TETRANCA

H630-PV Series

SOLAR WATER PUMP DEDICATED INVERTER

User Manual

CE CB ISO 9001 EMC

PREFACE

First of all, thank you for purchasing and using our company's H630-PV series inverter for photovoltaic water pumps!

H630-PV series inverter is a new generation inverter developed by our company for photovoltaic water pump applications,which optimizes the usability and performance of the product.

It has a comprehensive voltage level and power range, which can be applied to single-phase/three-phase 220V and three-phase 380V water pumps; it is easy to use and does not require any parameters to be set. The photovoltaic water pump can be automatically started after power is turned on; a variety of protection measures can effectively extend the product life; the advanced MPPT algorithm ensures that the solar power tracking efficiency can reach 99%; the boost module, 2.2KW and below models can be equipped with a boost module to meet the low voltage working requirements, which can reduce the configuration of solar panels and reduce the user's system cost.

This instruction manual describes how to use this series of frequency inverters correctly. Read this instruction carefully before use (installation, operation, maintenance , inspection, etc.).

MATTERS NEED ATTENTION

To illustrate the detailed part of the product, the legend in this manual sometimes remove the cover or the state of the safety cover.

When using this product, please install the shell or cover and follow the instructions The contents of the book are operated.

The illustrations in this manual are for reference s only and may differ from the product you ordered.

Due to product upgrades or specification changes, and to improve the convenience and accuracy of the instructions Indeed, the contents of this manual will be changed in time without further notice.

If you still have some unknown problems in your use, please work with our customer service heart contact.

Solar water pump dedicated inverter

Catalogue

CHAPTER 1
SAFETY INFORMATION AND USE PRECAUTIONS

In order to ensure the safety of your person and equipment, please read this chapter carefully before using the frequency inverter.

1.1 Safety information

This symbol indicates matters that require attention during operation and whether personal injury or equipment damage may occur if the operation is not performed as required.
This symbol indicates that death, serious injury or serious property damage may occur if the operation is not performed as required.

(1) It is strictly forbidden to connect the AC power cord to the U, V, and W output terminals of the inverter, otherwise the inverter will be completely damaged.

(2) Do not short-circuit (-) and (+), otherwise the inverter will be damaged and the power supply will be short-circuited.

(3) The inverter is prohibited from being installed on flammable materials, otherwise there is a risk of fire.

(4) Do not install it in an environment containing explosive gas, otherwise there is a risk of explosion.

(5) After the main circuit is connected, the exposed terminals should be insulated, otherwise there is a risk of electric shock.

(6) When the power is on, do not operate the inverter with wet hands, otherwise there is a risk of electric shock.

(7) The grounding terminal of the inverter must be well grounded.

(8) When the inverter is powered on, do not open the cover or perform wiring operations. Wiring or inspection can only be carried out 10 minutes after the power is turned off.

(9) Wiring work must be done by qualified professionals. It is strictly forbidden to leave any conductive objects in the machine. Otherwise, there is a risk of electric shock or damage to the inverter.

(10) For inverters that have been stored for more than 2 years, the voltage should be gradually increased using a voltage regulator when powered on. Otherwise, there is a risk of electric shock and explosion.

(1) It is strictly forbidden to connect the control terminals other than RO1A, RO1B , RO1C, RO2A, and RO2C to AC 220V signals, otherwise there is a risk of property damage.

(2) If the inverter is damaged or the components are incomplete, please do not install and operate it, otherwise there is a risk of fire or personal injury.

(3) When installing, it should be installed in a place that can bear the weight of the inverter, otherwise there is a risk of injury or property damage if it falls.

Chapter 2
H630-PV series product information

2.1. Naming rules

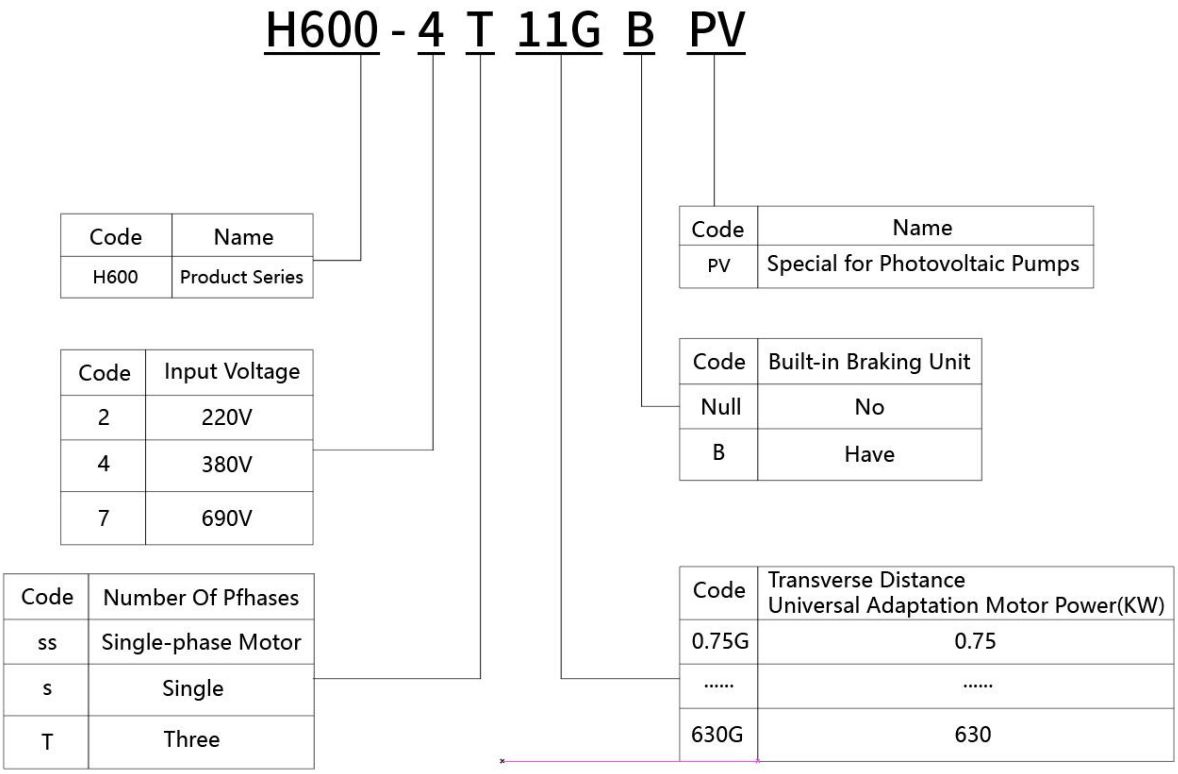


Figure 2-1 for naming rules

2.2 The nameplate

Model: H600-4T11GB-PV

Power: 11KW

Input: AC 3PH 380V 50/60Hz

Output: AC 3PH 0-380V 32A 0-400Hz

Figure 2-2 The nameplate

2.3 H630-PV series frequency inverter

Table 2-1 H630-PV inverter models and technical data

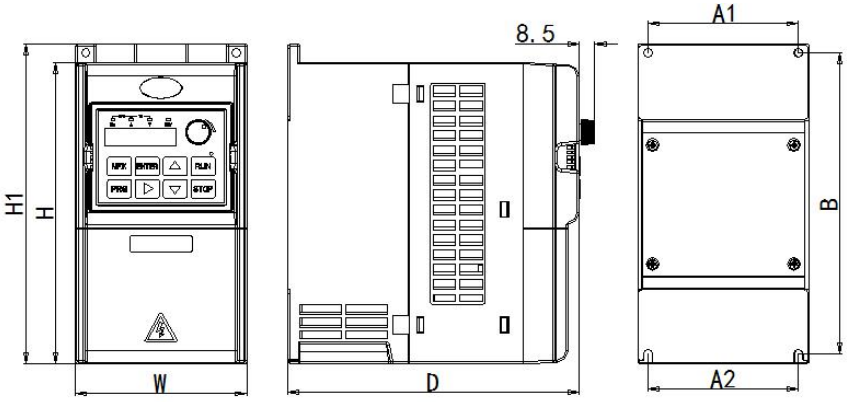
Type	2SS	2S	2T	4T
AC input voltage(V)	220 (-15%) ~240V (+10%)(1PH)		220(-15%)~ 240V(+10%)(3PH)	380(-15%)~ 440V(+10%)(3PH)
Max DC voltage (V)	440	440	440	800
starting voltage(V)	200	200	200	300
Min running voltage (V)	150	150	150	250
Recommended DC input voltage range (V)	200-400	200-400	200-400	300-750
Recommended MPP Voltage (V)	330	330	330	550

Frequency Inverter model	Max DC input current (A)	Rated input current (A)	rated output current (A)	Rated output power(KW)
Single-phase power supply 200~240V 50 / 60Hz				
H630-2SS0.4G-PV	9	5.4	4	0.4
H630-2SS0.75G-PV	9	8.2	7	0.75
H630-2SS1.5G-PV	12	14	10.0	1.5
H630-2SS2.2G-PV	12	23	14	2.2
H630-2S0.4G-PV	9	5.4	2.3	0.4
H630-2S0.75G-PV	9	8.2	4	0.75
H630-2S1.5G-PV	12	14	7	1.5
H630-2S2.2G-PV	12	23	9.6	2.2
Three-phase power supply 200~240V 50 / 6				
H630-2T4.0G-PV	20	17	16	4.0
H630-2T5.5G-PV	30	25	20	5.5
H630-2T7.5G-PV	40	33	30	7.5

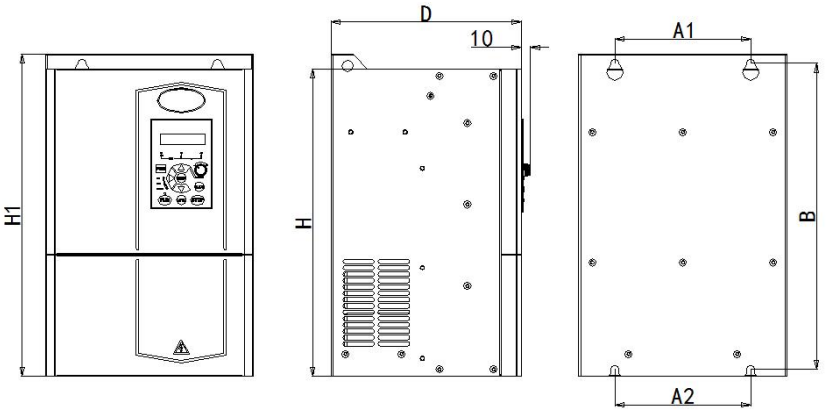
Three-phase power supply 380~480V 50 / 60Hz				
H630-4T0.75G-PV	9	3.4	2.5	0.75
H630-4T1.5G-PV	9	5	3.7	1.5
H630-4T2.2G-PV	12	5.8	5.1	2.2
H630-4T4.0G-PV	16.5	10.5	9	4.0
H630-4T5.5G-PV	23.9	14.6	13	5.5
H630-4T7.5G-PV	30.6	20.5	17	7.5
H630-4T11G-PV	39.2	26	25	11
H630-4T15G-PV	49	35	32	15
H630-4T18.5G-PV	50	38.5	37	18.5
H630-4T22G-PV	60	46.5	45	22
H630-4T30G-PV	81	62	60	30
H630-4T37G-PV	90	76	75	37
H630-4T45G-PV	130	92	91	45
H630-4T55G-PV	150	113	112	55
H630-4T75G-PV	200	157	150	75
H630-4T90G-PV	250	180	176	90
H630-4T110G-PV	300	214	210	110
H630-4T132G-PV	360	256	253	132
H630-4T160G-PV	430	307	304	160
H630-4T185G-PV	480	346	330	185
H630-4T200G-PV	500	385	377	200
H630-4T220G-PV	525	430	426	220
H630-4T250G-PV	550	468	465	250
H630-4T280G-PV	600	525	520	280
H630-4T315G-PV	690	590	585	315
H630-4T355G-PV	760	665	650	355
H630-4T400G-PV	870	785	725	400
H630-4T450G-PV	970	883	800	450
H630-4T500G-PV	1100	988	930	500

2.4 H630-PV series inverter appearance and part name of the H630-PV series frequency inverter

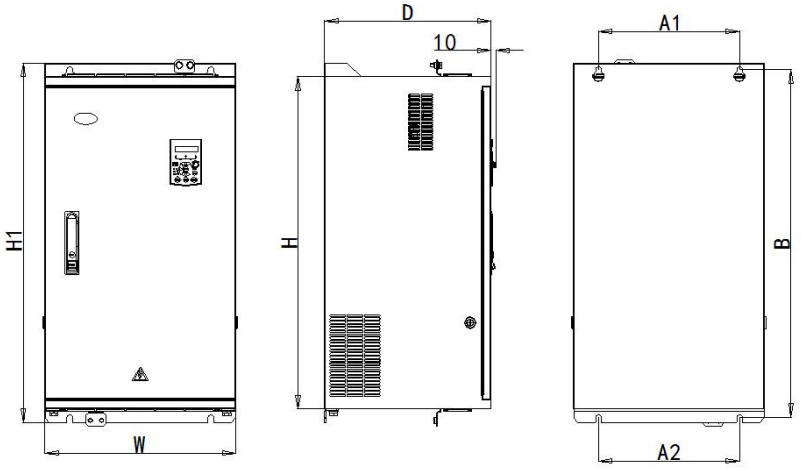
2.4.1 Product appearance diagram



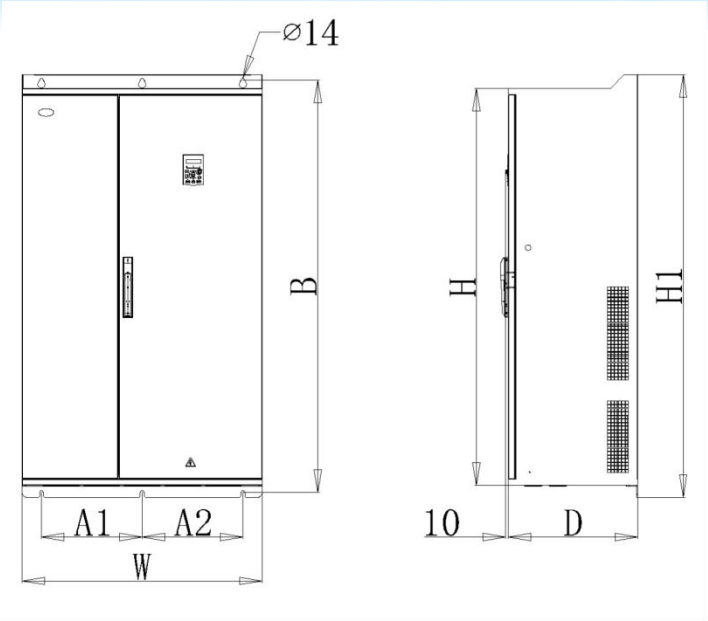
0.4kW～22kW Dimensions and installation dimensions



