

Preface

Thank you for purchasing the MX600 series inverter developed by Our company.

For the users who use this product for the first time, read the manual carefully.

Contents

Chapter 1 Safety and Cautions

1.1 Safety and Cautions Definition.....	3
1.2 Safety Cautions.....	3
1.3 Cautions.....	5

Chapter 2 Product Information

2.1 Naming Rules.....	10
2.2 Nameplate.....	10
2.3 AC220V Input Specifications.....	11
2.4 AC380V Input Specifications.....	12
2.5 Recommended PV Module.....	13
2.6 Product Outline, Installation Hole Size.....	14

Chapter 3 Debugging Guide

3.1 Debugging when solar panels are powered.....	16
3.2 Debugging when grid or generator are powered.....	16
3.3 PV and AC grid or generator power supply auto switch debugging.....	17
3.4 Single Phase Motor Wiring.....	18
3.5 Main Circuit Terminal Description.....	18
3.6 Control Panel Terminals.....	19

Chapter 4 Function Parameters Table.....22

Chapter 5 Solar Water Pump Inverter Parameters Instructions... 68

Chapter 6 Troubleshooting And Maintenance.....72

Chapter 7 Modbus Communication Instructions.....76

Warranty Agreement

1. The warranty period of the product is 24months (refer to the bar code on the equipment body). During the warranty period , if the product fails or damaged under the condition of normal use by following the instruction, we will be responsible for free maintenance.

2. Within the warranty period , maintenance will be charged for the damages caused by the following reasons :

The damage caused by improper use or repair/modification without prior permission.

The damage caused by fire , flood , abnormal voltage , other natural disasters and second disaster.

The hardware damage caused by artificial falling or transportation after purchase.

The damage caused by the improper operation.

The damage or failure caused by the trouble out of the equipment (e.g. : External device)

3. If there is any failure or damage to the product, please fill in the information of the Product Warranty Card in details correctly.

4. The maintenance fee is charged according to the newly adjusted Maintenance Price List of our company .

5. In general , the warranty card will not be re-issued. Please keep the card and present it to the maintenance personnel when asking for maintenance .

6. If there is any problem during the service , please contact the agent of our company or our company directly .

7. The company reserves the right to interpret this agreement

Chapter 1 Safety and Cautions

1.1 Safety and Cautions Definition

Read this manual carefully so that you have a thorough understanding. Installation, commissioning or maintenance may be performed in conjunction with this chapter. Our company will assume no ability and responsibility for any injury or loss caused by improper operation.



Operations which are not performed comply with the requirements may cause severe hurt or even death.











Operations which are not performed comply with requirements may cause personal injury or property damage.

1.2 Safety Cautions

Use Stage	Safety Grade	Precautions
Before Installation	Danger	<ul style="list-style-type: none"> + Do not install the equipment if you find water seepage, component missing or damage upon unpacking. + Do not install the equipment if the packing list does not conform to the product you received.
	Danger	<ul style="list-style-type: none"> + Handle the equipment with care during transportation to prevent damage to the equipment. + Do not use the equipment if any component is damaged or missing. Failure to comply will result in personal injury. + Do not touch the components with your hands. Failure to comply will result in static electricity damage.
During Installation	Danger	<ul style="list-style-type: none"> + Install the equipment on incombustible objects such as metal, and keep it away from combustible materials. Failures to comply may result in a fire. + Do not loosen the fixed screws of the components, especially the screws with the red marks.
	Note	<ul style="list-style-type: none"> + Do not drop wire end or screw into the AC drive. Failure it will result in damage to the AC drive. + Install the AC drive in places free of vibration and direct sunlight. + When two AC drives are laid in the same cabinet, arrange the installation positions properly to ensure the cooling effect.

Safety and Cautions

Use Stage	Safety Grade	Precautions
At wiring	 Danger	<ul style="list-style-type: none"> + A circuit breaker must be used to isolate the power supply and the AC drive. Failure to comply may result a fire. + Ensure that the power supply is cut off before wiring. Failure to comply may result in electric shock. + Never connect the power cables to the output terminals(U,V,W) of the AC drive. Pay attention to the marks of the wiring terminals and ensure correct wiring. Failure to comply may result in damage to the AC drive. + Ensure that the main cable line comply with the standard, the line meets the EMC requirements and the area safety standard. Failure to comply may result in risk or accident. + Never connect the power cables the braking resistor between the DC bus terminals P+, P-. Failure to comply may result in a fire.
At wiring	 Danger	<ul style="list-style-type: none"> + Use a shielded cable for the encoder, and ensure that the shielding layer is reliably grounded.
Before Power-on	 Danger	<ul style="list-style-type: none"> + Please confirm the peripheral equipment and cable converter is configured in this manual of the recommended model, all the configuration line in accordance with the connection method of the manual provides the correct wiring. Failure to comply will result in accidents. + Check that the voltage class of the power supply is consistent with the rated voltage class of the AC drive.
After Power-on	 Danger	<ul style="list-style-type: none"> + Do not open the AC drive's cover after power-on. Failure to comply may result in electric shock. + Do not touch the operation of AC drive during the hands is wet. Failure to comply will result in accident. + Do not touch any I/O terminal of the AC drive. Failure to comply may result in electric shock. + Do not change the default settings of the AC drive. Failure to comply will result in damage to the AC drive. + Do not touch the rotating part of the motor during the motor auto-tuning or running. Failure to comply will result in accident.
During Operation	 Danger	<ul style="list-style-type: none"> + Signal detection must be performed only by qualified personnel during operation. Failure to comply will result in personal injury or damage to the AC drive. + Do not touch the fan or the discharging resistor to check the temperature. Failure to comply will result in personal burnt.

Use Stage	Safety Grade	Precautions
During Operation	 Danger	<ul style="list-style-type: none"> + Avoid objects falling into the AC drive when it is running. Failure to comply will result in damage to the AC drive. + Do not start or stop the AC drive by turning the contactor ON/OFF. Failure to comply will result in damage to the AC drive.
After Power-on	 Danger	<ul style="list-style-type: none"> + Do not repair or maintain the AC drive at power-on. Failure to comply will result in electric shock. + Ensure that the AC drive is disconnected from all power suppliers before starting repair or maintenance on the AC drive. + Repair or maintenance of the AC drive may be performed only by qualified personnel. Failure to comply will result in personal injury or damage to the AC drive.
After Power-on	 Danger	<ul style="list-style-type: none"> + Set and check the parameters again after the AC drive is replaced.

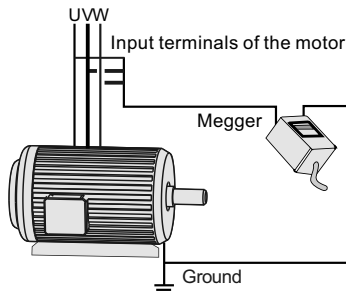
1.3 Cautions

1.3.1 Requirement on Residual Current Device(RCD)

The AC drive generates high leakage current during running, which flows earthing (PE) conductor. Thus install a type-B RCD at the transient and steady-state leakage current to ground that may be generated at startup and during running of the AC drive. You can select a specialized RCD with the function of suppressing high harmonics or general-purpose RCD with relatively large residual current.

1.3.2 Motor Insulation Test

Perform the insulation test when the motor is used for the first time, or when it is reused after being stored for a long time, or in a regular check-up, in order to prevent the poor insulation of motor windings from damaging the AC drive during the insulation test. A 500-V mega-Ohm meter is recommended for the test. The insulation resistance must not be less than 5 MΩ.



1.3.3 Thermal Protection of Motort

If the selected AC drive does not match the rated capacity of the motor , especially when the rated power of the AC drive is higher than that of the motor, adjust the parameters for motor protection in the AC drive or to install thermal relay to protect the motor .

1.3.4 Running Below and Above Rated Frequency

The AC drive provides frequency output of 0 to 600.00Hz. When the users use the frequency converter for a long time, please pay attention to the motor cooling or use of variable frequency motor. If the AC drive is required to run at over 50Hz, consider the capacity of the machine.

1.3.5 Vibration of mechanical device

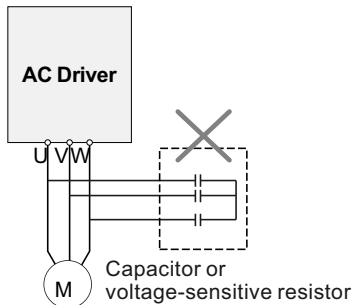
The AC drive may encounter the mechanical resonance point at some output frequencies, which can be avoided by setting the skip frequency. If the operating frequency of the customer coincide with the resonant frequency please modify the operating frequency or change the inherent resonance frequency of the mechanical system.

1.3.6 Motor heat and noise

The output of the AC drive is pulse width modulation (PWM) wave with certain harmonic frequencies, and therefore, the motor temperature, noise, and vibration are slightly greater than those when the AC drive runs at power frequency (50 Hz).

1.3.7 Voltage-sensitive device or capacitor on output side of the AC drive

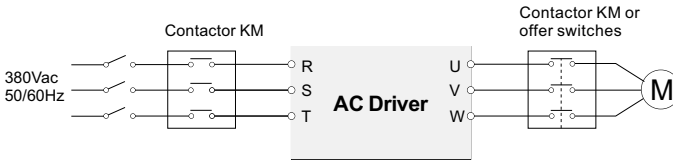
Do not install the capacitor for improving power factor or lightning protection voltage sensitive resistor on the output side of the AC drive because the output of the AC drive is PWM wave. Otherwise, the AC drive may suffer transient overcurrent or even bedamaged.



1.3.8 Contactor at the I/O terminal of the AC drive

When a contactor is installed between the input side of the AC drive and the power supply, the AC drive must not be started or stopped by switching the contactor on or off. If the AC drive has to be operated by the contactor, ensure that the time interval between switching is at least one hour since frequent charge and discharge will shorten the service life of the capacitor inside the AC drive.

When a contactor is installed between the output side of the AC drive and the motor, do not turn off the contactor when the AC drive is active. Otherwise, modules inside the AC drive may be damaged.



Do not start/stop the AC drive by switching the contactor on/off. If the AC drive has to be operated by the contactor, ensure that the time interval is at least one hour.

Turn on /off the contactor when the AC drive has no output. Otherwise, modules inside the AC drive may be damaged.

1.3.9 The Use Occasion of the External Voltage Out of Rated Voltage Range

The AC drive must not be used outside the allowable voltage range specified in this manual. Otherwise, the AC drive's components may be damaged. If required, use a corresponding voltage step-up or step-down device.

1.3.10 The Above Derating of the Default

Different power grade frequency converter has its default carrier frequency, when to run at a higher carrier frequency, the AC Drive must to reduce the amount when running.

1.3.11 Change Three Phase Input into Two Phase Input

It is not allowed to change the three phase AC drive into two phase one. Otherwise, it may cause it may cause fault or damage the AC drive.

1.3.12 The Protection of the Lighting Impulse

Although the AC drive has equipped with lightning overvoltage, overcurrent device, which has a certain protection function for the induction lightning. For the lightning prone areas, the user is necessary to install lightning protection device at the front of the AC drive, which will benefit to the service life of the transducer.

1.3.13 Ambient Temperature and De-rating

The normal use of the frequency converter ambient temperature is $-10^{\circ}\text{C}\sim 40^{\circ}\text{C}$. Temperature exceeds 40°C , the equipment need to reduce the amount of use. The ambient temperature of each increase is reduced by 1.5%, the maximum use of the ambient temperature is 50°C .

1.3.14 Altitude and Derating

In places where the altitude is above 1000m and the cooling effect reduces due to thin airt is necessary to de-rate the AC drive. Contact Our company for technical support.

1.3.15 Some Special Usages

If writing that is not described in this manual, such as common DC bus is applied, contact the agent or Our company for technical support.

1.3.16 The Cautious of the AC drive Disposal

The electrolytic capacitors on the main circuits and PCB may explore when they are burnt. Poisonous gas is generated when the plastic parts are burn. Treat them as ordinary industrial refer to relevant national laws and regulations.

1.3.17 Adaptable Motor

1. The standard parameters of the adaptable motor is adaptable four-squirrel-cage asynchronous induction motor or PMSM. For other types of motor, select a proper AC drive according to the rated motor current.
2. The cooling fan and rotor shaft of general AC Drive are coaxial, which results in reduced cooling effect when the rotational speed declines. If variable speed is required, add a more powerful fan or replace.
3. The standard parameters of the adaptable motor have been configured inside the AC drive. It is still necessary to perform motor auto-tuning or modify the default values based on actual conditions. Otherwise, the running result and protection performance will be affected.
4. The AC drive may alarm or even be damaged when short-circuit exists on cables or inside the motor. Therefore, perform insulation short-circuit test when the motor and cables are newly installed or during routine maintenance. During the test, make sure that the AC drive is disconnected from the tested parts.

DANGER

- ◆ Only trained and qualified professionals should perform the work that described in this chapter. Please follow the instructions in "Safety Precautions", ignoring these safety precautions may result in personal injury or damage to equipment.
- ◆ During the installation process, it must be ensured that the power supply of the inverter has been disconnected. If the inverter has been powered on, after the power is turned off, and the waiting time is not shorter than the time marked on the inverter, and confirm that the CHARGE light is off, it is recommended that the user directly use a multimeter to monitor that the DC bus voltage of the inverter below 36V.
- ◆ The installation design of the inverter must comply with the relevant laws and regulations of the installation site. If the installation of the inverter violates the requirements of local laws and regulations, our company does not assume any responsibility. In addition, if the user does not follow these recommendations, the VFD may experience some failures that are not covered by the warranty or quality assurance.

Chapter 2 Product Information

2.1 Naming Rules

MX600 - 4T - 11 G
1
2
3
4

Field	Mark	Explanation	Content
Ac drive series	①	Ac drive series	MX600 series
Voltage Level	②	Voltage Level	2T:Single-phase/Three-phase 220Vac Recommended voltage range (MTTP) 250Vdc~350Vdc 4T:Three-phase 380Vac Recommended voltage range (MTTP) 450Vdc~600Vdc
Adaptive Power	③	Adaptive Power	0.7KW~200KW
Function Type	④	Function Type	G:General

Figure 2-1 Name Designation Rules

2.2 Nameplate

CE A

MODEL: 600-4T-5.5G

INPUT: DC550V~750V 19A
AC3PH 380V 14.6A 50/60Hz

OUTPUT: AC3PH 0V-Uinput 0~500HZ 13A

S/N: _____

_____ Model of the AC drive

_____ Rated input voltage, frequency and current

_____ Rated output voltage, frequency and current

_____ Bar code

Figure 2-2 Name Designation Rules

2.3 AC220V Input Specifications

Model	Power Capacity (KVA)	Input Current (A)	Maximum Input DC Current(A)	Output Current (A)	Adaptable Motor (KW)	Recommended main circuit wire (mm ²)
AC Three-phase/Single-phase220V Range:-15%~20% DC 360V~430V						
MX600-2T-0.7G	1.5	5.5	12	4.7	0.75	2.5
MX600-2T-1.5G	3.0	7.7	12	7.5	1.5	4.0
MX600-2T-2.2G	4.0	12.0	12	10.0	2.2	4.0
MX600-2T-4.0G	5.9	14.6	21	13	4.0	4.0
MX600-2T-5.5G	8.9	26	31	25	5.5	6.0
MX600-2T-7.5G	11	35	43	32	7.5	10
MX600-2T-11G	17	46.5	63	45	11	10
MX600-2T-15G	21	62.5	85	60	15	16
MX600-2T-18.5G	24	76	105	75	18.5	25
MX600-2T-22G	30	92	128	91	22	25
Input Specification						
Max. input DC voltage			450VDC			
Recommended VOC voltage range			360~430VDC			
Recommended MPPT voltage range			250~350VDC			
Starting voltage range			160~450VDC (Adjustable parameters)			
Grid or Backup Generator Input						
Input AC voltage			2T: Single-phase 220V/Three-phase 220V (-15%~20%)			
Output Specification						
Rated output voltage AC			3PH /1PH 220V			
Output frequency range			0~500.00HZ			
Protection						
Built-in protection			Overvoltage, overcurrent, output phase loss, overload, undervoltage, short circuit,overheating, dry running of the pump under load, etc.			

