock. The parameter lock prevents the parameter from being modified.	Open= [0]
	Open	Parameter lock open. Parameter values can be modified.	0
	Locked	Locked. The parameter values cannot be modified from the control keyboard.	1
	Not saved	Parameters lock open. User can modify the parameter values, but changes will not be saved if the power is cut off.	2
1602	Pass code	Enter different passwords to obtain different parameters access rights.	0
	[0, 65535]		-
1603	Param restore	Restore the default value of the parameters. This parameter is automatically restored to 0 only after the operation is complete. Affects only the currently active parameter set.	Done= [0]
	Done	No action or parameter restore completed.	0
	Default	Restore to custom defaults, excluding motor and encoder related parameters.	1
	Clear all	Restore all parameters to the custom defaults.	2
	Factory	Reserved for manufacturers.	3

No.	Name / Value	Description	Default														
1604	Param save manual	Save the parameters manually. This parameter is automatically restored to 0 after the operation is complete. Affects only the currently active parameter set.	Done=[0]														
	Done	No action or parameter save completed.	0														
	Save	Request to save the parameters to the memory, next time will be automatically restored when power on.	1														
1605	Param set sel	Load the specified parameter set to the current active parameter set, or save the current active parameter set to the specified parameter set. This parameter is automatically restored to 0 when the operation is completed.	No request=[0]														
	No request	No request or operation completed.	0														
	Load by I/O	The parameter set 1~4 is selected by a combination of parameter <i>1608 Para set in1</i> (Parameter set switch input 1) and <i>1609 Para set in2</i> (Parameter set switch input 2) Combined selection parameter set 1~4: <table border="1"> <tr> <th>Parameter set input 1 status</th> <th>Parameter set input 2 status</th> <th>Selected user parameter set</th> </tr> <tr> <td>0</td> <td>0</td> <td>Load the parameter set1</td> </tr> <tr> <td>1</td> <td>0</td> <td>Load the parameter set2</td> </tr> <tr> <td>0</td> <td>1</td> <td>Load the parameter set3</td> </tr> <tr> <td>1</td> <td>1</td> <td>Load the parameter set4</td> </tr> </table>	Parameter set input 1 status	Parameter set input 2 status	Selected user parameter set	0	0	Load the parameter set1	1	0	Load the parameter set2	0	1	Load the parameter set3	1	1	Load the parameter set4
Parameter set input 1 status	Parameter set input 2 status	Selected user parameter set															
0	0	Load the parameter set1															
1	0	Load the parameter set2															
0	1	Load the parameter set3															
1	1	Load the parameter set4															
Load set 1	Load parameter set 1 to the current active parameter set.	2															
Load set2	Load parameter set 2 to the current active parameter set.	3															
Load set3	Load parameter set 3 to the current active parameter set.	4															
Load set4	Load parameter set 4 to the current active parameter set.	5															
Save to set 1	Save current active parameter set to parameter set1.	6															
Save to set2	Save current active parameter set to parameter set2.	7															
Save to set3	Save current active parameter set to parameter set3.	8															
Save to set4	Save current active parameter set to parameter set4.	9															

No.	Name / Value	Description	Default
1608	Param set in1	This parameter is valid only when the parameter <i>1605 Param set sel</i> is set to 1 (Load by IO). P.01.00.00 User defined pointer (parameter bit pointer). CONST.FALSE Always be 0 CONST.TRUE Always be 1 DI1 Digital input DI1 (<i>parameter 0200 DI status, bit 0</i>) DI2 Digital input DI2 DI3 Digital input DI3 DI4 Digital input DI4 DI5 Digital input DI5 DI6 Digital input DI6 DI7 Digital input DI7	CONST. FALSE = [0] - 0 1 2048 2049 2050 2051 2052 2053 2054
	Param set in2	This parameter is valid only when the parameter <i>1605 Param set sel</i> is set to 1 (Load by IO). for available selections, see parameter <i>1608 Param set in1</i> .	CONST .FALSE = [0]
1610	Set as default	Set the current value of all parameters to default value. This parameter will automatically restore to 0 when the operation is completed. <i>Refer to parameter 1603 Param restore</i> .	Done = [0]
	Done	No request or operation completed.	0
	Save as default	Request to save the current value of all parameters as custom default value.	1

No.	Name / Value	Description	Default
1611	Fan on temp	Temperature value at cooling fan is turned on. [0.0, 150.0°C]	40.0°C
1612	Fan off temp	Temperature value at cooling fan is turned off. [0.0, 150.0°C]	30.0°C
1613	Fan off delay	Delay time of fan off after shutdown when using the operating signal to control the fan. [0.0, 6553.5s]	30.0s
1614	Fan ctrl mode	Control mode of the cooling fan.	Auto = [0]
	Auto	The fan operates automatically according to the temperature of the radiator.	0
	On while run	The fan runs, when drive running. When the drive stops, fan stops after delay.	1
	Always on	Fan always runs.	2
	Always off	Fan always stops. Be careful: select this mode may cause overheating.	3
1615	System reboot	System manual reset request. This parameter is automatically restored to 0 after the operation is completed.	No Request =0
	No request	No request or reset completed.	0
	Reboot request	Request reset.	1
1616	System language	System language setting.	Chinese = [1]
	English	Choose English as system language.	0
	Chinese	Choose Chinese as system language.	1

17 Data logger

No.	Name / Value	Description	Default
1700	Data log enables	Enable of the function of the software oscilloscope.	Enable = [1]
	Disable	Turn off the oscilloscope can save CPU resources.	0
	Enable	Enable oscilloscope	1
1701	Acquire mode	The data acquisition mode of the oscilloscope is consistent with the usage method of the physical	Normal = [1]
	Auto	No need to trigger the signal, the oscilloscope has been taking sample.	0
	Normal	Normal trigger mode. Collection will start each time the trigger condition is satisfied, until the entire screen updated.	1
	Single	Single trigger mode. Collection will start when the trigger condition is satisfied and will stop automatically when the collection is completed, waiting for the waveform to read.	2
1702	Sample rate	Data sampling rate, i.e. the number of points collected in 1 second. If 1000 represents a collection of 1000 points per second, that is one data per 1ms for collection. If the parameter exceeds the carrier frequency by 2 times, then the actual sampling rate will drop to 2 times of the carrier frequency.	1000Hz
	[10Hz, 24000Hz]	Sampling rate.	
1703	CH1 source	Selection of the signal source for oscilloscope channel 1	Iu
1704	CH2 source	Selection of the signal source for oscilloscope channel 2.	Iv
1705	CH3 source	Selection of the signal source for oscilloscope channel 3.	
1706	CH4 source	Selection of the signal source for oscilloscope channel 4.	
1707	CH5 source	Selection of the signal source for oscilloscope channel 5.	
1708	CH6 source	Selection of the signal source for oscilloscope channel 6.	
1709	CH7 source	Selection of the signal source for oscilloscope channel 7.	
1710	CH8 source	Selection of the signal source for oscilloscope channel 8.	

No.	Name / Value	Description	Default
1711	Trigger source	Selection of the signal source for oscilloscope trigger channel.	
1712	Force trig	Forced trigger request.	Done = [0]
	Done	Completed.	0
	Force trig	Forced trigger request.	1
1713	Trig level	Set the trigger level. This parameter does not work in auto-trigger mode.	0
	[-32768, 32767]	Set trigger level.	-
1714	Event trig source	Select the event triggered signal source. 0: No trigger, 1: trigger.	CONST.FALSE E = [0]
	P.01.00.00	User defined pointer (parameter bit pointer).	-
	CONST.FALSE	Always be 0	0
	CONST.TRUE	Always be 1	1
1715	Trig edge sel	The trigger edge setting, which is used for the signal source of the trigger, is specified by the parameter <i>1711 Trigger source</i> .	Rising = [0]
	Rising	Rising edge trigger acquisition.	0
	Falling	Falling edge trigger acquisition.	1
	Both	Rising and falling edge trigger acquisition.	2
1716	Event edge sel	The event edge setting used for trigger is specified by the parameter <i>1714 Event trig source</i> . Refer to the parameter <i>1715 Trig edge sel</i> for relevant available options.	Rising = [0]
1717	Channel num	Setting for the number of channels of the oscilloscope. When the number of channels is less than 8, the part of the parameters from <i>1703</i> ... <i>1710</i> does not work, by the front is preferred.	6
	[1, 8]	Channel number setting.	-
1718	Channel size	Data length of each channel. System automatically calculates, for PC use. Read only.	-

18 Fault log

No.	Name / Value	Description	Default
1800	Read index	The serial number of the fault record to be read. If you want to read the latest fault record, please set this parameter to 1. If you want to read the 10 th fault record, please set this parameter to 10. [0, 99]	0
1801	Fault record num	Indicates the total number of fault records.	-
1802	Fault record clear	Set this parameter to 1 and clear all fault records. This parameter is automatically restored to 0 when the operation is completed.	
1803	Fault code	The fault record index read from <i>parameter 1800</i> will be stored in <i>parameter from 1803 to 1820</i> , which including the fault code, the length, the address and the content of fault information.	
1804	Fault info len		
1805	Fault info1 addr		
1806	Fault info1 data		
1807	Fault info2 addr		
1808	Fault info2 data		
1809	Fault info3 addr		
1810	Fault info3 data		
1811	Fault info4 addr		
1812	Fault info4 data		
1813	Fault info5 addr		
1814	Fault info5 data		
1815	Fault info6 addr		
1816	Fault info6 data		
1817	Fault info7 addr		
1818	Fault info7 data		
1819	Fault info8 addr		
1820	Fault info8 data		
1821	Fault code 1	The 1 st fault code (the latest first fault code).	
1822	Fault code 2	The 2 nd latest fault code.	
1823	Fault code 3	The 3 rd latest fault code.	
1824	Fault code 4	The 4 th latest fault code.	
1825	Fault code 5	The 5 th latest fault code.	
1826	Fault code 6	The 6 th latest fault code.	
1827	Fault code 7	The 7 th latest fault code.	
1828	Fault code 8	The 8 th latest fault code.	

19 Speed Calculation

No.	Name / Value	Description	Default
1900	Speed scaling	Define the final speed value for acceleration, as well as the initial speed value in deceleration. Similar to the maximum frequency of drives.	1500rpm
	[150rpm, 30000rpm]		
1901	Speed filter time	Define the filtering time of the speed feedback.	2.0ms
	[0.0ms, 10.0ms]		
1902	Zero speed delay	Define the zero-speed holding time for acceleration stop.	0.5s
	[0.0s, 6000.0s]		
1903	Zero speed level	Define the initial speed value of zero speed holding.	30rpm
	[0 rpm, 1500rpm]		
1904	Speed window	Define the speed window range of the speed to reach.	30rpm
	[0rpm, 1500rpm]		

20 Limits

No.	Name / Value	Description	Default
2000	Maximum speed	Define the maximum allowed speed.	1500rpm
	[-30000rpm, 30000rpm]	Maximum speed.	
2001	Minimum speed	Define the minimum allowed speed.	-1500rpm
	[-30000rpm, 30000rpm]	Minimum speed.	
2002	Pos speed enable	Select the signal source of the corotation (speed given value is positive) to enable the command. 0: No positive rotation; 1: Allow positive rotation.	CONST.TRUE =[1]
	P.01.00.00	User defined pointer (parameter bit pointer)	-
	CONST.FALSE	Always be 0	0
	CONST.TRUE	Always be 1	1
	DI1	Digital input DI1(<i>0200 DI State, bit 0</i>)	2048
	DI2	Digital input DI2	2049
	DI3	Digital input DI3	2050
	DI4	Digital input DI4	2051
	DI5	Digital input DI5	2052
	DI6	Digital input DI6	2053
	DI7	Digital input DI7	2054
2003	Neg speed enable	Select the signal source of reverse (the speed given value is negative) enable command. 0: reverse inhibited 1: reverse allow. <i>Refer to parameter 2002 Pos speed enable for relevant available options.</i>	CONST.TRUE =[1]
2004	Torque ref max	Maximum value of the torque given. Relative to the rated torque of motor.	150.0%
	[0%, 300.0%]		
2005	Torque ref min	Minimum value of the torque given. Relative to the rated torque of motor.	-150.0%
	[-300.0%, 0%]		
2006	Max motor torque	The permitted maximum motor torque. Relative to the rated torque of motor.	150.0%
	[0.0%, 300.0%]		
2007	Max regen torque	The permitted maximum generator torque. Relative to the rated torque of motor.	150.0%
	[0.0%, 300.0%]		

21 Speed Ref

No.	Name / Value	Description	Default
2100	Speed ref1 src	Select the signal source for the speed setpoint 1. Also, can refer to parameter <i>2102 Speedref1 func.</i>	AI1scaled = [515]
	P.01.00	User-defined pointer (parameter pointer)	-
	Zero	Always zero	0
	AI1 scaled	Refer to parameter <i>0203 AI1 scaled.</i>	515
	AI2 scaled	Refer to parameter <i>0205 AI2 scaled.</i>	517
	AI3 scaled	Refer to parameter <i>0207 AI3 scaled.</i>	519
	Freq in scaled	Refer to parameter <i>0211 Freq in scaled.</i>	523
	Control panel ref1	Refer to parameter <i>0213 Control panel ref1.</i>	525
	Control panel ref2	Refer to parameter <i>0214 Control panel ref2.</i>	526
	Fieldbus ref1	Refer to parameter <i>0215 Fieldbus ref1.</i>	527
	Fieldbus ref2	Refer to parameter <i>0216 Fieldbus ref2.</i>	528
	Motor potent out	Refer to parameter <i>0301 Motor potent out.</i>	769
	Const speed out	Refer to parameter <i>0302 Const speed out.</i>	770
	Process PID out	Refer to parameter <i>0404 Process PID out.</i>	1028
2101	Speed ref2 src	Select the signal source for the speed setpoint 2. Refer to parameter <i>2100 Speed ref1 src</i> for relevant available options.	AI2 scaled = [517]
2102	Speed ref1 func	Define the mathematical function of the two reference signal synthesis speed setpoint2 which are selected by the parameter <i>2100 Speed ref1 src</i> and <i>2101 Speed ref2 src</i> .	Ref1 = [0]
	Ref1	The signal selected by the parameter <i>2100 Speed ref1 src</i> is used as the speed given value1.	0
	Add (Ref1 + Ref2)	The sum of the two reference signals is used as the speed given1.	1
	Sub (Ref1-Ref2)	The difference of the two reference signals is used as the speed given2 .	2
	Mul (Ref1xRef2)	The product of the two reference signals is used as the speed given3.	3
	Min	The small one of the two reference signals is used as the speed given4.	4
	Max	The big one of the two reference signals is used as the speed given5.	5
	Abs	Select the absolute value of Ref6.	6