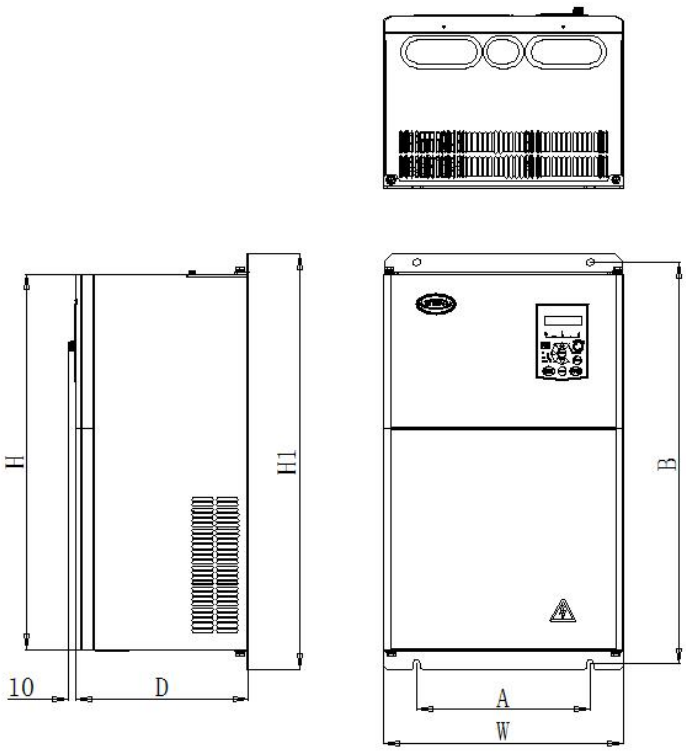
30kW～160kW Dimensions and installation dimensions



185kW～400kW Dimensions and installation dimensions



450kW～630kW Dimensions and installation dimensions



710kW～1250kW Dimensions and installation dimensions

2.4.2 Appearance and installation hole size

Table 2 2 H630 PV Appearance and installation hole position dimensions

Shell code	Ozone power supply model	Mounting hole position (mm)		Overall dimensions (mm)				Mounting hole diameter (mm)	Gross weight (Kg)
		A1/A2	B	H	H1	W	D		
T2	H630-2SS0.4G-PV	81/81	162	162	172	92	152	⌀ 4.5	1.4
	H630-2SS0.75G-PV								
	H630-2SS1.5G-PV								
	H630-2SS2.2G-PV								
	H630-2S0.4G-PV								
	H630-2S0.75G-PV								
	H630-2S1.5G-PV								
	H630-2S2.2G-PV								
	H630-4T0.75G-PV								
	H630-4T1.5G-PV								
	H630-4T2.2G-PV								
	H630-4T4.0G-PV								
T3	H630-4T5.5G-PV	98/98	208	207	219	109	172.5	⌀ 5.5	2.4
	H630-4T7.5G-PV								
T4	H630-4T11G-PV	119/119	250	250	261	130	182	⌀ 5.5	3.8
	H630-4T15G-PV								
	H630-4T18.5GA-PV								
T5	H630-4T18.5G-PV	167/177	282	280	293	190	199	⌀ 5.5	6.5
	H630-4T22G-PV								
T6	H630-4T30G-PV	210/200	410	390	426	250	210	⌀ 9	14.6
	H630-4T37G-PV								
T7	H630-4T45G-PV	266/266	473	450	492	300	236	⌀ 9	19.4
	H630-4T55G-PV								
	H630-4T75GA-PV								
T8	H630-4T75G-PV	230/230	536	500	555	320	230	⌀ 10	26.5
T9	H630-4T90G-PV	320/320	611	568	634	410	240	⌀ 12	49
	H630-4T110G-PV								
T10	H630-4T132G-PV	310/310	594	545	620	440	310	⌀ 11	
T11	H630-4T160G-PV	310/310	649	600	675	440	320	⌀ 11	
T12	H630-4T185G-PV	310/310	764	730	790	420	366	⌀ 12	80
	H630-4T200G-PV								
T13	H630-4T220G-PV	360/360	785	750	810	490	370	⌀ 12	103
	H630-4T250G-PV								
	H630-4T280GA-PV	360/360	1085	1050	1110	490	370	⌀ 12	126
T14	H630-4T280G-PV	520/520	1159	1120	1190	650	370	⌀ 14	164
	H630-4T315G-PV								
	H630-4T355G-PV								
	H630-4T400G-PV								
T15	H630-4T450G-PV	335/335	1372	1320	1405	800	430	⌀ 14	
	H630-4T500G-PV								
T16	H630-4T560G-PV	400/400	1502	1450	1535	950	450	⌀ 14	
	H630-4T630G-PV								

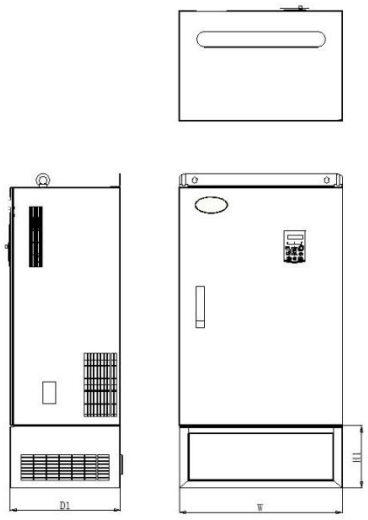
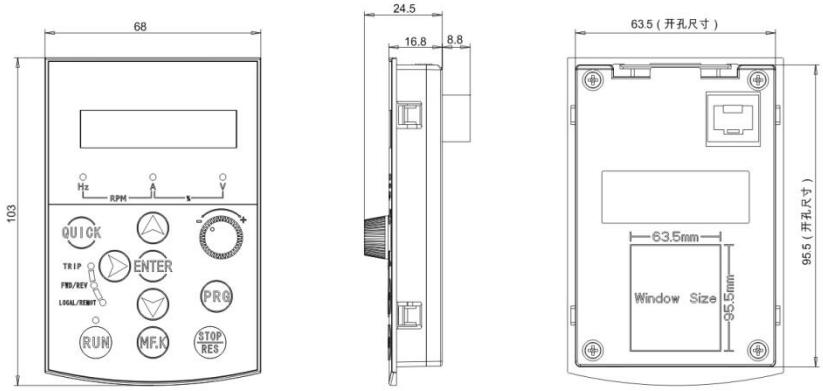


Figure 2-5: Schematic diagram of the base installation

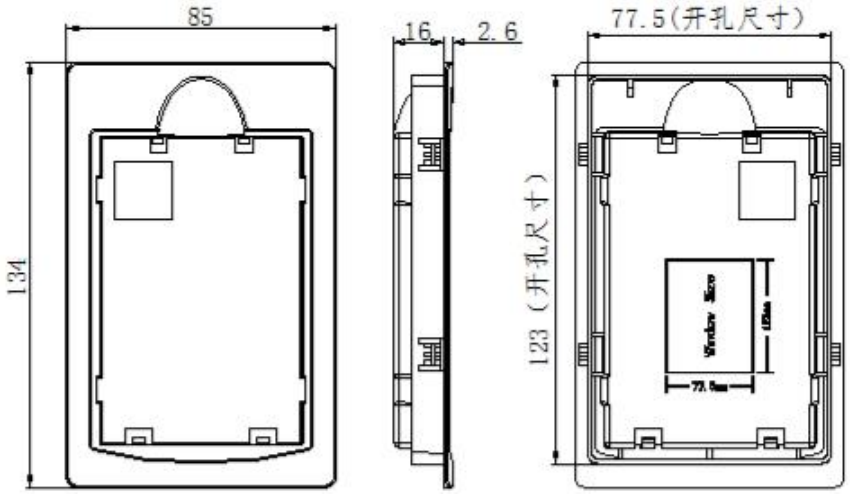
Table 2-3 Base shape and installation hole dimensions

Base code	Corresponding to the frequency inverter power	W (mm)	D (mm)	H1(mm)	Iconograph
T12_DZ	H630-4T185G-PV H630-4T200G-PV	420	366	300	2-5
T13_DZ	H630-4T220G-PV H630-4T250G-PV	490	370	300	
The H630-4T 250G-PV already has a standard base					
T14_DZ	H630-4T280G-PV H630-4T315G-PV H630-4T355G-PV H630-4T400G-PV	650	370	400	
T15_DZ	H630-4T450G-PV H630-4T500G-PV	800	430	450	
T16_DZ	H630-4T560G-PV H630-4T630G-PV	950	450	450	
T17_DZ	H630-4T710G-PV H630-4T800G-PV	1200	500	500	

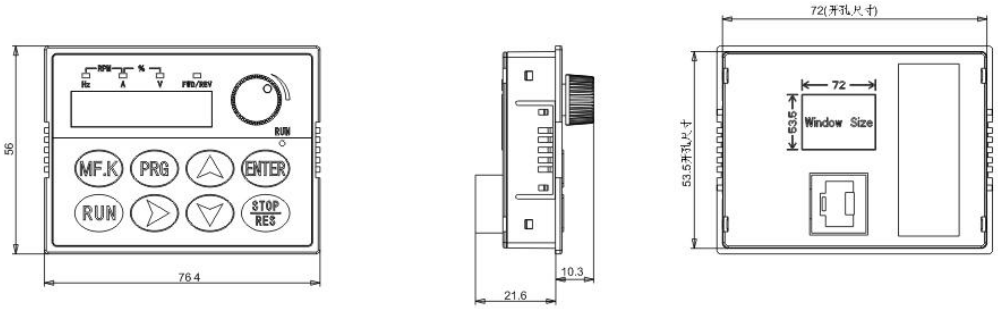
2.4.3 External keyboard X3-KB dimensions (opening size 63.5 × 95.5mm)



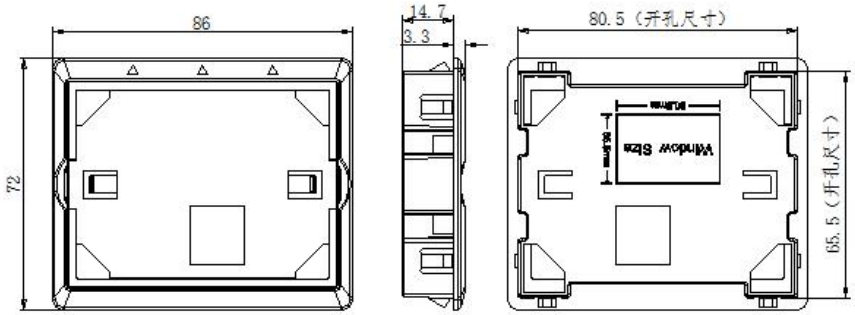
Keyboard carrier X3-KB-T Outline dimensions (hole size 77.5×23mm)



External keyboard X3-KB dimensions (opening size 72 × 53.5mm)



Keyboard carrier X3-KB-T Outline dimensions (opening size 80.5×65.5mm)



Chapter 3
Installation and wiring of H630-PV series inverter

3.1 Mechanical installation

3.1.1 Installation environment:

1) Ambient temperature: The ambient temperature has a great impact on the life of the inverter. The operating ambient temperature of the inverter is not allowed to exceed the allowable temperature range (-10℃～50℃).

2) Install the inverter on the surface of a flame-retardant object, and there must be enough space around it for heat dissipation. The inverter is prone to generate a lot of heat when working. And install it vertically on the mounting bracket with screws.

3) Please install it in a place that is not easy to vibrate. The vibration should not exceed 0.6G. Pay special attention to stay away from equipment such as punching machines.

4) Avoid installing it in direct sunlight, humid, and water droplets.

5) Avoid installing it in places with corrosive, flammable, and explosive gases in the air.

6) Avoid installing it in places with oil, dust, and metal dust.

H630-PV series frequency inverter heat distribution from bottom to top during heat dissipation, multiple frequency inverters work, usually installed side by side. In the installation of the upper and lower row,because the heat of the lower row frequency inverter will cause the temperature of the upper row equipment to rise and lead to failure, countermeasures such as installing the heat insulation guide plate should be taken. When it is greater than 22kW, A should be greater than 50mm.

Power level	Installation size	
	B	A
≤15kW	≥100mm	You can make no request
18.5kW—30kW	≥200mm	≥50mm
≥37kW	≥300mm	≥50mm

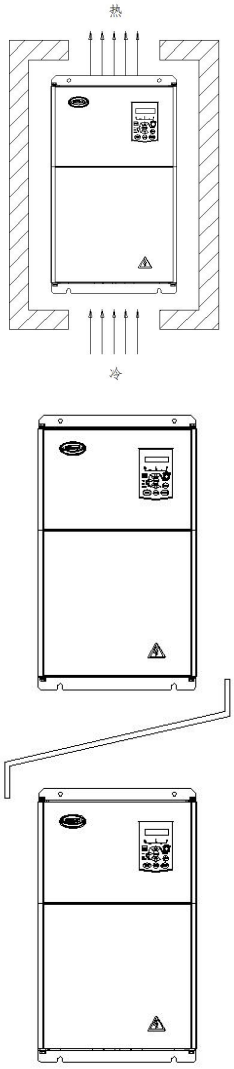


Figure 3-1 Installation diagram of heat insulation guide plate

3.2 Frequency inverter wiring

3.2.1. typical wiring diagram

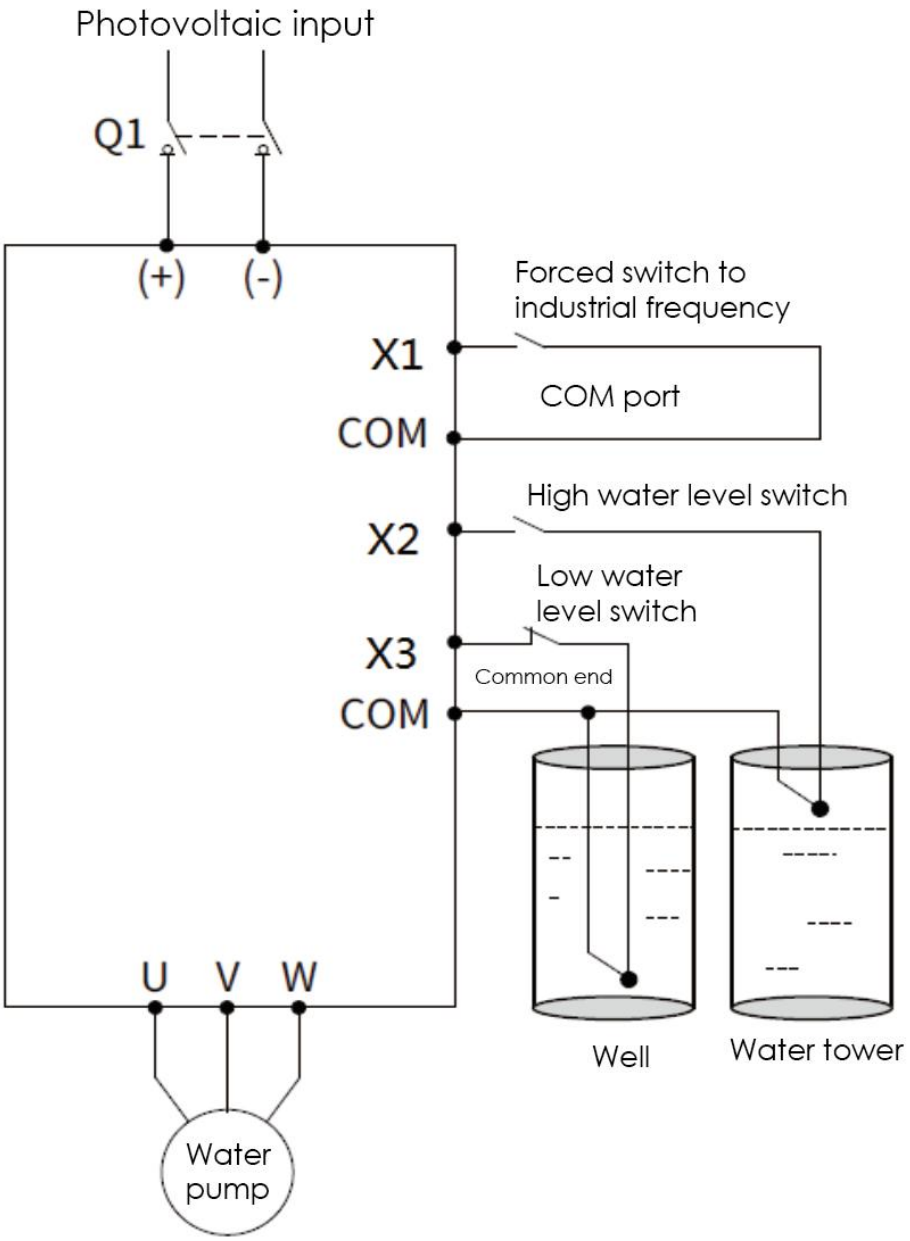


Figure 3-2 Typical wiring diagram of frequency inverter

Notice:	The DC circuit breaker Q1 must be installed as a protective switch for the PV DC input
	When the modules are connected in parallel, a special photovoltaic junction box should be selected
	When the example of photovoltaic cell module and frequency inverter exceeds 10 meters, the DC input end should be equipped with Type II type Lightning protection device.
	When the water pump is more than 50 meters away from the frequency inverter, it is recommended to select the output reactor.
	The frequency inverter runs automatically by default. If you need to set the parameters, please strictly follow the debugging instructions.