2.4 AC380V Input Specifications

Model	Power Capacity (KVA)	Input Current (A)	Maximum Input DC Current(A)	Output Current (A)	Adaptable Motor (KW)	Recommended main circuit wire (mm ²)
AC Three-phase 380V Range:-15%~20% DC 550V~750V						
MX600-4T-0.7G	1.5	3.4	9	2.3	0.75	2.5
MX600-4T-1.5G	3.0	5.0	9	3.7	1.5	2.5
MX600-4T-2.2G	4.0	5.8	12	5.1	2.2	2.5
MX600-4T-4.0G	5.9	10.5	12	8.5	4.0	4.0
MX600-4T-5.5G	8.9	14.6	19	13	5.5	4.0
MX600-4T-7.5G	11	20.5	21	17	7.5	6.0
MX600-4T-11G	17	26.0	31	25	11	6.0
MX600-4T-15G	21	35.0	43	32	15	10
MX600-4T-18.5G	24	38.5	53	37	18.5	10
MX600-4T-22G	30	46.5	63	45	22	10
MX600-4T-30G	40	62.5	85	60	30	16
MX600-4T-37G	57	76.0	105	75	37	25
MX600-4T-45G	69	92.0	128	91	45	25
MX600-4T-55G	85	113	157	112	55	50
MX600-4T-75G	114	157	214	150	75	60
MX600-4T-90G	134	180	252	176	90	70
MX600-4T-110G	160	214	308	210	110	120
MX600-4T-132G	192	256	369	253	132	150
MX600-4T-160G	231	307	448	304	160	185
MX600-4T-185G	255	333	517	330	185	185
MX600-4T-200G	287	380	559	377	200	150*2
Input Specification						
Max. input DC voltage			800VDC (900VDC optional)			
Recommended VOC voltage range			550~750VDC			
Recommended MPPT voltage range			450~600VDC			
Starting voltage range			250~800VDC (Adjustable parameters)			
Grid or Backup Generator Input						
Input AC voltage			Three-phase 380V Range:-15%~20%			

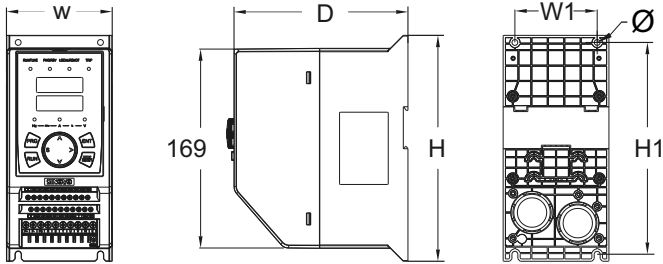
2.4 AC380V Input Specifications

Model	Power Capacity (KVA)	Input Current (A)	Output Current (A)	Adaptable Motor (KW)	Recommended input side main circuit wire (mm ²)	Recommended output side main circuit wire (mm ²)
Output Specification						
Rated output voltage AC			Three-phase 380V			
Output frequency range			0~50.00Hz			
Protection						
Built-in protection			Overvoltage, overcurrent, output phase loss, overload, undervoltage, short circuit, overheating, dry running of the pump under load, etc.			

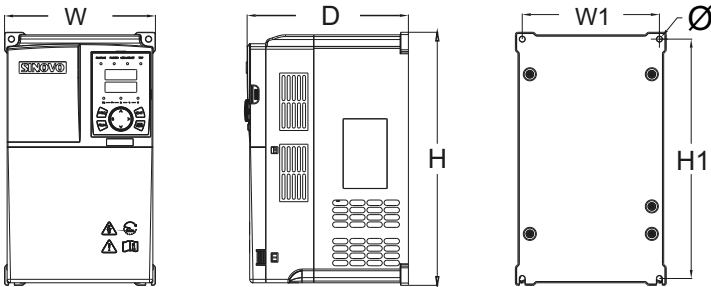
2.5 Recommended Battery Module Configuration for Solar Pump Inverter (only some power sections are listed for reference)

Model	Solar Cell Module Open Circuit Voltage Rating			
	37±1V		45±1V	
	Component power ±5WP	Components per string number* strings number	Component power ±5WP	Components per string number* strings number
MX600-4T-2.2G	250	18*1	300	15*1
MX600-4T-4.0G	250	20*1	300	16*1
MX600-4T-5.5G	250	18*2	300	15*2
MX600-4T-7.5G	250	18*2	300	15*2
MX600-4T-11G	250	18*3	300	15*3
MX600-4T-15G	250	18*4	300	15*4
MX600-4T-18.5G	250	18*5	300	15*5
MX600-4T-22G	250	18*6	300	15*6
MX600-4T-30G	250	18*8	300	15*8
MX600-4T-37G	250	18*9	300	15*9
MX600-4T-45G	250	18*11	300	15*11

2.6 Product Outline, Installation Hole Size

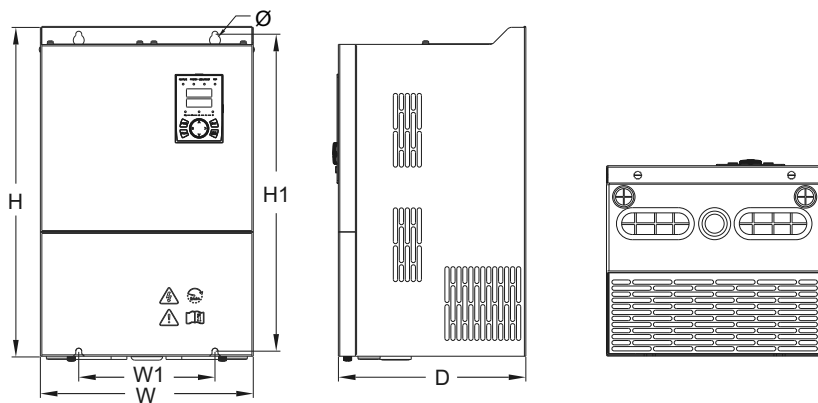


Model	inverter			Installation			GW (kg)
	H(mm)	W(mm)	D(mm)	H1(mm)	W1(mm)	Diameter (mm)	
MX600-4T-0.7G	192	90	148	180	70	Ø5	1.7
MX600-4T-1.5G							
MX600-4T-2.2G							
MX600-4T-4.0G							



Model	inverter			Installation			GW (kg)
	H(mm)	W(mm)	D(mm)	H1(mm)	W1(mm)	Diameter (mm)	
MX600-4T-5.5G	190	110	150	178	98	Ø5	2.6
MX600-4T-7.5G	210	130	160	198	118	Ø5	3.8
MX600-4T-11G	250	155	176	236	141	Ø5	5.0
MX600-4T-15G	295	176	188	279	160	Ø7	7.5
MX600-4T-18.5G							
MX600-4T-22G	337	245	188	320	228	Ø7	10.5
MX600-4T-30G							

Product Information



Model	inverter			Installation		GW (kg)	
	H(mm)	W(mm)	D(mm)	H1(mm)	W1(mm)		
MX600-4T-37G	387	250	220	372	150	Ø7	14
MX00-4T-45G	440	270	256	426	180		25
MX600-4T-55G						Ø10	32
MX600-4T-75G	469	307	263	450	200		52
MX600-4T-90G	590	340	305	565	200		55
MX600-4T-110G						Ø12	96.5
MX600-4T-132G	740	450	329	715	360		98
MX600-4T-160G							98.7
MX600-4T-185G	940	500	369	914	400		168.5
MX600-4T-200G							

Chapter 3 Debugging Guide

3.1 Debugging when solar panels are powered

1. When the solar panel is powered, the MX600 wiring is as follows:

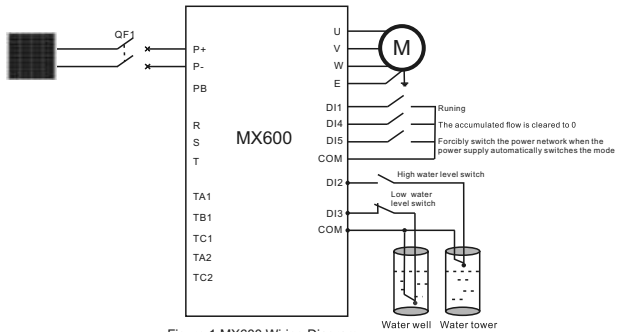


Figure 1 MX600 Wiring Diagram

2. Debugging Step are as Follows

- 1). Check the inverter model and wiring, and turn on QF1 after confirming that it is correct.
- 2). Correctly set the motor parameters, and input F05.01~F05.05 according to the motor nameplate; Set the command source F02.00 according to the requirements, MX600 inverter has a power-off memory for the panel commands and communication commands, that is, the command before the power-off is memorized, and the command is still maintained after the power-on.
- 3). When running the inverter, under normal light, if the running frequency is very low or the water output is very small, it is possible that the connection of the water pump is reversed.
- 4). F23 group related weak light warning, abnormal water level warning and other special functions can be set according to requirements.
- 5). If the water pumping is normal, it can work normally.

Note: DI2, DI3 abnormal water level input terminals, it can change the positive and negative logic polarity of the terminals through parameter F11.11 to meet the different installation methods of the water level switch.

3.2 Debugging when grid or generator are powered

1. When the solar panel is powered, the MX600 wiring is as follows

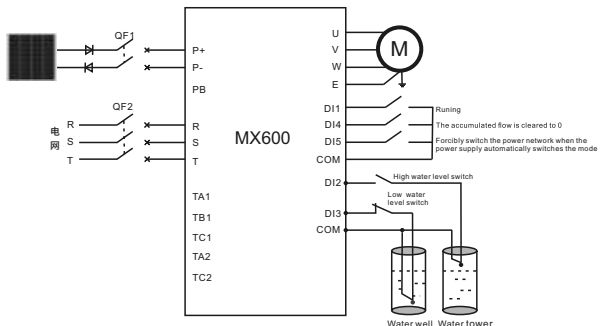


Figure 2 MX600 Wiring Diagram

2. Debugging Step are as Follows

- 1). Check whether the wiring is correct. When there is no diode protection installed at the input end of the DC bus, it is forbidden to close the solar panel switch QF1 and the grid input switch QF2 at the same time, otherwise the solar panel will be damaged.
- 2). First disconnect the solar panel switch QF1, and then close the grid switch QF2.
- 3). Set the motor parameters correctly, and input F05.01~F05.05 according to the motor nameplate;. Set the command source F02.00 according to the requirements, MX600 inverter has a power-off memory for the panel commands and communication commands, that is, the command before the power-off is memorized, and the command is still maintained after the power-on.
- 4). Set parameter F23.05=2 or close DI5 terminal (switch to grid mode). Note: when F23.05 is not equal to 0, closing the DI5 terminal only participates in the internal algorithm calculation, and does not automatically switch the power relay output operation. If need to convert the power supply to the photovoltaic panel, only need to set F23.05=1 or disconnect the DI5 terminal.
- 5). F23 group related weak light warning, abnormal water level warning and other special functions can be set according to requirements.
- 6). If the water pumping is normal, it can work normally.

Note: DI2, DI3 abnormal water level input terminals, it can change the positive and negative logic polarity of the terminals through parameter F11.11 to meet the different installation methods of the water level switch.

3.3 Debugging when Solar Panel is Automatically Switched with Grid or Generator are Powered

1. When the solar panel and the grid power supply are automatically switched, the MX600 wiring is as follows:

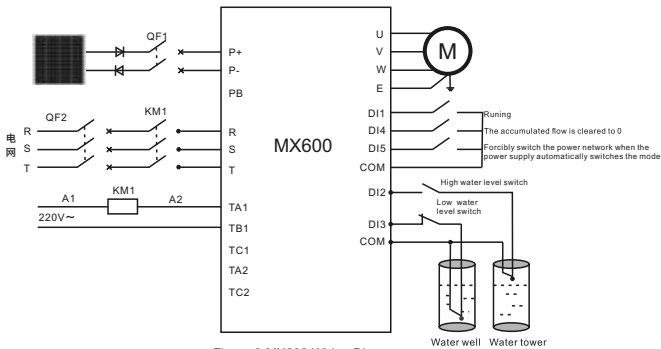


Figure 3 MX600 Wiring Diagram


2. Debugging Step are as

- 1). Please connect the wires correctly according to the above figure, and close QF1 and QF2 at the same time after making sure that there is no error.
- 2). Set the motor parameters correctly, and input F05.01~F05.05 according to the motor nameplate; Set the command source F02.00 according to the requirements, MX600 inverter has a power-off memory for the panel commands and communication commands, that is, the command before the power-off is memorized, and the command is still maintained after the power-on

3). Set F23.05=0 (automatically switch the power supply), when the system is powered on, the solar panel will give priority to power supply by default, TA1/TB1 operates, and the power will be switched to the solar panel. After the bus voltage is stable and the conditions are met, it is allowed to run. When it is insufficient, the inverter determines that it is weak light according to its own weak light algorithm, the inverter automatically stops and TA1/TB1 operates, and switches to grid power supply and runs automatically. After the running time reaches F23.06, it switches to solar panel power supply, after F23.07 delay and voltage stable, it will automatically run, and this logic cycle will determine the switching operation.

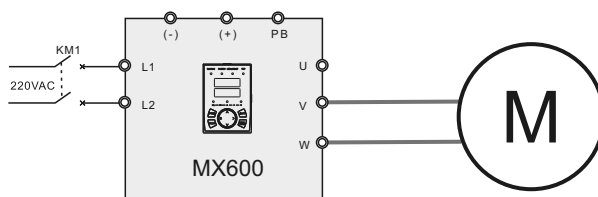
4). F23 group related weak light warning, abnormal water level warning and other special functions can be set according to requirements.

Note: DI2, DI3 abnormal water level input terminals, it can change the positive and negative logic polarity of the terminals through parameter F11.11 to meet the different installation methods of the water level switch.

	<ul style="list-style-type: none"> ● The DC circuit breaker QF1 must be installed as a protection switch for the PV DC input ● When components are connected in parallel should be used PV special combiner box. ● When the distance between the PV cell module and the inverter exceeds 10 meters, the DC input end needs to be equipped with a Type II surge arrester. ● When the pump is more than 50 meters away from the inverter, it is recommended to select an output reactor.
---	--

3.4 Single Phase Motor Wiring

MX600 with Single-phase motor wiring diagram is as follows:

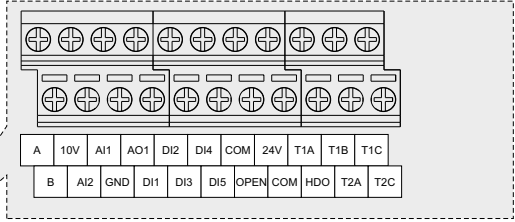
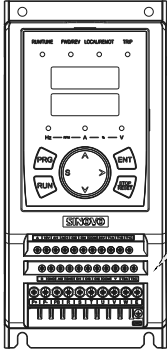


Note: After the wiring is completed, set F22.16=1.

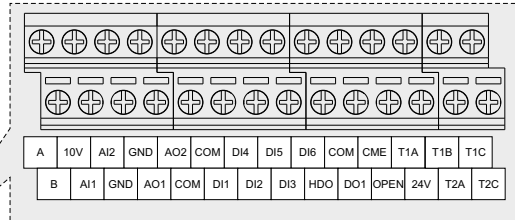
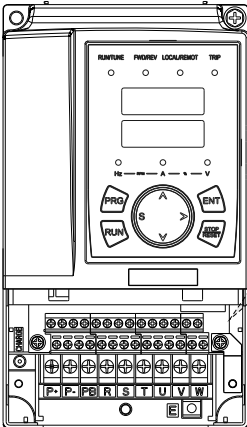
3.5 Main Circuit Terminal Description

Terminal Identity	Terminal Name	Terminal Function Description
R、S、T	AC Input	Three-phase AC input terminal, connected to the grid
P+、P-	PV DC Input	Solar panel input terminal
U、V、W	Inverter Output	Three-phase AC output terminal, connected to the pump motor
PE	Safety grounding	Safety protection grounding terminal, each inverter must be grounded reliably

3.6 Control Panel Terminals



0.75~4.0KW Control terminal diagram











5.5~500KW Control terminal diagram

Debugging Guide

Control Panel Terminal Function Instructions(continued)

Type	Terminal	Terminal name	Specification
Analog input	+10V	Analog input reference voltage	10.5V(+3%) Maximum output current 25mA/ the potentiometer resistance range is more than 4KΩ.
	GND	Analog ground	Internal isolated with COM
	AI1	Analog Input 1	0~20mA: Input resistance 500Ω, max input current is 25mA 0~10V: Input resistance 100KΩ, max input voltage 12.5V Input range: 0~10VDC/0~20 mA, switched by jumper J9 on the control board and factory defaulted as voltage input.
	AI2	Analog Input 2	
Analog output	AO1	Analog output 1	0~20mA: Input resistance 200Ω~500Ω 0~10V: Input resistance >10KΩ Input range: 0~10 VDC/4~20 mA, switched by jumper J3 or J4 on the control board and factory defaulted as voltage input.
	AO2	Analog output 2	
	GND	Analog ground	Internal isolated with COM
	+24V	+24V	24V±10%: Internal isolated with GND
Digital input	OPEN	Digital input terminal common	It is used for switching between high and low level of input. By default, OPEN is short-connected with +24V through jumper J7, that is, the switch input is low effective. If the enable level needs to be modified, the connection position of the jumper needs to be changed
	COM	+24V	Internal isolated with GND
	DI1~DI5	Digital input 1-5	Input specification: 24VDC/5mA Frequency range: 0~200Hz Voltage range: 10V~30V NOTE: DI5 supports 0~100KHZ high speed pulse input
Digital output	DO1	Open collector output	Voltage range: 0~24V Current range: 0~50mA
	HDO	High-speed pulse output	Pulse output: 0~50KHz
	CME	DO1/HDO1 Digital output public ground	0~20mA: Input impedance: 500Ω, Max input current: 25mA When leaving the factory, CME and COM have been short -connected through jumper J8 (DO1 defaults to +24V driver). When DO1 wants to be driven by an external power source, CME and COM must be disconnected.
Relay output	T1A、T1B、T1C	Relay 1 output	T1A-T1B:NC T1A-T1C:NO Contact capacity: 250VAC/5A/30VDC/5A
	T2A、T2C	Relay 2 output	T2A-T2C:NO Contact capacity: 250VAC/3A/30VDC/3A
Rs485 communication	A	485 differential signal +	Speed rate 1200/2400/4800/9600/19200/38400 Use twisted pair or shielded cable, the longest distance:300m Internal isolated with COM
	B	485 differential signal -	
	GND	Analog ground	

Switching Dial Code Switch Function Description

Name	Jumpers Figure	Function	Factory setting
485		Rs485 communication terminating resistor selection ON: 120Ω termination resistor connection is valid OFF: Without termination resistor connection	OFF
AI1		I is the current input: 0~20mA. V is voltage input: 0~10V.	0~10V
AI2		I is the current input: 0~20mA. V is voltage input: 0~10V.	0~10V
AO1		I is current output: 0~20mA. V is voltage output: 0~10V.	0~10V
AO2		I is current output: 0~20mA. V is voltage output: 0~10V.	0~10V
J7		OPEN: OPEN is connected with 24V (DI low level valid) NULL: OPEN is disconnected from 24V (user selects according to demand)	OPEN
J8		CME: CME is connected with COM (DO1 defaults to 24V drivers) NULL: CME is disconnected from COM (Use external power to drive).	CME
J5,J6		Choose whether connect PE with GND/COM. Occasions with interference, Connect PE with GND/COM can improve the ability to resist the interference.	Connection (Jumper is UP)

Note:

The jumper wire of 0.75~ 4.0kW control board shall be arranged horizontally.