No.	Name / Value	Description	Default
2103	Speed ref2 sel	Select the signal source switching between the speed reference 1 and speed reference 2. 0: Select the speed reference 1 defined by the parameter <i>2102 Speed ref func.</i> 1: Select the speed reference 2 defined by the parameter <i>2101 Speed ref2 src.</i>	CONST.FALSE= [0]
	P.01.00.00	User-defined pointer (parameter bit pointer)	-
	CONST.FALSE	Always be 0	0
	CONST.TRUE	Always be 1	1
	DI1	Digital input DI1 (<i>0200 DI status, bit 0</i>)	2048
	DI2	Digital input DI2	2049
	DI3	Digital input DI3	2050
	DI4	Digital input DI4	2051
	DI5	Digital input DI5	2052
	DI6	Digital input DI6	2053
	DI7	Digital input DI7	2054
2104	Speed ref share	The conversion factor for the speed reference.	1.000
	[-10.000, 10.000]	Speed given conversion factor.	
2105	Speed ref JOG1	The speed reference of jogging 1.	150rpm
	[-30000rpm, 30000rpm]		
2106	Speed ref JOG2	The speed reference of jogging 2.	300rpm
	[-30000rpm, 30000rpm]		

No.	Name / Value	Description	Default
2107	Pot save mode	Select whether to retain the value of the potentiometer when the drive is powered off.	
	Reset	The value of the potentiometer will be reset when the drive is powered off.	0
	Store	The value of the potentiometer will be retained after the drive is powered off.	1
2108	Pot up source	Select the incremental instruction signal source of the electric potentiometer. 0 : No incremental instruction; 1: Has incremental instruction. Refer to parameter <i>2103 Speed ref2 sel</i> for relevant available options.	CONST.FALSE = [0]
2109	Pot down source	Select the descending instruction signal source of the electric potentiometer. 0 : No descending instruction; 1: Has descending instruction. Refer to parameter <i>2103 Speed ref2 sel</i> for relevant available options.	CONST.FALSE = [0]
2110	Pot output max	The maximum output of the electric potentiometer.	1500rpm
	[0, 30000rpm]		
2111	Pot output min	The minimum output of the electric potentiometer.	-1500rpm
	[-30000rpm, 0rpm]		
2112	Pot ramp time	The acceleration and deceleration time from the parameter 2110 to 2111 for the output of the electric potentiometer.	10.0s
	[0.1s, 100.0s]		
2113	Pot output	The real-time output of the electric potentiometer. Read-only.	
2114	Slow down spd ref	Up or down speed limits value.	301rpm
	[0, 30000]		
2115	Up slow rqst	Signal source selection of the up-direction deceleration request.	CONST TRUE
2116	Down slow rqst	Signal source selection of the down direction deceleration request.	CONST TRUE

22 Speed Ref Ramp

No.	Name / Value	Description	Default
2200	Acc time1	Defines acceleration time 1 as the time required for the speed to change from zero to the speed defined by parameter <i>1900 Speed scaling</i> defined speed.	Model dependent
		[0.01s, 655.35s]	
2201	Dec time1	Defines deceleration time 1 as the time required for the speed to change from the speed defined by parameter <i>1900 Speed scaling</i> to zero.	Model dependent
		[0.01s, 655.35s]	
2202	Acc time2	Acceleration time2	Model dependent
		[0.01s, 655.35s]	
2203	Dec time2	Deceleration time2	Model dependent
		[0.01s, 655.35s]	
2204	EM stop time	Emergency stop time	1.00s
		[0.01s, 655.35s]	
2205	Jog acc time	Jog acceleration time	5.00s
		[0.01s, 655.35s]	
2206	Jog dec time	Jog deceleration time	5.00s
		[0.01s, 655.35s]	
2207	Shape acc time1	S Curve acceleration time 1	0.20s
		[0.01s, 655.35s]	
2208	Shape acc time2	S Curve acceleration time 2	0.20s
		[0.01s, 655.35s]	
2209	Shape dec time1	S Curve deceleration time1	0.20s
		[0.01s, 655.35s]	
2210	Shape dec time2	S Curve deceleration time2	0.20s
		[0.01s, 655.35s]	
2211	Speed scaling	The same parameter <i>1900 Speed scaling</i> .	1500rpm

No.	Name / Value	Description	Default
2212	Ramp time sel	Selects the source that switches between the two sets of acceleration/deceleration ramp times defined by parameters 2200… 2203. 0 = Acceleration time 1 and deceleration time 1 are active 1 = Acceleration time 2 and deceleration time 2 are active.	CONST.FALSE = [0]
	P.01.00.00	User-defined pointer (parameter bit pointer)	-
	CONST.FALSE	0, always acceleration time 1 and deceleration time 1 are active.	0
	CONST.TRUE	1, always acceleration time 2 and deceleration time 2 are active.	1
	DI1	Digital input DI1 (<i>0200 DI State, bit 0</i>)	2048
	DI2	Digital input DI2	2049
	DI3	Digital input DI3	2050
	DI4	Digital input DI4	2051
	DI5	Digital input DI5	2052
	DI6	Digital input DI6	2053
	DI7	Digital input DI7	2054

23 Speed Control

No.	Name / Value	Description	Default
2300	Speed Kp	Speed regulator Kp should be adjust according to rotating inertia of machines connecting with motor. For machines with large rotating inertia, please increase Kp value; for machines with small rotating inertia, please decrease Kp value. When Kp is greater than inertia, although the control response become quickly, but may cause speed oscillation. Reversely, if Kp setting is smaller than inertia, the control response will get slower and the time taken to adjust the speed to the stable value will longer.	1.00
	[0.00, 30.00]		
2301	Speed Ti	Speed regulator Ti defines the rate at which the speed controller output changes. The shorter the Ti setting, the faster the system responses. Too short Ti value may cause the system unstable.	60ms
	[0, 3000ms]		
2302	Torque Kp	Defines the current regulator Kp. Vector control will control the motor output current and keep track the current.	1.00
	[0.00, 30.00]		
2303	Droop rate	Speed droop control rate used for speed droop control only. The function is used to keep the motor speed constant if load fluctuation or under heavy load. 100% means full slip gain; 0% means no slip gain.	0.0%
	[0.0, 1000.0%]		

24 Torque Reference

No.	Name / Value	Description	Default
2400	Torque ref1 src	Select the signal source of torque reference 1.	AI1 scaled = [515]
	P.01.00	User-defined pointer (parameter pointer)	-
	Zero	Always zero	0
	AI1 scaled	See parameter <i>0203 AI1 scaled</i> .	515
	AI2 scaled	See parameter <i>0205 AI2 scaled</i> .	517
	AI3 scaled	See parameter <i>0207 AI3 scaled</i> .	519
	Freq in scaled	See parameter <i>0211 Freq in scaled</i> .	523
	Control panel ref1	See parameter <i>0213 Control panel ref1</i> .	525
	Control panel ref2	See parameter <i>0214 Control panel ref2</i> .	526
	Fieldbus ref1	See parameter <i>0215 Fieldbus ref1</i> .	527
	Fieldbus ref2	See parameter <i>0216 Fieldbus ref2</i> .	528
	Const speed out	See parameter <i>0302 Const speed out</i> .	770
2401	Torque ref2 src	Select the signal source of torque reference 2. For available selections, see parameter <i>2400 Torque ref1 src</i> .	AI2scaled = [517]
	Torque ref func	Define the calculation of the torque reference 1 (<i>2400 Torque ref1 src</i>) and torque reference 2 (<i>2401 Torque ref2 src</i>), the result is given as the final torque reference 1.	Ref1 = [0]
2402	Ref1	The signal selected by <i>2400 Torque ref1 src</i> is used as the torque reference 1.	0
	Add (Ref1 + Ref2)	The sum of the two reference signals is used as the torque reference 1.	1
	Sub (Ref1 - Ref2)	The difference of the two reference signals is used as the torque reference 1.	2
	Mul (Ref1 * Ref2)	The product of the two reference signals is used as the torque reference 1.	3
	Min	The small one of the two reference signals is used as the torque reference 1.	4
	Max	The big one of the two reference signals is used as the torque reference 1.	5

No.	Name / Value	Description	Default
2403	Torque ref2 sel	This parameter is used to select the torque reference 1 or the torque reference 2 as torque reference. 0: Select torque reference defined by parameter <i>2402 Torque ref func.</i> 1: Select the torque reference defined by the parameter <i>2401 Torquer ref2 src.</i>	CONST.FALSE = [0]
	P.01.00.00	User-defined pointer (parameter bit pointer)	-
	CONST.FALSE	0, the torque reference defined by parameter <i>2402 Torque ref func.</i>	0
	CONST.TRUE	1, the torque reference defined by parameter <i>2401 Torquer ref2 src.</i>	1
	DI1	Digital input DI1 (<i>0200 DI Status, bit 0</i>)	2048
	DI2	Digital input DI2	2049
	DI3	Digital input DI3	2050
	DI4	Digital input DI4	2051
	DI5	Digital input DI5	2052
	DI6	Digital input DI6	2053
	DI7	Digital input DI7	2054
2404	Torque load share	The torque reference distribution coefficient.	1.000
	[0.000, 10.000]		
2405	Torque acc time	The torque reference acceleration time.	0.10s
	[0.00, 655.35s]		
2406	Torque dec time	The torque reference deceleration time.	0.10s
	[0.00, 655.35s]		
2407	Torque filter time	The torque reference filtering time.	1ms
	[0, 10000ms]		
2408	Fric Trqstatic	The static friction compensation coefficient, relative to the motor rated torque.	0.0%
	[0, 100.0%]		0.1%
2409	Fric Trqslide	The sliding friction compensation coefficient, relative to the motor rated torque.	0.0%
	[0, 100.0%]		0.1%
2410	Inertial trq	The moment of the inertia compensation coefficient, relative to the motor rated torque.	0.0%
	[0, 100.0%]		0.1%

25 Critical Speed

No.	Name / Value	Description	Default
2500	Crit speed 1 lo	Defines the low limit for critical speed range 1. Note: this value must be less than or equal to the value of 2501 <i>Crit speed 1 hi</i> .	0
	[0, 30000rpm]	Low limit for critical speed 1.	
2501	Crits peed 1 hi	Define the high limit for critical speed range 1. Note: this value must be greater than or equal to the value of 2500 <i>Crit speed 1 lo</i> .	0
	[0, 30000rpm]	High limit for critical speed 1.	
2502	Crit speed 2 lo	Defines the low limit for critical speed range 2. Note: this value must be less than or equal to the value of 2503 <i>Crit speed 2 hi</i> .	0
	[0, 30000rpm]	Low limit for critical speed 2.	
2503	Crit speed 2 hi	Define the high limit for critical speed range 2. Note: this value must be greater than or equal to the value of 2502 <i>Crit speed 2 lo</i> .	0
	[0, 30000rpm]	High limit for critical speed 2.	
2504	Crit speed 3 lo	Defines the low limit for critical speed range 3. Note: this value must be less than or equal to the value of 2505 <i>Crit speed 3 hi</i> .	0
	[0, 30000rpm]	Low limit for critical speed 3.	
2505	Crit speed3 hi	Define the high limit for critical speed range 3. Note: this value must be greater than or equal to the value of 2504 <i>Crit speed 3 lo</i> .	0
	[0, 30000rpm]	High limit for critical speed 3	
2506	Crits peed sel	Critical speed control	Disable= [0]
	Disable	Critical speeds is disabled.	0
	Enable	Critical speeds is enabled.	1

26 Constant Speeds

No.	Name / Value	Description	Default
2600	Const speed 0	When <i>2100 spd ref1 src</i> is set to [-30000rpm,30000rpm]	750 rpm
		P.03.02 Const speed out, it is possible to predefine 15 constant speeds in parameters 2600 … 2615. Constant speeds are selected through parameters 2618 … 2621.	
2601	Const speed 1		1500 rpm
2602	Const speed 2		1500 rpm
2603	Const speed 3		1500 rpm
2604	Const speed 4		1500 rpm
2605	Const speed 5		0 rpm
2606	Const speed 6	The setting range and unit of parameters 2600 … 2615 are the same as parameter 2600.	0 rpm
2607	Const speed 7		0 rpm
2608	Const speed 8		0 rpm
2609	Const speed 9		0 rpm
2610	Const speed 10		0 rpm
2611	Const speed 11		0 rpm
2612	Const speed 12		0 rpm
2613	Const speed 13		0 rpm
2614	Const speed 14		0 rpm
2615	Const speed 15		0 rpm

No.	Name / Value	Description	Default																																																																																					
2616	Const speed mode	Define the multi-step speed mode. Packed = [0]																																																																																						
	Packed	Four digital signals generate a total of 16 combinations, corresponding to multi step speeds of 0 … 15. The specific combination is as follows: <table border="1"> <thead> <tr> <th>Sel4</th><th>Sel3</th><th>Sel2</th><th>Sel1</th><th>Reference active</th></tr> </thead> <tbody> <tr><td>0</td><td>0</td><td>0</td><td>0</td><td>Constant speed 0</td></tr> <tr><td>0</td><td>0</td><td>0</td><td>1</td><td>Constant speed 1</td></tr> <tr><td>0</td><td>0</td><td>1</td><td>0</td><td>Constant speed 1</td></tr> <tr><td>0</td><td>0</td><td>1</td><td>1</td><td>Constant speed 3</td></tr> <tr><td>0</td><td>1</td><td>0</td><td>0</td><td>Constant speed 4</td></tr> <tr><td>0</td><td>1</td><td>0</td><td>1</td><td>Constant speed 5</td></tr> <tr><td>0</td><td>1</td><td>1</td><td>0</td><td>Constant speed 6</td></tr> <tr><td>0</td><td>1</td><td>1</td><td>1</td><td>Constant speed 7</td></tr> <tr><td>1</td><td>0</td><td>0</td><td>0</td><td>Constant speed 8</td></tr> <tr><td>1</td><td>0</td><td>0</td><td>1</td><td>Constant speed 9</td></tr> <tr><td>1</td><td>0</td><td>1</td><td>0</td><td>Constant speed 10</td></tr> <tr><td>1</td><td>0</td><td>1</td><td>1</td><td>Constant speed 11</td></tr> <tr><td>1</td><td>1</td><td>0</td><td>0</td><td>Constant speed 12</td></tr> <tr><td>1</td><td>1</td><td>0</td><td>1</td><td>Constant speed 13</td></tr> <tr><td>1</td><td>1</td><td>1</td><td>0</td><td>Constant speed 14</td></tr> <tr><td>1</td><td>1</td><td>1</td><td>1</td><td>Constant speed 15</td></tr> </tbody> </table>	Sel4	Sel3	Sel2	Sel1	Reference active	0	0	0	0	Constant speed 0	0	0	0	1	Constant speed 1	0	0	1	0	Constant speed 1	0	0	1	1	Constant speed 3	0	1	0	0	Constant speed 4	0	1	0	1	Constant speed 5	0	1	1	0	Constant speed 6	0	1	1	1	Constant speed 7	1	0	0	0	Constant speed 8	1	0	0	1	Constant speed 9	1	0	1	0	Constant speed 10	1	0	1	1	Constant speed 11	1	1	0	0	Constant speed 12	1	1	0	1	Constant speed 13	1	1	1	0	Constant speed 14	1	1	1	1	Constant speed 15	0
Sel4	Sel3	Sel2	Sel1	Reference active																																																																																				
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1	-	-	-	Constant speed 4																																																																																				
2617	Const speed out	Output of the multi segment speed.	0 rpm																																																																																					
	[-30000rpm, 30000rpm]	Actual output of the multi speed.	Read-only																																																																																					