3.2.2 Main circuit terminals and wiring

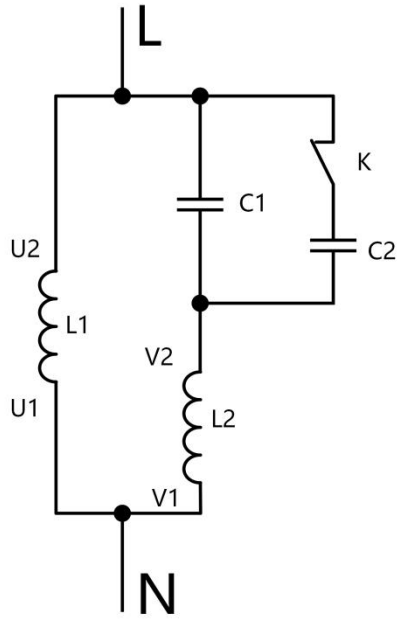
1) Description of the main circuit terminal of the single-phase frequency inverter:

Terminal mark	Name	Explain
L, N, or R, S	Single-phase power supply input terminal	Single-phase 220V AC power supply connection point
(+) 、 (-)	Positive and negative terminals of the DC bus line	Common-DC bus input point
PB 、 (+)	Energy consumption brake terminal	Connect the brake resistance
U 、V 、W	Inverter output terminal	Connect to the three-phase motor
⏚	Earth terminal	Frequency inverter safety grounding

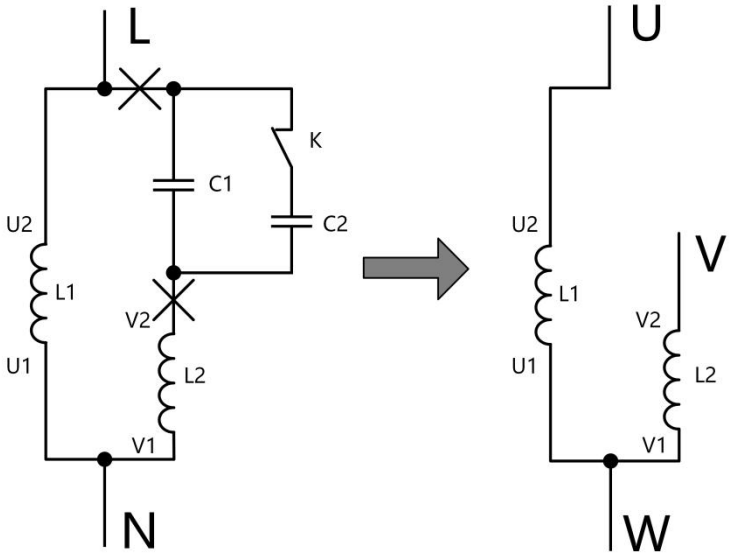
Description of the 2SS single-phase output model:

A. In general, the output U and W of the frequency inverter are connected to the phase line of the single-phase electric machine;

B. If the single-phase water pump cannot start, use the two-phase control mode to remove the starting capacitor and running capacitor (If there is a running capacitor), the internal wiring diagram of the ordinary single-phase generator is as follows. L1 is the running winding, L2 is the starting winding, C1 is the running capacitor, and C2 is the starting capacitor. When the speed of the motor exceeds 75% of the rated speed, the starting capacitor is disconnected through the centrifugal switch.



After removing the starting capacitor and running capacitor, the internal wiring diagram of the single-phase motor winding as follows



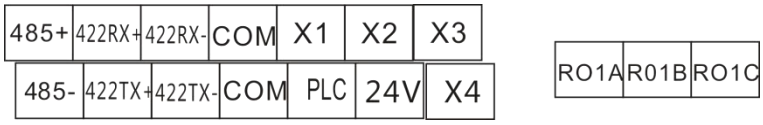
U1 and V1 are the common ends of the windings, connected to the W phase output of the photovoltaic water pump inverter, the U2 end of the running winding is connected to the U phase output of the photovoltaic water pump inverter, and the V2 end of the starting winding is connected to the V phase output of the photovoltaic water pump inverter (Note: Use the screws provided with the inverter); at the same time, short-circuit X4 and COM of the inverter.

2) Description of the main circuit terminal of the three-phase frequency inverter:

Terminal mark	Name	Explain
R、S、T	Three-phase power supply input terminal	AC input three-phase power connection point
(+)、 (-)	Positive and negative terminals of the DC bus line	Common DC bus terminal, connection point of external brake unit above 18.5KW
PB、(+)	Energy consumption brake terminal	Connect the brake resistance
P、(+)	External reactor connection terminal	External electric reactor connection point
U、V、W	Inverter output terminal	Connect to the three-phase motor
⏚	Earth terminal	Frequency inverter safety grounding

3.2.3 Control terminals and wiring:

1) The control circuit terminal layout is shown below:



220V / 2.2KW, and below power and 380V / 4.0KW and below power

220V / 4.0KW and above and 380V / 5.5KW and above, power section

2) Function description of the control terminal:

Table 3-1 Function description of the control terminal ofthe H630-PV frequency inverter

Class	Terminal symbol	Terminal name	Function declaration
Source	10V-GND	External connection with +10V power supply	Provide + 10V power supply, maximum output current: 10 mA, Generally used as the working power supply of external potentiometer, the resistance range of potentiometer: 1k Ω ~5k Ω
	24V-COM	External connection with a + 24V power supply	Provide + 24V power supply, generally used as the digital input and output terminal working power supply and the external sensor power supply maximum output current: 200 mA.

Source	PLC	External power supply input terminal	Factory default connection with + 24V: when using external signals to drive X 1~X 5, the PLC shall be connected to the external power supply and disconnected from the + 24V power supply terminal.
	AI2-GND	Analog quantity input terminal 2	1. Input range: DC 0V ~10V / 0 (4) mA ~ 20mA, determined by the J2 jumper on the control board. J2 jumps to the upper end is the current, and jumps to the bottom is the voltage. 2. Input impedance: 20k Ω at voltage input and 250 Ω at current input.
	AI3-GND	Analog quantity input terminal 3	1. Input range: DC-10V ~10V 2. Input impedance: 20k Ω
Digital Input	X1-COM	Number input to 1	1. Light lotus root isolation, compatible with bipolar input, and support NPN and PNP connection method 2. Input impedance: 3.3k Ω 3. the level input voltage range: 9V ~30V 4. Maximum input frequency: 1 kHz 5. All the terminals are programmable digital input terminals, and the user can set the terminal function through the function code X1: Forced switching to the power frequency (closed means switching to the power frequency, open means the input mode is controlled by the keyboard) X2: Water level switch with normally open contact by default (high water level switch) X3: Water level switch with normally closed contact by default (low water level switch) X4: High level corresponds to single-phase algorithm, low level corresponds to two-phase algorithm
	X2-COM	Number input to 2	
	X3-COM	Number input to 3	
	X4-COM	Number input to 4	
	HDI-COM	High-speed pulse input	In addition to the characteristics of X1~X4, it can also be used as a high-speed pulse input channel. Maximum input frequency: 50 kHz
Analog output	AO1-GND	Analog output of 1	The voltage or current output is determined by the J3 jumper selection on the control board. The J3 jumps to the upper end is the current, and the jump to the lower end is the voltage. Output voltage range: 0V ~10V Output current range: 0 (4) mA ~ 20 mA
	AO2-GND	Analog output of 2	The voltage or current output is determined by the J4 jumper selection on the control board. The J4 jumps to the upper end is the current, and the jump to the lower end is the voltage. Output voltage range: 0V ~10V Output current range: 0 (4) mA ~ 20 mA

Class	Terminal symbol	Terminal name	Function declaration
Digital Output	Y1-COM	Digital output of 1	Optical lotus root isolation, bipolar open circuit collector output Output voltage range: 0V ~24V Output current range: 0mA ~ 50 mA
Communication	485+	485 Differential signal plus end	Standard RS-485 interface, please use twisted pair or shielding wire, J5 is the terminal resistance matching jumper, the factory value jumper cap jump to the bottom for OFF state.
	485-	485 differential signal minus end	
	422TX+	422 Send differential signal positive	Special communication terminal of the booster module
	422TX-	422 Send a negative differential signal	
	422RX+	422 Received differential signal is positive	
	422RX+	422 Receive differential signal negative	
Relay output	RO1A-RO1B	Often closed terminal	Contact point drive ability: 3A / AC 250V COSø=0.4, 1A / DC30V
	RO1A-RO1C	Often start	
	RO2A-RO2C	Often start	
Auxiliary interface	CN4	Local keyboard interface	The native keyboard can also be used as a copy keyboard without parameters
Wire jumper	J2	A12 current and voltage selection	Jump to the upper end is the current, the factory value is jump to the lower end is the voltage
	J3	AO1 current and voltage selection	
	J4	AO2 current and voltage selection	
	J5	485 Communication terminal resistance selection	Jump to the bottom end is OFF, and jump to the top end is ON (connecting terminal matching resistor 120 Ω)

Chapter 4
Operation and Display

4.1 Introduction of the operation and display interface

With the operating panel, we can modify the functional parameters, monitor the working status of the frequency inverter and run the frequency inverter Control (start, stop) and other operations, its shape and functional areas are shown in the figure below:

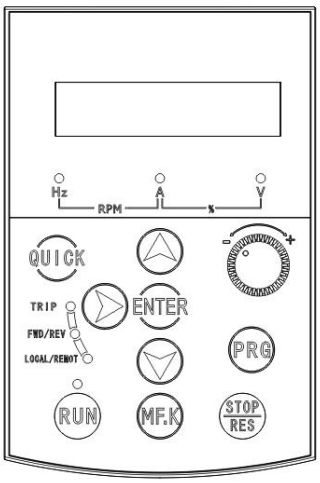


Figure 4-1 Layout diagram of the operation keyboard

1) Function indicator light instructions:

RUN/TUNE: When the lamp is out, the inverter is shut down, when the lamp is on, the inverter is in operation, and the flashing lamp means that the inverter is in the self-learning state of motor parameters.

LOCAL/REMOT: keyboard operation, terminal operation and remote operation (communication control) indicator, the light out indicates the keyboard operation control state, the light flashing indicates the terminal operation control state, and the light on indicates the remote operation control state.

FWD/REV: Positive and reverse indicator, the light is in positive state and the light is in reverse state.

TRIP: fault indicator lamp, when the inverter is in fault state, the lamp is on; under normal state Out; when the inverter is forecast, the lamp flashes.

2)Unit indicator light:

Hz: frequency unit　　A: Current Unit　　V: voltage unit

RPM (Hz + A): rotational speed unit　　% (A + V): percentage

3) Digital display area:

5-bit LED display, can display the set frequency, output frequency, various monitoring data and alarm code, etc.

4)Keyboard button description table

Table 4-1 Keyboard functions table

Key	Name	Function declaration
PRG	Programming / exit keys exit keys	Primary menu enter or exit, shortcut parameter delete
▶	Shift / monitor key	Under the shutdown display interface and running display interface, select display parameter; when modifying the parameter, the modification bit of the parameter can be selected
ENTER	Determine the key	Enter the menu screen step by step and confirm the setting parameters
MF.K	Multi-function selection key	For the detailed operation method, see H 07.02 (MF. K-key function selection) description
RUN	Running key	In the operation keyboard mode, press the key to turn the inverter forward operation
STOP RES	Stop / Reset the key	In running state, press this key can be used to stop running operation; in fault alarm state, used to reset operation, the characteristics of this key is restricted by function code H 07.04 (STOP / RST key function).
▲	UP increased key	Increment of data or function code (increase speed on continuous press)
▼	DOWN Degradation key	Decline of data or function code (increase rate on continuous press)
QUICK	continue to have	

4.2 Self-learning of motor parameters

Before selecting the vector control operation mode, the nameplate parameters of the motor. H630-PV inverter matches the standard motor parameters; the vector control mode is very dependent on the motor parameters. In order to obtain good control performance, the accurate parameters of the controlled motor must be obtained. The self-learning step of the motor parameters is as follows:

First select the command source (H00.01) as the operation panel command channel. Then please enter the following parameters by the actual parameters of the motor:

H02.01: Rated power of motor　　H02.02: rated frequency of motor

H02.03: rated speed of motor　　H02.04: rated voltage of the motor

H02.05: rated current of the motor

If the motor is completely detached of the load, H00.15 select 1(rotate complete self-learning), then press RUN on the keyboard panel and the frequency inverter will automatically calculate the following parameters of the motor:

H02.06: Stator resistance　　H02.07: Rotor resistance

H02.08: Leakage resistance　　H02.09: Mutual inductive resistance

H02.10: No-load exciting magnetic current

No-load current: $I_0 = I \cdot \sqrt{1-\eta^2}$

Mutual inductance calculation: $L_m = \frac{U}{2\sqrt{3}\,f \cdot I_0} - L\alpha$

I_0 is no-load current,

L_m is mutual inductance leakage inductance

If the motor cannot be completely disconnected from the load, H00.15 select 2(Still and complete self-learning), then press the RUN key on the keyboard panel. The frequency inverter successively measures the five parameters of stator resistance,

rotor resistance, leakage resistance, mutual inductive resistance and no-load magnetic current.

If the motor cannot be completely disconnected from the load, H00.15 select 3 (still part self-learn) and press RUN on the keyboard panel. The frequency inverter measures the three parameters of stator resistance, rotor resistance and leakage resistance in turn, and does not measure the mutual inductive resistance and no-load current of the motor, and the user can calculate these two parameters according to the motor nameplate. The parameters of the motor nameplate used in the calculation include: rated voltage U, rated current I, rated frequency ? and power factor η:

The calculation method of the no-load current of the motor and the calculation method of the motor mutual feeling are described below, wherein Lσ is the motor leakage inductive reactance.

Chapter 5
Functional parameter table

H07.00 is set to a non-0 value, namely, the parameter protection password is set in the functional parameter mode and in which the user changes the parameter mode below, the parameter menu must be entered after entering the password correctly. Cancel the password and set H07.00 to "0".

"Parameter decimal" is decimal(DEC). If the parameter is represented in hexadecimal, the data of each bit is independent of each other, and the value range of some bits can make hexadecimal (0~F).

The symbols in the function table are described as follows:

"☆": It means that the set value of the parameter can be changed when the inverter is down and running;

"★": Indicates that the setting value of this parameter cannot be changed when the inverter is in operation.