Chapter 4 Function parameters table

The function parameters of the inverter are grouped by function, and each function group includes several function codes.

1. The column contents of the function table are described as follows:

The first column "function code": the number of the function parameter group and the parameter;

The second column "name": the complete name of the function parameter;

The third column "setting range": the effective set value of the function parameter;

The fourth column "default value": the factory original set value of the function parameter;

The fifth column "Modification": is the change attribute of the function parameter (that is, whether the change is allowed and the change condition), and the description is as follows:

“ O ” : Indicates that the set value of this parameter can be changed when the inverter is in stop or running state;

“ X ” : Indicates that the set value of this parameter cannot be changed when the inverter is in the running state;

“ * ” : Indicates that the parameter is reserved or the value is the actual detection record value and cannot be changed;

Column 6 "communication address": the address of the function parameter during communication.

Function code	Name	Setup range	Default Value	Modification	Add.
Group F00 Basic Function Group					
F00.00	Motor selection	0: Motor 1 1: Motor 2	0	X	0x000
F00.01	Motor control technique	Ones: motor 1 control parameter 0: V/F control 1: SVC control 1: FVC control Tens: motor 2 control parameter 0: V/F control 1: SVC control 1: FVC control	0	X	0x001
F00.02	Type of drive	0: Type G (applicable to constant-torque load) 1: Type P (applicable to light-duty load)	0	X	0x002
F00.03	LCD display language	0: Chinese 1: English 2: Russian	0	○	0x003
F00.04	RESERVED			*	
F00.05	Parameters copy	0: No operation 1: Displays the modified parameters 2: Parameters copied to control panel 3: Parameters copied(excluding motor parameters)to control board 4: Parameters copied(including motor parameters)to control board	0	○	0x005

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
F00.06	Parameters protection	0: All parameter programming allowed 1: Only this parameter programming allowed	0	○	0x006
F00.07	Software version	XXXXX		*	0x007
F00.08	User's password	0: No password Other: Password protection	0	○	0x008
F00.09	Supplier's password	XXXXX	Model dependent	○	0x009
F00.10	Parameter restoration	0: No operation 1: Restore all parameters to factory default (excluding motor parameters) 2: Clear fault record 3: Restore all parameters to factory default (including motor parameters)	0	X	0x00A

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
Group F01 Basic Function Group					
F01.00	X frequency command	0: Keypad digital setting 1: Keypad potentiometer setting 2: Analog AI1 setting 3: Analog AI2 setting 4: Analog AI3 setting 5: High-speed pulse DI5 setting	1	X	0x100
F01.01	Y frequency command	6: Multi-step Freq running setting 7: Simple PLC setting 8: PID control setting 9: Communication setting	3	X	0x101
F01.02	Y frequency command reference	0: MAX. output frequency(F01.07) 1: X frequency command	0	○	0x102
F01.03	Y frequency range	0.0~100.0%	100.0%	○	0x103
F01.04	Combination of the setting codes	Ones: Frequency reference selection 0: X 1: X and Y calculation (based on tens position) 2: Switchover between X and Y 3: Switchover between X and "X&Y calculation" 4: Switchover between Y and "X&Y calculation" Tens: X and Y calculation formula 0: X + Y 1: X - Y 2: Max. (X, Y) 3: Min. (X, Y)	00	○	0x104
F01.05	Keypad digital setting frequency	0.00Hz~F01.07(Max. Freq)	50.00Hz	○	0x105
F01.06	Retentive of digital setting frequency	Ones: Retentive selection of digital setting frequency upon stop 0: Not retentive 1: Retentive Tens: Retentive selection of digital setting frequency upon power-off 0: Not retentive 1: Retentive	11	○	0x106

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
F01.07	Max. output frequency	50.00Hz~500.00Hz	50.00Hz	×	0x107
F01.08	Upper limit frequency source selection	0: F01.09 1: AI1 2: AI2 3: AI3 4: Pluse	0	○	0x108
F01.09	Upper limit frequency	F01.10~F01.07(Max. frequency)	50.00Hz	○	0x109
F01.10	Lower limit frequency	0.00Hz~F01.09 (Upper limit frequency)	0.00Hz	○	0x10A
F01.11	Jog frequency	0.00Hz~F01.07(Max. frequency)	5.00Hz	○	0x10B
F01.12	Jog selection in running state	0:allowed 1:prohibited	0	○	0x10C
F01.13	Action if running frequency<lower limit frequency	0: Operating frequency lower limit 1: Zero speed operation 2: Stop	0	○	0x10D
F01.14	Time-delay of stop when running frequency<lower limit frequency	0.0s~6500.0s	0.0s	○	0x10E
F01.15	Jump frequency 1	0.00Hz~F01.07(Max. frequency)	0.00Hz	○	0x10F
F01.16	Jump frequency 1 width	0.00Hz~F01.07(Max. frequency)	0.00Hz	○	0x110
F01.17	Jump frequency 2	0.00Hz~F01.07(Max. frequency)	0.00Hz	○	0x111
F01.18	Jump frequency 2 width	0.00Hz~F01.07(Max. frequency)	0.00Hz	○	0x112

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
Group F02 Startup and stop Control					
F02.00	Run command channel	0: Keypad run command channel 1: Terminal command channel (Keypad STOP disabled) 2: Terminal command channel (Keypad STOP enable) 3: Communication command (Keypad STOP disabled) 4: Communication command (Keypad STOP enabled)	0	○	0x200
F02.01	Binding command source to frequency source	Ones: Binding keyboard command to frequency source 0: No function 1: Keypad digital setting 2: Keypad potentiometer setting 3: Analog AI1 setting 4: Analog AI2 setting 5: Analog AI3 setting 6: High-speed pulse DI5 setting 7: Multi-speed running setting 8: Simple PLC program setting 9: PID control setting A: Communication setting Tens: Binding terminal command to frequency source 0-9, same as Ones Hundreds: Binding communication command to frequency source 0-9, same as Ones	000	○	0x201
F02.02	Rotation direction	0: Same direction 1: Reverse direction	0	○	0x202
F02.03	Start-up mode	0: Start-up directly 1: Start-up after Speed tracking 2: Start-up after DC braking/Pre excitation	0	○	0x203
F02.04	Starting frequency of direct start	0.00~10.00Hz	0.00Hz	×	0x204
F02.05	Retention time of the starting frequency	0.0~100.0s	0.0s	×	0x205

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
F02.06	DC injection braking level/ Pre excitation level	0.0~100.0%	50.0%	×	0x206
F02.07	DC injection braking active time/ Pre-excitation active time	0.0~1000.0s	0.0s	×	0x207
F02.08	RESERVED			*	—
F02.09	Stop Mode	0: Decelerate to stop 1: Coast to stop	0	○	0x209
F02.10	Starting frequency of DC braking	0.00~F01.07(Max. frequency)	0.00Hz	○	0x20A
F02.11	Waiting time of DC braking	0.0~1000.0s	0.0s	○	0x20B
F02.12	Stopping DC braking current	0.0~100.0%	50.0%	○	0x20C
F02.13	Stopping DC braking time	0.0~1000.0s	0.0s	○	0x20D
F02.14	Reverse disabled	0: Reverse enabled 1: Reverse disabled	0	○	0x20E
F02.15	Dead time of FWD/REV rotation	0.0~3000.0s	0.0s	○	0x20F
F02.16	The protection of the electric terminals	0: Invalid operation command on terminal 1: valid operation command on terminal	0	○	0x210
F02.17	Select restart after power failure	0: prohibit restart 1: allow restart	0	○	0x211
F02.18	RESERVED				—
F02.19	Energy braking selection	0: Disable 1: Enable	1	○	0x213
F02.20	Energy braking threshold voltage	600.0~800.0V	Model dependent	○	0x214
F02.21	Brake use ratio	0.0%~100.0%	100.0%	○	0x215
F02.22	The coefficient of Magnetic flux braking	1~100%: The bigger the coefficient, the stronger the braking is)	0.0%	○	0x216

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
Group F03 Acc/Dec Parameters					
F03.00	Acc-time 1	0.0~6500.0s	Model dependent	○	0x300
F03.01	Dec-time 1	0.0~6500.0s	Model dependent	○	0x301
F03.02	ACC time2	0.0~6500.0s	Model dependent	○	0x302
F03.03	DEC time2	0.0~6500.0s	Model dependent	○	0x303
F03.04	ACC time3	0.0~6500.0s	Model dependent	○	0x304
F03.05	DEC time3	0.0~6500.0s	Model dependent	○	0x305
F03.06	ACC time4	0.0~6500.0s	Model dependent	○	0x306
F03.07	DEC time4	0.0~6500.0s	Model dependent	○	0x307
F03.08	Jogging ACC time	0.0~6500.0s	20.0s	○	0x308
F03.09	Jogging DEC time	0.0~6500.0s	20.0s	○	0x309
F03.10	Switching frequency of ACC time 1, 2	0.00~F01.07(Max. frequency)	0.00Hz	○	0x30A
F03.11	Switching frequency of DEC time 1, 2	0.00~F01.07(Max. frequency)	0.00Hz	○	0x30B
F03.12	ACC/DEC selection	0: Linear type 1: S-curve type	0	×	0x30C
F03.13	S curve start ratio	0.0~(100.0~F03.14)%	30.0%	×	0x30D
F03.14	S curve end ratio	0.0~(100.0~F03.13)%	30.0%	×	0x30E

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Modification
Group F04 V / F Control Group					
F04.00	Motor 1V / F curve setting	0: Straight line V/F curve 1: Multi-dots V/F curve 2: 2.0en power V/F curve 3: V/F separation	0	X	0x400
F04.01	V/F frequency 1 of motor 1	0.00Hz~F04.03	0.00Hz	X	0x401
F04.02	V/F Voltage 1 of motor 1	0.0%~100.0%(motor1 rated voltage)	0.0%	X	0x402
F04.03	V/F frequency 2 of motor 1	F04.01~F04.05	25.00Hz	X	0x403
F04.04	V/F Voltage 2 of motor 1	0.0%~100.0%(motor1 rated voltage)	50.0%	X	0x404
F04.05	V/F frequency 3 of motor 1	F04.03~F02.02 (motor1 rated frequency)	50.00Hz	X	0x405
F04.06	V/F Voltage 3 of motor 1	0.0%~100.0%(motor1 rated voltage)	100.0%	X	0x406
F04.07	Torque boost of motor 1	0.0%(automatic torque boost) 0.1%~30.0%(Manual torque boost)	Model dependent	○	0x407
F04.08	Frequency limit of torque boost of motor1	0.00~F01.07(Max. frequency)	50.00Hz	X	0x408
F04.09	V/F oscillation suppression gain of motor 1	0~100	Model dependent	○	0x409
F04.10	RESERVED				—
F04.11	RESERVED				—
F04.12	RESERVED				—
F04.13	RESERVED				—
F04.14	RESERVED				—
F04.15	RESERVED				—
F04.16	RESERVED				—

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
F04.17	Torque boost of motor 2	0.0%(automatic torque boost) 0.1%~30.0%(Manual torque boost)	Model dependent	<input type="radio"/>	0x411
F04.18	Frequency limit of torque boost of motor2	0.00~F01.07(Max. frequency)	50.00Hz	X	0x412
F04.19	V/F oscillation suppression gain of motor2	0~100	Model dependent	<input type="radio"/>	0x413
F04.20	V/F slip compensation gain of motor 2	0.0~200.0%	100%	<input type="radio"/>	0x414
F04.21	Droop control	0.0~100.0%	0.0%	<input type="radio"/>	0x415
F04.22	Voltage setting on V/F separated pattern	0: Keypad digital setting(F04.23) 1: Keypad potentiometer setting 2: Analog AI1 setting 3: Analog AI2 setting 4: Analog AI3 setting 5: High-speed pulse DI5 setting 6: Multi-step Freq running setting 7: Simple PLC program setting 8: PID control setting 9: Communication setting	0	<input type="radio"/>	0x416
F04.23	Keypad setting voltage	0.0~Motor rated voltage	0.0v	<input type="radio"/>	0x417
F04.24	Voltage ACC time	0.0~1000.0s	0.0s	<input type="radio"/>	0x418
F04.25	Voltage DEC time	0.0~1000.0s	0.0s	<input type="radio"/>	0x419
F04.26	Automatic current limit action selection	0: Disable 1: Enable	1	X	0x41A
F04.27	Automatic current limit	50.0~200.0%	160%	X	0x41B
F04.28	RESERVED				—
F04.29	RESERVED				—
F04.30	Over-voltage stall protection	0: Invalid 1: Stall protection mode 1 2: Stall protection mode 2	1	X	0x41E
F04.31	Voltage protection of over-voltage stall	650.0V~800.0V	Model dependent	X	0x41F

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
Group F05 Motor 1 Parameter Group					
F05.00	Motor 1 type	0: Ordinary asynchronous motor (with low frequency compensation) 1: AC drive motor (without low frequency compensation)	0	×	0x500
F05.01	Rated power of motor 1	0.1~1000.0kW	Model dependent	×	0x501
F05.02	Rated voltage of motor 1	0~1200V	Model dependent	×	0x502
F05.03	Rated current of motor 1	0.1~6000.0A	Model dependent	×	0x503
F05.04	Rated frequency of motor 1	0.01~F01.07(Max. frequency)	50.00Hz	×	0x504
F05.05	Rated speed of motor1	1~36000rpm	Model dependent	×	0x505
F05.06	Stator resistance of motor 1	0.001~65.535Ω	self-study specification	×	0x506
F05.07	rotor resistance of motor 1	0.001~65.535Ω	self-study specification	×	0x507
F05.08	leakage inductance of motor 1	0.01~655.35mH	self-study specification	×	0x508
F05.09	Mutual inductance of motor 1	0.01~655.35mH	self-study specification	×	0x509
F05.10	Non-load current of motor 1	0.1A~F05.03	self-study specification	×	0x50A
F05.16	Encoder type	0: ABZ incremental encoder 2: Resolver	0	×	0x510
F05.17	Encoder pulses per revolution	1~65535	1024	×	0x511
F05.18	A/B phase sequence of ABZ incremental encoder	0: Forward 1: Reserve	0	×	0x512
F05.19	Number of pole pairs of resolver	1~65535	1	×	0x513
F05.25	Encoder disconnection fault detection time	0:No detection 1:0.1s~10.0s	0.0	×	0x519
F05.26	Motor 1 parameter autotuning	0: No operation 1: Rotation autotuning 2: Static autotuning	0	×	0x51A