No.	Name / Value	Description	Default
2618	Const speed sel1	Signal source of the multi-step speed selection 1. See parameter 2616 <i>Const speed mode</i> for details.	CONST.FA LSE= [0]
	P.01.00.00	User-defined pointer (parameter bit pointer)	-
	CONST.FALSE	0	0
	CONST.TRUE	1	1
	DI1	Digital input DI1 (<i>0200 DI Status, bit 0</i>)	2048
	DI2	Digital input DI2	2049
	DI3	Digital input DI3	2050
	DI4	Digital input DI4	2051
	DI5	Digital input DI5	2052
	DI6	Digital input DI6	2053
	DI7	Digital input DI7	2054
2619	Const speed sel2	Signal source of the multi-step speed selection 2. For available selections see parameter 2618 <i>Const speed sel1</i> .	CONST.FA LSE= [0]
2620	Const speed sel3	Signal source of the multi-step speed selection 3. For available selections see parameter 2618 <i>Const speed sel1</i> .	CONST.FA LSE= [0]
2621	Const speed sel4	Signal source of the multi-step speed selection 4. For available selections see parameter 2618 <i>Const speed sel1</i> .	CONST.FA LSE= [0]

27 Process PID

No.	Name / Value	Description	Default
2700	PID activate	Active the control of the process control PID.	Disable = [0]
	Disable	Process control disabled.	0
	Enable	Process control activated.	1
2701	Reference source	Select a given signal source.	P.27.02 = [6914]
	P.01.00	User-defined pointer (parameter pointer)	-
	Zero	Always zero	0
	AI1 scaled	Refer to parameter 0203 AI1 scaled.	515
	AI2 scaled	Refer to parameter 0205 AI2 scaled.	517
	AI3 scaled	Refer to parameter 0207 AI3 scaled.	519
	Freq in scaled	Refer to parameter 0211 Freq in scaled.	523
	Control panel ref1	Refer to parameter 0213 Control panel ref1.	525
	Control panel ref2	Refer to parameter 0214 Control panel ref2.	526
	Fieldbus ref1	Refer to parameter 0215 Fieldbus ref1.	527
	Fieldbus ref2	Refer to parameter 0216 Fieldbus ref2.	528
2702	Ref internal	Internal digital reference for process control.	0
	[-32768, 32767]		
2703	Ref filter time	Reference filter time constant.	0.1s
	[0.01s, 3.00s]		-
2704	Reference actual	Actual reference value. Read-only.	
2705	Feedback func	Select the calculation of feedback signal source 1 and feedback signal source 2.	Fbk1 = [0]
	Fbk1	Actual feedback = feedback 1.	0
	Add	Actual feedback = feedback 1 + feedback 2.	1
	Sub	Actual feedback = feedback 1 - feedback 2.	2
	Min	Actual feedback = min (feedback 1, feedback 2).	3
	Max	Actual feedback = max (feedback 1, feedback 2).	4
2706	Feedback 1 source	Select the source of feedback 1. Refer to parameter 2701 Reference source for relevant available options.	AI1 scaled = [515]
2707	Feedback 2 source	Select the signal source of feedback 2. Refer to parameter 2701 Reference source for relevant available options.	AI2 scaled = [517]

No.	Name / Value	Description	Default
2708	Feedback1 max	Set the maximum allowable value of feedback 1. [-32768, 32767]	32767
2709	Feedback1 min	Set the minimum allowable value of feedback 1. [-32768, 32767]	-32768
2710	Feedback2 max	Set the maximum allowable value of feedback 2. [-32768, 32767]	32767
2711	Feedback2 min	Set the minimum allowable value of feedback 2. [-32768, 32767]	-32768
2712	Feedback gain	Feedback gain factor. [0.10, 10.00]	1.00
2713	Fbk filter time	Filter time constant of the feedback. [0.01s, 2.00s]	0.01s
2714	Feedback actual	Actual value of the feedback. Read-only.	
2715	PID Kp	Proportional gain of PID [0.01, 100.00]	1.00
2716	PID Ti	PID integration time. [0.10s, 20.00s]	1.00s
2717	PID Td	PID differential time. [0.00s, 20.00s]	0.00s
2718	Deriv filter time	Filtering time of differential quantity. [0.01s, 20.00s]	1.00s
2719	Error invert sel	Error is selected by the reverse mode. Disable Positive polarity, when the PID feedback is higher than the PID reference, decrease the PID output. Enable Negative polarity, when the PID feedback is higher than the PID reference, increase the PID output.	Disable = [0] 0 1
2720	Output trim mode	Format the output. Direct The output is not converted. Speed The output is converted to the speed. Torque The output is converted to torque.	Direct = [1] 0 1 2
2721	Out max	The maximum allowable value of PID output. [-32768, 32767]	1500
2722	Out min	The minimum allowable value of PID output. [-32768, 32767]	-1500

No.	Name / Value	Description	Default
2723	Bal enable sel	Balanced control enable signal.	Disable = [0]
	Disable	Balance control is disabled.	0
	Enable	Balance control is enabled.	1
2724	Bal ref	Reference of balance control.	0
	[-32768, 32767]		
2725	Sleep mode	Sleep mode.	No sleep= [0]
	No sleep	Sleep function disabled.	0
	Sleep internal	The sleep function is activated by process control.	1
	Sleep external	The sleep function is activated by external signal, and will be triggered when the actual speed is less than the value of parameter 2726 <i>Sleep level</i> .	2
	Sleep by error	The sleep function is activated when the PID error is less than the value of parameter 2728 <i>wakeup level</i> .	3
2726	Sleep level	The motor speed at which sleep begins.	900
	[-32768, 32767]		
2727	Sleep delay	Delay time of sleep.	60.0s
	[0.0, 6553.5s]		
2728	Wakeup level	The error level of wake up. Wake up when the PID error is greater than this value.	1000
	[-32768, 32767]		
2729	Wakeup delay	Wake up delay time after sleep.	1.0s
	[0.0, 6553.5s]		
2730	Sleep enable sel	Defines a source that is used to activate the PID sleep function when parameter 2725 <i>Sleep mode</i> is set to "Sleep external".	CONST.FALSE E= [0]
	P.01.00.00	User-defined pointer (parameter bit pointer)	-
	CONST.FALSE	Always be 0.	0
	CONST.TRUE	Always be 1.	1
	DI1	Digital input DI1 (<i>0200 DI Status, bit 0</i>)	2048
	DI2	Digital input DI2	2049
	DI3	Digital input DI3	2050
	DI4	Digital input DI4	2051
	DI5	Digital input DI5	2052
	DI6	Digital input DI6	2053
	DI7	Digital input DI7	2054

No.	Name / Value	Description	Default
2731	Calc enable sel	Select the signal source of PID operation enable. Selects a source that enables/disables process PID control. 0 = Process PID control disabled 1 = Process PID control enabled	Running = [6148]
	P.01.00.00	User-defined pointer (parameter bit pointer)	-
	CONST.FALSE	Always be 0	0
	CONST.TRUE	Always be 1	1
	Feedback loss mode	Detection mode of PID feedback disconnection.	Internal = [2]
2732	Disable	No detection.	0
	External	Detection by external terminal input.	1
	Internal	Detection by judging the PID error.	2
2733	Fbk loss min speed	The minimum speed of the PID feedback disconnection detection.	30.0 rpm
	[0, 3000.0rpm]		
2734	Fbk loss src	Select the input terminal for the external feedback missing signal. For available selections, see parameter 2730 <i>Sleep enable sel</i> .	False
2735	Fbk loss level	The error judgment level of PID feedback disconnection.	3000
	[0, 30000]		-
2736	Fbk loss delay	PID feedback disconnection fault delay.	2.0s
	[0, 60.0s]		

29 Timer Function

No.	Name / Value	Description	Default																					
2900	Timer enable	Activation the timer.	Disable = [0]																					
	Disable	Timer not activated.	0																					
	Enable	Timer is activated.	1																					
2901	Timer status	The state word of the timer. The timer function can be configured by pointing to this parameter with a pointer.																						
		<table border="1"> <thead> <tr> <th>bit</th><th>Name</th><th>Description</th></tr> </thead> <tbody> <tr> <td>0</td><td>Timer 1 compare</td><td>Timer 1 compare trigger</td></tr> <tr> <td>1</td><td>Timer 2 compare</td><td>Timer 2 compare trigger</td></tr> <tr> <td>2</td><td>Timer3 compare</td><td>Timer 3 compare trigger</td></tr> <tr> <td>3</td><td>Timer 1 period</td><td>Timer 1 cycle trigger</td></tr> <tr> <td>4</td><td>Timer 2 period</td><td>Timer 2 cycle trigger</td></tr> <tr> <td>5</td><td>Timer 3 period</td><td>Timer 3 cycle trigger</td></tr> </tbody> </table>	bit	Name	Description	0	Timer 1 compare	Timer 1 compare trigger	1	Timer 2 compare	Timer 2 compare trigger	2	Timer3 compare	Timer 3 compare trigger	3	Timer 1 period	Timer 1 cycle trigger	4	Timer 2 period	Timer 2 cycle trigger	5	Timer 3 period	Timer 3 cycle trigger	
bit	Name	Description																						
0	Timer 1 compare	Timer 1 compare trigger																						
1	Timer 2 compare	Timer 2 compare trigger																						
2	Timer3 compare	Timer 3 compare trigger																						
3	Timer 1 period	Timer 1 cycle trigger																						
4	Timer 2 period	Timer 2 cycle trigger																						
5	Timer 3 period	Timer 3 cycle trigger																						
2902	Timer1 period	The cycle of Timer 1, unit in minute.	1.0min																					
	[0. 1min, 6553.5min]																							
2903	Timer1 duty	Duty cycle of the Timer 1, unit is percentage.	50.0%																					
	[0.0%, 100.0%]																							
2904	Timer2 period	Cycle of the Timer 2, unit is minute.	1.0min																					
	[0. 1min, 6553.5min]																							
2905	Timer2 duty	Duty cycle of the Timer 2, unit is percentage.	50.0%																					
	[0.0%, 100.0%]																							
2906	Timer3 period	Cycle of the Timer 3, unit is minute.	1.0min																					
	[0. 1min, 6553.5min]																							
2907	Timer3 duty	Duty cycle of the Timer 3, unit is percentage.	50.0%																					
	[0.0%, 100.0%]																							
2908	Long period	For long cycle mode, the unit of the timer cycle is minute; for short cycle mode, the unit of the timer cycle is second.	Disable																					
	Disable	Short cycle mode, second.	0																					
	Enable	Long cycle mode, minute.	1																					

30 Fault function

No.	Name / Value	Description	Default
3000	Ext fault 1 src	Select the signal source for the external fault 1. 0: No external fault input 1: External fault input	CONST.FALSE =[0]
	P.01.00.00	User-defined pointer (parameter bit pointer)	-
	CONST.FALSE	Always be 0	0
	CONST.TRUE	Always be 1	1
	DI1	Digital input DI1 (<i>0200 DI Status, bit 0</i>)	2048
	DI2	Digital input DI2	2049
	DI3	Digital input DI3	2050
	DI4	Digital input DI4	2051
	DI5	Digital input DI5	2052
	DI6	Digital input DI6	2053
	DI7	Digital input DI7	2054
3001	Ext fault 2 src	Select the signal source for the external fault 2. For available selections, see parameter 3000 <i>Ext fault 1 src</i> .	CONST.FALSE =[0]
3002	Groud fault act	Selects the action taken when a ground fault is detected.	Fault = [1]
	No action	No action.	0
	Fault	Report fault.	1
	Alarm	Report alarm.	2
3003	Input phase loss	Selects the action taken when an input phase fault is detected.	Fault = [1]
	No action	No action.	0
	Fault	Report fault.	1
	Alarm	Report alarm.	2
3004	Motor phase loss	Selects the action taken when motor phase loss is detected.	Fault = [1]
	No action	No action.	0
	Fault	Report fault.	1
	Alarm	Report alarm.	2
3005	STO action	Activate or deactivate the STO function.	Enable = [1]
	Disable	Disable the STO function.	0
	Enable	Enable the STO function.	1

No.	Name / Value	Description	Default
3006	OH alarm level	Setting the IGBT radiator overheating warning point. When the set overheating warning point exceeds the allowable temperature of the drive, this value will be ignored and automatically warning at 5 degrees ahead of the over temperature value.	90.0°C
	[40.0°C, 120.0°C]	Overheat warning temperature point.	
3007	Fault auto reset	Activate or disable the fault automatic reset function by this parameter.	Disable = [0]
	Disable	Disable the fault automatic reset function.	0
	Enable	Enable the fault automatic reset function.	1
3008	Fault trial num	Number of times a fault reset trying is allowed.	5
	[1, 20]		-
3009	Fault trial wait	Interval time of fault reset.	1.00s
	[0.01s, 150.00s]		
3010	Trial cnt reset	Time interval for fault reset trying to clear the counter.	60.00s
	[0.01s, 150.00s]		