"●": indicates that the value of the parameter is the actual recorded value and can not be changed;

"*": It indicates that the parameter is "manufacturer parameter", which is only set by the manufacturer and is forbidden to operate;

5.1 Basic function parameter table

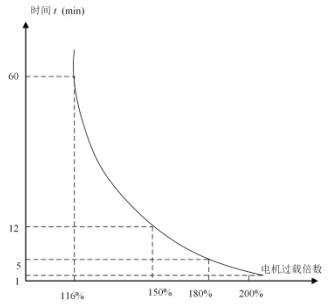
Table 5-1 Basic function parameter table

Code	Name	Description	Factory value	Change
		H00 Basic function group		
H00.00	Speed-control mode	0: No PG vector control mode 0 does not need to install the encoder, suitable for requiring large low frequency torque, high speed control precision requirements, can achieve high precision speed and torque control. This mode is more suitable for small and medium power situations than PG vector control mode 1. 1: No PG vector control mode 1 does not need to install the encoder, suitable for high speed control precision requirements, can be used for all power segments, can achieve high precision speed and torque control. 2: VF control mode is suitable for the control accuracy requirements are not high occasions, such as fan, pump and other loads. It can be used for one frequency inverter to drag multiple motors. Note: When using the vector mode, you should learn the motor parameters from the inverter first.	2	★
H00.01	Command source selection	Select the channel of the frequency inverter control command. The frequency inverter control commands include: start, stop, forward, reverse, jog, fault reset, etc. 0: Keypad running command channel (the LOCAL/ REMOT light is off) The running command is controlled by the RUN, STOP/RST keys on the keyboard. Multi-function key MF. When K is set to FWD/REV switching function (H07.02=3), you can change the running direction through this key: in the running state, if the RUN and STOP/RST keys are pressed at the same time, the frequency inverter can be shut down freely. 1: Terminal running command channel ("LOCAL/REMOT" lamp flashes) Operation command is controlled by multifunctional input terminals, reverse, forward point movement and reverse point movement. 2: Communication operation instruction channel ("LOCAL/REMOT" light is lit) The running command is controlled by the upper computer through the communication mode.	1	☆
H00.03	Maximum output frequency	Used to set the Max output frequency of the frequency inverter. It is the basis of frequency setting, but also the basis of acceleration and deceleration speed, please pay attention to users. Setting range: H00.04~400.00Hz	50.00Hz	★

Code	Name	Parameter details	Factory value	Change
H00.04	Running frequency upper limit	The upper limit of the operating frequency is the upper limit of the output frequency of the inverter. This value should be less than or equal to the maximum output frequency. The above limit frequency runs when the set frequency is above the upper limit frequency. Setting range: H00.05~H00.03 (Max output frequency)	50.00Hz	★
H00.05	Running frequency lower limit	The lower limit of the operating frequenc is the lower limit of the output frequency of the frequency inverter. Run at the lower limit frequency when the set frequency is below the lower limit frequency. Note: maximum output frequency upper frequency lower frequency. Setting range: 0.00Hz~H00.04 (upper limit of operating frequency)	0.00Hz	★
H00.06	A The frequency instruction selection	0: The keyboard number setting 1: Analog AI1 setting (keyboard panel potentiometer) 2~7: Keep 8: Modbus Communication settings Set the range: 0~8	0	☆
H00.10	The keyboard sets the frequency	0.00Hz~P00.03 (Maximum frequency)	50.00Hz	☆
H00.11	Acceleration time 1	Acceleration time is the time required for the frequency inverter to accelerate from 0Hz to the maximum output frequency (H00.03). The deceleration time refers to the time required for the inverter to slow down from the maximum output frequency (H00.03) to 0Hz. There are four sets of acceleration and deceleration times defined, which can be selected through the multi-function digital input terminal (H05 group). The acceleration and deceleration time of frequency inverter is the first set of acceleration and deceleration time. The setting range of H00.11 and H00.12: 0.0~3600.0s		☆
H00.12	Reduced-down time 1			☆

Code	Name	Description	Factory value	Change
H00.13	Run the direction selection	0: default direction: frequency inverter is running , FWD/EV indicator off. 1: Run in the opposite direction: inverter reverse operation, FWD/EV FWD/REV indicator is on. The steering of the motor can be changed by changing this function code, which is equivalent to realizing the conversion of the motor rotation direction by adjusting any two lines of the motor line (U,V,W). When the running channel is set to the keyboard control, through the MF on the keyboard. K key to change the steering of the motor, see parameter H07.02. Tip: ● After the function parameter recovers the default value, the motor running direction will return to the default value state. It is strictly prohibited to change the motor steering after the system debugging. ● Pump use occasions prohibit the reverse operation , do not allow to adjust the function code. 2: No reverse operation; prohibit frequency inverter from reverse operation, which is suitable for application in specific situations of reverse	0	☆
H00.14	Carrier frequency setting	1.0～15.0kHz		☆
H00.15	Motor parameters by self-learning	0: No operation 1: Complete rotation self-learning; comprehensive self-learning of motor parameters, and rotational self-learning is recommended for situations requiring high control accuracy. 2: Still self-learning1(static complete self-learning): suitable for the motor can not remove the load, the motor parameters for self-learning 3: Still self-learning2 (still part self-learning,no load current and mutual sensing); suitable for self-learning of motor parameters when the motor can not remove the load. However, only some motor parameters can be obtained.	0	★
H00.18	Functional parameter recovery	0: No operation 1: To restore the default value 2: Clear the fault file pay attention to: After the selected function operation completes, the function code automatically returns to 0. Restoring the default value can clear the user password, please use this feature carefully.	0	★

Code	Name	Description	Factory default	Change
		H01 group Startup and shutdown control group		
H01.08	Stop mode selection	0: deceleration stop: after the stop command is valid, the frequency inverter reduces the output frequency according to the deceleration mode and the defined deceleration time, and stops after the frequency is reduced to 0Hz. 1: Free parking: After the stop command is valid, the inverter immediately stops the output. The load stops freely according to the mechanical inertia.	0	☆
H01.18	The upper terminal runs Protect the choice	When the operation command channel is controlled by the terminal, the system will automatically detect the status of the running terminal during the power process of the frequency inverter. 0: The terminal run command is invalid when powered up. Even in the process of power-up, it is detected that the running command terminal is effective, the inverter will not run, and the system is in the operational protection state until the running command terminal is canceled, and then the terminal is enabled. 1: The terminal running command is valid when powered up. That is, during the process of charging the frequency inverter, if the operation command terminal is detected, the system will automatically start the frequency inverter after the initialization is completed. Note: users must carefully select this function, otherwise serious consequences may occur.	1	☆
H01.21	Power outage restart option	This function realizes the frequency inverter after the power drop, and then on the power on, whether the frequency inverter automatically began to run. 0: No restart 1: Allow restart: when the power is on after power failure, if the starting conditions are met, the inverter will operate automatically after waiting for the time defined by H01.22.	1	☆

Code	Name	Description	Factory default	Change
		H02 group motor 1 parameter group		
H02.01	Rated power of asynchronous motor 1	0.1～3000.0kW	Model confirmation	★
H02.02	Rated frequency of asynchronous motor 1	0.01Hz～H00.03(maximum output frequency)	Model confirmation	★
H02.03	Rated speed of asynchronous motor 1	1～36000rpm	Model confirmation	★
H02.04	Rated voltage of asynchronous motor 1	0～1200V	Model confirmation	★
H02.05	Rated current of asynchronous motor 1	0.8～6000.0A	Model confirmation	★
H02.06	Stator resistance of asynchronous motor 1	0.001～65.535Ω	Model confirmation	☆
H02.07	Rotor resistance of asynchronous motor 1	0.001～65.535Ω	Model confirmation	☆
H02.08	Asynchronous motor 1 leakage feeling	0.1～6553.5mH	Model confirmation	☆
H02.09	Asynchronous motor 1 mutual sense	0.1～6553.5mH	Model confirmation	☆
H02.10	Asynchronous motor 1 no-load current	0.1～6553.5A	Model confirmation	☆
H02.27	Motor overload protection factor	Motor overload multiple M = Iout /(In * K), In, is the rated current of the motor, Iout is the output current of the frequency inverter, and K is the motor overload protection coefficient. The smaller the K, the larger the M value, the easier the protection. When M =116%, motor overload 1 hour protection; when M=150%, motor overload 12 minutes protection; when M=180%, motor overload 5 minutes protection; when M =200%, motor overload 60 seconds protection, M 400% immediate protection. Set the range: 20.0%~120.0% 		

Code	Name	Description	Factory default	Change
The H 04 group was the VF control group				
H04.00	Motor: 1 V /F curve setting	This set of function codes defines the V / F curve of the motor 1 to meet different load characteristic requirements. 0: Line V / F curve; suitable for constant torque load 1: Multipoint V / F curve 2:1.3 power drop torque V / F curve 3:1.7 power drop torque V / F curve 4:2.0, power reduced torque V / F curve Curve 2~4 is suitable for the variable torque load of the fan and water pump,and users can adjust it according to the load characteristics to achieve the best energy saving effect. 5: Custom V / F (V / F separation); in this mode, V separates from F, adjust F through frequency given channel set by H00.06, or V by voltage given channel set by H 04.27.	4	★
H04.01	Motor 1 Recurrent ascension	In order to compensate the low frequency torque characteristics, the output voltage can be improved. H 04.01 is relative to the maximum output voltage..02 H 04 defines the percentage of the cut-off frequency of the manual torque lift relative to the rated frequency of the motor. The torque lift can improve the low-frequency torque characteristics of the spatial voltage vector. The torque increase should be appropriately selected according to the size of the load. The load can be increased and increased, but the lifting value should not be set too large. When the torque increase is too large, the motor will run the excitation, the output current of the frequency inverter will increase, the heat of the motor will increase, and the efficiency will be reduced. When the torque lift is set to 0.0%, the frequency inverter is the automatic torque lift. Torque lift cut-off: below this frequency point, torque lift is effective, beyond this set frequency, torque lift fails..01 Setting range of H 04:0.0%: (automatic) 0.1% ~ 10.0% Setting range of H04.02:0.0%~50.0%	0.0%	☆
H04.02	Motor 1 torque lift cut-off		20.0%	☆
H04.03	Motor: 1 V /F Frequency point 1	When H 04.00=1 (multipoint V / F curve), users can set the V / F curve through H 04.03~H 04.08. The V/F curve is usually set according to the load characteristics of the motor. Note: V 1 <V 2 <V 3, f 1 <f 2 <f 3. The low frequency voltage set too high may cause the motor to overheating or even burn, and the frequency inverter may exceed the loss speed or over current protection. H04.03 Setting range of :0.00Hz ~H 04.05 H04.04 Setting range of :0.0%~110.0% (rated voltage of motor 1) H04.05 Setting range of : H 04.03~H 04.07 H04.06 Setting range of:0.0%~110.0% (rated voltage of motor) H04.07 Setting range of : H 04.05~H 02.02(rated frequency of motor 1) H04.08 Setting range of :0.0%~110.0% (rated voltage of motor)	0.00Hz	☆
H04.04	Motor: 1 V /F Voltage point 1		0.0%	☆
H04.05	Motor: 1 V /F Frequency point 2		0.00Hz	☆
H04.06	Motor: 1 V /F Voltage point 2		0.0%	☆
H04.07	Motor: 1 V /F Frequency point 3		0.00Hz	☆
H04.08	Motor: 1 V /F Voltage point 3		0.0%	☆

Code	Name	Description	Factory default	Change
H04.09	Motor 1 V/F slip compensation gain	Used to compensate for the motor speed change caused by the load change during the space voltage vector control, so as to improve the hardness of the mechanical characteristics of the motor. The rated differential frequency of the motor shall be calculated. Δf= fb - n ×p /60 Where: fb is the rated frequency of the motor, the corresponding function code H02.02; n is the rated speed of the motor, the corresponding function code H 02.03; p is the pole logarithm of the motor.100.0% corresponds to the rated differential frequency Δf of the motor. Setting range:0 0~200.0%	100.0%	☆
H04.10	Motor 1 low frequency suppresses the oscillation factor	In the space voltage vector control mode, the motor, especially the high power motor, is easy to appear current shock at some frequencies, and the light motor can not run stably, and the heavy one will lead to the overcurrent of the frequency inverter. This parameter can be adjusted appropriately to eliminate this phenomenon. H04.10 Setting range: 0~100 H04.11 Setting range: 0~100 H04.12 Setting range: 0.00Hz-H 00.03(maximum output frequency)	10	
H04.11	Motor 1 high frequency suppresses the oscillation factor		10	
H04.12	Motor 1 oscillation suppression cutoff point		30.00	
H04.34	Two-phase control selection of single-phase generator	Units: Reserved Tens: Secondary winding (V phase) voltage inversion 0: No inversion 1: Inversion Setting range: 0~0x11	0x00	★
H04.35	Voltage ratio of secondary winding (V phase) to main winding (U phase)	0.00～2.00	1.40	☆

<table>
<tr><th>Code</th><th>Name</th><th>Description</th><th>Factory default</th><th>Change</th></tr>
<tr><td colspan="5">C5 group Input terminal group</td></tr>
<tr><td>H05.00</td><td>HDI input type selection</td><td>0: The HDI is a high-speed pulse input: refer to H 05.49 to H 05.54.
1: The HDI is the switch quantity input</td><td>1</td><td>★</td></tr>
<tr><td>H05.01</td><td>X1 terminal function selection</td><td rowspan="6">0: No function
1: Forward Run (FWD)
2: Reverse Run (REV)
3: Three-line Operation Control (Xin in)
4: Is moving
5: Reverse move
6: Free parking
7: Fault reset
8: Run pause
9: External fault input
10: Increasing frequency setting (UP)
11: decreasing frequency setting (DOWN)
12: Frequincrease setting setting setting
13: Switch between A settings and B settings
14: Combine the setting and A setting
15: Combine the setting and B setting
16: Multiple speed terminal 1
17: Multiple segment speed terminal 2
18: Multiple segment speed terminal 3
19: Multiple segment speed terminal 4
20: Multiple segment speed pause
21: Select the terminal 1 for the acceleration and deceleration time
22: Select the terminal 2 for the acceleration and deceleration time
23: Simple PLC, shutdown and reset
24: Simple PLC pause
25: The PID control is paused
26: Suspension pause (stop at current frequency)
27: pendulum frequency reset (back to center frequency)
28: Counter is reset
29: Torque control is prohibited
30: acceleration and deceleration
31: Counter triggers
33: Frequency increase and decrease setting temporarily clear
34: DC brake
36: Command to switch to the keyboard
37: Command to switch to the terminal
38: The command switches to the communication
39: Pre-excitation command
40: Clear the power consumption to zero
41: Maintain the power consumption
42: forced switch to power frequency(closed means switch to power frequency, broken On means that the input mode iscontrolled by the keyboard)
43: Full of water signal
44: Empty water signal
45: Two-phase control mode of the singlephase electric generator
46: No boost module PV switch input(automatic switch)
When the terminal is selected as the function of acceleration and deceleration time, it is necessary to select 4 sets of acceleration and deceleration times through the state combination of the two terminals (terminal 121 and terminal 22):
<table><tr><th>Terminal 2 (22)</th><th>Terminal (21)</th><th>Selection of the acceleration and deceleration time</th><th>Correspon ding parameters</th></tr><tr><td>OFF</td><td>OFF</td><td>Add deceleration Time 1</td><td>H00.11
H00.12</td></tr><tr><td>OFF</td><td>ON</td><td>Add deceleration Time 2</td><td>H08.00
H08.01</td></tr><tr><td>ON</td><td>OFF</td><td>Add deceleration Time 3</td><td>H08.02
H08.03</td></tr><tr><td>ON</td><td>ON</td><td>Add deceleration Time 4</td><td>H08.04
H08.05</td></tr></table></td><td>42</td><td>★</td></tr>
<tr><td>H05.02</td><td>X2 terminal function selection</td><td>43</td><td>★</td></tr>
<tr><td>H05.03</td><td>X3 terminal function selection</td><td>44</td><td>★</td></tr>
<tr><td>H05.04</td><td>X4 terminal function selection</td><td>45</td><td>★</td></tr>
<tr><td>H05.05</td><td>X5 terminal function selection</td><td>1</td><td>★</td></tr>
<tr><td>H05.09</td><td>The HDI terminal function selection</td><td>46</td><td>★</td></tr>
<tr><td>H05.10</td><td>Input terminal polarity selection</td><td>This function code is used to set the input terminal polarity.
when the bit is set to 0 . The input terminal positive polarity
when the bit is set to 1. The input terminal negative polarity
<table><tr><td>BIT 8</td><td>BIT 3</td><td>BIT 2</td><td>BIT 1</td><td>BIT 0</td></tr><tr><td>HDI</td><td>X4</td><td>X3</td><td>X2</td><td>X1</td></tr></table>Set the range: 0x000～0x1FF</td><td>0x000</td><td>☆</td></tr>
</table>