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
Group F06: Motor 1 Vector Control Parameters					
F06.00	Speed loop proportional gain 1	1~100	30	○	0x600
F06.01	Speed loop integral time 1	0.01~10.000s	0.50s	○	0x601
F06.02	Low switching frequency	0.00Hz~F06.05	5.00Hz	○	0x602
F06.03	Speed loop proportional gain 2	1~100	20	○	0x603
F06.04	Speed loop integral time 2	0.01~10.00s	1.0s	○	0x604
F06.05	High switching frequency	F06.02~F01.07 (Max. frequency)	10.00Hz	○	0x605
F06.06	ASR feedback input filtering time	0.000~0.100s	0.015s	○	0x606
F06.07	Current loop percentage coefficient KP1	0~60000	Model dependent	○	0x607
F06.08	Current loop integral coefficient KI1	0~60000	Model dependent	○	0x608
F06.09	Current loop percentage coefficient KP2	0~60000	Model dependent	○	0x609
F06.10	Current loop integral coefficient KI2	0~60000	Model dependent	○	0x60A
F06.11	Electric torque upper limit setting source selection	0: Keypad digital setting(F06.13) 1: Keypad potentiometer setting 2: Analog AI1 setting 3: Analog AI2 setting 4: Analog AI3 setting 5: High-speed pulse DI5 setting 6: Communication setting Note: Full range of values 1~6 corresponds to the digital setting of F06.13.	0	○	0x60B
F06.12	Braking torque upper limit setting source selection	0: Keypad digital setting(F06.14) 1: Keypad potentiometer setting 2: Analog AI1 setting 3: Analog AI2 setting 4: Analog AI3 setting 5: High-speed pulse DI5 setting 6: Communication setting Note: Full range of values 1~6 corresponds to the digital setting of F06.14.	0	○	0x60C

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
F06.13	Keypad digital setting of electric torque	0.0~200.0% (Motor rated current)	150.0%	○	0x60D
F06.14	Keypad digital setting of braking torque	0.0~200.0% (Motor rated current)	150.0%	○	0x60E
F06.15	Torque limit coefficient influx weakening	50~200	100	○	0x60F
F06.16	Compensation coefficient of slip	50%~200%	100%	○	0x610

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
Group F07 Motor 2 Parameter Group					
F07.00	Motor 2 type	0: Ordinary asynchronous motor (with low-frequency compensation) 1: AC drive motor (without low frequency compensation)	0	×	0x700
F07.01	Rated power of motor 2	0.1~1000.0kW	Model dependent	×	0x701
F07.02	Rated voltage of motor 2	0~1200V	Model dependent	×	0x702
F07.03	Rated current of motor 2	0.1~6000.0A	Model dependent	×	0x703
F07.04	Rated frequency of motor 2	0.01~F01.07(Max. frequency)	50.00Hz	×	0x704
F07.05	Rated speed of motor2	1~36000rpm	Model dependent	×	0x705
F07.06	Stator resistance of motor 2	0.001~65.535Ω	self-study specification	×	0x706
F07.07	Rotor resistance of motor 2	0.001~65.535Ω	self-study specification	×	0x707
F07.08	leakage inductance of motor 2	0.01~655.35mH	self-study specification	×	0x708
F07.09	Mutual inductance of motor 2	0.01~655.35mH	self-study specification	×	0x709
F07.10	Non-load current of motor 2	0.1A~F07.03	self-study specification	×	0x70A
F07.16	Encoder type	0: ABZ incremental encoder 1: Resolver	0	×	0x710
F07.17	Encoder pulses per revolution	1~65535	1024	×	0x711
F07.18	A/B phase sequence of ABZ incremental encoder	0: Forward 1: Reserve	0	×	0x712
F07.19	Number of pole pairs of resolver	1~65535	1	×	0x713
F07.25	Encoder disconnection fault detection time	0: No detection 0.1s~10.0s	0.0	×	0x719
F07.26	Motor 2 parameter autotuning	0: No operation 1: Rotation autotuning 2: Static autotuning	0	×	0x71A

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
Group F08: Motor 2 Vector Control Parameters					
F08.00	Speed loop proportional gain 1	1~100	30	○	0x800
F08.01	Speed loop integral time 1	0.01~10.00s	0.50s	○	0x801
F08.02	Low switching frequency	0.00Hz~F08.05	5.00Hz	○	0x802
F08.03	Speed loop proportional gain 2	1~100	20	○	0x803
F08.04	Speed loop integral time 2	0.01~10.00s	1.0s	○	0x804
F08.05	High switching frequency	F08.02~F01.07 (Max. frequency)	10.00Hz	○	0x805
F08.06	ASR feedback input filtering time	0.000~0.100s	0.015s	○	0x806
F08.07	Current loop percentage coefficient KP1	0~60000	Model dependent	○	0x807
F08.08	Current loop integral coefficient KI1	0~60000	Model dependent	○	0x808
F08.09	Current loop percentage coefficient KP2	0~60000	Model dependent	○	0x809
F08.10	Current loop integral coefficient KI2	0~60000	Model dependent	○	0x80A
F08.11	Electric torque upper limit setting source selection	0: Keypad digital setting(F08.13) 1: Keypad potentiometer setting 2: Analog AI1 setting 3: Analog AI2 setting 4: Analog AI3 setting 5: High-speed pulse DI5 setting 6: Communication setting Note: Full range of values 1~6 corresponds to the digital setting of F08.13.	Model dependent	○	0x80B
F08.12	Braking torque upper limit setting source selection	0: Keypad digital setting(F08.14) 1: Keypad potentiometer setting 2: Analog AI1 setting 3: Analog AI2 setting 4: Analog AI3 setting 5: High-speed pulse DI5 setting 6: Communication setting Note: Full range of values 1~6 corresponds to the digital setting of F08.14.	Model dependent	○	0x80C

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
F08.13	Keypad digital setting of electric torque	0.0~200.0% (Motor rated current)	150.0%	○	0x80D
F08.14	Keypad digital setting of braking torque	0.0~200.0% (Motor rated current)	150.0%	○	0x80E
F08.15	Torque limit coefficient influx weakening	50~200	100	○	0x80F
F08.16	Compensation coefficient of slip	50%~200%	100%	○	0x810

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
Group F09: Torque Control Parameters					
F09.00	Speed/Torque control selection	0: Speed control 1: Torque control	0	X	0x900
F09.01	Torque setting source in torque control	0: Keypad digital setting(F09.02) 1: Keypad potentiometer setting 2: Analog AI1 setting 3: Analog AI2 setting 4: Analog AI3 setting 5: High-speed pulse DI5 setting 6: Communication setting	0	○	0x901
F09.02	Torque digital setting in torque control	-200.0%~200.0%	150.0%	○	0x902
F09.03	ACC time in torque control	0.00~650.00s	0.00s	○	0x903
F09.04	DEC time in torque control	0.00~650.00s	0.00s	○	0x904
F09.05	Torque control forward rotation upper limit frequency setting source selection	0: Keypad digital setting(F09.06) 1: Keypad potentiometer setting 2: Analog AI1 setting 3: Analog AI2 setting 4: Analog AI3 setting 5: High-speed pulse DI5 setting 6: Communication setting Note: Full range of values 1~6 corresponds to the digital setting of F09.06	0	○	0x905
F09.06	Torque control forward rotation upper limit frequency keyboard limit value	0.00Hz~F01.07 (Max. frequency)	50.0Hz	○	0x906
F09.07	Torque control reverse rotation upper limit frequency setting source selection	0: Keypad digital setting(F09.08) 1: Keypad potentiometer setting 2: Analog AI1 setting 3: Analog AI2 setting 4: Analog AI3 setting 5: High-speed pulse DI5 setting 6: Communication setting Note: Full range of values 1~6 corresponds to the digital setting of F9.08.	0	○	0x907
F09.08	Torque control reverse upper limit frequency keyboard limit value	0.00Hz~F01.07 (Max. frequency)	50.0Hz	○	0x908

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
F09.09	Low-friction torque compensation	0.0~100.0%(motor rated torque)	0.0%	<input type="radio"/>	0x909
F09.10	High-friction torque compensation	0.0~100.0%(motor rated torque)	0.0%	<input type="radio"/>	0x90A
F09.11	Coefficient of inertia compensation	0.0~100.0%(motor rated torque)	0.0%	<input type="radio"/>	0x90B

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
Group F10: Keypad Operation and LED Display					
F10.00	The key of S function selection	0: No function 1: Forward jog 2: Reverse jog 3: Forward/reverse switchover 4: Run command sources shifted 5: Clear the date of exact stop	1	×	0x0A00
F10.01	Display parameter setting 1 on run status	0~65535 BIT0: Running frequency(Hz ON) $2^0=1$ BIT1: Setting frequency(Hz flash) $2^1=2$ BIT2: Bus voltage(V ON) $2^2=4$ BIT3: Output voltage(V ON) $2^3=8$ BIT4: Output current(A ON) $2^4=16$ BIT5: Motor speed(rpm ON) $2^5=32$ BIT6: Output power(% ON) $2^6=64$ BIT7: Output torque(% ON) $2^7=128$ BIT8: PID reference (% ON) $2^8=256$ BIT9: PID feedback(% ON) $2^9=512$ BIT10: Input terminal state $2^{10}=1024$ BIT11: Output terminal state $2^{11}=2048$ BIT12: AI1(V on) $2^{12}=4096$ BIT13: AI2(V on) $2^{13}=8192$ BIT14: AI3(V on) $2^{14}=16384$ BIT15: Linear speed $2^{15}=32768$ Note: If you want to display the above parameters, add the corresponding decimal to enter this parameter	53	○	0x0A01
F10.02	Display parameter setting 2 on run status	0~65535 BIT0: PLC current stage $2^0=1$ BIT1: Pulse count value $2^1=2$ BIT2: Length value $2^2=4$ BIT3: Torque setting value(% ON) $2^3=8$ BIT4: Pulse Di5 frequency $2^4=16$ BIT5: Load speed $2^5=32$ BIT6: IGBT temperature $2^6=64$ BIT7: AC input voltage $2^7=128$ BIT8: Encoder feedback speed $2^8=256$ BIT9~BIT15: Reserve Note: If you want to display the above parameters, add the corresponding decimal to enter this parameter	0	○	0x0A02
F10.03	RESERVED				—

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.	
F10.04	Display parameter setting on stop status	0~65535 BIT0: Setting frequency(Hz ON) BIT1: Motor speed(rpm ON) BIT2: Bus voltage(V ON) BIT3: AC input voltage BIT4: Input terminal state BIT5: Output terminal state BIT6: PID reference (% ON) BIT7: PID feedback(% ON) BIT8: AI1(V on) BIT9: AI2(V on) BIT10: AI3(V on) BIT11: Length value BIT12: Pulse count value BIT13: PLC current stage BIT14: Load speed BIT15: Pulse Di5 frequency Note: If you want to display the above parameters, add the corresponding decimal to enter this parameter	$2^0=1$ $2^1=2$ $2^2=4$ $2^3=8$ $2^4=16$ $2^5=32$ $2^6=64$ $2^7=128$ $2^8=256$ $2^9=512$ $2^{10}=1024$ $2^{11}=2048$ $2^{12}=4096$ $2^{13}=8192$ $2^{14}=16384$ $2^{15}=32768$	7	<input type="radio"/>	0x0A04
F10.05	RESERVED				0x0A05	
F10.06	Auxiliary Monitoring	The parameter value is consistent with the monitoring parameter group F99	2	<input type="radio"/>	0x0A06	
F10.07	RESERVED				—	
F10.08	RESERVED				—	
F10.09	Load speed display coefficient	0.001~ 65.000	1.000	<input type="radio"/>	0x0A09	
F10.10	Number of decimal places for loadspeed display	0.Zero decimal point 1.One decimal point 2.Two decimal points 3.Three decimal points	0	<input type="radio"/>	0x0A0A	

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Modification
Group F11 Digital Input Terminal Group					
F11.00	DI1 terminals function selection	0: No function 1: Forward 2: Reverse 3: Three-wire control operation 4: Forward Jogging 5: Reverse Jogging	1	×	0x0B00
F11.01	DI2 terminals function selection	6: Coast to stop 7: External STOP terminal 1 8: External STOP terminal 2(DEC time4) 9: Immediate DC injection braking 10: DEC DC injection braking	2	×	0x0B01
F11.02	DI3 terminals function selection	11: Run Pause 12: Fault reset 13: Shift the command 1 14: Shift the command 2 15: Shift frequency command	4	×	0x0B02
F11.03	DI4 terminals function selection	16: Terminal UP 17: Terminal DOWN 18: Clear UP/DOWN (including \wedge / \vee key) adjustment	12	×	0x0B03
F11.04	DI5 terminals function selection	19: Multi-step speed terminal K1 20: Multi-step speed terminal K2 21: Multi-step speed terminal K3 22: Multi-step speed terminal K4 23: PLC status reset 24: PID parameters switching	0	×	0x0B04
F11.05	DI6 terminals function selection (extension card function)	25: PID second digital given switching terminal 26: PID action direction reverse 27: PID pause 28: Pulse input (valid only for DI5)	0	×	0x0B05
F11.06	DI7 terminals function selection (extension card function)	29: Swing pause 30: Counter input 31: Counter reset 32: Length count input 33: Length reset	0	×	0x0B06
F11.07	DI8 terminals function selection (extension card function)	34: Clear the current running time 35: Reverse prohibited 36: DEC/ACC time 1 37: DEC/ACC time 2 38: DEC/ACC disabling	0	×	0x0B07
F11.08	DI9 terminals function selection (extension card function)	39: External fault input 1 40: External fault input 2 41: Motor 1/2 switchover 42: Speed control/Torque control switchover	0	×	0x0B08
F11.09	DI10 terminals function selection (extension card function)	43: Disable torque control 44: Water level detection switch 1 45: Water level detection switch 2 46: The accumulated flow clear to 0 47: Forced switching to grid power supply	0	×	0x0B09

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
F11.10	Filtering time of digital input terminal	0.000~1.000s	0.010s	○	0x0B0A
F11.11	DI active mode selection 1	0:Positive logic 1:Negative logic Units position: DI1 active mode Tens position: DI2 active mode Hundreds position: DI3 active mode Thousand position: DI4 active mode Ten thousands position: DI5 active mode	00000	X	0x0B0B
F11.12	DI active mode selection 2	0:Positive logic 1:Negative logic Units position: DI6 active mode Tens position: DI7 active mode Hundreds position: DI8 active mode Thousand position: DI9 active mode Ten thousands position: DI10 active mode	00000	X	0x0B0C
F11.13	Terminals control running mode	0: 2-wire control 1 1: 2-wire control 2 2: 3-wire control 1 3: 3-wire control 2	0	X	0x0B0D
F11.14	Terminal UP/DOWN rate	0.001Hz/s~65.000Hz/s	1.000Hz	○	0x0B0E
F11.15	Switch-on delay of DI1 terminal	0.0~3600.0s	0.0s	X	0x0B0F
F11.16	Switch-off delay of DI1 terminal	0.0~3600.0s	0.0s	X	0x0B10
F11.17	Switch-on delay of DI2 terminal	0.0~3600.0s	0.0s	X	0x0B11
F11.18	Switch-off delay of DI2 terminal	0.0~3600.0s	0.0s	X	0x0B12
F11.19	Switch-on delay of DI3 terminal	0.0~3600.0s	0.0s	X	0x0B13
F11.20	Switch-off delay of DI3 terminal	0.0~3600.0s	0.0s	X	0x0B14

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
Group F12 Digital Output Terminal Group					
F12.00	HDO output	0: Open collector pole high speed pulse output(See F15.02 for detailed information of the related function) 1: Open collector pole output (See F12.02 for detailed information of the related function)	0	○	0x0C00
F12.01	DO1 output	0: Invalid 1: AC drive running 2: Forward running 3: Reverse running 4: Jogging running 5: Zero-speed running 6: Ready for operation 7: AC drive fault	0	○	0x0C01
F12.02	HDO output	8: AC drive overload pre-alarming 9: Motor overload pre-alarming 10: AC drive underload pre-alarming 11: Frequency arrival 12: Upper limit Freq attained 13: Lower limit Freq attained	0	○	0x0C02
F12.03	Relay T1 output	14: Frequency detection FDT1 15: Frequency detection FDT2 16: Frequency 1 reached 17: Frequency 2 reached 18: Reserved 19: Completion of PLC stage 20: Completion of PLC Circle	1	○	0x0C03
F12.04	Relay T2 output	21: PID sleeping 22: Current 1 reached 23: Current 2 reached 24: Load status 25: Setting count value attained 26: Designated count value attained 27: Setting length attained 28: Designated length attained 29: Setting running time reached 30: Communication setting	7	○	0x0C04
F12.05	Relay T2 output	31: Output DI1 32: Output DI2 33: Limit the output DI1 34: AI1 input limit exceeded 35: Brake control 36: PID feedback offline 37: Motor overheat warning 38: Automatic power supply switching terminal	0	○	0x0C05
F12.06	Polarity of output terminals	0:Positive logic 1:Negative logic Units position: D01 active mode Tens position: HDO active mode Hundreds position: T1 active mode Thousand position: T2 active mode Ten thousands position: T3 active mode	0	○	0xC06