No.	Name / Value	Description	Default
3011	Chop IGBT fault act	Selects the action taken when brake IGBT fails.	Fault
	None	No action.	0
	Fault	Fault output.	1
	Alarm	Alarm output.	2
3012	Rb est	Estimated resistance value of the braking resistor, read-only.	-
3013	Br thermal enable	Braking resistor thermal protection enable.	Disable
	Disable	Turn off.	0
	Enable	Enable braking resistor thermal protection.	1
3014	Br temp est	Estimated value of the temperature rise of the braking resistor. Read-only.	-
3015	Br max power	Set the rated power of the braking resistor.	2.0kW
	[0, 3000.0kW]		0.1kW
3016	Br time constant	Set the thermal time constant of the braking resistor.	60.0 s
	[0. 1s, 3000.0s]		0.1s
3017	Br temp rise	Set the rated temperature rise of the braking resistor.	60.0°C
	[0.0s, 300.0s]		0.1 °C
3018	Br fault level	Set the overheat fault point of the braking resistor.	150.0°C
	[0.0, 300.0°C]		0.1 °C
3019	Br alarm level	Set the overheat alarm point of the braking resistor.	120.0°C
	[0.0, 300.0°C]		0.1 °C

31 Motor Therm Prot

No.	Name / Value	Description	Default
3100	Protect action	Selects the action taken when motor over temperature is detected.	Fault = [1]
	No	Motor thermal protection is not activated.	0
	Fault	When the temperature is above the alarm / fault level defined by the parameters <i>3102 Alarm limit</i> / <i>3103 Fault limit</i> (whichever is lower), the drive will generate a MOTOR OH alarm or a MOTOR OH fault trip.	1
	Alarm	When the motor temperature exceeds the alarm limit defined by the parameter <i>3102 Alarm limit</i> , the drive generates a MOTOR OH warning.	2
3101	Temperature src	Select the temperature measurement method for the motor thermal protection. When the overheating is detected; the drive will react in accordance with the method defined by the parameter <i>3100 Protect action</i> .	Estimated = [0]
	Estimated	Estimated motor temperature. This model uses motor thermal time constant (parameter <i>3109 Therm time const</i>) and motor load curve (parameters <i>3104...3108</i>). The motor temperature increases if it operates in the region above the load curve, and decreases if it operates in the region below the load curve. WARNING! The model cannot protect the motor if the motor does not cool properly because of dust, dirt, etc.	0
	KTY84	The motor temperature sensor is KTY84.	1
	PTC	The motor temperature sensor is PTC.	2
	PT100_X1	The motor temperature sensor is a PT100.	3
	PT100_X2	The motor temperature sensor is two PT100s.	4
	PT100_X3	The motor temperature sensor is three PT100s.	5

No.	Name / Value	Description	Default
3102	Alarm limit	Set the motor temperature warning point. [0.0°C, 200.0°C]	120.0°C
3103	Fault limit	Set motor temperature fault point. [0.0°C, 200.0°C]	130.0°C
3104	Ambient temp	Set the actual operating ambient temperature of the motor. [0.0°C, 90.0°C]	40.0°C
3105	Motor nom load	Maximum load of the motor load curve. [50.0%, 200.0%]	110.0%
3106	Zero speed load	Define the maximum motor load at zero speed on the load curve. If the motor is equipped with an external fan to enhance ventilation and cooling, a greater value may be set. Refer to the motor manufacturer's recommendations. [50.0%, 100.0%]	70.0%
3107	Motor nom speed	Defines the break point speed of the load curve i.e. the point at which the motor load curve begins to decrease from the value of parameter 3105 <i>Nominal load</i> towards the value of 3106 <i>Zero speed load</i> . [150rpm, 30000rpm]	1500rpm
3108	Motor nom temp rise	When the load of the motor reaches the rated current, define the temperature rise of the motor. When the parameter 3101 <i>Temperature src</i> is set as <i>Estimated</i> , the heating model of the motor will use the load curve. Refer to the motor manufacturer's recommendations. [10.0°C , 200.0°C]	60.0°C
3109	Therm time const	Defining the thermal time constant of the motor thermal protection model (i.e. the time that the temperature rise to the 63% of the rated temperature rise). Refer to the recommendations of the motor manufacturer. [10.0s, 1800.0s]	1800.0s

No.	Name / Value	Description	Default
3110	External cool fan	For the variable frequency asynchronous motor or the synchronous motor, the cooling fan is independent, then the load capacity of zero speed is the same as that of the rated speed. For the non-variable frequency motor, the motor comes with the fan and coaxial with the rotor, then need to be set to Auto cool. The correct setting is the premise of accurate temperature estimation.	External cool = [0]
	Auto cool	Non variable frequency motor. The load capacity of zero speed is lower than that of the rated speed.	0
	External fan	External independent fan. The load capacity of zero speed is the same as that of the rated speed.	1
3111	Sensor input sel	The signal input channel of the temperature sensor. Be sure to change the corresponding analog input jump to voltage type input side.	AI1 = [0]
	AI1	The temperature sensor is connected to the analog input AI1.	0
	AI2	The temperature sensor is connected to the analog input AI2.	1
	AI3	The temperature sensor is connected to the analog input AI3.	2
3112	Sensor bias out	The selection of bias current source for the temperature sensor. Be sure to change the corresponding analog output jumper to current type output side.	AO1 = [0]
	AO1	The temperature sensor is connected to the analog output AO1.	0
	AO2	The temperature sensor is connected to the analog output AO2.	1

32 Factory Setting

No.	Name / Value	Description	Default
3204	Kp_vdc_max	Gain of the overvoltage controller, Q12. [2048, 16384]	4096 1
3205	Ki_vdc_max	Integral gain of the overvoltage stall controller, Q16. [419, 16384]	1638 1
3206	Kp_vdc_max_f	Gain of the overvoltage frequency controller, Q12. [2048, 16384]	4096 1
3207	Ki_vdc_max_f	Integral gain of the overvoltage frequency controller, Q16. [419, 16384]	1638 1
3208	Kp_fctrl	Gain of the open loop frequency controller, Q12. [819, 16384]	2048 1
3209	Kp_vctrl	Gain of the open loop voltage controller, Q12. [819, 16384]	2048 1
3210	AI1 gain	Analog input AI1 correction gain, Q12 [2048, 8192]	4096 1
3211	AI1 offset	Analog input AI1 corrected offset, 1mV or 1mA [-200, 200]	0 1mV / 1mA
3212	AI2 gain	Analog input AI2 correction gain, Q12 [2048, 8192]	4096 1
3213	AI2 offset	Analog input AI2 corrected offset, 1mV or 1mA [-200, 200]	0 1mV / 1mA
3214	AI3 gain	Analog input AI3 correction gain, Q12 [2048, 8192]	4096 1
3215	AI3 offset	Analog input AI3 corrected offset, 1mV or 1mA [-200, 200]	0 1mV / 1mA
3216	AO1 gain	Analog output AO1 correction gain, Q12 [2048, 8192]	3805 1
3217	AO1 offset	Analog output AO1 corrected offset, 1mV or 1mA [-200, 200]	45mV 1mV / 1mA
3218	AO2 gain	Analog output AO2 correction gain, Q12 [2048, 8192]	3805 1
3219	AO2 offset	Analog output AO2 corrected offset, 1mV or 1mA [-200, 200]	45mV 1mV / 1mA

33 Signal Generator

No.	Name / Value	Description	Default
3300	Signal generator	Enable or disable signal generator function.	Enable = [1]
	Disable	When this function is not required, please deactivate it to reduce CPU load.	0
	Enable	Enable.	1
3301	Signal waveform	Select the output signal waveform.	Sinusoid = [0]
	Sinusoid	Output sine wave of the signal generator.	0
	Trapezoid	Output trapezoidal wave of the signal generator.	1
3302	Signal output	Display the current output value of the monitoring signal, read only. This parameter can be connected by a pointer.	0
	[-32768,32767]		-
3303	Max output	Set the maximum output value of the signal.	1500
	[-32768,32767]		-
3304	Min output	Set the minimum output value of the signal.	-1500
	[-32768,32767]		-
3305	Sinusoid period	Set the signal cycle of the sine wave.	3000 ms
	[8,30000]		-
3306	Trape rise time	Set the rising time of the trapezoidal wave from low level to high level.	6000 ms
	[1,60000]		-
3307	Trape fall time	Set the falling time of the trapezoidal wave from high level to low level.	6000 ms
	[1,60000]		-
3308	Trape high time	Set the duration of the trapezoidal wave high level.	1.00 s
	[0.01,600.00]		-
3309	Trape low time	duration of the trapezoidal wave low level.	1.00 s
	[0.01,600.00]		-

34 Logic Function

No.	Name / Value	Description	Default																																										
3400	Logic status	Can be connected to any bit of the status word by a bit pointer. <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Bit</th><th>Name</th><th>Description</th></tr> </thead> <tbody> <tr><td>0</td><td>Edge1</td><td>Edge counter 1 output</td></tr> <tr><td>1</td><td>Edge2</td><td>Edge counter 2 output</td></tr> <tr><td>2</td><td>Edge3</td><td>Edge counter 3 output</td></tr> <tr><td>3</td><td>Comp1</td><td>Comparator 1 output</td></tr> <tr><td>4</td><td>Comp2</td><td>Comparator 2 output</td></tr> <tr><td>5</td><td>Comp3</td><td>Comparator 3 output</td></tr> <tr><td>6</td><td>Logic1</td><td>Logic 1 output</td></tr> <tr><td>7</td><td>Logic2</td><td>Logic 2 output</td></tr> <tr><td>8</td><td>Logic3</td><td>Logic 3 output</td></tr> <tr><td>9</td><td>Ontime1</td><td>Timer 1 output</td></tr> <tr><td>10</td><td>Ontime2</td><td>Timer 2 output</td></tr> <tr><td>11</td><td>Ontime3</td><td>Timer 3 output</td></tr> <tr><td>12~15</td><td>Reserved</td><td>Reserved</td></tr> </tbody> </table>	Bit	Name	Description	0	Edge1	Edge counter 1 output	1	Edge2	Edge counter 2 output	2	Edge3	Edge counter 3 output	3	Comp1	Comparator 1 output	4	Comp2	Comparator 2 output	5	Comp3	Comparator 3 output	6	Logic1	Logic 1 output	7	Logic2	Logic 2 output	8	Logic3	Logic 3 output	9	Ontime1	Timer 1 output	10	Ontime2	Timer 2 output	11	Ontime3	Timer 3 output	12~15	Reserved	Reserved	
Bit	Name	Description																																											
0	Edge1	Edge counter 1 output																																											
1	Edge2	Edge counter 2 output																																											
2	Edge3	Edge counter 3 output																																											
3	Comp1	Comparator 1 output																																											
4	Comp2	Comparator 2 output																																											
5	Comp3	Comparator 3 output																																											
6	Logic1	Logic 1 output																																											
7	Logic2	Logic 2 output																																											
8	Logic3	Logic 3 output																																											
9	Ontime1	Timer 1 output																																											
10	Ontime2	Timer 2 output																																											
11	Ontime3	Timer 3 output																																											
12~15	Reserved	Reserved																																											
3401	Edge cnt 1 val	Display the count value of edge counter 1, read-only.	0																																										
	[0, 65535]		-																																										
3402	Edge cnt 1 src	Selects the signal to be monitored by edge counter 1.	CONST.FALSE = [0]																																										
	P.01.00.00	User-defined pointer (parameter bit pointer)	-																																										
	CONST.FALSE	Always be 0	0																																										
	CONST.TRUE	Always be 1	1																																										
	DI1	Digital input DI1 (<i>0200 DI Status, Position 0</i>)	2048																																										
	DI2	Digital input DI2	2049																																										
	DI3	Digital input DI3	2050																																										
	DI4	Digital input DI4	2051																																										
	DI5	Digital input DI5	2052																																										
	DI6	Digital input DI6	2053																																										
	DI7	Digital input DI7	2054																																										
3403	Edge cnt 1 reset	Select the reset signal of the edge counter 1. The value will be reset to 0 after reset. For available selections, see parameter 3402 Edge cnt1 src.	CONST.FALSE = [0]																																										
3404	Edge cnt 1 edge	Select the count edge of the edge counter 1.	Rising = [0]																																										
	Rising	Only rising edges are counted.	0																																										
	Falling	Only falling edges are counted.	1																																										
	Both	Both rising edges and falling edges are counted.	2																																										

No.	Name / Value	Description	Default
3405	Edge cnt 1 duty	Set the duty cycle of the edge counter 1. The output of the edge counter 1 is display by the bit0 of parameter <i>3400 Logic status</i> . When the count value is less than the duty cycle, the output is 0; otherwise, the output is 1. [0,65535]	100 -
3406	Edge cnt 1 period	Set the count cycle for the edge counter 1. Note: The period of the edge counter should not be less than its duty cycle. [0,65535]	120 -
3407	Edge cnt 1 clear	Set the clear mode of the edge counter 1 .	Disable = [0]
	Disable	Clear when the count value exceeds the value of 65535.	0
	Enable	Clear when the count value reaches the cycle value.	1
...
3415	Edge cnt3 val	Display the count value of edge counter 3, read-only. The value range and units and other descriptions see parameter <i>3401 Edge cnt1 val</i> .	0
3416	Edge cnt3 src	Select the count signal source of the edge counter 3. For available selections, see parameter <i>3402 Edge cnt1 src</i> .	CONST.FALS E = [0]
3417	Edge cnt3 reset	Select the reset signal source of edge counter 3. For available selections, see parameter <i>3402 Edge cnt1 src</i> .	CONST.FALS E = [0]
3418	Edge cnt3 edge	Select the count value of the edge counter 3. For available selections, see parameter <i>3404 Edge cnt1 edge</i> .	Rising = [0]
3419	Edge cnt3 duty	Set the duty cycle of the edge counter 3. The value range and units and other descriptions see parameter <i>3405 Edge cnt1 duty</i> .	100
3420	Edge cnt3 period	Set the cycle of the edge counter 3. The value range and units and other descriptions see parameter <i>3406 Edge cnt1 period</i> .	120
3421	Edge cnt3clear	Set the clear mode of the edge counter 3. For available selections, see parameter <i>3407 Edge cnt1</i>	

No.	Name / Value	Description	Default
3422	Comp 1 output	The output of the comparator 1, read only. The output of the comparator 1 is also displayed in the bit3 of parameter <i>3400 Logic status</i> .	0
	[0, 1]	The comparator using the hysteresis comparison mode by default. The hysteresis size Δ is determined by the parameter <i>3425 Comp1 range</i> . Initially, the comparator output is 0; When the input A decreased to less than or equal to $B - \Delta$, the output is reversed to 0; When the input A increased to greater than or equal to the input $B + \Delta$, the output is reversed to 1. Enable the window comparison mode by the parameter <i>3428 Comp1 win</i> , the window size Δ is also determined by the parameter <i>3425 Comp1 range</i> . When the input A is not less than $B - \Delta$ and no greater than the input $B + \Delta$, the output is 1, otherwise the output is 0.	-
3423	Comp 1 A src	Select the input A signal source of comparator 1.	Zero= [0]
	P.01.00	User-defined pointer (parameter bit pointer)	-
	Zero	Always zero.	0
3424	Comp 1 B val	Set the input B value of comparator 1.	120
	[-32767,32767]		-
3425	Comp 1 range	Set the comparison range of comparator 1.	20
	[-32767,32767]		
3426	Comp 1 in abs	Enable or disable the absolute value of the input A of comparator 1.	Disable = [0]
	Disable	Disable	0
	Enable	Enable	1
3427	Comp 1 out inv	Enable or disable the inversion of comparator 1. For available selections, see parameter <i>3426 Comp 1 in abs</i> .	Disable = [0]
3428	Comp 1 win	Enable or disable the window comparison mode of comparator 1. For available selections, see parameter <i>3426 Comp 1 in abs</i> .	Disable = [0]
...