<table>
<tr><th>Code</th><th>Name</th><th>Description</th><th>Factory default</th><th>Change</th></tr>
<tr><td colspan="5">C06 group Output terminal group</td></tr>
<tr><td>H06.03</td><td>Relay, RO 1 Output selection</td><td rowspan="2">0: invalid
1: In operation
2: Turn forward is in operation
3: Inversion is in operation
4: Click and move in operation
5: The frequency inverter fails
6: Frequency level detection of FDT 1
7: Frequency level detection of FDT 2
8: Frequency reaches
9: During zero-speed operation (output in running state)
10: Upper limit frequency reaches
11: Lower limit frequency reaches
12: Ready to run
13: Pre-excitation in the field
14: Overload early warning
15: Overload early warning
16: Simple PLC stage is completed
17: Simple PLC cycle is completed
18: Set the value arrives
19: Specify the note number to arrive
20: External failure is valid
22: Run time arrives
23: MODBUS Communication virtual terminal output
27: Light weak
30: Switch to photovoltaic</td><td>30</td><td>☆</td></tr>
<tr><td>H06.04</td><td>VRelay RO2 output selection</td><td>5</td><td>☆</td></tr>
<tr><td>H06.05</td><td>Output terminal polarity selection</td><td>This function code is used to set the output terminal polarity.
when the bit is set to 0 , the input terminal positive polarity
when the bit is set to 1, the input terminal negative polarity
<table><tr><td>BIT1</td><td>BIT0</td></tr><tr><td>RO2</td><td>RO1</td></tr></table>Setting range : 0 to F</td><td>0</td><td>☆</td></tr>
<tr><td>H06.10</td><td>Relay RO1 opening delay time</td><td rowspan="4">The function code defines the delay time corresponding to the level change lock of the programmable output terminal from on and off
 

Setting range: 0.00~50.00s
Note: H 06.08 and H 06.09 are valid only at H06.00=1</td><td>10.00s</td><td>☆</td></tr>
<tr><td>H06.11</td><td>Relay RO1 disconnecti on delay time</td><td>10.00s</td><td>☆</td></tr>
<tr><td>H06.12</td><td>Relay RO2 opening delay time</td><td>0.00s</td><td>☆</td></tr>
<tr><td>H06.13</td><td>Relay RO2 disconnecti on delay time</td><td>0.00s</td><td>☆</td></tr>
</table>

Code	Name	Description	Factory default	Change
		H07 group HMI group		
H07.00	User password	0~65535 Set any non-zero number, and the password protection function takes effect. 00000: Clear the previously set user password values and make invalid the password protection function. When the user password is set and takes effect, if the user password is not correct, the user cannot enter the parameter menu. Only by entering the correct user password, the user can view the parameters and modify the parameters. Remember the user password you set up. Exit the function code editing state, and the password protection will work in one minute. When the password presses PRG to enter the function code editing state, "0.0.0.0.0" will be displayed, and the operator must correctly enter the user password, otherwise it cannot enter. Note: Restoring the default value can clear the user password, so please use it carefully.	0	☆
H07.02	MF.K-key function selection	0: No function 1: Point operation.press MF. The K key realizes the dot moving run. 2: The shift key switches the display status.press MF. K key to the t to switch the displayed function code. 3: Forward turn reversal switch.press MF. The K key realizes the ection of the switching frequency instruction. Only valid in the keyboard command channel. 4: Clear the UP / DOWN setting.press MF. K key against UP The / DOWN tings are cleared. 5: Free parking.press MF. K key to achieve free shutdown. 6: Implement the given mode of running command switching in r.press MF. K key switches the given mode in order. 7: Quick debugging mode (debugging according to the non-factory ameters). Note: By the MF. When the K key sets the forward and reverse switch, frequency inverter will not remember the state after the switch during power loss process, and the frequency inverter will operate according the running direction set by the parameter H00.13. Setting range: 0~07	6	★
H07.03	MF . K key run command channel switching order selection	When H 07.02=6, set the order of running command channel switching. 0: Keyboard control terminal controls the communication control 1: Keyboard control terminal control 2: keyboard control communication control 3: Terminal control and communication control	1	☆

Code	Name	Description	Factory default	Change
		H07 group HMI group		
H07.04	STOP / RST key shutdown, function selection	STOP / RST shutdown function effective option. For fault reset, the STOP / RST key is valid in any condition. 0: Only valid for the keyboard control 1: Effective for both keyboard and terminal control 2: Effective for both the keyboard and the communication control 3: Effective for all control modes	3	☆
H07.11	boost module temperature	When the inverter is configured with the boost module, the function code displays the temperature of the boost module. Note: the function code is only valid in AC mode, the value displayed by the function code in PV mode is not meaningful. -20.0~120.0° C	/	●
H07.12	Inverter module temperature	0～100.0℃	/	●
H07.13	Control board software version	1.00～655.35	/	●
H07.15	High power consumption of the frequency inverter	Display the power consumption of the frequency inverter. Power consumption of frequency inverter=H 07.151000 + H 07.16 H 07 15 setting range: 0~65535 kWh (1000)	/	●
H07.16	Low power consumption of the frequency inverter		/	●
H07.27	Last 1 failure type	0: No fault 3: Inverter unit protection (E 003) 4: accelerated overcurrent (E 004) 5: deceleration overcurrent (E 005) 6: constant speed over-current (E 006) 7: accelerated overvoltage (E 007) 8: deceleration overvoltage (E 008) 9: constant speed overvoltage (E 009) 10: Bus undervoltage fault (E 010) 11: Motor overload (E 011) 12: Frequter overload (E 012) 13: Input side (E 013) 14: Output side phase absence (E 014) 15: boost Module overheating (E 015) 16: inverter module overheating fault (E016) 17: External fault (E 017) 18:485 Communication fault (E 018) 19: Current detection fault (E 019) 20: Motor self-learning fault (E 020) 21: EEPROM operation fault (E 021) 22: PID, feedback line break fault (E 022) 23: Brake unit fault (E 023) 24: Run time reached (E 024) 25: Electronic overload (E 025) 32: Short circuit to ground fault 1 (E 032) 33: Short circuit to ground fault 2 (E 033) 34: Speed deviation fault (E 034) 35: Disorder fault (E 035) 36: Underload fault (E 036) 37: Hydraulic probe damaged fault (E 037) 38: PV reverse connection fault (E 038) 39: PV overflow (E 039) 40: PV overvoltage (E 040) 41: PV undervoltage (E 041) 42: Communication fault with the boost module422 (E-422) 43: boost, busbar overvoltage detected onthe side (E 043) Note: The No.38~40 fault is only detected in the boost. After the boost module detects the fault, and the fault information is returned to the inverter module in the next data return. report to the police: 61: Weak early warning (A-LS) 62: Underload early warning (A-LL) 63: Water full warning (A-tF) 64: Water air early warning (A-tL) 65: Phase phase warning (A-SPI) Note: The alert is not logged to the fault, but can be read by the Modbus	/	●
H07.28	Previous 1 failure type		/	●
H07.29	Previous 2 failure type		/	●
H07.30	Previous 3 failure type		/	●
H07.31	Previous 4 failure type		/	●
H07.32	Previous 5 failure type		/	●
H07.57	Previous 6 failure type		/	●
H07.58	Previous 7 failure type		/	●
H07.59	Previous 8 failure type		/	●
H07.60	Previous 9 failure type		/	●
H07.61	Previous 10 failure type		/	●
H07.62	Previous 11 failure type		/	●
H07.63	Previous 12 failure type		/	●
H07.64	Previous 13 failure type		/	●
H07.65	Previous 14 failure type		/	●
H07.66	Previous 15 failure type		/	●
H07.67	Previous 16 failure type		/	●
H07.68	Previous 17 failure type		/	●
H07.69	Previous 18 failure type		/	●
H07.70	Previous 19 failure type		/	●
H07.71	Previous 20 failure type		/	●

Code	Name	Description	Factory default	Change
		H08 group Enhanced function group		
H08.28	Number of automatic reset	Number of automatic reset: when the inverter selects automatic reset, it is used to set the number of automatic reset. If the number of continuous reset times exceeds this value, the frequency inverter will report the fault shutdown and wait for repair.	5	☆
H08.29	Fault automatic reset interval time setting	Automatic reset interval: Select the time interval between the fault occurrence and the automatic reset action. H 08.28 Setting range: 0~10 H 08.29 Setting range: 0.1~3600.0s	10.0s	☆
H08.53	Open the hidden function code	0: Close 1: Open Setting range : 0~1 Note: This function code EEPROM is not saved, that is, the default shutdown state is still left after power recovery.	0	☆
		H11 group Protection parameter group		
H11.00	Lack of phase protection	0x 000~0x 111 LED the unit: 0: Enter the missing phase protection is prohibited 1: Enter the missing phase protection allowance LED decade: 0: Output missing phase protection is prohibited 1: The output of phase-protection is allowed LED hundred: (reserved)	Model determination	☆
H11.01	Instant power drop frequency drop voltage point	20.0%～120.0%	80.0%	☆
H11.02	Instant power-off frequency drop rate	Setting range: : 0.00Hz / s ~H 00.03 (maximum output frequency) After the power grid drops, when the bus voltage drops to the instantaneous power drop frequency point, the frequency inverter starts to drop the rate according to the instantaneous power drop frequency (H11.02) Reduce the operating frequency,make the motor in the generating state,let the feedback power to maintain the bus voltage, ensure that the inverter does not stop, until the inverter is powered on again, the inverter returns to the state before the power drop. 220VAC power supply: the instantaneous power drop frequency reduction point is 260V (bus voltage) 380VAC power supply: the instantaneous power drop frequency reduction point is 460V (bus voltage) 690VAC power supply: the instantaneous power drop frequency reduction point is 800V (bus voltage) Note: 1. Adjusting this parameter appropriately can avoid the production shutdown caused by the protection of the frequency inverter when the power grid is switched. 2. The missing phase protection function must be prohibited to enable the function.	10.00Hz/s	☆
H11.03	Over-pressure stall protection	0: Prohibit 1: Allow	0	☆
H11.04	Over-voltage stall protection voltage	120-150% (standard bus voltage) (220V)	120%	☆
		120-150% (standard bus bar voltage) (380V)	136%	
H11.05	Limited flow selection	0x 00~0x 12 Individual bit: current limiting action selection 0: Flow limit action is invalid 1: The current limiting action is always effective 2: The deceleration time limit flow is invalid Ten place: hardware current limit overload alarm selection 0: Hardware current limit overload alarm is valid 1: Hardware current limit overload alarm is invalid	0x01	★

Code	Name	Description	Factory default	Change
H11.06	Automatic current limiting level	50.0～200.0%	Type G type machine:150.0% Type P type machine:110.0%	★
H11.07	Frequency drop rate during current limiting time	0.00～50.00Hz/s	10.00Hz/s	★
H11.08	Frequency inverter/motor underload forecast alarm selection	If the output current of the frequency inverter or motor is greater than the overload forecast alarm detection level (H 11.09), and the duration exceeds the overload warning delay time (H 11.10), the overload warning signal is output. H11.08 enables and defines the preoverload alarm function of the inverter and motor. LED the unit: 0: the motor overload forecast alarm, relative to the rated current of the motor 1: the frequency inverter overload forecast alarm, relative to the rated output current of the frequency inverter 2: Motor output torque overload forecast alarm, relative to the motor rated torque LED ten tens: 0: Continue operation after underload alarm 1: Continue operation after underload alarm, and stop running after overload fault 2: The inverter continues to run after overload alarm, and stop operation after underload failure 3: The frequency inverter stops running after reporting the underload fault LED hundreds place: 0: Always detect 1: Detection in constant speed operation LED thousand bits: overload integral selection 0: Invalid overload integral 1: overload integral effective setting H11.08 set range:0000~1131 H11.09 set range: H11.11~200% (relative value determined by H 11.08 bits) H11.10 set range: 0.1~3600.0s	0	☆
H11.09	Overload forecast alarm detection level		150	☆
H11.10	Overload forecast alarm detection time		1.0	☆
H11.11	Underload forecast alarm detection level	If the output current of the frequency inverter or motor is less than the underload warning detection level (H11.11), and the duration exceeds the underload warning delay time (H11.12), the underload warning signal is output. Setting range of H 11.11:0~H 11.09(relative value determined by H 11.08 bits) Setting range of H 11.12:0.1~3600.0s	50	☆
H11.12	Time of underload forecast alarm detection		1.0	☆
H11.13	Action selection of the fault output terminal during the fault	Used to select the action of the fault output terminal in undervoltage and fault automatic reset. LED the unit: 0: Action during underpressure failure 1: Do not act when the underpressure fault occurs LED decade: 0: Action during the automatic reset 1: No action during the automatic reset	00	☆
H11.14	Speed deviation detection value	0.0~50.0% is used to set the speed deviation detection value.	10.0	☆
H11.15	Speed deviation detection time	Used to set the speed deviation detection time. Setting range of H 11.15:0.0 (invalid), 0.1~10.0s	0.5	☆

Code	Name	Description	Factory default	Change
H14 group Serial communication parameter group				
H14.00	Address of this machine	Setting range: 1~247 When the host frame, the slave address is set to 0, i. e For the broadcast address, all slave on the MODBUS bus accept the frame,but the slave does not answer. The local communication address is unique in the communication network, which is the basis of realizing the point-to-point communication between the upper computer and the frequency inverter. Note: The slave address cannot be set to 0.	1	☆
H14.01	The Communication Baud rate setting	Set the data transmission rate between the upper position computer and the frequency inverter. 0: 1200bps 1: 2400bps 2: 4800bps 3: 9600bps 4: 19200bps 5: 38400bps 6: 57600bps Note: The port rate set by the upper computer and the inverter must be consistent, otherwise, the communication cannot be carried out. The larger the port rate, the faster the communication speed.	4	☆
H14.02	Data-bit calibration setting	0: No check (N, 8,1) for RTU 1: even check (E, 8,1) for RTU 2: odd check (O, 8,1) for RTU 3: No check (N, 8,2) for RTU 4: even check (E, 8,2) for RTU 5: odd check (O, 8,2) for RTU	1	☆
H14.03	Communication response delay	0~200ms It is the intermediate interval between the end of the inverter data acceptance and the response data from the upper computer. If the response delay is less than the system processing time, the response delay shall be subject to the system processing time. If the response delay is longer than the system processing time, the system shall process the data and delay until the response delay time to send the data to the upper machine.	5	☆
H14.04	485 Communication timeout fault time	00 (Invalid) ~60.0s The communication timeout time parameter is invalid when the function code is set to 0.0. When the function code is set to a non-zero value, if the interval between one communication and the next communication exceeds the communication timeout time, the system will report "485 communication fault" (E 018). Usually, it is set to be invalid. If you set this parameter in a continuous communication system, you can monitor the communication status.	0.0s	☆
H14.05	Transport error handling	0: Alarm and stop freely 1: Do not alarm and continue to run 2: Stop by shutdown mode without alarm(only by communication control mode) 3: Stop according to shutdown mode without alarm (under all control modes)	0	☆
H14.06	Communication processing action selection	0x 000~0x 111 LED individual bit: write the operation action 0: responds to the write operation; the frequency inverter responds to the read and write command of the upper computer. 1: No response to the write operation; the frequency inverter only responds to the read command of the upper computer and has no response to the write command, improving the communication efficiency. LED ten-place: communication encryption processing 0: Communication password protection is invalid 1: Communication password protection is valid LED 100 bits: communication command address customization 0: H 14.07, H 14.08 Custom address is invalid 1: H 14.07, H 14.08 Custom address is valid	0x000	☆