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
F12.07	DO1 switch-on delay time	0.0~3600.0s	0.0s	<input type="radio"/>	0x0C07
F12.08	DO1 switch-off delay time	0.0~3600.0s	0.0s	<input type="radio"/>	0x0C08
F12.09	HDO switch-on delay time	0.0~3600.0s	0.0s	<input type="radio"/>	0x0C09
F12.10	HDO switch- off delay time	0.0~3600.0s	0.0s	<input type="radio"/>	0x0C0A
F12.11	T1 switch-on delay time	0.0~3600.0s	0.0s	<input type="radio"/>	0x0C0B
F12.12	T1 switch-off delay time	0.0~3600.0s	0.0s	<input type="radio"/>	0x0C0C
F12.13	T2 switch-on delay time	0.0~3600.0s	0.0s	<input type="radio"/>	0x0C0D
F12.14	T2 switch-off delay time	0.0~3600.0s	0.0s	<input type="radio"/>	0x0C0E
F12.15	RESERVED				—
F12.16	RESERVED				—
F12.17	Frequency arrival detection value	0.0%~100.0%	0.0%	<input type="radio"/>	0x0C11
F12.18	FDT1 frequency detection value	0.00Hz~F01.07(Max. frequency)	50.00Hz	<input type="radio"/>	0x0C12
F12.19	FDT1 frequency detection hysteresis	0.0%~100.0%	5.0%	<input type="radio"/>	0x0C13
F12.20	FDT2 frequency detection value	0.00Hz~F01.07(Max. frequency)	50.00Hz	<input type="radio"/>	0x0C14
F12.21	FDT2 frequency detection hysteresis	0.0%~100.0%	5.0%	<input type="radio"/>	0x0C15
F12.22	Detection of any frequency 1	0.00Hz~F01.07(Max. frequency)	50.00Hz	<input type="radio"/>	0x0C16
F12.23	Detection width of any frequency 1	0.0%~100.0%(Max. frequency)	0	<input type="radio"/>	0x0C17
F12.24	Detection of any frequency 2	0.00Hz~F01.07(Max. frequency)	50.00Hz	<input type="radio"/>	0x0C18
F12.25	Detection width of any frequency 2	0.0%~100.0%(Max. frequency)	0	<input checked="" type="checkbox"/>	0x0C19

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
F12.26	Upper limit of load current	0.0%~300.0%(Motor rated current)	100.0%	×	0x0C1A
F12.27	Lower limit of load current	0.0%~300.0%(Motor rated current)	50.0%	×	0x0C1B
F12.28	Any current reaching 1 value	0.0%~300.0%(Motor rated current)	100.0%	○	0x0C1C
F12.29	Any current reaching 1 amplitude	0.0%~300.0%(Motor rated current)	0.0%	○	0x0C1D
F12.30	Any current reaching 2 value	0.0%~300.0%(Motor rated current)	100.0%	○	0x0C1E
F12.31	Any current reaching 2 amplitude	0.0%~300.0%(Motor rated current)	0.0%	○	0x0C1F
F12.32	AI1 input voltage lower limit	0.0V~F12.33	3.0V	○	0x0C20
F12.33	AI1 input upper limit voltage	F12.32~10.00V	7.0V	○	0x0C21
F12.34	Mechanical brake control	0: Disabled 1: Enabled	0	×	0x0C22
F12.35	Mechanical brake open frequency	0.00Hz~10.00Hz	2.5Hz	×	0x0C23
F12.36	Mechanical brake open current	0.0%~200.0%	150.0%	×	0x0C24
F12.37	Accel delay time after brake open	0.0s~10.0s	1.0S	○	0x0C25
F12.38	Mechanical brake Freq	0.00Hz~10.00Hz	2.0Hz	×	0x0C26
F12.39	Mechanical brake close waiting time	0.0s~10.0s	1.0S	○	0x0C27
F12.40	Mechanical brake holding time	0.0s~10.0s	0.5S	○	0x0C28

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
Group F14 Analog Curve And Pulse Input Setting Function Group					
F14.00	Lower limit of AI1	0.00V~ F14.02	0.00V	<input type="radio"/>	0x0E00
F14.01	Corresponding setting of the lower limit of AI1	-100.0%~100.0%	0.0%	<input type="radio"/>	0x0E01
F14.02	AI1 inflexion 1 input	F14.00~F14.04	10.00V	<input type="radio"/>	0x0E02
F14.03	Corresponding percentage of AI1 inflexion 1 input	-100.0%~100.0%	100.0%	<input type="radio"/>	0x0E03
F14.04	AI1 inflexion 2 input	F14.02~F14.06	10.00V	<input type="radio"/>	0x0E04
F14.05	Corresponding percentage of AI1 inflexion 2 input	-100.0%~100.0%	100.0%	<input type="radio"/>	0x0E05
F14.06	Upper limit of AI1	F14.04~10.00V	10.00V	<input type="radio"/>	0x0E06
F14.07	Corresponding setting of the upper limit of AI1	-100.0%~100.0%	100.0%	<input type="radio"/>	0x0E07
F14.08	AI1 input filter time	0.00s~10.00s	0.100s	<input type="radio"/>	0x0E08
F14.09	Lower limit of AI2	0.00V~ F14.11	0.00V	<input type="radio"/>	0x0E09
F14.10	Corresponding setting of the lower limit of AI2	-100.0%~100.0%	0.0%	<input type="radio"/>	0x0E0A
F14.11	AI2 inflexion 1 input	F14.09~F14.13	10.00V	<input type="radio"/>	0x0E0B
F14.12	Corresponding percentage of AI2 inflexion 1 input	-100.0%~100.0%	100.0%	<input type="radio"/>	0x0E0C
F14.13	AI2 inflexion 2 input	F14.11~F14.15	10.00V	<input type="radio"/>	0x0E0D
F14.14	Corresponding percentage of AI2 inflexion 2 input	-100.0%~100.0%	100.0%	<input type="radio"/>	0x0E0E
F14.15	Upper limit of AI2	F14.13~10.00V	10.00V	<input type="radio"/>	0x0E0F
F14.16	Corresponding setting of the upper limit of AI2	-100.0%~100.0%	100.0%	<input type="radio"/>	0x0E10
F14.17	AI2 input filter time	0.00s~10.00s	0.100s	<input type="radio"/>	0x0E11
F14.18	Lower limit of AI3	-10.00V~ F14.20	-10.00V	<input type="radio"/>	0x0E12
F14.19	Corresponding setting of the lower limit of AI3	-100.0%~100.0%	-100.0%	<input type="radio"/>	0x0E13
F14.20	AI 3 inflexion 1 input	F14.18~F14.22	-3.00V	<input type="radio"/>	0x0E14
F14.21	Corresponding percentage of AI3 inflexion 1 input	-100.0%~100.0%	-30.0%	<input type="radio"/>	0x0E15

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
F14.22	AI3 inflexion 2 input	F14.20~F14.24	3.00V	○	0x0E16
F14.23	Corresponding percentage of AI3 inflexion 2 input	-100.0%~100.0%	30.0%	○	0x0E17
F14.24	Upper limit of AI 3	F14.22~10.00V	10.00V	○	0x0E18
F14.25	Corresponding setting of the upper limit of AI3	-100.0%~100.0%	100.0%	○	0x0E19
F14.26	AI3 input filter time	0.00s~10.00s	0.10s	○	0x0E1A
F14.27	AI lower than Min. input setting selection	000~111 Ones: AI1 lower than minimum input setting selection 0: Corresponding percentage of min. input 1: 0. 0% Tens: AI2 lower than minimum input setting selection (As above) Hundreds: AI3 lower than minimum input setting selection(As above)	0x000	○	0x0E1B
F14.28	Lower limit frequency of pulse DI5	0.00KHz~F14.30	0.00 KHz	○	0x0E1C
F14.29	Corresponding setting of lower limit frequency of pulse DI5	-100.0%~100.0%	0.0%	○	0x0E1D
F14.30	Upper limit frequency of pulse DI5	F14.28~100.00KHz	50.00 KHz	○	0x0E1E
F14.31	Corresponding setting of upper limit frequency of pulse DI5	-100.0%~100.0%	100.0%	○	0x0E1F
F14.32	Input filter time of pulse DI5	0.00s~10.00s	0.10s	○	0x0E20

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
Group F15 Analog Curve And Pulse Output Setting Function Group					
F15.00	AO1 output	0: Running frequency 1: Setting frequency 2: Output current (relative to twice rated current of the motor) 3: Output voltage 4: High speed pulse DI5 input value 5: Analog AI1 input value 6: Analog AI2 input value 7: Analog AI3 input value 8: Length 9: Count value 10: Running time 11: Output torque 12: Output power 13: Communication setting 14: Keypad potentiometer setting	0	<input type="radio"/>	0x0F00
F15.01	AO2 output		1	<input type="radio"/>	0x0F01
F15.02	HDO output		0	<input type="radio"/>	0x0F02
F15.03	Lower output limit of AO1	0.0%~F15.05	0.0%	<input type="radio"/>	0x0F03
F15.04	Corresponding AO1 output of lower limit	0.00V~10.00V	0.00V	<input type="radio"/>	0x0F04
F15.05	Upper output limit of AO1	F15.03~100.0%	100.0%	<input type="radio"/>	0x0F05
F15.06	The corresponding AO1 output of upper limit	0.00V~10.00V	10.00V	<input type="radio"/>	0x0F06
F15.07	Lower output limit of AO2	0.0%~F15.09	0.0%	<input type="radio"/>	0x0F07
F15.08	Corresponding AO2 output of lower limit	0.00V~10.00V	0.0%	<input type="radio"/>	0x0F08
F15.09	Upper output limit of AO2	F15.07~100.0%	100.0%	<input type="radio"/>	0x0F09
F15.10	The corresponding AO2 output of upper limit	0.00V~10.00V	10.00V	<input type="radio"/>	0x0F0A
F15.11	Lower output limit of HDO	0.0%~F15.13	0.0%	<input type="radio"/>	0x0F0B
F15.12	Corresponding HDO output of lower limit	0.00~60.00kHz	0.00Hz	<input type="radio"/>	0x0F0C
F15.13	Upper output limit of HDO	F15.11~100.0%	100.0%	<input type="radio"/>	0x0F0D
F15.14	Corresponding HDO output of upper limit	0.00~60.00kHz	10.00 kHz	<input type="radio"/>	0x0F0E

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
Group F16 AI/AO Correction Group					
F16.00	AI,AO corrective active selection	0: No action 1: AI1 channel correction 2: AI2 channel correction 3: AI3 channel correction 4: AO1 channel correction 5: AO2 channel correction	0	<input type="radio"/>	0x1000
F16.01	AI1 measured voltage1	0.000V~10.000V	Correction before delivery	<input type="radio"/>	0x1001
F16.02	AI1 display voltage1	0.000V~10.000V		<input type="radio"/>	0x1002
F16.03	AI1 measured voltage2	0.000V~10.000V		<input type="radio"/>	0x1003
F16.04	AI1 display voltage 2	0.000V~10.000V		<input type="radio"/>	0x1004
F16.05	AI2 measured voltage1	0.000V~10.000V		<input type="radio"/>	0x1005
F16.06	AI2 display voltage1	0.000V~10.000V		<input type="radio"/>	0x1006
F16.07	AI2 measured voltage 2	0.000V~10.000V		<input type="radio"/>	0x1007
F16.08	AI2 display voltage 2	0.000V~10.000V		<input type="radio"/>	0x1008
F16.09	AI3 measured voltage 1	0.000V~10.000V		<input type="radio"/>	0x1009
F16.10	AI3 display voltage 1	0.000V~10.000V		<input type="radio"/>	0x100A
F16.11	AI3 measured voltage 2	0.00V~10.000V		<input type="radio"/>	0x100B
F16.12	AI3 display voltage 2	0.00V~10.000V		<input type="radio"/>	0x100C
F16.13	AO1 measured voltage 1	0.000V~10.000V		<input type="radio"/>	0x100D
F16.14	AO1 display voltage 1	0.000V~10.000V		<input type="radio"/>	0x100E
F16.15	AO1 measured voltage 2	0.000V~10.000V		<input type="radio"/>	0x100F
F16.16	AO1 display voltage 2	0.000V~10.000V		<input type="radio"/>	0x1010
F16.17	AO2 measured voltage1	0.000V~10.000V		<input type="radio"/>	0x1011
F16.18	AO2 display voltage1	0.000V~10.000V		<input type="radio"/>	0x1012
F16.19	AO2 measured voltage 2	0.000V~10.000V		<input type="radio"/>	0x1013
F16.20	AO2 display voltage 2	0.000V~10.000V		<input type="radio"/>	0x1014

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Modification
Group F18 Serial Communication Function Group					
F18.00	Local communication address	0~247 0: Broadcast address 1: Slaver address	1	○	0x1200
F18.01	Communication baud rate	Units position : Modbus Communication baud rate 0: 300 BPS 1: 600 BPS 2: 1200 BPS 3: 2400 BPS 4: 4800 BPS 5: 9600 BPS 6: 19200 BPS 7: 38400 BPS 8: 57600 BPS 9: 115200 BPS Tens position : CAN Communication baud rate 0:20 KBPS 1:50 KBPS 2:100 KBPS 3:125 KBPS 4:250 KBPS 5:500 KBPS 6:1 MBPS	45	○	0x1201
F18.02	Data format symbol	0: No check (8-N-2) 1: Even parity check (8-E-1) 2: Odd parity check (8-O-1) 3: No check, data format (8-N-1)	0	○	0x1202
F18.03	Answer delay	0~20ms	2ms	○	0x1203
F18.04	Fault time of communication overtime	0.0s (Invalid); 0.1~60.0s	0.0s	○	0x1204
F18.05	Transmission fault processing	0: Alarm and stop freely 1: Alarm and stop according to the stop mode 2: No alarm and continue to run	0	○	0x1205
F18.06	Current resolution readby communication	0: 0.01A 1: 0.1A	0	○	0x1206
F18.07	Modbus Protocol compatibility selection	0: SD600 protocol 1: SD100 protocol 2: SD200 protocol	0	○	0x1207
F18.08	RESERVE				—

Function parameters table

Function code	Name	Setup range	Default Value	Modification	ADD.
F18.09	Communication protocol selection	Units position: Communication run command channel selection 0: Modbus 1: Profibus-DP 2: CAN 3: CANopen Tens position : Communication protocol selection 0: Modbus 1: CANopen	00	○	0x1209
F18.10	PPO type	0: PPO1 format 1: PP02 format 2: PPO3 format 3: PPO4 format 4: PPO5 format	2	×	0x120A
F18.11	DP slave address	1~127	1	×	0x120B
F18.12	PZD3 Write	0: No operation	0	○	0x120C
F18.13	PZD4 Write	1: Communication setting frequency	0	○	0x120D
F18.14	PZD5 Write	2: PID Given value(0~PID range) 3: PID feedback(0~PID range)	0	○	0x120E
F18.15	PZD6 Write	4: Torque setting value(-10000~10000)	0	○	0x120F
F18.16	PZD7 Write	5: Forward upper limit frequency setting value (0~10000)	0	○	0x1210
F18.17	PZD8 Write	6: Reverse upper limit frequency setting value (0~10000)	0	○	0x1211
F18.18	PZD9 Write	7: Electric torque upper limit torque(0~10000)	0	○	0x1212
F18.19	PZD10 Write	8: Braking torque upper limit torque(0~10000)	0	○	0x1213
F18.20	PZD11 Write	9: Virtual output terminal command	0	○	0x1214
F18.21	PZD12 Write	10: Voltage setting (V/F separation purpose)(0~1000)	0	○	0x1215
F18.22	PZD3 Read	11: AO1 output setting (0~0X7FFF)	0	○	0x1216
F18.23	PZD4 Read	12: AO2 output setting (0~0X7FFF)	0	○	0x1217
F18.24	PZD5 Read	13: HDO output setting (0~0X7FFF)	0	○	0x1218
F18.25	PZD6 Read	0: No-operation	0	○	0x1219
F18.26	PZD7 Read	1~40: Corresponding to F99.01~F99.40	0	○	0x121A
F18.27	PZD8 Read	41: Running frequency at current fault	0	○	0x121B
F18.28	PZD9 Read	42: Output current at current fault	0	○	0x121C
F18.29	PZD10 Read	43: Output voltage at current fault	0	○	0x121D
F18.30	PZD11 Read	44: Bus voltage at current fault	0	○	0x121E
F18.31	PZD12 Read	45: The Max. temperature at current fault	0	○	0x121F
		46: Input terminal state at current fault			
		47: Output terminal state at current fault			
		48: Inverter status at current fault			
		49: Power on time at current fault			
		50: Running time at current fault			