No.	Name / Value	Description	Default
3436	Comp 3 output	The output of the comparator 3, read only. The output of the comparator 3 is also displayed in the bit5 of parameter <i>3400 Logic status</i> . The value range and unit and other instructions see parameter <i>3422 Comp1 output</i> .	0
3437	Comp 3 A src	Select the input A signal source of comparator 3. For available selections, see parameter <i>3423 Comp1A src</i> .	Zero= [0]
3438	Comp 3 B val	Set the input B value of comparator 3. The value range and unit and other instructions see parameter <i>3424 Comp1B val</i> .	100
3439	Comp 3 range	Set the comparison range of comparator 3. The value range and unit and other instructions see parameter <i>3425 Comp1 range</i> .	20
3440	Comp 3 in abs	Enable or disable the absolute value of the input A of comparator 3. For available selections, see parameter <i>3426 Comp1 in abs</i> .	Disable = [0]
3441	Comp 3 out inv	Enable or disable the inversion of comparator 3. For available selections, see parameter <i>3426 Comp1 in abs</i> .	Disable = [0]
3442	Comp 3 win	Enable or disable the window comparison mode of comparator 3. For available selections, see parameter <i>3426 Comp1 in abs</i> .	Disable = [0]

No.	Name / Value	Description	Default
3443	Logic 1 A src	Select the input A signal source of logic 1.	CONST.FALSE = [0]
	P.01.00.00	User-defined pointer (parameter bit pointer.)	-
	CONST.FALSE	Always be 0	0
	CONST.TRUE	Always be 1	1
	DI1	Digital input DI1 (<i>0200 DI State, bit 0</i>)	2048
	DI2	Digital input DI2	2049
	DI3	Digital input DI3	2050
	DI4	Digital input DI4	2051
	DI5	Digital input DI5	2052
	DI6	Digital input DI6	2053
	DI7	Digital input DI7	2054
3444	Logic 1 B src	Select the input B signal source of logic 1. For available selections, see parameter 3443 Logic1 A src.	CONST.FALSE = [0]
3445	Logic 1 C src	Select the input C signal source of logic 1. For available selections, see parameter 3443 Logic1 A src.	CONST.FALSE = [0]
3446	Logic 1 func	Selection the function of logic 1. The Logic 1 output is displayed in bit6 of parameter 3400 Logic status.	AND = [0]
	AND	Logic and	0
	OR	Logic or	1
	NOT	Logic non	2
	XOR	Logic exclusive or	3
	Toggle	Logic reverse	4
	NAND	Logic and non	5

3451	Logic 3 A src	Set the input A signal source of logic 3. For available selections, see parameter 3443 Logic1 A src.	CONST.FALSE = [0]
3452	Logic 3 B src	Set the input B signal source of logic 3. For available selections, see parameter 3443 Logic1 A src.	CONST.FALSE = [0]
3453	Logic 3 C src	Set the input C signal source of logic 3. For available selections, see parameter 3443 Logic1 A src.	CONST.FALSE = [0]
3454	Logic 3 func	Selection the function of logic 3. The Logic 3 output is displayed in bit8 of parameter 3400 Logic status.	AND = [0]

No.	Name / Value	Description	Default
3455	Ontime 1 enable	Select the enable signal source of the timer 1.	CONST.FALSE
	src	When the enable signal is equal to 0, timer stops; When the enable signal is equal to 1 , timer starts.	= [0]
	P.01.00.00	User-defined pointer (parameter bit pointer).	-
	CONST.FALSE	Always be 0	0
	CONST.TRUE	Always be 1	1
	DI1	Digital input DI1 (<i>0200 DI state, bit 0</i>)	2048
	DI2	Digital input DI2	2049
	DI3	Digital input DI3	2050
	DI4	Digital input DI4	2051
	DI5	Digital input DI5	2052
3456	Ontime1 comp	Set the comparison value of timer 1, units is 0.1s.	6553.5 s
	val	Timer 1 output is displayed in bit 9 of parameter 3400 <i>Logic status</i> . When the timer value is less than the comparison value, the output is 0, otherwise, the output is 1.	
3457	Ontime 1 cnt	Display the timer 1 count value, read – only.	0
	[0, 65535]		-

3461	Ontime3 enable	Select the enable signal source of timer 3.	CONST.FALSE
	src	For available selections, see parameter 3455 <i>Ontime1 enable src</i> .	= [0]
3462	Ontime3 comp	Set the comparison value of timer 3.	6553.5 s
	val	The value range and unit and other instructions see parameter 3456 <i>Ontime1comp val</i> .	
3463	Ontime 3 cnt	Display the timer 3 count value, read – only.	0
		The value range and unit and other instructions see parameter 3457 <i>Ontime 1 cnt</i> .	

35 Math function

No.	Name / Value	Description	Default
3500	Linear1x src	Select the signal source for proportional conversion 1 input X.	Zero = [0]
	P.01.00	User-defined pointer (parameter pointer).	-
	Zero	Always zero	0
3501	Linear1y	The output value of proportional conversion 1 output Y. User can connect to the parameter by a parameter pointer.	0
	[-32767, 32767]		-
3502	Linear1x max	The maximum value of the proportional conversion 1 input X.	32767
	[-32767, 32767]		-
3503	Linear1x min	The minimum value of the proportional conversion 1 input X.	0
	[-32767, 32767]		-
3504	Linear1y max	The maximum output value of proportional conversion 1 output Y.	32767
	[-32767, 32767]		-
3505	Linear1y min	The minimum output value of proportional conversion 1 output Y.	0
	[-32767, 32767]		-
3506	Linear1x abs	Enable or disable the absolute value of the proportional conversion 1 input X.	Disable = [0]
	Disable	Disable	0
	Enable	Enable	1
3507	Linear1y dec	Set the decimal digits of the proportional conversion output Y.	0
	[0, 7]		-
3508	Linear1y unit	Select the unit of the proportional conversion 1 output Y.	0
	[0, 63]		-
...

No.	Name / Value	Description	Default
3518	Linear3 x src	Select the signal source of the proportional conversion 3 input X. For available selections see parameter <i>3500 Linear1x src</i> .	Zero = [0]
3519	Linear3 y	Value of the proportional conversion 3 output Y. For setting range and unit see parameter <i>3501 Linear1 output</i> .	0
3520	Linear3 x max	Set the maximum value the proportional conversion 3 input X. For setting range and unit see parameter <i>3502 Linear1 x max</i> .	32767
3521	Linear3 x min	Set the minimum value the proportional conversion 3 input X. For setting range and unit see parameter <i>3503 Linear1 x min</i> .	0
3522	Linear3 y max	Set the maximum value the proportional conversion 3 output Y. For setting range and unit see parameter <i>3504 Linear1 y max</i> .	32767
3523	Linear3 y min	Set the minimum value the proportional conversion 3 output Y. For setting range and unit see parameter <i>3505 Linear1 y min</i> .	0
3524	Linear3 x abs	Enable or disable the absolute value of the proportional conversion 3 input X.	Disable = [0]
3525	Linear3 y dec	Set the decimal digits of the proportional conversion 3 output Y.	0
3526	Linear3 y unit	Select the unit of the proportional conversion 3 output Y.	0

No.	Name / Value	Description	Default
3527	Math1 x src	Select the signal source of math 1 input X.	Zero = [0]
	P.01.00	User-defined pointer (parameter pointer).	-
	Zero	Always zero	0
3528	Math1 y src	Select the signal source of math 1 input Y. For available selections, see parameter 3527 Math1 x src.	Zero = [0]
3529	Math1 func	Select the calculation function of math 1.	Add = [0]
	Add	x + y	0
	Sub	x - y	1
	Min	Min (X, Y)	2
	Max	Max (X, Y)	3
	Abs	ABS (X)	4
	Mul	x * y / k (k is a scaling factor)	5
	Div	X * k / y (k is a scaling factor)	6
3530	Math 1 factor	When the parameter 3529 Math1 func select "Mul" or "Div" operator, set the scaling factor k of math 1.	0
	[-32768,32767]		-
3531	Math1 output	The output of math 1, read – only. It can be connected to the parameter by a pointer.	0
	[-32768,32767]		-
...
3537	Math 3 x src	Select the signal source of math 3 input X. For available selections, see parameter 3527 Math1 x src.	Zero = [0]
3538	Math3 y src	Select the signal source of math 3 input Y. For available selections, see parameter 3527 Math1 x src.	Zero = [0]
3539	Math 3 func	Select the calculation function of math 3. For available selections, see parameter 3529 Math1 func.	Add = [0]
	Math3 factor	When the parameter 3539 Math3 func select "Mul" or "Div" operator, set the scaling factor k of math 3.	0
3541	Math 3 output	The output of math 3, read – only. It can be connected to the parameter by a pointer.	0

No.	Name / Value	Description	Default
3542	Integrator1src	Select the signal source of integrator1 input. For available selections, see parameter <i>3527 Math1 x src.</i>	Zero = [0]
3543	Integrator 1 output	The output of integrator1 1, read – only. It can be connected to the parameter by a pointer.	0
	[0, 65535]		-
3544	Integrator1scaling		0
	[0, 65535]		-
.....
3548	Integrator3src	Select the signal source of integrator3 input. For available selections, see parameter <i>3542 Integrator 1 src.</i>	
3549	Integrator3output	The output of integrator1 3, read – only. It can be connected to the parameter by a pointer.	
3550	Integrator3scaling		
3551	Filter 1 input	Select the signal source of a low pass filter 1 input.	Zero = [0]
	P.01.00	User-defined pointer (parameter pointer).	-
	Zero	Always zero	0
3552	Filter 1 output	The output of filter 1, read – only. It can be connected to the parameter by a pointer.	0
	[0, 65535]		-
3553	Filter 1 time const	Set the filter time constant of low pass filter 1. Unit is 0.01s.	1.00 s
	[0.00, 655.35]		-
.....
3557	Filter 3 input src	Select the signal source of a low pass filter 3 input.. For available selections, see parameter <i>3551 Filter 1 input.</i>	Zero = [0]
3558	Filter 3 output	The output of filter 3, read – only. It can be connected to the parameter by a pointer. More information about the range and unit, see parameter <i>3552 Filter 1 output.</i>	0
3559	Filter 3 time const	Set the filter time constant of low pass filter 3. Unit is 0.01s.	1.00 s

40 Pos control

No.	Name / Value	Description	Default
4000	Pos ctrl mode	Position control mode	Disable
	POS CTRL	Positioning control, including the trajectory planning. Support for fixed length and fixed angle control.	0
	SERVO CTRL	servo control supports for conventional servo function.	1
	ZERO SERVO	Zero servo control.	2
4001	Pos ctrl enable	Activate/deactivate position control.	CONST.FALSE
4002	Pos mark type	Position reference signal type.	Z mark = [0]
	Z mark	Take Z pulse as position reference signal	0
	DI	Take the external signal as position reference signal defined by the parameter 4003.	1
4003	Pos mark src	Selection of external reference signal source.	CONST.FALSE
4004	Orient dir	Direction of spindle orientation.	0
	AUTO	Automatic	0
	FWD	Positive	1
	REV	Reverse	2
4005	Pos spd set	Orientation speed	300 rpm
	[0, 30000]		
4006	Pos refsrc	Select the position reference source	PULSE = [0]
	PULSE	The position reference source is given by the pulse train	0
	FIELDBUS	The position reference source is given by the Fieldbus	1
4007	Pos ctrl gain	Position loop gain	40Hz
	[1, 100]		
4008	Pos ffwd filter	Filtering time of position feedforward	2.0ms
	[0.0, 50.0]		
4009	Pos sel in1	Multi-step position selection source 1	CONST.FALSE
4010	Pos sel in2	Multi-step position selection source 2	CONST.FALSE
4011	Inc pos sel in1	Incremental position selection source 1	CONST.FALSE
4012	Inc pos sel in2	Incremental position selection source 2	CONST.FALSE
4013	Inc pos sel in3	Incremental position selection source 3	CONST.FALSE
4014	Feed fwd rqst	Forward feed request signal source	CONST.FALSE
4015	Feed rev rqst	Reverse feed request signal source	CONST.FALSE
4016	Pos rpt rqst	Repeat positioning request signal source	CONST.FALSE