Code	Name	Description	Factory default	Change
		H15 group Solar inverter special function group		
H15.00	Pv inverter choice	0: invalid 1: enable For 0 indicates that the photovoltaic control is invalid and the function group is not used. For 1 indicates an enabling PV control that can adjust the parameters of the H15 group.	1	★
H15.01	Vmpp voltage given the selection	0: Voltage is given 1: The maximum power tracking given For 0 indicates that the voltage given method. the reference voltage is given by H 15.02 keyboard, which is a fixed value. For 1 indicates maximum power for a given reference voltage that changes until the system is stable. Note: The function code is not valid when the terminal function 43 is valid.	1	★
H15.02	Vmpp voltage keyboard given	0.0~6553.5Vdc In the case that H15.01 is 0, the reference voltage value is given by the function code. (During testing, the reference voltage should be lower than the PV input voltage, otherwise the system will operate at the lower frequency limit)	250.0V	☆
H15.03	PID control deflection limit	0.0~100.0% (100.0% corresponds to H 15.02) PI adjustment will be made when the deviation between the actual voltage and reference voltage, namely abs(actual voltage-reference voltage) * 100.0% / reference voltage, is greater than the deviation limit value of H15.03, otherwise PI processing is not performed. The default is 0.0%. Abs: take the absolute value	0.0%	☆
H15.04	PID output on the frequency	H 15.05~100.0% (100.0% corresponds to H00.03) H 15.04 was used to limit the maximum of the target frequency, 100.0% corresponds to H 00.03 maximum frequency. After PI adjustment, the final target frequency cannot exceed the set upper limit.	100.0%	☆
H15.05	PID output lower frequency	0.0%~H 15.04 (100.0% corresponds to H 00.03) H15.05 was used to limit the minimum of target frequency, 100.0% corresponds Maximum frequency at H 00.03. After PI adjustment, the final target frequency cannot be below the set lower limit.	20.0%	☆
H15.06	KP1	0.00~100.00 Protionality coefficient of target frequency 1 A larger value indicates greater effect and faster regulation.	5.00	☆
H15.07	KI1	0.00~100.00 The integration coefficient of 1 of the target frequency A larger value indicates greater effect and faster regulation.	5.00	☆
H15.08	KP2	0.00～100.00 Protionality coefficient of target frequency 2 A larger value indicates greater effect and faster regulation.	35.00	☆
H15.09	KI2	0.00～100.00 The integration coefficient 2 of the target frequency A larger value indicates greater effect and faster regulation.	35.00	☆
H15.10	PI switching point	0.0～6553.5Vdc When the absolute value of the difference between PV voltage and reference voltage is greater than the set value of H 15.10, switch to H15.08 ratio 2 and H15.09 integration coefficient 2; otherwise use H 15.06 ratio 1 and H 15.07 ratio 1.	20.0V	★
H15.11	Water level control selection	0: Water level control switch quantity input 1: AI 1 (water level signal is input by analog AI 1, not supported) 2: AI 2 (water level signal is input by analog AI 2, not supported) 3: AI 3 (water level signal is input by analog AI 3, not supported) When the function code is selected as 0, the water level signal is controlled by switch input. See S terminal 43 and 44 of Group H05; when the terminal input the full water signal is valid, the system reports the full water warning (A-tF) after the delay time of H 15.14 and sleeps. Under the full water alarm state, the full water signal is invalid. After the delay time of H15.15, clear the full water alarm and enter the running state again. When the terminal input the empty water signal is valid, the system will report the empty water warning (A-tL) after the delay time of H 15.16, and sleep; under the empty water alarm state, the empty water signal is invalid. After the delay time of H 15.17, remove the empty water alarm and enter the operation state again. When the function code is selected as 1 to 3, representing the given water level control analog signal source. See functional code H 15 12, H 15 13 for details.	0	★

Code	Name	Description	Factory default	Change
H15.12	Full water level threshold	0.0~100.0% This function code is valid when H 15.11 water level control is selected as the analog input. When the detected water level control analog signal is less than the H 15.12 water level threshold, and continue this state after the delay time of H 15.14, report the full water warning (A-tF), and sleep. If the non-persistent case, that is, when the delay time does not arrive, the given simulation signal is large At the water level threshold, the delay time will be automatically cleared. Then, the delay timing is restarted when the measured water level control simulation signal is less than the water level threshold. In the full water alarm state, when the detected water level control simulation signal is greater than the water level threshold of H 15.12, the delay time starts. After the delay time of H 15.15, the full water alarm is cleared and restored to the normal state. In non continuous cases, the delay time will automatically clear up.	25.0%	☆
H15.13	Empty water level threshold	0.0~100.0% This function code is valid when H 15.11 water level control is selected as the analog input. When the detected water level control analog signal is greater than the H 15.13 water level threshold, and continue this state after the delay time of H 15.16, report the empty water warning (A-tL), and sleep. If in the case of nonpersistent, that is, when the delay time does not arrive, the given analog signal is greater than the water level threshold, the delay time will automatically clear up. Then, the delay timing is restarted when the measured water level control simulation signal is less than the water level threshold. In the empty water alarm state, when the detected water level control simulation signal is less than the water level threshold of H15.13, the delay time starts. After the delay time of H 15.17, the empty water alarm is cleared and returns to the normal state. In non continuous cases, the delay time will automatically clear up.	75.0%	☆
H15.14	Full water level delay	0～10000s Full water delay time is set.(The function code is still valid when the full water signal)	5s	☆
H15.15	Full water level wake up delay	0～10000s Set the delay time of full water level.(The function code is still valid when the full water signal)	20s	☆
H15.16	Air water level delay	0～10000s Set the delay time of the empty water.(The function code is still valid when switching on the water air signal)	5s	☆
H15.17	Empty water level awakening delay	0～10000s Set the delay time of empty water level.(The function code is still valid when switching on the water air signal)	20s	☆
H15.18	Hydraulic probe damage point	0.0～100.0% If 0.0% is invalid, not 0.0%, when the detected water level control analog signal is greater than the damage point of H15.18 hydraulic probe, the fault (E 037) will be directly reported and stopped.	0.0%	☆
H15.19	Underload operati on time of the water pump	0.0～1000.0s Setting of the underload operation time of the water pump. Under continuous underload, underload alarm (A-LL).	60.0s	☆
H15.20	Overload running current Detection value	0.0%:, Automatic underload detection 0.1~100.0% When it is 0.0%, it is determined by the underload detection of the water pump inverter itself. If not 0.0%, determined by H15.20.100.0% corresponds to the motor rated current. When the absolute value of the difference between target frequency and ramp frequency is continuously less than or equal to the H 15.22 lag frequency threshold, if the current current value corresponding to the current frequency is continuously less than the set value of H15.20, the underload alarm fault is reported after the underrunning time of H 15.19 pump, otherwise normal operation. In non-continuous cases, the delay timing will automatically clear up.	00.0%	☆

Code	Name	Description	Factory default	Change
H15.21	Underload reset delay	0.0~1000.0s Underload reset delay setting. In the underload, the underloaded running time timing and the overloaded reset delay timing are synchronized. The value is generally set larger than H 15.19 to ensure that the overloaded delay running time reaches, and the overloaded alarm can be reset after the time of H 15.21~H15.19. If the value is consistent with the time of H 15.19, it will automatically reset when the overload alarm is reported.	660.0s	☆
H15.22	Underload protection option	0～1 0: Determine the underload according to the output power 1: according to the output current	0	☆
H15.23	Low light delay time	0.0～3600.0s Light-weak delay time setting. When the output frequency is less than or equal to the lower limit of PI output frequency, the delay timing starts. After this state reaches the light delay time, report the weak alarm (A-LS) and sleep. In noncontinuous cases, the delay timing will automatically clear up. pay attention to: ● When the bus voltage is lower than the undervoltage point, or the PV voltage is less than 70V, the light warning without delay. ●In the case of H 15.32=0, the system will automatically switch to the power frequency input mode after light weakness.	100.0s	☆
H15.24	Low light wake-up delay	0.0～3600.0s Weak wake-up delay setting. Under the light weak warning, after the light weak wake-up delay, clear the light weak warning, and re-enter the operation state. In the case of H15.32=0, when the PV voltage is greater than H15.34, the system switches back to the photovoltaic input mode after the weak wake-up delay.	300.0s	☆
H15.25	Initial actual reference voltage is given for the display	0.0～2000.0V	0	●
H15.26	Max tracking Min voltage reference	0.00～1.00 This function code can set the minimum voltage reference for the maximum power tracking, and the maximum power tracking minimum voltage reference =the open circuit voltage of the photovoltaic panel * H 15.26. Open circuit voltage of PV panels = H15.25+H 15.28. The maximum power tracking voltage will be tracked within the minimum voltage reference range ~H 15.27. H 15.27 must be greater than the minimum voltage reference. The smaller the difference between them, the narrower the tracking range and the faster the tracking.However, make sure that the voltage point of the normal maximum power falls within the range. H 15.26 and H 15.27 must be properly adjusted according to the conditions of the site.	0.50	☆
H15.27	Max power tracks the maximum voltage reference	Maximum power tracking minimum voltage reference ~H 15.31 Is active at MPPT maximum power tracking,for the maximum voltage tracked. Factory value is determined by the model: Type / Maximum voltage reference / Vmppt Maximum value 2SS / 400.0V / 400.0V 2S / 400.0V / 400.0V 2T / 400.0V / 400.0V 4T / 750.0V / 750.0V	400.0V	☆
H15.28	Reference voltage initial value adjustment	80～95% Initial reference voltage = V oc * P15.28 MPPT is perturbed from the initial value ofthe reference voltage.	88%	☆
H15.29	Automatically adjust the upper and lower limits of Vmppt	0.0～10.0s When H 15.29 is set to 0.0, the automatic adjustment of the upper and lower limit of Vmppt is invalid. When not 0.0, automatically adjust the upper and lower limits of Vmppt once for each time set by H 15.29. The adjusted center is the current PV voltage and the upper and lower limits is H 15.30, namely: Maximum / minimum reference voltage =current PV voltage ± H15.30 While automatically updated to H15.26 and H15.27.	0.0s	☆

Code	Name	Description	Factory default	Change
H15.30	Automatically adjust the upper and lower limits of the Vmppt	5.0～100.0V Adjustment of the upper and lower range amplitude when the Vmppt is automatically adjusted	30.0V	☆
H15.31	Vmppt Max value	H15.27～6553.5V Vmppt Maximum value. During the maximum power tracking process, the upper panel reference voltage limit will not exceed the value set by ~H 15.31. The factory value of this value is determined according to the model, 4T, the default of other models is 750V, and the default of other models is 400V	400.0V	☆
H15.32	solar input and power frequency input selection	0: Automatic switch mode 1: Power frequency input mode 2: PV input mode This function code selects 0, and the system automatically switches between PV and power frequency according to the detected PV voltage value and switching threshold. This function code selects 1, and the system forces the switch to the power frequency input. This function code selects 2, and the system forces the switch to the photovoltaic input. Note: The function code is invalid when the terminal input function 42 is valid.	2	★
H15.33	Switch to the power frequency input threshold setting	0.0V～H15.34 When the PV voltage is below the threshold value or the light is weak, it can be switched to the power frequency input through the relay output. Invalid for 0. For models without a boost module, the switching point voltage is set by the external voltage detection circuit; The model with the voltage module, the switching point voltage is 70V	70.0V	☆
H15.34	Switch to the PV input threshold setting	H15.33～400.0V When the PV voltage is above the threshold value, the system can be switched to photovoltaic input by H 15.24. This threshold is a little higher than that of H 15.33 to avoid back and forth switching.. Invalid for 0.0 Factory value model decision.	100.0V	☆
H15.35	Rated flow rate of the water pump	QN at rated head; unit: m^3/h	0.0	☆
H15.36	Head of water pump rating	Head HN at rated frequency; in: m	0.0	☆
H15.37	PV under-voltage point voltage setting	When the PV voltage is lower than the set voltage value, the system reports the PV undervoltage fault factory value is determined by the model: Type / The PV undervoltage point 2SS / 140V 2S / 140V 2T / 140V 4T / 240V With a boost, of any model type / 70V Setting range: 0.0~400.0	70.0V	☆
H15.39	Product model	This function code is provided to the user to change the model of the product, such as the factory 4T model, the user wants to use as a 2T model, need to set H15.39 to 2. 0:2SS 220V Single-phase input and single-phase output 1:2S 220V Single-phase input and three-phase output 2:2T 220V three phase input three phase output 3:4T 380V Three-phase input and three-phase output Setting range: 0~3	0	★
H15.40	The PQ curve fitting is enabled	0: Not enabled 1: Enable Setting range: 0~1 to enable this function code, flow calculation will use H 15.41~H15.50 point for PQ curve fitting calculation, flow calculation will be more accurate.	0	★
H15.41	The PQ curve power point 1	The setting range of pump input power at the first point of the PQ curve:0.0~1000.0kW	0.0kW	★

Code	Name	Description	Factory default	Change
H15.42	The PQ curve power point 2	The setting range of pump input power at the second point of the PQ curve:0.0~1000.0kW	0.0kW	★
H15.43	The PQ curve power point 3	The setting range of pump input power at the third point of the PQ curve:0.0~1000.0kW	0.0kW	★
H15.44	The PQ curve power point 4	The setting range of the pump input power at the fourth point of the PQ curve: 0.0~1000.0kW	0.0kW	★
H15.45	The PQ curve power point 5	The setting range of the pump input power at the fifth point of the PQ curve: 0.0~1000.0kW	0.0kW	★
H15.46	The PQ curve flow point 1	The setting range of the corresponding pump flow point at the first point of the PQ curve is: 0.0~1000 0m³/h	0.0m³/h	★
H15.47	The PQ curve flow point 2	The setting range of the corresponding pump flow point at the second point of the PQ curve is: 0.0~1000 0m³/h	0.0m³/h	★
H15.48	The PQ curve flow point 3	The setting range of the corresponding pump flow point at the third point of the PQ curve is: 0.0~1000 0m³/h	0.0m³/h	★
H15.49	The PQ curve flow point 4	The setting range of the corresponding pump flow point at the fourth point of the PQ curve is: 0.0~1000 0m³/h	0.0m³/h	★
H15.50	The PQ curve flow point 5	The setting range of the corresponding pump flow point at the fifth point of the PQ curve is: 0.0~1000 0m³/h	0.0m³/h	★
H15.51	Pump efficiency	This function code indicates the overall efficiency of the water pump. Set the range: 0-100%	80%	☆
H17 group Status view functional group				
H17.01	Output frequency	Displays the current output frequency of the frequency inverter. Range: 0.00Hz ~H 00.03	0.00Hz	●
H17.03	Output voltage	Displays the current output voltage of the frequency inverter. Range: 0~1200V	0V	●
H17.04	Output current	Displays the current output current effective value of the frequency inverter. Range: 0.0~3000.0 A	0.0A	●
H17.08	Motor power	Show the current power of the motor,100.0% relative to the rated power value of the motor, the positive value is the electric state, and the negative value is the power generating state Range: -300.0~300.0% (relative to the rated power of the motor)	0.0%	●
H17.11	DC bus voltage	Displays the current DC bus voltage of the frequency inverter. Range: 0.0~2000.0V	0.0V	●
H17.12	Switch quantity input terminal status	Displays the current switch quantity input terminal status of the frequency inverter BIT8 BIT7 BIT6 BIT5 HDI X8 X7 X6 BIT4 BIT3 BIT2 BIT1 BIT0 X5 X4 X3 X2 X1	0	●
H17.13	Switch quantity output terminal status	Displays the current switch volume output terminal status of the frequency inverter BIT3 BIT2 BIT1 BIT0 RO2 RO1 HDO Y1	0	●
H17.38	Main winding current	The main winding current of the single phase generator is controlled by the disassembly mode 0.00~100.00A	0.00A	●
H17.39	Secondary winding current	To control the secondary winding current of the single-phase electric machine in the single-phase capacitor mode 0.00~100.00 A	0.00A	●