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
Group F19 PID Control Group					
F19.00	PID reference source	Units position: PID reference source 0: Keypad potentiometer setting 1: PID digital setting(F19.02) 2: AI1 3: AI2 4: AI3 5: Pulse DI5 6: Communication setting Tens position: PID feedback source 0: AI1 1: AI2 2: AI3 3: AI1+AI2 4: AI1-AI2 5: MAX(AI1,AI2) 6: MIN(AI1,AI2) 7: Pulse DI5 8: Communication setting	01	○	0x1300
F19.01	PID range	0~65535	1000	○	0x1301
F19.02	PID digital 1 setting	0~F19.01	500	○	0x1302
F19.03	PID digital 2 setting	0~F19.01	500	○	0x1303
F19.04	PID operation direction	0: PID output is positive 1: PID output is negative	0	○	0x1304
F19.05	Proportional gain(P1)	0.00~100.0%	20.0%	○	0x1305
F19.06	Intergal time(I1)	0.0~100.0s	2.0s	○	0x1306
F19.07	Differential time(D1)	0.00~10.00s	0.00s	○	0x1307
F19.08	PID offse limit	0.00~50.0%	0.0%	○	0x1308
F19.09	PID differential limit	0.0%~100.0%	1.0%	○	0x1309
F19.10	PID reference change time	0.00~650.00s	0.00s	○	0x130A
F19.11	PID feedback filter time	0.00~60.00s	0.00s	○	0x130B
F19.12	PID output filter time	0.00~60.00s	0.00s	○	0x130C
F19.13	Proportional gain(P2)	0.00~100.0%	20.0%	○	0x130D
F19.14	Intergal time(I2)	0.0~100.0s	2.0s	○	0x130E
F19.15	Differential time(D2)	0.00~10.00s	0.00s	○	0x130F

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
F19.16	Upper limit Freq when opposite to rotary set direction	0.00Hz~F01.07(max. frequency)	0.00Hz	○	0x1310
F19.17	PID Preset Value	0.0%~100.0%	0.0%	○	0x1311
F19.18	PID Preset Value Keeping time	0.0~650.0s	0.00s	○	0x1312
F19.19	PID Hibernate Frequency	0.00Hz~F01.07(max. frequency)	0.0	○	0x1313
F19.20	PID Hibernate Delay Time	0.0~6500.0s	30.0s	○	0x1314
F19.21	PID Awaken Value	0.0~100.0%	0.0%	○	0x1315
F19.22	PID Awaken Value delay time	0.0~6500.0s	0.5S	○	0x1316
F19.23	Upper protective pressure value	0.0%~100.0%	100.0%	○	0x1317
F19.24	Upper limit protection detection time	0.0s~1000.0s	1.0s	○	0x1318
F19.25	Forced sleep deviation	0.0%~50.0%	0.0%	○	0x1319
F19.26	Forced sleep delay time	0.0~6000.0s	0.0S	○	0x131A
F19.27	Detection value of feedback offline	0.0~100.0%	0.0%	○	0x131B
F19.28	Detection time of feedback offline	0.0~6500.0s	0.0s	○	0x131C
F19.29	PID feedback offline processing	0: Alarm and stop freely 1: Alarm and stop according to the stop mode 2: No alarm and continue to run	0	○	0x131D
F19.30	PID range decimal number	0~4	0	○	0x131E

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
Group F20 Swing Frequency, Fixed Length, Count and Timing					
F20.00	Swing Frequency setting mode	0: Relative to center frequency 1: Relative to Max. frequency	0	○	0x1400
F20.01	Swing frequency amplitude	0.0~100.0%	0.0%	○	0x1401
F20.02	Kick frequency amplitude	0.0~50.0%	0.0%	○	0x1402
F20.03	Cycle of swing frequency	0.1s~3000.0s	10.0s	○	0x1403
F20.04	Triangular wave ramp-up time coefficient	0.1%~100.0%	50.0%	○	0x1404
F20.05	Setup length	0~65535m	1000m	○	0x1405
F20.06	Designed length	0~65535m	1m	○	0x1406
F20.07	The number of pulses of each meter	0.1~6553.5	100.0	○	0x1407
F20.08	Set count value	1~65535	1000	○	0x1408
F20.09	Designated count value	1~65535	1	○	0x1409
F20.10	Running time setting	0.0~65535min	0.0Min	○	0x140A
F20.11	Exact stop mode	0: invalid 1: setting length arrive 2: setting count value arrive 3: setting running time arrive	0	○	0x140B

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
Group F21 Simple PLC and Multi-step Freq Control Group					
F21.00	Multi-step Freq 0	0.0Hz~F01.07(Max.Freq)	0.00Hz	○	0x1500
F21.01	Multi-step Freq 1	0.0Hz~F01.07(Max.Freq)	0.00Hz	○	0x1501
F21.02	Multi-step Freq 2	0.0Hz~F01.07(Max.Freq)	0.00Hz	○	0x1502
F21.03	Multi-step Freq 3	0.0Hz~F01.07(Max.Freq)	0.00Hz	○	0x1503
F21.04	Multi-step Freq 4	0.0Hz~F01.07(Max.Freq)	0.00Hz	○	0x1504
F21.05	Multi-step Freq 5	0.0Hz~F01.07(Max.Freq)	0.00Hz	○	0x1505
F21.06	Multi-step Freq 6	0.0Hz~F01.07(Max.Freq)	0.00Hz	○	0x1506
F21.07	Multi-step Freq 7	0.0Hz~F01.07(Max.Freq)	0.00Hz	○	0x1507
F21.08	Multi-step Freq 8	0.0Hz~F01.07(Max.Freq)	0.00Hz	○	0x1508
F21.09	Multi-step Freq 9	0.0Hz~F01.07(Max.Freq)	0.00Hz	○	0x1509
F21.10	Multi-step Freq 10	0.0Hz~F01.07(Max.Freq)	0.00Hz	○	0x150A
F21.11	Multi-step Freq 11	0.0Hz~F01.07(Max.Freq)	0.00Hz	○	0x150B
F21.12	Multi-step Freq 12	0.0Hz~F01.07(Max.Freq)	0.00Hz	○	0x150C
F21.13	Multi-step Freq 13	0.0Hz~F01.07(Max.Freq)	0.00Hz	○	0x150D
F21.14	Multi-step Freq 14	0.0Hz~F01.07(Max.Freq)	0.00Hz	○	0x150E
F21.15	Multi-step Freq 15	0.0Hz~F01.07(Max.Freq)	0.00Hz	○	0x150F
F21.16	Simple PLC running method	<p>Ones :</p> <p>PLC runmode</p> <p>0: Stop after running once</p> <p>1: Run at the final value after running once</p> <p>2: Cycle running</p> <p>Tens :</p> <p>Unit of simple PLC runtime</p> <p>0: Second (s)</p> <p>1: Minute (min)</p>	00	○	0x1510
F21.17	Simple PLC memory selection when in power loss	<p>Ones:</p> <p>Power loss memory</p> <p>0:No memory on power loss</p> <p>1: Memorized on power loss</p> <p>Tens:</p> <p>Stop memory</p> <p>0:No memory on stop</p> <p>1: Memorized on stop</p>	00	○	0x1511
F21.18	The running time of step 0	0.0~6553.5s(min)	0.00s (Min)	○	0x1512

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Modification
F21.19	Setting of multi-step 0	<p>Ones :Run direction 0: Forward 1: Reverse</p> <p>Tens: Accel/Decel time 0: Accel/Decel time 1 1: Accel/Decel time 2 2: Accel/Decel time 3 3: Accel/Decel time 4</p> <p>Hundreds : Freq setting 0: Multi-step Freq 0 (F21.00) 1: Keypad digital setting 2: Keypad potentiometer setting 3: AI1 setting 4: AI2 setting 5: AI3 setting 6: DI5 pulse input 7: Process PID output 8: Communication setting</p>	000	○	0x1513
F21.20	The running time of step 1	0.0~6553.5s(min)	0.0s	○	0x1514
F21.21	Setting of multi-step 1	Same as F21-19	000	○	0x1515
F21.22	The running time of step 2	0.0~6553.5s(min)	0.0s	○	0x1516
F21.23	Setting of multi-step 2	Same as F21-19	000	○	0x1517
F21.24	The running time of step 3	0.0~6553.5s(min)	0.0s	○	0x1518
F21.25	Setting of multi-step 3	Same as F21-19	000	○	0x1519
F21.26	The running time of step 4	0.0~6553.5s(min)	0.0s	○	0x151A
F21.27	Setting of multi-step 4	Same as F21-19	000	○	0x151B
F21.28	The running time of step 5	0.0~6553.5s(min)	0.0s	○	0x151C
F21.29	Setting of multi-step 5	Same as F21-19	000	○	0x151D
F21.30	The running time of step 6	0.0~6553.5s(min)	0.0s	○	0x151E
F21.31	Setting of multi-step 6	Same as F21-19	000	○	0x151F

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Modification
F21.32	The running time of step 7	0.0~6553.5s(min)	0.0s	○	0x1520
F21.33	Setting of multi-step 7	Same as F21-19	000	○	0x1521
F21.34	The running time of step 8	0.0~6553.5s(min)	0.0s	○	0x1522
F21.35	Setting of multi-step 8	Same as F21-19	000	○	0x1523
F21.36	The running time of step 9	0.0~6553.5s(min)	0.0s	○	0x1524
F21.37	Setting of multi-step 9	Same as F21-19	000	○	0x1525
F21.38	The running time of step 10	0.0~6553.5s(min)	0.0s	○	0x1526
F21.39	Setting of multi-step 10	Same as F21-19	000	○	0x1527
F21.40	The running time of step 11	0.0~6553.5s(min)	0.0s	○	0x1528
F21.41	Setting of multi-step 11	Same as F21-19	000	○	0x1529
F21.42	The running time of step 12	0.0~6553.5s(min)	0.0s	○	0x152A
F21.43	Setting of multi-step 12	Same as F21-19	000	○	0x152B
F21.44	The running time of step 13	0.0~6553.5s(min)	0.0s	○	0x152C
F21.45	Setting of multi-step 13	Same as F21-19	000	○	0x152D
F21.46	The running time of step 14	0.0~6553.5s(min)	0.0s	○	0x152E
F21.47	Setting of multi-step 14	Same as F21-19	000	○	0x152F
F21.48	The running time of step 15	0.0~6553.5s(min)	0.0s	○	0x1530
F21.49	Setting of multi-step 15	Same as F21-19	000	○	0x1531
F21.50	PLC model	0: PLC model 1 1: PLC model 2	0	○	0x1532

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Modification
Group F22 MPPT Parameters Group					
F22.00	Solar pump special mode	0-Invalid 1-Valid	1	✗	0x1600
F22.01	Target voltage in MPPT start-up phase	0-100%	85%	○	0x1601
F22.02	System parameter	—	—	○	—
F22.03	System parameter	—	—	○	—
F22.04	System parameter	—	—	○	—
F22.05	MPPT voltage lower limit	230. 0-750. 0V	250.0V	○	0x1605
F22.06	MPPT voltage upper limit	230. 0-750. 0V	650.0V	○	0x1606
F22.07	MPPT control proportional gain	0-100	35	○	0x1607
F22.08	MPPT control integral gain	0-100	35	○	0x1608
F22.09	Reserve	—	—	○	—
F22.10	MPPT upper limit frequency selectio	0-Main frequency setting 1-MPPT Max. frequency 2-Option 1 and Option 2 combined settings	1	○	0x160A
F22.11	Reserve	—	—	○	—
F22.12	MPPT power-on allowable operating voltage	160-600V	4T:300V 2T:170V	○	0x160C
F22.13	System parameter	—	—	○	—
F22.14	System parameter	—	—	○	—
F22.15	System parameter	—	—	○	—
F22.16	Single-phase pump model	0-Invalid 1-Valid	0	✗	0x1610

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Modification
Group F23 Water Pump Application Parameters Group					
F23.00	Weak light judgment frequency threshold	0-Max. frequency	20.00Hz	○	0x1700
F23.01	Weak light judgment delay	5.00-6553.5s	600.0s	○	0x1701
F23.02	Weak light wake up voltage valve	0-1000.0v	20.0v	○	0x1702
F23.03	Weak light wake up delay time	0.0-6553.5S	200.0s	○	0x1703
F23.04	Forced wake up time after low light	0.0-6553.5S	400.0s	○	0x1704
F23.05	Power supply selection	0-Auto switch 1- Solar Panel power supply 2- Grid power supply	1	✗	0x1705
F23.06	Grid supply running time in automatic switching mode	0-6553.5min	60.0	○	0x1706
F23.07	Delay running time after switching power supply in automatic switching mode	2.0-6553.5s	4.0	○	0x1707
F23.08	Reservoir water level detection channel	0-Invalid 1- AI1 2- AI2	0	✗	0x1708
F23.09	Reservoir full control level	0.0-100.0%	25.0%	○	0x1709
F23.10	Reservoir full water warning sleep delay	0.0-6553.5s	60.0s	○	0x170A
F23.11	Reservoir lack of water start delay	0.0-6553.5s	600.0s	○	0x170B
F23.12	Hydraulic probe damage monitoring threshold	0-100.0% (When 0.0%, the function is invalid)	0.0%	○	0x170C
F23.13	Underload Protection Selection	0-Invalid 1-Valid	0	○	0x170D
F23.14	Underload detection level	0-100.0%	25.0%	○	0x170E
F23.15	Underload detection time	0-1000.0s	60.0s	○	0x170F
F23.16	Underload fault reset time	0-1000.0s	120.0s	○	0x1710
F23.17	Pump rated flow Qn	0-1000.0m ³ /h	6.0	✗	0x1711
F23.18	Pump rated head Hn	0-500.0m	24.0	✗	0x1712
F23.19	Accumulated flow reset	0-Invalid 1-Valid	0	○	0x1713

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Modification
Group F28 Strengthen Function Groups					
F28.00	Carrier frequency setting	1.0~16.0	Model dependent	○	0x1C00
F28.01	Carrier frequency adjusted with temperature	0: Invalid 1: Valid	1	○	0x1C01
F28.02	PWM mode	0: Three-phase modulation 1: Three-phase and two-phase modulation switching	0	×	0x1C02
F28.03	Random PWM	0: Fixed PWM 1~10: Random PWM coefficient	0	×	0x1C03
F28.04	Voltage over modulation coefficient	100~110	105	×	0x1C04
F28.05	Cooling fan working mode	0: Working during drive running 1: Working continuously	0	×	0x1C05

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
Group F29 Protection Parameters Group					
F29.00	Phase loss protection	0x00~0x11 Ones: Input phase loss protection 0: Disable 1: Enable Tens: Output phase loss protection 0: Disable 1: Enable	0x11	×	0x1D00
F29.01	Detection of short-circuit to ground	0x00~0x11 Ones: Detection of short-circuit to ground upon power-on 0: Disable 1: Enable Tens: Before running detection of short-circuit to ground 0: Disable 1: Enable	0x01	×	0x1D01
F29.02	Motor overload protection	0: Invalid 1: Valid	1	×	0x1D02
F29.03	Motor overload protection gain	50~300	100	×	0x1D03
F29.04	Overload pre-alarm setting	0x00~0x12 Ones: Overload pre-alarm processing 0: Alarm and stop freely 1: Alarm and stop according to the stop mode 2: No alarm and continue to run Tens: Detection mode 0: Detection all the time 1: Detection in constant running	02	○	0x1D04
F29.05	Overload pre-alarm detection	50.0%~200%	150%	○	0x1D05
F29.06	Overload pre-alarm detection time	0.1s~60.0s	1.0s	○	0x1D06
F29.07	Reserve	—	—	*	—
F29.08	Reserve	—	—	*	—
F29.09	Reserve	—	—	*	—
F29.10	Reserve	—	—	*	—

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
F29.11	Fault reset times	0~20	0	<input type="radio"/>	0x1D0B
F29.12	Selection of DO action during auto reset	0: Not act 1: Act	0	<input type="radio"/>	0x1D0C
F29.13	Delay time of auto reset	0.0s~100.0s	1.0s	<input type="radio"/>	0x1D0D
F29.14	Detection level of speed error	0.0%~50.0%	20.0%	<input type="radio"/>	0x1D0E
F29.15	Detection time of speed error	0.0:Don't detection 0.1s~60.0s	5.0s	<input type="radio"/>	0x1D0F
F29.16	Overspeed detection level	0.0%~50.0%	20.0%	<input type="radio"/>	0x1D10
F29.17	Overspeed detection time	0.0:Don't detection 0.1s~60.0s	1.0s	<input type="radio"/>	0x1D11
F29.18		—	—	*	—
F29.19		—	—	*	—
F29.20		—	—	*	—
F29.21		—	—	*	—
F29.22	Type of motor temperature sensor	0: No temperature sensor 1: PT100 2: PT1000	0	<input type="radio"/>	0x1D16
F29.23	Motor overheat protection threshold	0.0~200.0℃	110℃	<input type="radio"/>	0x1D17
F29.24	Motor overheat pre-warning threshold	0.0~200.0℃	90℃	<input type="radio"/>	0x1D18