No.	Name / Value	Description	Default
4017	Pos err lim [10, 1000]	The allowable position error of the positioning	100
4018	Pos preset1_rev [-32768, 32767]	The revolutions of multi-step position 1.	0
4019	Pos preset1_pul [-32768, 32767]	The pulses of multi-step position 1.	0
4020	Pos preset2_rev [-32768, 32767]	The revolutions of multi-step position 2.	0
4021	Pos preset2_pul [-32768, 32767]	The pulses of multi-step position 2.	0
4022	Pos preset3_rev [-32768, 32767]	The revolutions of multi-step position 3.	0
4023	Pos preset3_pul [-32768, 32767]	The pulses of multi-step position 3.	0
4024	Pos preset4_rev [-32768, 32767]	The revolutions of multi-step position 4.	0
4025	Pos preset4_pul [-32768, 32767]	The pulses of multi-step position 4.	0
4026	Inc pos preset1_rev	The revolutions of incremental position 1.	0
4027	Inc pos preset1_pul	The pulses of incremental position 1.	0
4028	Inc pos preset2_rev	The revolutions of incremental position 2.	0
4029	Inc pos preset2_pul	The pulses of incremental position 2.	0
4030	Inc pos preset3_rev	The revolutions of incremental position 3.	0
4031	Inc pos preset3_pul	The pulses of incremental position 3.	0
4032	Inc pos preset4_rev	The revolutions of incremental position 4.	0
4033	Inc pos preset4_pul	The pulses of incremental position 4.	0
4034	Inc pos preset5_rev	The revolutions of incremental position 5.	0
4035	Inc pos preset5_pul	The pulses of incremental position 5.	0
4036	Inc pos preset6_rev	The revolutions of incremental position 6.	0
4037	Inc pos preset6_pul	The pulses of incremental position 6.	0
4038	Inc pos preset7_rev	The revolutions of incremental position 7.	0
4039	Inc pos preset7_pul	The pulses of incremental position 7.	0
4040	Inc pos preset8_rev	The revolutions of incremental position 8.	0
4041	Inc pos preset8_pul	The pulses of incremental position 8.	0
4042	Force home rqst	Signal source of force return to zero position request.	CONST.FALSE

42 Mech brake

No.	Name / Value	Description	Default
4200	Mech brake enable	Enable the mechanical brake control logic.	Disable
	Disable	Not enabled. Brake output signal is always OFF.	0
	Enable	Enabled. No brake response signal.	1
	Enable with ack	Enabled, has brake response signal send the drive. When the response signal is abnormal, system will produce a protective fault.	2
4201	Mech ack src	The mechanical brake response signal source, only effective when the parameter <i>4200 Mech brake enable</i> is Enable with ack.	False
	P.01.00.00	User-defined pointer (parameter bit pointer).	-
	CONST.FALSE	Always be 0	0
	CONST.TRUE	Always be 1	1
	DI1	Digital input DI1(<i>0200 DI state, bit 0</i>)	2048
	DI2	Digital input DI2	2049
	DI3	Digital input DI3	2050
	DI4	Digital input DI4	2051
	DI5	Digital input DI5	2052
	DI6	Digital input DI6	2053
	DI7	Digital input DI7	2054
4202	Brake open delay	The time required from issuing the mechanical brake release command to fully releasing the mechanical brake. Please set according to the specifications of the mechanical brake. Unreasonable settings can cause damage to the brake due to friction.	800ms
	[200ms, 2000ms]		
4203	Brake close delay	The time required from issuing the mechanical brake close command to fully close the mechanical brake. Please set according to the specifications of the brake. Unreasonable settings will cause "slide hook" accident.	800ms
	[200ms, 2000ms]		
4204	Brake open torque	The setting of the torque output before sending the mechanical brake release command during startup.	100.0%
	[50.0%, 200.0%]		0.1%

No.	Name / Value	Description	Default
4205	Brake check rqst src	Request signal source of the mechanical brake check. The drive checks this signal before sending run command. When effective drive runs the brake check function. When invalid, drive runs the normal operation of the crane control function.	False
	P.01.00.00	User-defined pointer (parameter bit pointer).	-
	CONST.FALSE	Always be 0	0
	CONST.TRUE	Always be 1	1
	DI1	Digital input DI1(<i>0200 DI state, bit 0</i>)	2048
	DI2	Digital input DI2	2049
	DI3	Digital input DI3	2050
	DI4	Digital input DI4	2051
	DI5	Digital input DI5	2052
	DI6	Digital input DI6	2053
	DI7	Digital input DI7	2054
4206	Brake check torque	Torque setting for mechanical brake check function. When the mechanical brake check function is activated, if the drive detects the motor in slip state, the drive will produce a fault prompt.	100.0%
	[50.0%, 200.0%]		0.1%
4207	Brake check time	The drive torque retention time when the mechanical brake check function is activated.	2.0s
	[0.5s, 10.0s]		
4208	Brake slip limit	When the mechanical brake check function is activated, this parameter is used to determine whether the speed level slips or not during mechanical brake checking function.	30rpm
	[15rpm, 60rpm]		
4209	Brake open trq mem	The motor torque measured by the drive after the brake is completely released, used for diagnosis, read-only.	0.1%
4210	Brake close trq mem	The motor torque measured by the drive when the brake is about to close, used for diagnosis, read-only.	0.1%

43 Winder

No.	Name / Value	Description	Default
4300	Winder mode	Winding mode	Winder = [0]
	Winder		0
	Unwinder		1
4301	Gear ratio	Mechanical transmission ratio	1.000
	[0.001, 30.000]		
4302	Thickness	Material thickness	0.100mm
	[0.001, 30.000]		
4303	Web width	Strip material width	1000mm
	[1, 30000]		
4304	Density	Material density	1000kg/m ³
	[1, 30000]		
4305	Line spd max	Maximum linear speed	300.0m/min
	[0.1, 3000.0]		
4306	Line spd src	Line speed input signal source selection	AI1 scaled
4307	Dia calc mode	Roll diameter calculation mode	LINESPEED
	LINE SPEED		0
	ENCODER		1
	ROLL_PULSE		2
	EXT_FBK	Calculated by parameter 4308 Roll dia src	3
4308	Roll dia src	Signal source selection for external roll diameter calculation.	AI1 scaled
4309	Roll pulse src	Roll pulse signal source selection.	CONST.FALSE
4310	Roll pulse scaling	Roll pulse rate, i.e. The number of pulses generated by one revolution of the drum.	1
4311	Core diameter	Empty roll diameter	100mm
4312	Full roll dia	Full roll diameter	1
4313	Dia reset rqst	Roll diameter reset request signal source	CONST.FALSE
4314	Dia preset rqst	Roll diameter preset request signal source	CONST.FALSE
4315	Dia preset data	Roll diameter preset value	100mm
4316	Min spd dia calc	Maximum speed for roll diameter calculation	30rpm
4317	Tense src	Tension reference source selection	AI2 scaled
4318	Tmax	Maximum tension setting	30.0N
4319	Tape mode	Tension taper mode selection	0
4320	Max tape	Maximum gain of tension taper	0.0%
	[0, 100.0]		

47 Simple PLC function

No.	Name / Value	Description	Default
4700	Speed out	Speed reference Simple PLC module speed output, read-only. When select speed reference source (parameter 2100 or 2101) by parameter pointer and set to P.47.00, then simple PLC output is connected to the speed reference.	-
4701	Run enable src	Parameter Bit pointer. The default enable source is RUN signal.	P.06.00.04
4702	Mode	Select the simple PLC operation mode.	0
	Single	Keep the final speed after one process operation.	0
	Repeat	Circulation operation.	1
	Single & stop	Stop after one process operation. Before the next startup, it is necessary to issue a stop command first.	2
4703	Save mode	Whether save running data after stop or power off.	0
	Disable	Not save.	0
	Enable	Save running data to memory.	1
4704	Stage	Current running step, user can edit this parameter as the starting step.	0
	[0, 15]		
4705	Timer	The current step running time, users can edit this parameter as starting time.	0
	[0.0, 6553.5]		0. 1min
4706	Time Set 0	Defines the 1 st step run time. 0 = Ignore this step.	0
	[0.0, 6553.5]		0. 1min
...	0
4721	Time Set 15	Defines the 16 th step run time. 0 = Ignore this step.	0
	[0.0, 6553.5]		0. 1min
4722	Speed Set 0	Defines the 1 st step speed reference.	0
	[0, 65535]		1rpm
...	
4737	Speed Set 15	Defines the 16 th step speed reference.	0
	[0, 65535]		1rpm

48 Switch Sync

No.	Name / Value	Description	Default									
4800	Status	Status word for synchronous switching controller. <table border="1" style="margin-left: 20px;"> <tr> <th>Bit</th><th>Name</th><th>Information</th></tr> <tr> <td>0</td><td>Sync out</td><td>1=Switching action. 0=Switching no action.</td></tr> <tr> <td>15 … 1</td><td>Reserved</td><td></td></tr> </table>	Bit	Name	Information	0	Sync out	1=Switching action. 0=Switching no action.	15 … 1	Reserved		0
Bit	Name	Information										
0	Sync out	1=Switching action. 0=Switching no action.										
15 … 1	Reserved											
4801	Phase err	The phase error value of the motor and the power grid, read-only.	-									
4802	Switch enable	Enable the synchronous switching	Disable = [0]									
4803	Phase comp	The phase compensation size for synchronous switching control is used to compensate for the phase lag caused by the contactor delay and the load.	6deg									
4804	Speed comp	The phase of the motor needs to be modified to synchronize with the grid before the synchronous switching. When enable the synchronous switching, the speed compensation is automatically added to the given speed. Read-only.	0									

49 Data storage

No.	Name / Value	Description	Default
4900	Data storage1	Data storage parameter 1.	0
	[-32768,32767]	16 bits data.	-
4901	Data storage2	Data storage parameter 2.	0
	[-32768,32767]	16 bits data.	-
4902	Data storage3	Data storage parameter 3.	0
	[-32768,32767]	16 bits data.	-
4903	Data storage4	Data storage parameter 4.	0
	[-32768,32767]	16 bits data.	-
4904	Data storage5	Data storage parameter 5.	0
	[-32768,32767]	16 bits data.	-
4905	Data storage6	Data storage parameter 6.	0
	[-32768,32767]	16 bits data.	-
4906	Data storage7	Data storage parameter 7.	0
	[-32768,32767]	16 bits data.	-
4907	Data storage8	Data storage parameter 8.	0
	[-32768,32767]	16 bits data.	-

50 Fieldbus

No.	Name / Value	Description	Default
5000	Fieldbus enable	Disable or enable the fieldbus function.	Disable = [0]
	Disable	Disable	0
	Enable	Enable	1
5001	Comm loss func	Select the action to be performed when the field bus communication is lost.	No action = [0]
	No action	No action	0
	Fault	Report failure	1
	Alarm	Report alarm	2
5002	Comm loss time	Set the detection time of the loss of the fieldbus communication, Unit is 0.1s.	2.0 s
	[0.0, 60.0]	-	-
5003	Act1 src		
5004	Act2 src		
5005	Data in1	Select the data 1 transferred from the drive to the fieldbus module.	Status word = [1536]
	P.01.00	User-defined pointer (parameter pointer).	-
	Zero	Always zero	0
	Status word	Refer to parameter <i>0600 Status word 1</i> .	1536
	Act 1		
	Act2		

5016	Data in12	Select the data 12 transferred from the drive to the fieldbus module.	-
5017	Data out 1	Select the data 1 transferred from the field bus module to the drive.	Control word = [1541]
	P.01.00	User-defined pointer (parameter pointer).	-
	Zero	Always zero	0
	Fieldbus ref1	See parameter <i>0215 Fieldbus ref1</i> .	527
	Fieldbus ref2	See parameter <i>0216 Fieldbus ref2</i> .	528
	Control word	See parameter <i>0605 Control word</i> .	1541

5028	Data out 12	Select the data 12 transferred from the field bus module to the drive.	Zero = [0]

51 Embedded Modbus

No.	Name / Value	Description	Default
5100	Modbus enable	Disable or enable the Modbus communication function. When this function is not needed, it can be disabled to reduce CPU load.	Enable = [1]
	Disable	Disable	0
	Enable	Enable	1
5101	Node address	Defines the Modbus address. Two units with the same address are not allowed on-line. 0 = broadcast address.	1
	[0, 247]		-
5102	Baud rate	Selects the Modbus baud rate.	9600 = [1]
	4800		0
	9600		1
	19200		2
	38400		3
	57600		4
	115200		5
	230400		6
	460800		7
	921600		8
5103	Format	Sets the Modbus-RTU data format.	8, N, 1= [0]
	8, N, 1	8 data bits, no parity bit, 1 stop bit	0
	8, N, 2	8 data bits, no parity bit, 2 stop bits	1
	8, E, 1	8 data bits, even parity bit, 1 stop bit	2
	8, O, 1	8 data bits, odd parity bit, 1 stop bit	3

No.	Name / Value	Description	Default
5104	Master mode	Set Modbus to master mode. Note: The master mode only supports 0x06 function code.	Disable= [0]
	Disable	Disable	0
	Enable	Enable	1
5105	Reg data	When working on the master mode, set the data source of the target register.	Zero = [0]
	P.01.00	User-defined pointer (parameter pointer).	-
	Zero	Always zero	0
5106	Reg addr	When working on the master mode, set the address of the target register.	2
	[0, 65535]		
5107	Comm cycle	When working on the master mode, set the communication cycle. Unit is 1ms.	100 ms
	[0, 65535]	-	-
5108	Slave addr	When working on the master mode, set the destination node address.	0
	[0, 247]		

No.	Name / Value	Description	Default
5109	Diagnostics	Diagnostic information for Modbus Communications.	0
5110	Packet recv count	Count the message frames for this node received from the Modbus bus. Note: this counter counts only the message frames sent to this node (Broadcast frame included)	
	[0, 65535]		
5111	Packet send count	Count the message frames for this node sent to the Modbus bus.	
	[0, 65535]		
5112	Bus message count	Count all the message frames detected by this node from the Modbus bus.	
	[0, 65535]		
5113	UART error count	Count the number of serial port errors when the node receives the message frame from the Modbus	
	[0, 65535]	Normally the baud rate, frame format error, will therefore increase the error.	
5114	CRC error count	Count the number of CRC verification errors for this node to receive messages from Modbus bus.	
	[0, 65535]	CRC is normally prone to errors when communication is disturbed or protocol is inconsistent. Make sure that the master-slave communication GND has been connected together.	
5115	Frame error count	Count other errors that occur when the node receives the message frame from the Modbus bus, such as frame length error, frame timeout, etc.	
	[0, 65535]	Check communication agreement.	