Code	Name	Description	Factory default	Change
		H18 group PV inverter dedicated status view group		
H18.00	PV reference voltage	The mppt is done on the inverter side, and this value is given by the inverter side 0～65535.0V	0.0V	●
H18.01	Current PV voltage	The boost module is over or the bus voltage 0～65535.0V	0.0V	●
H18.02	The MPPT Min reference voltage is shown	This value shows the maximum power trace minimum voltage reference, which is equal to the panel open circuit voltage * H15.26 0～65535.0V	0.0V	●
H18.04	Current inductance current	From the boost module, the function code is only valid in AC mode, the function code is invalid	0.0A	●
H18.07	Solar input power	Retention, in kW	0.00kW	●
H18.08	Last last input power	Retention, in kW	0.00kW	●
H18.09	Last PV voltage	The last boost module is incoming or the bus voltage		●
H18.10	Device configuration display	0x 00~0x 11 LED the unit 0: Photovoltaic power supply 1: AC power grid power supply LED decade 0: The system with a boost module is detected 1: The system is detected without the boost module	00	●
H18.11	Current water pump flow rate	$Q=\frac{Q_N \times f}{f_N}$ Unit: cubic meter/hour	0.0	●
H18.12	Current pump lift	$H=0.9H_N \times (f/f_N)$ Unit: meter	0.0	●
H18.13	Pump total flow rate high	The function code shows the high 16 bits of the total pump flow rate. Unit: cubic meters	0	●
H18.14	Pump total flow rate low	This function code shows the low 16 bits of the total pump flow rate. Unit: cubic meters.Total flow of pump = H18.13 * 65535 + H18.14	0.0	●
H18.15	Pump total flow reset	This variable is set to 1 to reset the total flow rate of the pump, H18.13, H18.14 will clear zero and start accumulating again. After you reset the function code H18.15, it will automatically change to 0.	0	●
		H19 group BOOST boost special group (transmitted by inverter module and boost module through RS422 communication)		
H19.00	Boost voltage loop KPP	0.000～65.535	0.500	☆
H19.01	Boost 0.000~65.53 Voltage ring KI	0.000～65.535	0.080	☆
H19.02	Boost current loop KP	0.000～65.535	0.010	☆
H19.03	Boost current loop KI	0.000～65.535	0.010	☆
H19.04	Boost voltage loop PI output upper limit current	PI output limit of mppt voltage ring, boost current ring reference current limit H19.05~15.0A	12.0A	☆
H19.05	Boost voltage loop PI output lower limit current	Mppt voltage loop PI output lower limit, boost current loop reference current lower limit 0～H19.04	0.0	☆
H19.06	Bus-line reference voltage	Solar input, the system with boost module, the function code sets the reference voltage of the bus voltage. The default factory value of the function code of 220V model is 350V, and the default function code of 380V model is 570V. Set the range: 300.0V ~600.0V	350.0V	★
H19.07	boost Voltage ring of KP1	When the difference between bus voltage reference and actual bus voltage is greater than 20V, the voltage ring, otherwise the first set of PI parameters Setting range: 0.000~65.535	0.500	☆

H19.08	Voltage ring KI boost 1	When the difference between bus voltage reference and actual bus voltage is greater than 20V, the voltage ring, otherwise the first set of PI parameters Setting range: 0.000~65.535	0.080	☆
H19.09	Boost Start-up voltage	When the PV voltage reaches the starting voltage value, and the other starting conditions of the system are met, the boost circuit is activated. Setting range: 60 0~200 0V	80.0V	★
H19.10	Boost software version	boost After the power, the version will be sent to the inverter side	0.00	●
H19.11	Output voltage filter coefficient	Setting range: 0~10	5	☆
H19.14	MPPT adjustment step	Set the range: 0.0~10.0V When this value is 0, the step size is automatically set according to the average voltage / 100 Calculate, range [2.0V, 5.0V]; the step size is not zero.	0.0V	☆
H19.15	MPPT adjustment time	Setting range: 0.0~120.0s	2.0s	☆
H19.16	△P coefficient 1	Setting range: 0.0%~5.0% This value affects the effect of tracking from right to left, and the larger the value, the closer to the right.	0.0%	☆
H19.17	△P coefficient 2	Setting range: 0.0%~5.0% This value affects the effect of tracking from right to left, and the larger the value, the closer to the right.	0.0%	☆
H19.19	Fine-tune the reference voltage time	Setting range: 0.00~60.00s With KP 2 / KI 2, the reference voltage slightly increases by 1V.	0.01	★

Note:

● The time from the pump inverter to the lower limit of PI output frequency is determined by the acceleration time.

● Description of timing problems that meet multiple fault conditions simultaneously. For example, when the conditions of light weakness, full water and underload failure are met at the same time, the delay timing will start respectively, without correlation. When a fault delay time arrives, the fault is reported. The other two fault delay timing will be maintained. After the fault reset returns to normal, if the other two fault conditions are still met, the last time will continue, and so on. If a fault condition is not met in the middle, then the fault delay time will be cleared.

5.2 Commissioning guidance

5.2.1 Check before operation

Be sure to confirm the following items before switching on.

1. Check whether the inverter is reliably grounded;
2. Check whether the wiring is correct and reliable;

3. Check whether the selection of AC and DC circuit breaker is correct;

4. Check whether the photovoltaic DC input voltage is within the allowable range of the frequency inverter;

5.Check whether the motor type, voltage and power are consistent with the inverter type, voltage

5.2.2 Trial operation

Close the DC circuit breaker, the inverter will operate automatically after about 10s, observe the water output of the water pump, if the water output is normal, the trial operation is successful; if the water output is small, adjust any two motor wires before operation.

5.2.3 The parameter settings

The frequency inverter runs automatically by default. If the parameters need to be set, press MF for 10s after the frequency inverter is charged. K key, change the inverter to keyboard control mode ("LOCAL / REMOT" light is off); if the inverter operation indicator is on after power,Press the STOP / RST button to enter the parameter setting interface. After completing parameter setting, disconnect the power switch, and it can be put into operation again.

5.2.4 Advanced settings

Note: The default Settings of the water pump inverter can adapt to most working conditions, and the advanced Settings generally do not need to be set again.

5.2.4.1 PI adjustment of system water outlet speed

If the user has higher requirements for the speed of water discharge, the PI parameters (H15.06~H15.10) can be adjusted appropriately. The larger the PI parameter, the stronger the effect, the faster the water discharge, but the motor frequency fluctuates greatly; conversely, the slower the water discharge, the relatively stable motor operating frequency.

5.2.4.2 Special setting of single-phase electric machine

A) For the poor performance of the single-phase generator, the user can adjust the setting of H04, set H04.00= 1 to multi-point VF mode, and set H04.03 to H 04.08

as appropriate value according to the debugging conditions; when the motor cannot be started;if the current is too high, the voltage value should be lowered.

B) When the system startup is slow, the initial voltage difference of H15.28 can be adjusted appropriately.

C) for single-phase generator with two-phase control mode (starting capacitor to be removed):

① The Max voltage setting should be less than 1 / 1.6 of the bus voltage, it is recommended to set the rated voltage H02.04 less than 200V, or the maximum voltage output can be limited by the multi-point V / F curve;

② H17.38 H17.39 can observe whether the current of the main and secondary winding is normal, and the current shown by>> shift key switch is two

The synthetic current of the winding current, note that the impedance of the main and secondary winding is different, and the current of the main and secondary winding is different when the same voltage is output;

③ the output current of the main and secondary winding can be changed by adjusting the voltage ratio of the main and secondary winding H04.35, but the adjustment of this voltage is related to the design parameters of the motor and it is suggested to be adjusted by professionals, otherwise it will affect the output of the motor.

Chapter 6
Fault diagnosis and measures

6.1 Fault alarm and measure

Fault name	Operation panel shows	Troubleshooting	Fault handling countermeasures
Inverter module failure	E003	Speed up too fast The phase IGBT is damaged Interference causes misaction Poor drive line connection Whether the short circuit to the ground	Increase acceleration time Replace the power unit Please check the drive line Check the peripheral equipment for strong interference sources
Accelerate over current	E004	Speed down too fast The power grid voltage is too low The frequency inverter power is too small Load mutation or abnormalities Short circuit to the ground, the output phase deficiency External external strong interference sources Over-voltage stall protection is not turned on	Increase the acceleration and deceleration time Check the input power supply Choose a large power of the frequency inverter Check the load for short circuit (short to ground or between lines) or plugging Check the output wiring Check for any strong interference phenomenon Check the settings of the relevant function codes
Slow down over current	E005		
Constant speed over current	E006		
Accelerated overvoltage	E007	Input voltage is abnormal There is a large energy feedback Missing brake assembly The energy brake function is not on	Check the input power supply Check whether the load deceleration time is too short or there is started in motor rotation Energy consumption brake components need to be added Check the settings of the relevant function codes
Slow down over voltage	E008		
Constant speed overvoltage	E009		
Bus undervoltage fault	E010	The power grid voltage is too low Over-voltage stall protection is not turned on	Check the power grid input power supply Check the settings of the relevant function codes
Motor overload	E011	Grid voltage is too low Motor rated current setting is incorrectly Motor blocking rotation or load mutation is too large	Check the power grid voltage Resrated motor current Check the load and adjust the torque increase amount
Frequency inverter overload	E012	Speed up too fast Restart of the rotating motor Grid voltage is too low Too much load The little horse pulled the cart	Increase acceleration time Avoid downtime and restart Check the power grid voltage Choose a larger power frequency inverter Select a suitable electric motor
Input side phase loss	E013	Enter R, S, and T with phase absence or large fluctuations	Check the input power supply : check the safety assembly line
Output side phase loss	E014	U, V, W missing phase output (or load three-phase severe asymmetry)	Check the output wiring:check the motor and cable
Boost module Overheating fault	E015	The air duct of the boost module is blocked or the fan is damaged The ambient temperature of the boost module is too high Boost module operates overloaded for a long time	Clear the air duct of the boost module or replace the fan The boost module lowers the ambient temperature
Inverter module overheating fault	E016	Blocking of air duct or damaged fan The ambient temperature is too high Long-time overload run	Dredge the air duct or replace the fan Reduce the ambient temperature
External failure	E017	Xi external fault input terminal action	Check the external device input
485 Communication failure	E018	The Porter rate is not set properly Communication line fault Wrong mailing address Communication is strongly disturbed	Set the appropriate baud rate Check the communication interface wiring Set the correct mailing address Replace or change the wiring to improve the disturbance resistance

Current detection failure	E019	Control board connector has poor contact Hall device damaged The amplification circuit is abnormal	Check the connector and replug the wire Replace Hall Replace the main control board
Motor self learning failure	E020	Motor capacity does not match the inverter capacity Improper setting of the motor parameters The deviation between self learning parameters and standard parameters is too large for self-learning timeout	Replace the frequency inverter model Set the motor type and the nameplate parameters correctly Make the motor no load, reidentify Check the motor wiring and check the parameter setting Check if the upper limit frequency is above 2 / 3 of the rated frequency
EEPROM Operation failure	E021	A read-write error occurred for the control parameter EEPROM Damage	Reset by STOP / RST Replace the main control board
PID feedback Broken line failure	E022	PID feedback disconnection The PID feedback source has disappeared	Check the PID feedback signal line Check the PID, and the feedback source
Brake unit failure	E023	Brake line fault or brake pipe is damaged The external brake resistance value is small	Check the brake unit and replace the new brake pipe to increase the brake resistance
Run time arrives	E024	The actual operating time of the inverter is greater than the internal set operating time	Seek the supplier, adjust the set running time
Electronic overload failure	E025	The frequency inverter conducts the overload warning according to the set value	Check the load and overload warning points
Short circuit to ground failure 1	E032	Frequency inverter output and ground short connection The current detection circuit is faulty The difference between the actual motor power setting and the frequency inverter power is too large	Check the motor wiring Replace Hall Replace the main control board Reset the correct motor parameters
Short circuit to ground failure 2	E033		
Speed deviation failure	E034	Overload or blocked	Check the load and confirm that the load is normal, Increase the detection time; Check that the control parameters are appropriate.
Disorder failure	E035	Improper setting of the control parameters of the synchronous motor; Self-learning parameters are not allowed; The frequency inverter is not connected to the electric motor.	Check the load to confirm that the load is normal; Check whether the control parameters are set correctly; Increase the time for disorder detection.
Electronic underload failure	E036	The frequency inverter conducts the underload early warning according to the set value	Check the load and the underload warning points
The hydraulic probe is damaged and failure	E037	The hydraulic probe is damaged	Replace the hydraulic probe
PV backlink failure	E038	PV wiring error	Replace the PV positive and negative terminal for rewiring
PV overcurrent	E039	Acceleration and deceleration are too fast; Frequency inverter power is too small; Load mutation or abnormality; Short circuit to ground.。	Increase the acceleration and deceleration time; Choose the frequency inverter with a large power level; Check the load for short circuit (short to ground or between lines) or plugging
PV overvoltage	E040	The panel input voltage is too high; The 4T model was set to other models.	Reduce the number of panels connected in series; Test the model, and reset it.
PV undervoltage	E041	Panel series power is too low or rainy weather; Motor starting current is too large.	Increase the number of panels or retest them under normal light; Replace the motor.