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
Group F30 User-Defined Parameters Group					
F30.00	User-Defined Parameter 0	F00.00~F99.XX	F00.01	○	0x1E00
F30.01	User-Defined Parameter 1	F00.00~F99.XX	F02.00	○	0x1E01
F30.02	User-Defined Parameter 2	F00.00~F99.XX	F01.00	○	0x1E02
F30.03	User-Defined Parameter 3	F00.00~F99.XX	F01.04	○	0x1E03
F30.04	User-Defined Parameter 4	F00.00~F99.XX	F01.05	○	0x1E04
F30.05	User-Defined Parameter 5	F00.00~F99.XX	F03.00	○	0x1E05
F30.06	User-Defined Parameter 6	F00.00~F99.XX	F03.01	○	0x1E06
F30.07	User-Defined Parameter 7	F00.00~F99.XX	F04.00	○	0x1E07
F30.08	User-Defined Parameter 8	F00.00~F99.XX	F04.07	○	0x1E08
F30.09	User-Defined Parameter 9	F00.00~F99.XX	F11.00	○	0x1E09
F30.10	User-Defined Parameter 10	F00.00~F99.XX	F11.01	○	0x1E0A
F30.11	User-Defined Parameter 11	F00.00~F99.XX	F11.02	○	0x1E0B
F30.12	User-Defined Parameter 12	F00.00~F99.XX	F12.03	○	0x1E0C
F30.13	User-Defined Parameter 13	F00.00~F99.XX	F15.00	○	0x1E0D
F30.14	User-Defined Parameter 14	F00.00~F99.XX	F02.03	○	0x1E0E
F30.15	User-Defined Parameter 15	F00.00~F99.XX	F02.09	○	0x1E0F
F30.16	User-Defined Parameter 16	F00.00~F99.XX	F28.00	○	0x1E10
F30.17	User-Defined Parameter 17	F00.00~F99.XX	F00.00	○	0x1E11
F30.18	User-Defined Parameter 18	F00.00~F99.XX	F00.00	○	0x1E12
F30.19	User-Defined Parameter 19	F00.00~F99.XX	F00.00	○	0x1E13
F30.20	User-Defined Parameter 20	F00.00~F99.XX	F00.00	○	0x1E14
F30.21	User-Defined Parameter 21	F00.00~F99.XX	F00.00	○	0x1E15
F30.22	User-Defined Parameter 22	F00.00~F99.XX	F00.00	○	0x1E16
F30.23	User-Defined Parameter 23	F00.00~F99.XX	F00.00	○	0x1E17
F30.24	User-Defined Parameter 24	F00.00~F99.XX	F00.00	○	0x1E18
F30.25	User-Defined Parameter 25	F00.00~F99.XX	F00.00	○	0x1E19
F30.26	User-Defined Parameter 26	F00.00~F99.XX	F00.00	○	0x1E1A
F30.27	User-Defined Parameter 27	F00.00~F99.XX	F00.00	○	0x1E1B
F30.28	User-Defined Parameter 28	F00.00~F99.XX	F00.00	○	0x1E1C
F30.29	User-Defined Parameter 29	F00.00~F99.XX	F00.00	○	0x1E1D
F30.30	User-Defined Parameter 30	F00.00~F99.XX	F00.00	○	0x1E1E
F30.31	User-Defined Parameter 31	F00.00~F99.XX	F00.00	○	0x1E1F

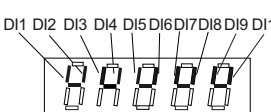
Function parameters table

Function code	Name	Setup range	Default Value	Modification	Modification
Group F98 History Fault					
F98.00	Current fault type	0: No fault 1: Inverter module protection(E.OUT) 2: Current detection fault(E.ICE) 3: Short circuit to ground(E.ERH) 4: Input phase loss(E.SPI) 5: Output phase loss(E.SPO) 6: Overcurrent during acceleration(E.OC1) 7: Overcurrent during deceleration(E.OC2) 8: Overcurrent at constant speed(E.OC3) 9: Overvoltage during acceleration(E.OU1) 10: Overvoltage during deceleration(E.OU2) 11: Overvoltage at constant speed(E.OU3)	-	*	0x2200
F98.01	Previous fault type	12: Undervoltage(E.LU) 13: AC drive overload(E.OL1) 14: Motor overload(E.OL2) 15: Motor overload prealarm(E.OL3) 16: Motor underload(E.LL) 17: AC drive overheated(E.OH) 18: Motor auto-tuning fault(E.TUNE) 19: EEPROM read-write fault(E.EEP) 20: External fault 1(E.EF1) 21: External fault 2(E.EF2) 22: Port communication fault(E.CE)	-	*	0x2201
F98.02	Previous 2 fault type	23: PID feedback loss(E.PID) 24: Speed feedback fault(E.EDU) 25: Imbalance fault(E.STO) 26: Encoder fault(E.ECD) 27: Motor overheated fault(E.PTC) 28: Reserve 29: Magnetic pole initial position detection fault(E.PLR) 30: Motor switchover fault during running(E.CH) 31: RESERVE	-	*	0x2202
F98.03	Running frequency at current fault	----	----	*	0x2203
F98.04	Output current at current fault	----	----	*	0x2204
F98.05	Output voltage at current fault	----	----	*	0x2205
F98.06	Bus voltage at current fault	----	----	*	0x2206
F98.07	IGBT temperature at current fault	----	----	*	0x2207
F98.08	Input terminals state at current fault	----	----	*	0x2208
F98.09	Output terminals state at current fault	----	----	*	0x2209

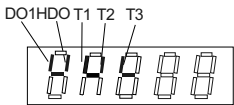
Function parameters table

Function code	Name	Setup range	Default Value	Modification	Modification
F98.10	AC drive state at current fault	----	----	*	0x220A
F98.11	Power-on time at current fault	----	----	*	0x220B
F98.12	Running time at current fault	----	----	*	0x220C
F98.13	Running frequency at previous fault	----	----	*	0x220D
F98.14	Output current at previous fault	----	----	*	0x220E
F98.15	Output voltage at previous fault	----	----	*	0x220F
F98.16	Bus voltage at previous fault	----	----	*	0x2210
F98.17	IGBT temperature at previous fault	----	----	*	0x2211
F98.18	Input terminals state at previous fault	----	----	*	0x2212
F98.19	Output terminals state at previous fault	----	----	*	0x2213
F98.20	AC drive state at previous fault	----	----	*	0x2214
F98.21	Power-on time at previous fault	----	----	*	0x2215
F98.22	Running time at previous fault	----	----	*	0x2216
F98.23	Running frequency at previous 2 fault	----	----	*	0x2217
F98.24	Output current at previous 2 fault	----	----	*	0x2218
F98.25	Output voltage at previous 2 fault	----	----	*	0x2219
F98.26	Bus voltage at previous 2 fault	----	----	*	0x221A
F98.27	IGBT temperature at previous 2 fault	----	----	*	0x221B
F98.28	Input terminals state at previous 2 fault	----	----	*	0x221C
F98.29	Output terminals state at previous 2 fault	----	----	*	0x221D
F98.30	AC drive state at previous 2 fault	----	----	*	0x221E
F98.31	Power-on time at previous 2 fault	----	----	*	0x221F
F98.32	Running time at previous 2 fault	----	----	*	0x2220

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Add.
Group F99 Monitoring Function Group					
F99.00	Output frequency	0.00Hz~F01.08(Upper limit Freq)	----	*	0x2100
F99.01	Setting frequency	0.00Hz~F01.08(Upper limit Freq)	----	*	0x2101
F99.02	Output current	0.01~5000.0A	----	*	0x2102
F99.03	Motor speed	0~65535rpm	----	*	0x2103
F99.04	Load speed display	0~65535	----	*	0x2104
F99.05	Output power	0.1~6553.5KW	----	*	0x2105
F99.06	Output torque	-300.0%~300.0%	----	*	0x2106
F99.07	Output voltage	0~1000V	----	*	0x2107
F99.08	DC bus voltage	0.0~2000.0V	----	*	0x2108
F99.09	AC input voltage	0.0~2000.0V	----	*	0x2109
F99.10	AC drive status	1: Forward 2: Reverse 3: Forward Jogging 4: Reverse Jogging 5: AC drive Fault 6: Under-voltage 7: AC drive stop	----	*	0x210A
F99.11	Fault information	0~33(Corresponding to F98.00)	----	*	0x210B
F99.12	AI1 input voltage	0.00~10.00V	----	*	0x210C
F99.13	AI2 input voltage	0.00~10.00V	----	*	0x210D
F99.14	AI3 input voltage	0.00~10.00V	----	*	0x210E
F99.15	AO1 output voltage	0.00~10.00V	----	*	0x210F
F99.16	AO2 output voltage	0.00~10.00V	----	*	0x2110
F99.17	DI state	0x00~0xFFF	----	*	0x2111
F99.18	DI state display	The state of each function end is indicated by the on-off of the specified section of the LED digital tube. The on-off of the digital tube segment means that the corresponding terminal state is valid, while the off-off means that the corresponding terminal state is invalid. 	----	*	0x2112

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Modification
F99.19	DO state	0x00~0xFFFF	----	*	0x2113
F99.20	DO state display	Same as F99. 18. 	----	*	0x2114
F99.21	Di5 pulse frequency	0.01~100.00kHz	----	*	0x2115
F99.22	HDO output frequency	0.01~100.00kHz	----	*	0x2116
F99.23	PID reference	0~65000	----	*	0x2117
F99.24	PID feedback	0~65000	----	*	0x2118
F99.25	Counting value	0~65535	----	*	0x2119
F99.26	Length value	0~65535	----	*	0x211A
F99.27	Linear speed	0~65535	----	*	0x211B
F99.28	Target torque	-300.0%~300.0%	----	*	0x211C
F99.29	Remaining running time	0.1Min~6553.5Min	----	*	0x211D
F99.30	PLC step	0~15	----	*	0x211E
F99.31	Feedback frequency	0. 01Hz~F01. 07(MAX. Freq)	----	*	0x211F
F99.32	Feedback speed of encode	0. 01Hz~F01. 07(MAX. Freq)	----	*	0x2120
F99.33	Motor temperature	1~200℃	----	*	0x2121
F99.34	AC drive temperature	-30~200℃	----	*	0x2122
F99.35	Current Power-on time	1Min~65535Min	----	*	0x2123
F99.36	Current Running time	0.1Min~6553.5Min	----	*	0x2124
F99.37	G/P type	0: G type 1: P type	----	*	0x2125
F99.38	AC drive power	0.7~500.0KW	----	*	0x2126
F99.39	Motor seletion	1: Motor 1 2: Motor 2	----	*	0x2127
F99.40	Accumulative power-on time	1Min~65535Min	----	*	0x2128
F99.41	Accumulative running time	0.1Min~6553.5Min	----	*	0x2129
F99.43	Current flow	0. 0~ 6 5 5 3 . 5 m³/h	----	*	0x212B
F99.44	Current head	0. 0~ 6 5 5 3 . 5 m	----	*	0x212C

Function parameters table

Function code	Name	Setup range	Default Value	Modification	Modification
F99.45	Cumulative flow high 16 bits	Water pump total flow high bit. Unit: m ³	----	*	0x212D
F99.46	Cumulative flow low 16 bits	Water pump total flow low bit. Unit: m ³ Water pump total flow = F 9 9 . 4 5 * 6 5 5 3 5 + F 9 9 . 4 6	----	*	0x212E
F99.47	Current power supply	0-Grid 1-Solar Panel	----	*	0x212F

Chapter 5 Solar water pump inverter parameters instructions

Function code	Name	Setup range	Default Value	Modification	Modification
F22.00	Solar pump special mode	0-Invalid 1-Valid	1	✕	0x1600

0: Invalid

For standard model

1 ■ Valid

Enable the dedicated mode of photovoltaic water pump, group F22 and group F23 take effect

Function code	Name	Setup range	Default Value	Modification	Modification
F22.01	Target voltage in MPPT start-up phase	0-100%	85%	○	0x1601

This parameter is the target voltage to be tracked first in the inverter start-up phase.

Function code	Name	Setup range	Default Value	Modification	Modification
F22.02	System parameters	—	—	○	—
F22.03	System parameters	—	38	○	—
F22.04	System parameters	—	—	○	—
F22.05	MPPTvoltage lower limit	230. 0-750. 0V	250.0V	○	0x1605
F22.06	MPPTvoltage upper limit	230. 0-750. 0V	650.0V	○	0x1606

The above two parameters define the upper and lower limits of the MPPT tracking target voltage.

Function code	Name	Setup range	Default Value	Modification	Modification
F22.07	MPPTcontrols proportional gain	0-100	35	○	0x1607
F22.08	MPPTcontrol integral gain	0-100	35	○	0x1608

The above two parameters are the response coefficients of the frequency during MPPT tracking. The larger the value, the faster the response, but the system may be unstable.

Function code	Name	Setup range	Default Value	Modification	Modification
F22.09	Reserve	—	—	○	—
F22.10	MPPT upper limit frequency selection	0- Main frequency given 1- MPPT maximum frequenc 2- Option 1 and Option 2 combination setting	1	○	0x160A

0-main frequency given

The target frequency is determined by the F1 group frequency source.

Note: This mode may cause abnormal water output or increased current

1 - maximum frequency

The maximum target frequency is determined by the PV MPPT algorithm

2-Combination setting

The target frequency is set by the combination of the MPPT maximum frequency and the main frequency, and the two take the minimum value.

Solar water pump inverter parameters instructions

Function code	Name	Setup range	Default Value	Modification	Modification
F22.11	Reserve	—	—	○	—
F22.12	MPPT power-on allowable operating voltage	160-600V	4T:300V 2T:170V	○	0x160C

The minimum voltage at which the inverter is allowed to start running when powered on.

Function code	Name	Setup range	Default Value	Modification	Modification
F22.13	System parameters	—	—	○	—
F22.14	System parameters	—	—	○	—
F22.15	System parameters	—	—	○	—
F22.16	Single-phase pump mode	0-Invalid 1-Valid	0	✕	0x1610

When the 2T inverter take a single-phase water pump, set this parameter to 1.

Function code	Name	Setup range	Default Value	Modification	Modification
F23.00	Low Light Judgment Frequency Threshold	0- maximum frequency	20.00Hz	○	0x1700
F23.01	Low light judgment delay	5. 0-6553.5s	600.0S	○	0x1701

When the inverter works in the solar mode, and the running frequency is lower than F23.00 and the duration exceeds F23.01, the inverter will report a weak light warning A-SUN after it stops. When the voltage is lower than the undervoltage point, the low light warning A-SUN is reported, the inverter will coast to stop.

Function code	Name	Setup range	Default Value	Modification	Modification
F23.02	Low light wake-up voltage threshold	0-1000.0V	20.0V	○	0x1702
F23.03	Low light wake-up delay time	0.0-6553.5s	200.0s	○	0x1703
F23.04	Forced wake-up time after low light	0.0-6553.5s	400.0s	○	0x1704

After the inverter enters the weak light state, after the delay time F 23.03, the detected bus voltage value rises to the voltage of F23.02 when the weak light alarm occurs, and the inverter starts automatically immediately. After the time of F23.04, the inverter is forced to start to test Light intensity.

Solar water pump inverter parameters instructions

Function code	Name	Setup range	Default Value	Modification	Modification
F23.05	Power supply selection	0- Auto switch 1- Photovoltaic panel power supply 2- Grid supply	1	✗	0x1705

0-Auto switch

When the system is powered on, the default is to supply power to the solar first, TA1\TB1 is activated, the power supply is switched to the solar and the busbar voltage is stable and meets the starting conditions, and the operation is allowed. When the light is insufficient, the inverter determines according to its own weak light algorithm. When the light is weak, the inverter will automatically stop and TA1\TB1 will operate, switch to grid power supply and run automatically. After the running time reaches F23.06, it will automatically stop and switch to solar power supply. After the delay of F23.07, the voltage is stable. After that, it will run automatically, and this logic cycle will determine the switching operation.

1- Photovoltaic panel power supply

Select the solar mode, the inverter runs with the MPPT algorithm to track the maximum power point, if the inverter power supply is changed from the peripheral circuit to the grid power supply, you can use the default switch to grid function of DI5 to switch the grid power supply mode for the internal algorithm to identify, such as power supply switching Back to the solar power to supply power and disconnect DI5.