60 Motor control

No.	Name	Motor control	Default
6000	Carrier freq	Carrier frequency setting of the drive. Affected by the temperature of the drive and the frequency of the motor, the actual carrier frequency may be different, refer to parameter 0904.	Type decision
	[2kHz, 812kHz]	Enhance the carrier can reduce motor noise. For long-distance transmission, if no reactor at the output side, it is necessary to reduce the carrier to reduce the reflected voltage of motor, to avoid motor insulation failure and burned.	
6001	Slip gain	Slip compensation gain of the asynchronous motor.	1.00
	[0.00, 1.00]	In open loop control, it is used to modify the speed estimation value. Closed-loop control with encoder, it is used to correct the error of the rotor time constant, so that the motor is in the best state.	
6002	Torque boost	Manual boost capacity of the motor torque. Normally no need to set.	0.00
	[0.00, 1.00]	Manual torque boost ratio, relative to the rated torque of the motor.	
6003	SC brake time	Synchronous motor to start short circuit braking time.	0.0s
	[0.0s, 100.0s]	Start short circuit braking time.	-
6004	Res damp gain	Oscillation suppression gain.	0.50
	[0.00, 3.00]	The open loop V/F control applicable for synchronous and asynchronous motors.	
6005	Excitation time	The pre-excitation time of vector control of the asynchronous motor.	0.0s
	[0.0s, 5.0s]	Increasing the pre-excitation time can improve the starting torque.	
6006	Fly restart	Speed tracking enable control can only be used in open loop V/F control mode of the asynchronous motor.	Disable = [0]
	Disable	Speed tracking function disabled.	0
	Enable	Speed tracking function enabled.	1
6007	Vdc max control	Activate or disable the over voltage stall function by this parameter.	Enable = [1]
	Disable	Disable over voltage stall function.	0
	Enable	Enable over voltage stall function.	1
	Enable at equal	Activation of the over voltage stall, but is invalid in the deceleration. Used for periodic load equipment.	2

No.	Name	Motor control	Default
6008	Vdc min control	Activate or disable the under-voltage stall function by this parameter.	Disable = [0]
	Disable	Disable under voltage stall function.	0
	Enable	Enable under voltage stall function.	1
6009	Auto phase mode	Search mode for initial phase of the synchronous motor.	Auto = [0]
	Auto	Enable automatically. Normally performs after power up and coast stop.	0
	Always	Always enable the phase search function.	1
	Disable	Always disable the phase search function.	2
6010	PM type	PM motor type	[1]
	Type 1 (non-standard)	Special phase search method, suitable for partially IPM motors, such as squirrel cage motor.	0
	Type 2 (standard)	Standard phase search method, suitable for SPM motors and most IPM motors	1
6011	Cur inject	Injected current for phase search of PM motors. For PM motor with squirrel cage, as well as big rating drive control small rating motor, needs to be slightly increased.	30%
	[0, 100]		
6012	Phase comp	The phase compensation value of the PM motor. For quick start application 90 ° is the best, while ordinary start 30 ° is the best. Normally set in the range of 0 to 90°.	30deg
	[-180, 180]		
6013	Over modu gain	Over modulation output gain.	15%
	[0, 15]		

No.	Name	Encoder configue	Default
6014	PWM mode	PWM modulation mode.	THD = [0]
	AUTO THD	The PWM mode is automatically adjusted to minimize the output voltage harmonics.	0
	AUTO SL	The PWM mode is automatically adjusted to minimize the IGBT switching loss.	1
	SVPWM	SVPWM represents a continuous PWM mode, DPWM means intermittent PWM mode.	2
	DPWM MIN	DPWM MIN mode, micro drive series driver does not support DPWM mode.	3
	DPWM MAX	DPWM MAX mode	4
	DPWM3	DPWM3 mode	5
	DPWM2	DPWM2 mode	6
	DPWM1	DPWM1 mode	7
	DPWM0	DPWM0 mode	8
6015	Flux brake gain	Magnetic flux braking control gain	0%
	[0, 100]		
6016	Energy opt gain	Energy-saving control gain of the asynchronous motor.	0%
	[0, 50]		
6017	FOC spd max	Maximum allowable speed for closed loop control. If exceeds the maximum will switch to the open loop control.	30000rpm
	[0, 32767]		

61 Encoder config

No.	Name	Encoder configure	Default
6100	Pulse per rev	Define the PPR of the incremental encoder,	2048
	[100, 65535]	Pulses/rev	-
6101	Electric offset	Define the offset angle of the encoder Z pulse, relative to the d-q axis system.	0
	[0°, 360°]	Only applicable to synchronous motor.	1
6102	Encoder phase	Define the phase of the encoder signal.	Normal = [0]
	Normal	Normal phase.	0
	Invert	Inverse phase.	1
6103	Enc counter mode	Define the encoder count mode.	Quadrature = [0]
	Quadrature	Quadrature encoder (with two channels, A and B)	0
	Direction	Single-track encoder (with one channel, A).	1
6104	Pulse cnt mode	Define the count mode of the pulse inputs used for the location reference. For available selections see parameter <i>6103 Enc counter mode</i> .	Quadrature = [0]
6105	Gear den	The electronic gear denominator of the position pulse input.	1000
	[1, 65535]	Pulse input used for the given position.	-
6106	Gear num	The electronic gear molecule of the position pulse input.	1000
	[1, 65535]	Pulse input used for the given position.	-
6107	Encoder enable	The enable encoder module, can only be used for small micro series driver.	Disable = [0]
	Disable	Disable encoder function.	0
	Enable	Enable encoder function.	1

62 Motor parameter

No.	Name	Motor parameters	Default
6200	Pole pairs	Defines the motor pole pairs. This is automatically calculated based on the rated speed and rated frequency of the motor, so it is essential to set the rated speed and rated frequency correctly.	Model dependent
		[1, 30]	The pole pairs of the motor.
6201	No-load current	No-load current of the asynchronous motor.	Model dependent
		[0A, 400.0A]	The parameter is obtained after ID RUN.
6202	Stator resist	Stator resistance of motor.	Model dependent
		[0 Ω, 65.535 Ω]	The parameter is obtained after ID RUN.
6203	Rotor resist	Rotor phase resistance of asynchronous motor.	Model dependent
		[0 Ω, 65.535 Ω]	The parameter is obtained after ID RUN.
6204	Stator induct	Stator phase inductance of motor.	Model dependent
		[0mH, 3000.0mH]	The parameter is obtained after ID RUN.
6205	Leak induct coef	Leakage inductance coefficient of asynchronous motor.	Model dependent
		[0%, 20.0%]	The parameter is obtained after ID RUN.
6206	d-axis induct	D axis inductance of PM motor.	Model dependent
		[0.00mH, 300.00mH]	The parameter is obtained after ID RUN.
6207	q-axis induct	q axis inductance of PM motor.	Model dependent
		[0.00mH, 300.00mH]	The parameter is obtained after ID RUN.
6208	Back EMF coef	Back EMF coefficient of PM motor.	Model dependent
		[0.0mV, 3000.0mV]	The parameter is obtained after ID RUN.
6209	Core sat coef	Iron core saturation coefficient of motor.	80%
		[50, 100]	The parameter is obtained after ID RUN.
6210	PM with squirrel	1 = Synchronous motor with a squirrel cage.	0
		[50, 100]	The parameter is obtained after ID RUN.

63 Startup Parameters

No.	Name	Startup Parameters	Default
6300	Motor nom power	Defines the motor rated power. This setting must match the value on the rating plate of the motor. If multiple motors are connected to the drive, enter the total power of the motors. Note: This parameter cannot be changed while the drive is running.	Model dependent
		[0.00kW, 630.00 kW]	-
6301	Motor nom volt	Defines the nominal motor voltage supplied to the motor. This setting must match the value on the rating plate of the motor.	Model dependent
		[0 V, 1000 V]	
6302	Motor nom current	Defines the motor rated current. This setting must match the value on the rating plate of the motor. If multiple motors are connected to the drive, enter the total current of the motors.	Model dependent
		[0.0 A, 1200.0 A]	
6303	Motor nom speed	Defines the nominal motor speed. The setting must match the value on the rating plate of the motor.	Model dependent
		[0 RPM, 30000 RPM]	
6304	Motor nom freq	Defines the nominal motor frequency. This setting must match the value on the rating plate of the motor.	50Hz
		[0 Hz, 1000 Hz]	
6305	Motor type	Select the motor type.	ACIM = [0]
	ACIM	Standard squirrel cage AC induction motor (asynchronous induction motor).	0
	PMSM	Permanent magnet motor. Three-phase AC synchronous motor with permanent magnet rotor and sinusoidal Back EMF voltage.	1
	SynRM	Synchronous reluctance motor. Three-phase AC synchronous motor with salient pole rotor without permanent magnets.	2

No.	Name	Startup Parameters	Default
6306	ID run request	<p>Selects the type of the motor identification routine (ID run) performed at the next start of the drive. During the ID run, the drive will identify the characteristics of the motor for optimum motor control.</p> <p>After completion of the ID run of motor, drive will stop.</p> <p>Notes:</p> <ul style="list-style-type: none"> • The ID run can only be performed in local control mode. • Once the ID run is activated, it can be canceled by stopping the drive. 	No request = [0]
	No request	No motor ID run is requested.	0
	Normal	<p>Normal ID run. Guarantees good control accuracy for all cases.</p> <p>Notes:</p> <ul style="list-style-type: none"> • In the following two cases to perform normal ID run. Must disconnect the mechanical connection between motor and driven equipment: If the load torque is higher than 20%; If the mechanical device driven by the motor is not able to withstand the rated speed transients during the normal auto tuning operation. • Before starting ID run, please check the motor direction. During ID run, motor will rotate in the forward direction. • The motor will run at up to approximately 50 ~ 100% of the nominal speed during the ID run. ENSURE THAT IT IS SAFE TO RUN THE MOTOR BEFORE PERFORMING THE ID RUN! 	1
	Standstill	<p>Static ID run.</p> <p>Note: A standstill ID run should be selected only if the Normal ID run is not possible due to the restrictions caused by the connected mechanics (eg. with lift or crane applications).</p>	2
	Auto-phasing	Only applicable to synchronous motor, used to identify initial Angle encoder under stationary state.	3

No.	Name	Startup Parameters	Default
6307	Drive mode	Select motor control mode.	SVC = [0]
	Open loop vector	Open loop vector control model is suitable for most applications.	0
	Close loop vector	Closed loop vector control. This model is used for occasions with strict requirements for speed and torque accuracy and response speed. You must install the PG card plus encoder to obtain the speed feedback to a closed-loop control.	1
6308	Phase inversion	Switches the rotation direction of motor. This parameter can be used if the motor turns in the wrong direction (for example, because of the wrong phase order in the motor cable), and correcting the cabling is considered impractical. Notes: <ul style="list-style-type: none">● Changing this parameter does not affect speed reference polarities, so positive speed reference will rotate the motor forward. The phase order selection just ensures that “forward” is in fact the correct direction.● After changing this parameter, the sign of encoder feedback (if any) must be checked and re-start motor ID RUN.	Normal, UVW = [0]
	Normal, UVW	Motor phase sequence is normal.	0
	Invert, UWV	Motor phase inverting, V and W exchange.	1
	Macro sel	Select the drive application macro.	Factory = [0]
6309	Factory	Default factory application macros.	0
	Reserved		1

Chapter 6 Diagnostics

6.1 Fault Indications

This chapter lists all the faults messages including the possible causes and corrective actions. If the VFD faults, the VFD output is disabled so that the VFD stops controlling the motor, and the following fault code will be displayed on the keypad, the fault contact output operates too.

For details, refer to the following table to identify and correct the cause of the fault.

For damages on units or unsolvable questions, please contact with local distributors/agents, service centers or manufacturer for solutions.

No.	Failure name	Possible causes	Terms of settlement
01	SC(Output short circuit)	Output phase to phase short circuit Output to earth short circuit output to the bus short circuit	Check whether the motor is short circuit. Check wiring and cable short circuit. Check whether there is a power factor compensation capacitor or surge absorber in the motor cable.
02	OC(Motor over current)	Acceleration time is too short The motor parameters incorrect setting Load too heavy	Prolong acceleration time Adjust the motor parameter Check the load
03	OV(Bus overvoltage)	Abnormal input voltage Deceleration time is too short The motor is in power generating status	Check power supply voltage Prolong deceleration time Connect a braking resistor
04	OH(Drive over heat)	Ambient over-temperature Fan failure Blockage of air duct Output current too high. Temperature detect circuit failure	Check ambient conditions Check air flow and fan running Clean the heat-sink Check the load and parameter Check the PWM frequency Seek for technical support

No.	Failure name	Possible causes	Terms of settlement
05	GF(Earth leakage)	Output short to ground Input and output short circuit The sum of the output current is not zero, and greater than the allowable value.	Check wiring Measure motor insulation Check wiring is loose Check whether the motor cable leakage. Check the motor output line is too long and there is no additional output reactor.
06	ADC (ADC Fault)	Hardware problem Motor current sensor fault Analog to digital converter fault on the control board.	Seek for technical support
07	NTC LOSS (Temperature sensor break)	Drive internal temperature sensor disconnection.	Seek for technical support
08	ENCINIT Encoder initial fault	The encoder is found to be faulty during initialization.	Check the encoder wiring is correct
09	ENCZMARK	The number of pulses between the two Z pulses captured by the encoder is different from that of the encoder.	Check encoder resolution settings are correct. Check whether the encoder cable is disturbed.
10	EEPROM Memory fault	Hardware failure	Seek for technical support
11	CPU OVERLOAD	CPU load over 100%, Failure to complete real-time task. Or stack overflow.	Seek for technical support
12	PARA ERROR	The parameters of the motor are conflicting with each other.	Check motor parameters are set correctly.