2- Grid supply

At this time, the inverter runs in the grid power supply mode, and the MPPT algorithm is invalid.

Note: When F23.05 is not 0, the relay output TA1/TB1 does not act, and DI5 switches the grid terminal to close only to provide the algorithm basis for the inverter.

Function code	Name	Setup range	Default Value	Modification	Modification
F23.06	Grid supply running time in automatic switching mode	0-6553.5min	60.0	○	0x1706
F23.07	Delayed running time after switching power supply in automatic switching mode	2. 0-6553.5s	4.0	○	0x1707
F23.08	Sink water level detection channel	0-invalid 1- AI1 2- AI2	0	✗	0x1708

This parameter is used to select the analog channel for water level feedback. When the analog feedback is not used, ensure that the value of F23.08 is 0, and the switch DI2 and DI3 function of detecting water level is always valid.

Solar water pump inverter parameters instructions

Function code	Name	Setup range	Default Value	Modification	Modification
F23.09	Reservoir full control level	0.0-100.0%	25.0%	<input type="radio"/>	0x1709
F23.10	Reservoir full water warning sleep delay	0.0-6553.5s	60.0s	<input type="radio"/>	0x170A
F23.11	Reservoir lack of water start delay	0.0-6553.5s	600.0s	<input type="radio"/>	0x170B

When the feedback of the hydraulic probe is less than 25.0%, after the delay of F23.10, the inverter will stop and enter the water-filled sleep state, and display A-SSc,

when the feedback is greater than 25.0%, after the time of F 23.11, the inverter will exit the water-filled sleep state and run automatically according to the command before shutdown.

Note: The judgment time parameters of the abnormal water level detection function of terminals DI2 and DI3 share F23.10-F23.11.

Function code	Name	Setup range	Default Value	Modification	Modification
F23.12	Hydraulic probe damage monitoring threshold	0-100.0% (0.0%function invalid)	0.0%	<input type="radio"/>	0x170C

When this parameter is not 0, when the detected water level feedback analog signal is greater than F23.12, it is considered that the hydraulic probe is damaged and E. Prb fault is reported.

Function code	Name	Setup range	Default Value	Modification	Modification
F23.13	Underload Protection Selection	0-Invalid 1-Valid	0	<input type="radio"/>	0x170D

Underload protection enable parameter.

Function code	Name	Setup range	Default Value	Modification	Modification
F23.14	Underload detection level	0-100.0%	25.0%	<input type="radio"/>	0x170E
F23.15	Underload detection time	0-1000. 0s	60.0S	<input type="radio"/>	0x170F
F23.16	Underload fault reset time	0-1000. 0s	120.0S	<input type="radio"/>	0x1710

When the output current of the inverter is lower than the threshold current of F23.14 and continues for the detection time of F23.15, it will report the underload fault E.LL. The fault reset time of underload fault is determined by F23.16.

Note: 100.0% of the underload detection level corresponds to the rated motor current.

Function code	Name	Setup range	Default Value	Modification	Modification
F23.17	Pump rated flow Qn	0-1000. 0m ³ /h	6.0	<input checked="" type="checkbox"/>	0x1711
F23.18	Pump rated head Hn	0-500.0m	24.0	<input checked="" type="checkbox"/>	0x1712
F23.19	Accumulated flow reset	0-Invalid 1-Valid	0	<input type="radio"/>	0x1713

There are two ways to clear the accumulated flow to 0:

1. Set F23.19 to 1, the accumulated flow is cleared to 0, and F23.19 automatically becomes 0.
2. Close the multi-function terminal DI4 (to clear the accumulated flow to 0 terminal).

Chapter 6 Troubleshooting and Maintenance



✦ Only qualified electricians are allowed to maintain the AC drive. Read the safety instruction in chapter safety precaution before working on the AC drive.

No.	Code	Fault	Cause	Solution
1	E.OUT	IGBT protection	<ul style="list-style-type: none"> ◆ The acceleration is too fast . ◆ There is damage to the internal to IGBT of the phase. ◆ The connection of the driving wires and the grounding is not good. 	<ul style="list-style-type: none"> ◆ Increase Acc time. ◆ Change the power unit. ◆ Check the driving wires. ◆ Check if there is strong interference to the external equipment
2	E.LCE	Current-detecting fault	<ul style="list-style-type: none"> ◆ The connection of the control board is not good. ◆ Hoare components is broken ◆ The modifying circuit is abnormal. 	<ul style="list-style-type: none"> ◆ Check the connector and repatch. ◆ Change the hoare. ◆ Change the main panel.
3	E.ERH	Grounding shortcut fault	<ul style="list-style-type: none"> ◆ The output of the AC drive is short circuited with the ground. ◆ There is fault in the current detection circuit. 	<ul style="list-style-type: none"> ◆ The output of the AC drive is short circuited with the ground. ◆ There is fault in the current detection circuit.
4	E.SPI	Input phase loss	◆ Phase loss or fluctuation of input R,S,T.	◆ Check input power
5	E.SPO	Output phase loss	◆ U,V,W phase loss input (or serious asymmetrical three phase of the load)	◆ Check input power
6	E.OC 1	Accelerating overcurrent	<ul style="list-style-type: none"> ◆ The acceleration or deceleration is too fast. ◆ The voltage of the grid is too low. ◆ The power of the AC drive is too low. ◆ The load transient or abnormal. ◆ The grounding is short circuited or the output is phase loss. ◆ There is strong external interference. 	<ul style="list-style-type: none"> ◆ Increase the Acc time. ◆ Check the input power. ◆ Select the AC drive with a large power. ◆ Check if the load is short circuited(the grounding short circuited) or the rotation is not smooth. ◆ Check the output configuration. ◆ Check if there is strong interference.
7	E.OC 2	Decelerating overcurrent		
8	E.OC 3	Constant overcurrent		
9	E.OU 1	Accelerating overvoltage	<ul style="list-style-type: none"> ◆ The input voltage is abnormal. ◆ There is large energy feedback. 	<ul style="list-style-type: none"> ◆ Check the input power. ◆ Check if the DEC time of the load is too short or the AC drive starts during the rotation of the motor or it needs to increase the energy consumption components
10	E.OU 2	Decelerating overvoltage		
11	E.OU 3	Constant overvoltage		

Troubleshooting and Maintenance

No.	Code	Fault	Cause	Solution
12	E.LU	Under-voltage fault	<ul style="list-style-type: none"> ◆ The voltage of the power supply is too low. 	<ul style="list-style-type: none"> ◆ Check the input power of the supply line.
13	E.OL1	AC drive overload	<ul style="list-style-type: none"> ◆ The acceleration is too fast. ◆ Reset the rotating motor. ◆ The voltage of the power supply is too low. ◆ The load is too heavy. 	<ul style="list-style-type: none"> ◆ Increase the Acc time. ◆ Avoid the restarting after stopping. ◆ Check the power of the supply line, ◆ Select an AC drive with bigger power, ◆ Select a proper motor.
14	E.OL2	Motor overload	<ul style="list-style-type: none"> ◆ The voltage of the power supply is too low. 	<ul style="list-style-type: none"> ◆ Check the input power of the supply line.
15	E.oL3	Motor overload prealarm	<ul style="list-style-type: none"> ◆ The AC drive will report the overload pre-alarm according to the set value. 	<ul style="list-style-type: none"> ◆ Check the load and the overload pre-alarm point.
16	E.LL	Motor underload fault	<ul style="list-style-type: none"> ◆ The AC drive will report the underload pre-alarm according to the set value. 	<ul style="list-style-type: none"> ◆ Check the load and the underload pre-alarm point.
17	E.OH	AC drive overheated	<ul style="list-style-type: none"> ◆ Air duct jam or fan damage. ◆ Ambient temperature is too high. ◆ The time of overload running is too long 	<ul style="list-style-type: none"> ◆ Lower the ambient temperature. ◆ Clean the ventilation. ◆ Replace the cooling fan. ◆ Replace the damaged thermally sensitive resistor. ◆ Replace the AC Drive IGBT.
18	E.TUE	Motor-autotuning fault	<ul style="list-style-type: none"> ◆ The motor capacity does not comply with the AC drive capability. ◆ The rated parameter of the motor does not set correctly. ◆ The offset between the parameters from autotune and the standard parameter is huge. ◆ Autotune overtime. 	<ul style="list-style-type: none"> ◆ Check the connector and repatch. ◆ Change the hoare. ◆ Change the main panel.
19	E.EEP	EEPROM operation fault	<ul style="list-style-type: none"> ◆ Error of controlling the write and read of the parameters. ◆ Damage to EEPROM. 	<ul style="list-style-type: none"> ◆ Press STOP/RESET to reset. ◆ Change the main control panel.
20	E.EF1	User-defined fault 1	User-defined fault 1 is input via DI.	Reset the operation.
21	E.EF2	User-defined fault 2	User-defined fault 2 is input via DI.	Reset the operation.
22	E.CE	Communication fault	<ul style="list-style-type: none"> ◆ The baud rate setting is incorrect. ◆ Fault occurs to the communication wiring. ◆ The communication address is wrong. ◆ There is strong interference to the communication. 	<ul style="list-style-type: none"> ◆ Set proper baud rate. ◆ Check the communication connection distribution. ◆ Set proper communication address. ◆ Change or replace the connection distribution or improve the anti-interference capability.

Troubleshooting and Maintenance

No.	Code	Fault	Cause	Solution
23	E.PID	PID feedback outline fault	<ul style="list-style-type: none"> ◆ PID feedback offline. ◆ PID feedback source disappear. 	<ul style="list-style-type: none"> ◆ Check the PID feedback signal. ◆ Check the PID feedback source.
24	E.EDU	Speed deviation fault	<ul style="list-style-type: none"> ◆ Encoder parameters are set improperly. ◆ Motor auto-tuning is not performed. ◆ F29. 14 (detection level of speed error) and F29. 15 (detection time of speed error) are set incorrectly. 	<ul style="list-style-type: none"> ◆ Set encoder parameters properly. ◆ Perform motor auto-tuning. ◆ Set F9-69 and F9-70 correctly based on actual condition.
25	E.STO	Maladjustment fault	<ul style="list-style-type: none"> ◆ The control parameters of the synchronous motors not set properly. ◆ The autoturn parameter is not right. ◆ The AC drive is not connected to the motor. 	<ul style="list-style-type: none"> ◆ Check the load and ensure it is normal. ◆ Check whether the control parameter is set properly or not. ◆ Increase the maladjustment detection time.
26	E.ECD	Encoder fault	<ul style="list-style-type: none"> ◆ Encoder is not matched. ◆ Encoder wiring is incorrect. ◆ Encoder is damaged. ◆ PG card is abnormal. 	<ul style="list-style-type: none"> ◆ Set the type of encoder correctly. ◆ Check the PG card power supply and phase sequence. ◆ Replace encoder. ◆ Replace PG card.
27	E.PTC	Motor overheat	<ul style="list-style-type: none"> ◆ Cable connection of temperature sensor becomes loose ◆ The motor temperature is too high. 	<ul style="list-style-type: none"> ◆ Check cable connection of temperature sensor. ◆ Check cable connection of temperature sensor.
28	RESERVE			
29	E.PLR	Motor overheat		
30	E.CH	Motor switchover fault	Motor switchover via terminal during drive running of the AC drive	Perform motor switchover after the AC drive stops
41	A-SUN	Low light warning	Low light warning	Insufficient light intensity
42	A-SSC	Water level abnormal	<ol style="list-style-type: none"> 1. Abnormal detection of water level terminal 2. the water level sensor feedback full water 	<ol style="list-style-type: none"> 1. The reservoir is full 2. The water level of the well is low 3. Check the water level sensor
43	E.prb	Probe detection failure	Probe failure	Replace the probe

Modbus communication instructions

When read the function code parameters, user can only read the maximum of 16 consecutive address parameters. more than 16, the AC drive will return the illegal data.

When writing function parameter, each can only write a parameter. Users should pay attention to the setting value that cannot exceed the set range of function parameters.

Function parameters set permissions and function code attributes related parameters, such as read-only parameter is not writable, the operation cannot be changed in the running also cannot be written.

The password is set by the user, in the case without decryption, all of the parameters cannot write. User password and parameter autotune cannot via communication to write. Otherwise, the AC drive will return the fault information.

Chapter 7 Modbus communication instructions

MODBUS communication includes read and write operations of functional parameters and read and write operations of some special registers, among which special registers include control registers, setting registers, status registers and manufacturer information.

1. Function parameter address definition

The group number of the inverter function code is mapped to the high byte of the register address, and the parameter number in the group is mapped to the low byte of the register address. For example, to access F01.12, the access address of the parameter is 0x010C.

Function code group	Absolute Add.	Function code group	Absolute Add.
F00 Group	0x00	F01 Group	0x01
F02 Group	0x02	F03 Group	0x03
F04 Group	0x04	F05 Group	0x05
F06 Group	0x06	F07 Group	0x07
F08 Group	0x08	F09 Group	0x09
F10 Group	0x0A	F11 Group	0x0B
F12 Group	0x0C	F13 Group	0x0D
F14 Group	0x0E	F15 Group	0x0F
F16 Group	0x10	F18 Group	0x12
F19 Group	0x13	F20 Group	0x14
F21 Group	0x15	F28 Group	0x1C
F29 Group	0x1D	F30 Group	0x1E
F98 Group	0x22	F99 Group	0x21

Note: Because EEPROM is frequently stored, it will reduce the life of EEPROM. Therefore, some parameters in the mode of communication don't need to store as long as change the value of RAM. Absolute address in the table corresponds to the high byte of RAM address, to achieve this function, simply add 0X40 to all high bytes in the table.

For example:

The parameter F01.12 is stored in EEPROM , and the address is represented as 0x010C;

The parameter F01.12 is not stored in the EEPROM, and the address is represented as 0x410C;

Read of both EEPROM address and RAM address are valid.

When read the function code parameters, user can only read the maximum of 16 consecutive address parameters.more than 16, the AC drive will return the illegal data.

2. The Definition of the Status parameters

Add.	Number	Setting instruction	R/W
2100H	F99.99	Output frequency	R
2101H	F99.01	Setting frequency	W/R
2102H	F99.02	Output current	R
210AH	F99.10	AC drive status 1: Forward running 2: Reverse running 3: Forward jogging 4: Reverse jogging 5: AC drive fault 6: Under-voltage status 7: AC drive stop	R
210BH	F99.11	0~10000 0: No fault 1: IGBT protection 2: Current detecting fault 3: Grounding shortcut fault 4: Input phase loss 5: Output phase loss 6: Accelerating over-current 7: Decelerating over-current 8: Constant over-current 9: Accelerating over-voltage 10: Decelerating over-voltage 11: Constant over-voltage 12: Under-voltage fault 13: AC drive overload 14: Motor overload 15: Motor overload prealarm 16: Motor underload fault 17: AC drive overheat 18: Motor autotuning fault 19: EEPROM operation fault 20: User-defined fault 1 21: User-defined fault 2 22: Communication fault 23: PID feedback outline fault 24: Speed deviation fault 25: Maladjustment fault 26: Encoder fault 27: Motor overheat	R
.....	R
2117H	F99.23	PID reference	W/R
2118H	F99.24	PID feedback	W/R
....	R

3. The Definition of the Special Register Address

Register	Function instruction	Add.	Setting instruction	R/W
Control register	Control register	2000H	0001H: Forward running 0002H: Reverse running 0003H: Forward jogging 0004H: Reverse jogging 0005H: Dcclerate stop 0006H: Coast to stop(emergency stop) 0007H: Fault reset	W
Setting register	Setting frequency	2001H	-10000~10000 (Corresponding to -200.0%~200.0%)	W
	Forward upper limit frequency	2002H	0~10000 Correspond to 0.0Hz~F01.07(Max. Freq)	W
	Reverse upper limit frequency	2003H	0~10000 Correspond to 0.0Hz~F01.07(Max. Freq)	W
	Electric torque upper limit value	2004H	0~10000	W
	Brake torque upper limit value	2005H	0~10000	W
	Voltage setting on V/f separated pattern	2006H	0~1000 (Corresponding to 0~Motor rated voltage)	W
	DO control	2007H	0~0X000F	W
	Ao1 control	2008H	0~0X7FFF	W
	Ao2 control	2009H	0~0X7FFF	W
	HDO control	200AH	0~0X7FFF	W

Note:

1. R is read-only, invalid write and error reporting address;
2. W for write only, invalid read and error reporting address.

Product Warranty Card

Customer information	Add. of corporation:	
	Name of corporation:	Contact person:
	P.C.:	Tel.:
Product information	Product model:	
	Body bar code:	
	Name of agent:	
Failure information	(maintenance time and content):	
	Maintenance personnel:	