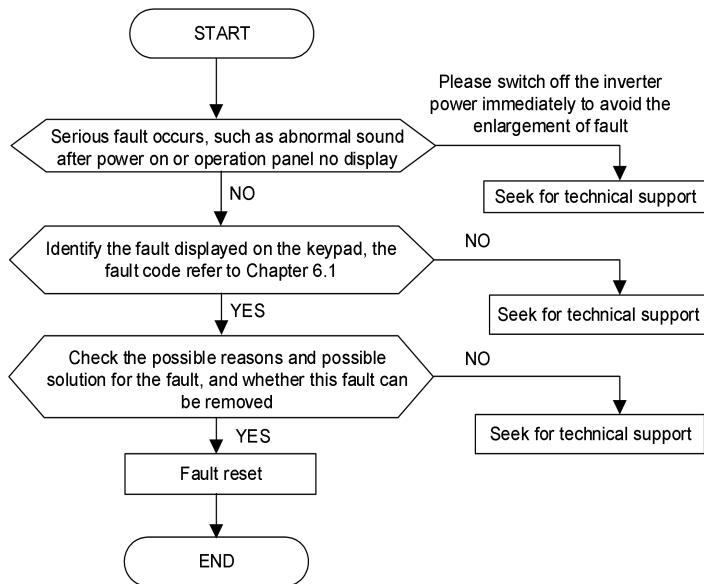
No.	Failure name	Possible causes	Terms of settlement
13	MOTOR OH	The temperature of the motor exceeds the set fault point.	Check whether the motor is overloaded. check motor overheating protection settings are correct.
14	AI LOSS	Analog input out of range.	Check whether analog input is broken or short.
15	EXT FAULT	External user defined fault.	Check external fault signal.
16	SUPPLY LOSS	Abnormal power supply. Input phase loss. Unbalanced 3-AC input. Insufficient capacity.	Check whether the lack of phase. Check whether the capacitance value is normal.
17	OUTPUT LOSS	Output current abnormal The output phase loss IGBT and peripheral anomalies cannot be controlled.	Check whether the motor is short of phase. Check whether the motor vibration.
18	ID RUN	Motor ID RUN fault.	Check whether the motor has been connected. Check the motor nameplate parameters are set correctly.
19	MODBUS FAULT	MODBUS Communication failure.	Check MODBUS communication.
20	CANOPEN FAULT	CAN Communication failure.	Check CAN communication.
21	PROFIBUS FAULT	PROFIBUS Communication failure.	Check PROFIBUS communication.
22	PAR SET ERR	Backup parameter set error in memory.	Parameter set not backup.

No.	Failure name	Possible causes	Terms of settlement
23	UNDER VOLTAGE	Power supply under voltage.	Check whether the power supply is normal. Check whether the soft start is normal.
24	SPEED FEEDBACK	Speed feedback fault.	Feedback phase disconnection or positive feedback.
25	OVER SPEED	Overspeed.	Check encoder settings are correct. Check whether the feedback is positive feedback.
26	OPTCARD CHANGED	Hot swap card options.	Do not allow the hot swap option card, otherwise it may cause permanent damage to the driver.
27	RUNTIME LIMITTED	Run time is limited.	Contact local agents.
28	PID FBK LOSS	Process PID feedback break.	Check whether the PID disconnection detection is correct. Check whether the external wire break.
29	BR ERR	The brake resistance is less than allowable resistance drive.	Check the brake resistance is reasonable.
30	BR OVERLOAD	Regenerative braking resistor.	Check the brake resistor overload detection settings are correct ,Check whether the power of resistance is reasonable.

No.	Failure name	Possible causes	Terms of settlement
31	BRAKE SLIP	The brake during the inspection, Motor slip.	Check whether the need to replace the brake. Check the brake check settings are correct.
32	BRAKE FLT	Open the front brake, start moment cannot be reached.	Check whether the normal brake.
33	BRAKE SAFE CLOSE	Open loop control, The motor works in the low speed dangerous area, Brake force close.	Check whether speed given is too low.
34	BRAKE OL	After the brake open, Actual compliance exceeds the maximum allowable torque of the drive.	Check whether the load is too high. Check the brake control circuit is normal.
35	BRAKE ACK FLT	After the brake open, no response signal.	Check the brake response signal is normal.
36	BRAKE SYNC FLT	Lifting control, motor speed and the given estimated deviation is too large. Magnetic flux anomaly.	Check motor parameters are set correctly.
37	PM SYNC LOSS	Multiple step out of step in the starting process of synchronous motor.	Check whether the initial angle identification parameter is set correctly

No.	Failure name	Possible causes	Terms of settlement
38	MOTOR STALL	Motor blocking fault, the rotor is almost impossible to rotate, The moment has reached the maximum torque.	Check if the machine is locked
39	STO Fault (1.0 version)	STO signal input	The connector between STO and 24V terminals may loose or singal triggered
40	STO Fault (1.1 version)	STO signal input	The connector between STO and 24V terminals may loose or singal triggered
41	STO Terminal 1 trigered (1.1 version)	STO signal input	The connector between STO 1 and 24V terminals may loose or STO 1 singal triggered
42	STO Terminal 2 trigered (1.1 version)	STO signal input	The connector between STO 2 and 24V terminals may loose or STO 1 singal triggered
43	Drive overload	Output current of drive exceeds rated current for a while	Use bigger rating drive

6.2 Troubleshooting Procedures



Chapter 7 Maintenance

The application environment (such as temperature, humidity, dust and powder, wool, smoke and oscillation), burning and wearing of internal devices and other factors may reduce the service life. To reduce the fault and prolong the service life, it is necessary to perform daily inspections and periodic maintenance.



Note

1. Only the professionals can dismantle and replace the VFD components.
2. Before inspection and maintenance, please make sure that the power supply has been switch off at least ten minutes, otherwise, electric shock may be happened.
3. Do not leave metal components and parts in the inner of VFD, otherwise, VFD will be damaged.

7.1 Daily Inspections

The VFD should be used under the allowable conditions as recommended in this manual and its daily inspections should be performed as the table.

Item	Inspection Contents	Inspection Means	Criteria
Environment	Temperature	Thermometer	-10 ~ +40°C. De-rated at 40 to 50°C, and the rated output current shall be decreased by 1% for every temperature rise of 1°C.
	Humidity	hygrometer	5 ~ 95%, no condensing
	Dust, oil, water and drop	Visual check	There are no dust, oil, water and drop
	Vibration	Special test instrument	3.5m/s ² , 2 ~ 9Hz 10m/s ² , 9 ~ 200Hz 15m/s ² , 200 ~ 500Hz
	Gas	Special test instrument, smell and visual check	There are no abnormal smell and smoke
VFD	Heat dissipation effect	Special test instrument	Exhaust normal
	Noise	Listen	There is no abnormal noise
	Gas	Smell and visual check	There are no abnormal smell and smoke
	Physical appearance	Visual check	The physical appearance is kept intact
	Heat-sink and	Visual check	No dust blocking the air duct

Item	Inspection Contents	Inspection Means	Criteria
Motor	cooling fan		
	Input current	Ampere-meter	Refer to the nameplate check allowable range
	Input voltage	Voltmeter	Refer to the nameplate check allowable range
	Output current	Ampere-meter	In the rated value range and can be overload for a short time
	Output voltage	Voltmeter	In the rated value range
Motor	Heat dissipation effect	Special test instrument and smell	The motor temperature is within the normal range, no abnormal burning smell
	Noise	Listen	No abnormal noise
	Vibration	Special test instrument	No vibration

7.2 Periodic Maintenance

Please start periodic maintenance every three to six months according to the application environment and working conditions.

Item	Inspection Contents	Inspection Means	Criteria
VFD	Main circuit terminal	Screwdriver/sleeve	The screws fixed strongly and no damaged to the cables
	PE terminal	Screwdriver/sleeve	The screws fixed strongly and no damaged to the cables
	Control circuit terminal	Screwdriver	The screws fixed strongly and no damaged to the cables
	Reliability of internal connections and connectors	Screwdriver and hands	Connection is firm and reliable
	Expansion card connector	Screwdriver and hands	Connection is firm and reliable
	Mounting screws	Screwdriver/sleeve	The screws are tightened
	Cleaning the dusts and powders	Cleaner	There are no dusts and wool
	Internal foreign matter	Visual check	There are no foreign matter
Motor	Insulation test	500VDC megger	Normal

7.3 Component Replacement

Different types of components have different service lives. The service lives of the components are subject to the environment and application conditions.

Better working environment may prolong the service lives of the components. The cooling fan and electrolytic capacitor are vulnerable components and should be periodic maintenance. If any fault occurs, please replace the component.

Vulnerable Component	Damage Causes	Solutions	Items for Routine Inspection
Cooling fan	Bearing worn, blade aging	Replace	Service life: 30 000 ... 40 000 hours The fan blade has no cracks and rotates normally. The screws are tightened.
Capacitor	High ambient temperature and electrolyte volatilization	Replace	Service life: 40 000 ... 50 000 hours There are no electrolyte leakage, color change, crack and shell inflation. The safety valve is normal. Static capacity is equal to or higher than the initial value *0.85.

When the VFD is stored for a long time, power-on test should be conducted once within two years and last at least five hours. You can use voltage regulator to gradually increase the voltage to the rated voltage after power-on.

Appendix A Modbus Comm

1 Support Protocol

Support Modbus protocol, RTU format.

Broadcast address is 0, slave address is “1–247”, and “248–255” for reservation.

2 Interface Mode

RS485: Asynchronous, half duplex, LSB sending priority. Low byte is after the high byte.

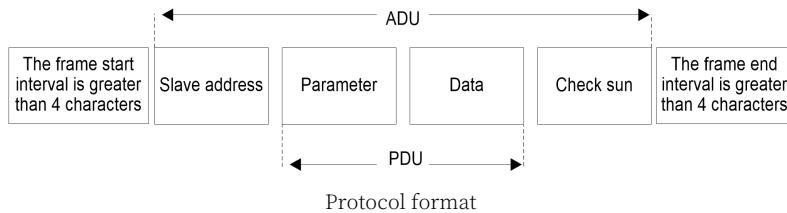
Communication terminals: RS485A, RS485B.

Default data format: 8-N-1.

Default baud rate: 9600bps.

Refer to the parameters group for more details.

3 Protocol Format



The ADU (Application Data Unit) check sum is the CRC16 checksum of the first three parts of the ADU obtained by exchanging the high and low bytes.

4 Field Bus Data Set

Address	Name
0001	Fieldbus control word (corresponding to parameter 0605)
0002	Field bus given 1(corresponding to parameter 0215)
0003	Field bus given 2(corresponding to parameter 0216)
0004	Field bus status word
0005	Field bus actual value1
0006	Field bus actual value2
0007-0018	Field bus module input1-12 (parameter 5005- 5016)
0019-0030	Field bus module output1-12 (parameter 5017- 5028)

Field Bus Status Word

No.	Name	Meaning
0	Ready	1 : Operational readiness
1	Enabled	1 : Run enable
2	Modulating	1 : PWM signal output
3	Following ref	1:
4	Em OFF2	1 : Free parking mode
5	Em OFF3	1 : Emergency stop mode
6	Start inhibit	1 : Start inhibit
7	Alarm	1 : Alarm
8	At setpoint	1 : The output is consistent with the set (speed arrival or torque arrival)
9	Torque limited	1 : Torque limited
10	Speed limited	1 : Speed limited
11	EXT2 active	1 : Control ground 2 effective
12	Local ctrl	1 : Local ctrl
13	Zero speed	1 : Zero speed
14	Direction reverse	1 : Direction reverse
15	Fault	1 : Fault

5 Related Parameters

Parameter address	Parameter name	Parameter values
5100	Modbus enable	Enable = [1]
5101	Node address	-
5102	Baud rate	-
5103	Format	-

6 Example

The following is an example of node address equal to 1, The last CRC check code is only applicable to this case, To change any data should be recalculated after CRC check code, Can use the software

automatically generated.

1 Read drive status

Request frame: 01 03 06 00 00 01 84 82, response frame: 01 03 02 B4 81 0F 24

2 Modify drive reference speed (First, set speed source is field bus)

Request frame: 01 06 00 02 03 E8 28 B4

3 Start drive (0x0882: start command, note that bit 7 and bit 11 must always 1)

(First, set the external start source is fieldbus communication)

Request frame: 01 06 00 01 08 82 5F AB

4 Stop driver (0x0881: stop command, note that bit 7 and bit 11 must always 1)

Request frame: 01 06 00 01 08 81 1F AA

6 Read parameter 2200 Acc timel attribute

Request: 01 42 0000 1600 77 A5, Response: 01 42 00 0008 AC 7E 78

7 Read parameter 2200 Acc timel default value

Request: 01 42 0001 1600 26 65, Response: 01 42 000101 F4 28 12

8 Read parameter 2201 Dec time minimum value

Request: 01 42 00 02 16 01 17 A5, Response: 01 42 00 02 00 01 19 C5

9 Read parameter 2201 Dec time maximum value

Request: 01 42 00 03 16 01 46 65, Response: 01 42 00 03 EA 60 C6 8D

10 Read the contained number of parameter group *01 Actual value*

Request: 01 42 00 04 16 01 F7 A4, Response: 01 42 00 04 00 0D F9 C1

7 Register Address

Parameter address is 16 bits, High 8 bit parameter group number, Low 8 bit is within the group index.

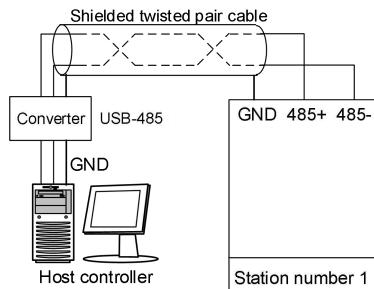
GROUP	INDEX	Address	
		Hexadecimal	Decimal
00: Communication data	01-30 Data set	0001-001E	0001-0030
01: Parameter group 01	00-255: Parameter 0100-01255	0100-01FF	256-511
02: Parameter group 02	00-255: Parameter 0200-02255	0200-02FF	512-767
...
63: Parameter group 63	00-255: Parameter 6300-63255	3F00-3FFF	16128-16383

Notice:

1. For each actual parameter, please refer to this manual.
2. The use of PLC as the master station parameter address need to add 40000, if the communication address of parameter *0100* is 40256.

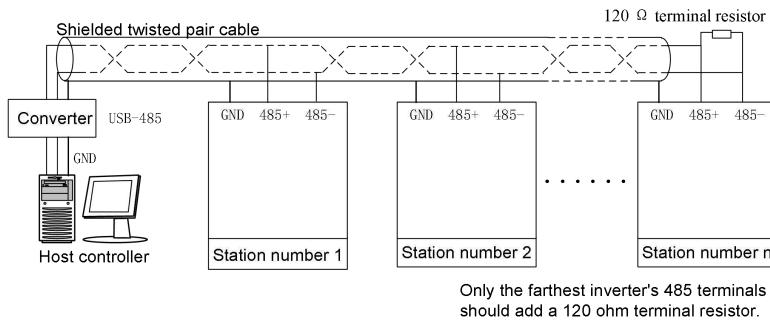
8 Network Construction

- The connection of one VFD and one host controller



The connection of one VFD and one host controller

- The connection of multiple VFDs and one host controller



The connection of multiple VFDs and one host controller