With the boost module 422, acommunicati on failure	E042	Poor contact of the communication line	Check the 4 communication lines ensuring a reliable connection 422 to ensure a reliable connection
Bus overvoltage is detected on the boost side	E043	The sun's light changes dramatically	Adjust the boost PI parameters and increase the parameters H19.07 and H19.08 appropriately.
Light weak warning	A-LS	The sun is weak, or it has too few panels	After the light intensity, the device will automatically run, and the user need not ignore; Please check the panel configuration.
Adue warning	A-LL	Water is empty in the pool	Check the pumping pool
Full water warning	A-tF	The reservoir is full of water	If the user sets the water full alarm function and the water full warning reaches a certain time, the device will automatically stop without the user; Otherwise, please check whether the terminal has miswiring.
Water air warning	A-tL	Water is empty in the pool	If the user sets the water air alarm function and the water air warning reaches a certain time, the equipment will automatically stop without the user; otherwise, please check whether the terminal has miswiring.
System off the electricity	oFF	System power failure or bus voltage is too low	Check the power grid environment
The keyboard failed to communicate with the master board	Empty display	The keyboard is not connected properly	Check the installation environment for the keyboard

Appendix A: Modbus-RTU communicationprotocol

- RTU frame format:

Frame-head, START	A 3.5-character time
Deliver the machine address to the ADR	Address: 1~247
Command code CMD	03: Read the slave parameters; 06:Write the slave parameters
Data Content DATA (N-1)	Data content: functional code parameter address, number of functional code parameters, functional code parameter value, etc.
Data Content DATA (N-2)	
.....	
Data content, DATA 0	
CRC CHK High level	Test value: CRC value.
CRC CHK Low level	
END	A 3.5-character time

- CMD(command instruction)and DATA(description of data words)

Command code: 03H, read N words (Word) (up to 12 words)

For example, read the function code parameters H 00.04 and H 00.05, from the starting address 0004H of the frequency inverter of 01H

Host command information

START	T1-T2-T3-T4(3.5 bytes of transfer time)
ADR	01H
CMD	03H
Start to address the high bit	00H
Start and the address low bit	04H
High number of registers	00H
Low number of registers	02H
CRC CHK (low-order)	85H
CRC CHK (high-order)	CAH
END	T1-T2-T3-T4(3.5 bytes of transfer time)

The slave response message

START	T1-T2-T3-T4(3.5 bytes of transfer time)
ADR	01H
CMD	03H
Number of bytes	04H
Data H00.04H high bit	13H
Data H00.04H low bit	88H
Data H00.05H high bit	00H
Data H00.05H low bit	00H
CRC CHK low bit	7EH
CRC CHK high bit	9DH
END	T1-T2-T3-T4(3.5 bytes of transfer time)

Command code: 06H, write one word (Word)

For example, set H00.04 to 50.00Hz, and write 5000 (1388H) to the 0004H address of the slave address 02H inverter

Host command information

START	T1-T2-T3-T4(3.5 bytes of transfer time)
ADR	02H
CMD	06H
Data address high bit	00H
Data address low bit	04H
Data content high bit	13H
Data content low bit	88H
CRC CHK low bit	C5H
CRC CHK high bit	6EH
END	T1-T2-T3-T4(3.5 bytes of transfer time)

The slave response message

START	T1-T2-T3-T4(3.5 bytes of transfer time)
ADR	02H
CMD	06H
Data address high bit	00H
Data address low bit	04H
Data content high bit	13H
Data content low bit	88H
CRC CHK low bit	C5H
CRC CHK high bit	6EH
END	T1-T2-T3-T4(3.5 bytes of transfer time)

● Address definition of the communication parameters

With function code group number and number:

High byte: 00~FF, high byte is the group number before the function code point number, but to be converted into hexadecimal

Low byte: 00~FF, status byte is the number after the function code point number, but to be converted into hexadecimal

For example: if the range function code H10.12, the access address of the function code is 0x 0A 0C;

Note: because EEPROM is frequently stored, will reduce the service life of EEPROM, so, some function codes in the communication mode, no need to store, as long as the value in the RAM is changed, only need to change the corresponding function code address from 0 to 1 can be achieved, such as function code H 03.12 is not stored in EEPROM, the address is 830C;

The function code H 24.12 is not stored in EEPROM and the address is 980C. The low decimal 12 is converted to hexadecimal to 0C, the high 24 is converted to hexadecimal to 18, not stored to EEPROM, the highest level is changed from 0 to 1, which is 16 x 18 + 80, and hexadecimal 98, the total address is 980C.

Function description	Address definition	Description	R/W characte ristic
Communication control order	2000H	0001H: Forward turn operation	R/W
		0002H: Reverse run	
		0003H: Positive turn-point movement	
		0004H: Reverse point movement	
		0005H: Stop	
		0006H: Free shutdown	
		0007H: Fault reset	
		0008H: The point action stops	
Communication setting address	2001H	Communication setting frequency (0 ~Fmax (unit: 0.01Hz))	R/W
	2002H	PID given, range (0~1000,1000 corresponds to 100.0%)	R/W
	2003H	PID feedback, range (0~1000,1000 corresponding to 100.0%)	R/W
	2004H	Torque setting value (-3000~3000,1000 corresponding to 100.0% of motor rated current)	R/W
	2005H	Positive setting (0 to Fmax (in 0.01Hz))	R/W
	2006H	Reverse the upper limit frequency setting value (0-Fmax (in 0.01Hz))	R/W
	2007H	Electric torque upper torque limit (0~3000,1000 corresponding to 100.0% frequency inverter motor current)	R/W
	2008H	Upper brake torque torque (0~3000,1000 for 100.0% motor rated current)	R/W
	2009H	Special control command word: Bit0 ~ 1:=00: motor1 =01: motor2=10: motor3 =11: motor 4 Bit 2: =1, Torque control =0: Speed control Bit 3: =1 power consumption zero =0: Power consumption is not zero Bit 4: =1 Pre-excitation enable =0:pre-excitation is prohibited Bit 5: =1 DC brake enable =0: DC brake is prohibited	R/W
Communication setpoint address	200AH	Virtual input terminal command, range: 0x000-0x1FF	R/W
	200BH	Virtual output terminal command, ranging from 0x00 to 0x0F	R/W
	200CH	Voltage setting value (V / F separation) (0~1000,1000 100.0% motor rated voltage)	R/W
	200DH	AO output setting 1 (-1000~1000,1000 corresponds to 100.0%)	R/W
	200EH	AO output setting 2 (-1000~1000,1000 corresponds to 100.0%)	R/W
Frequency transformer State word 1	2100H	0001H: Forward is in operation	R
		0002H: Reverse operation	
		0003H: In the frequency inverter shutdown	
		0004H: In the frequency inverter failure	
		0005H: The POFF status of the frequency inverter	
		0006H: Pre-excitation state of the frequency inverter	
Frequency transformer State word 2	2101H	Bit 0: =0: Ready to run dimension ready=1: ready to run Bit 1 ~ 2: =00: Motor 1 =01: Motor 2=10: Motor 3 =11: motor 4 Bit 3: =0: Asynchronous =1:,Synchronous Bit 4: =0: =1:Overload warning alarm Bit 5 ~ Bit 6: =00:Keyboard control =01: Terminal control =10: Communication control	R
Frequency transformer Fault code	2102H	See the fault type description	R
Running frequency	3000H	Setting range: 0.00Hz～H00.03	R
Set the frequency	3001H	Setting range: 0.00Hz-H00.03	R
Busbar voltage	3002H	Setting range: 0～1200V	R
Output voltage	3003H	Setting range: 0～1200V	R
Output current	3004H	Setting range: 0.0-5000.0A	R
Running speed	3005H	Setting range: 0～65535RPM	R
Output power	3006H	Setting range: -300.0～300.0%	R
output torque	3007H	Setting range: 0～65535RPM	R
Closed loop setting	3008H	Setting range: -100.0%～100.0%	R
Closed loop feedback	3009H	Setting range: -100.0%～100.0%	R
Enter the IO state	300AH	Setting range: 0000～00FF	R
Output the IO status	300BH	Setting range: 0000～00FF	R

Analog quantity input 1	300CH	Setting range: 0.00～10.00V	R
Analog quantity input 2	300DH	Setting range: 0.00～10.00V	R
Analog quantity input 3	300EH	Setting range: -10.00V～10.00V	R
Analog quantity input 4	300FH	Continue to have	R
Read the high-speed pulse-1 input	3010H	Setting range: 0.00～50.00kHz	R
Read the high-speed pulse-2 input	3011H	Continue to have	R
Read the number of multipl esegments	3012H	Setting range: 0～15	R
External length value	3013H	Setting range: 0～65535	R
External gauge value	3014H	Setting range: 0-65535	R
Torque setting value	3015H	Setting range: 0～65535	R
Fault code	5000H		R

Error message response:

In the communication control, there will inevitably be operation errors. For example, some parameters can only be read or written, and the result of a writing instruction is sent, then the inverter will send back an error message response message.

When the exception information is responded to the host, the highest position of the command word logic 1 on the basis of the command word, such as 03H read command, the exception response is 83H, and the write command 06H exception response is 86H.

Example: write H00.01, parameter address to 0001H set to 03 (but H00.01, set range to 0~2)

01 06 00 01 00 03 98 0B

Beyond the setting range of the H 00.01 parameter value, the inverter response error message is as follows: 01 86 04 43 A3, where 01H is the native address, 86H is the exception response code, 04H is the error code, and 43 A3 is the CRC check.

The error message response is sent to the host machine, and its code and meaning are shown below:

Code	Name	Meaning
01H	illegal command	When the command code received from the upper computer is not allowed, perhaps because the function code is only applicable to the new device and is not implemented in this device; the request may also be processed in the wrong state.
02H	Illegal data address	For the inverter, the host request data address is an undesirable address; in particular, the combination of the register address and the number of bytes transmitted is invalid.
03H	illegal Data value	When the received data domain contains unallowed values. This value indicates an error on the remaining structure in the combined request. Note: it does not mean that the data item in the register has a value that the application expects.
04H	Operation failed	The parameter is not set in the parameter write operation, such as the function input terminal cannot be repeated.
05H	Wrong password	The password written by the password verification address is different from that set by the H07.00 user
06H	Data Frame error	When the frame information sent by the upper computer, the length of the data frame is incorrect or the RTU format CRC, the calibration bit is different from the calibration calculation number of the lower computer.
07H	Parameter For reading only	The parameter changed in the host write operation is a read only parameter
08H	Parameter running Can't change	The parameters changed in the upper computer write operation are the parameters that are not changed in the run
09H	Password protection	When the upper computer reads or writes, when the user password is set, and the password lock is not unlocked, and the notification system is locked.

Appendix B
Recommends the solar module configuration

B .1 Battery module configuration is recommended for solar water pump inverter

Solar water pump frequency inverter model	Solar cell module open circuit voltage level			
	37±1V		45±1V	
	Component power ± 5 Wp	Number of components per string * Number of group strings	Component power ± 5 Wp	Number of components per string * Number of group strings
H630-2SS0.4G-PV	250	11*1	300	9*1
H630-2SS0.75G-PV	250	11*1	300	9*1
H630-2SS1.5G-PV	250	11*1	300	9*1
H630-2SS2.2G-PV	250	11*1	300	9*1
H630-2S0.4G-PV	250	11*1	300	9*1
H630-2S0.75G-PV	250	11*1	300	9*1
H630-2S1.5G-PV	250	11*1	300	9*1
H630-2S2.2G-PV	250	11*1	300	9*1
H630-2T4.0G-PV	250	11*2	300	9*2
H630-2T5.5G-PV	250	11*3	300	9*3
H630-2T7.5G-PV	250	11*4	300	9*4
H630-4T0.75G-PV	250	18*1	300	15*1
H630-4T1.5G-PV	250	18*1	300	15*1
H630-4T2.2G-PV	250	18*1	300	15*1
H630-4T4.0G-PV	250	20*1	300	16*1
H630-4T5.5G-PV	250	18*2	300	15*2
H630-4T7.5G-PV	250	18*2	300	15*2
H630-4T11G-PV	250	18*3	300	15*3
H630-4T15G-PV	250	18*4	300	15*4
H630-4T18.5G-PV	250	18*5	300	15*5
H630-4T22G-PV	250	18*6	300	15*6
H630-4T30G-PV	250	18*8	300	15*8
H630-4T37G-PV	250	18*9	300	15*9
H630-4T45G-PV	250	18*11	300	15*11
H630-4T55G-PV	250	18*14	300	15*14
H630-4T75G-PV	250	18*19	300	15*19
H630-4T90-PV	250	18*22	300	15*22
H630-4T110G-PV	250	18*27	300	15*27
H630-4T132G-PV	250	18*38	300	15*38
H630-4T160G-PV	250	18*46	300	15*46
H630-4T185G-PV	250	18*53	300	15*53
H630-4T200G-PV	250	18*57	300	15*57

B.2 Recommended configuration of battery components for the optional boost module

Boost module PP630-3.2KW -PV + solar water pump frequency inverter model	Solar cell module open circuit voltage level				Maximum DC input current
	37±1V		45±1V		
	Component power ±5 Wp	Number of components per string * Number of group strings	Component power ±5 Wp	Number of components per string * Number of group strings	(A)
H630-2SS0.4G-PV	250	4*1	300	3*1	12
H630-2SS0.75G-PV	250	5*1	300	4*1	12
H630-2SS1.5G-PV	250	8*1	300	7*1	12
H630-2S0.4G-PV	250	4*1	300	3*1	12
H630-2S0.75G-PV	250	5*1	300	4*1	12
H630-2S1.5G-PV	250	8*1	300	7*1	12
H630-2S2.2G-PV	250	13*1	300	11*1	12
H630-4T0.75G-PV	250	5*1	300	4*1	12
H630-4T1.5G-PV	250	8*1	300	7*1	12
H630-4T2.2G-PV	250	13*1	300	11*1	12

Appendix C
Boost module PP630-3.2Kw-PV

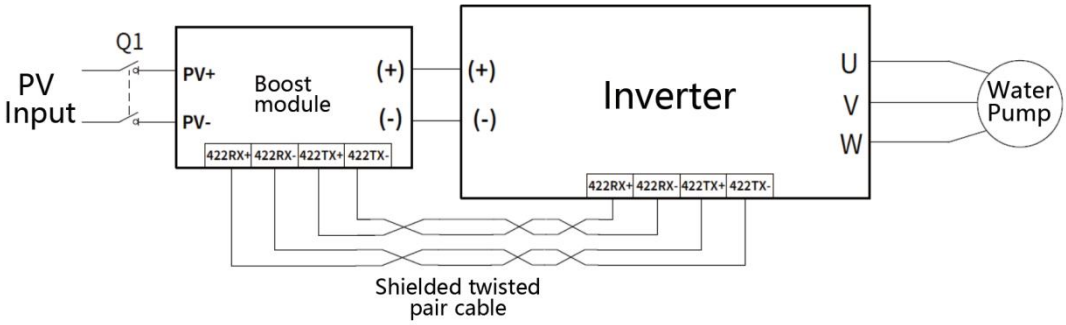
The water pump inverter below 2.2KW (inclusive) supports the optional boost module (PP630-3.2KW-PV) to improve the utilization rate of photovoltaic cell components. The wiring method is shown in the figure below:

1. The PV + and PV of the boost module-connect with the positive and negative input of the photovoltaic cell module;

2. Output of the booster module (+), (-) input of the connecting water pump inverter (+), (-);

3. The 422 communication receiving end of the boost module RX 422 communication sending terminal TX of the water pump inverter and the 422 communication sending end of the boost module TX 422 communication receiving terminal RX of the communication receiving terminal of the water pump inverter are connected by two sets of twisted pair wires;

4. After checking that the wiring is correct, close the DC side circuit breaker Q 1 and can run automatically.



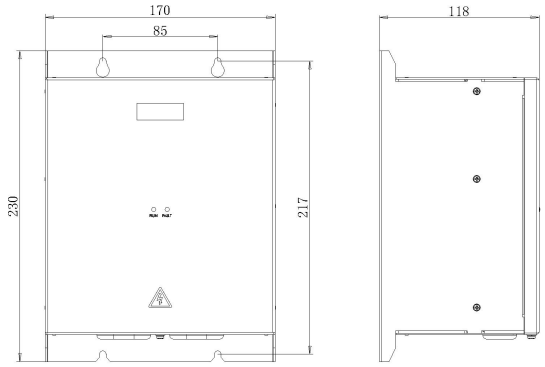
Product specification index of the booster module:

Model	PP630-3.2KW-PV
Input side	
Maximum input power (W)	3200
Maximum DC voltage (V)	600
Start-up voltage (V)	80
Minimum operating voltage (V)	70
Maximum input current (A)	12
Outlet side	
Output voltage (V)	220V frequency inverter: 350,380V frequency inverter: 570

Status indicator light description:

Display status	Explain
The green light flashing	The boost module has been powered up, and the control circuit is working
The Green light is always on	The boost module is running
The red light is on	Failure of booster module

The installation size of the booster module is as follows:



Warranty protocol

1. The warranty period of this product is 18 months (subject to the bar code information of the fuselage). During the warranty period, if the product is faulty or damaged according to the instruction manual, our company is responsible for free repair.

2. During the warranty period, if the damage is caused by the following reasons, a certain maintenance fee shall be charged;

A. Damage caused by errors in use and unauthorized repair and transformation;

B. Product damage caused by force majeure reasons such as earthquake, fire, geomantic disaster, lightning strike, abnormal voltage or other natural disasters, as well
as various human factors;

C. Hardware damage caused by artificial fall and transportation after purchase;

D. Damage caused by not following the user manual provided by our company;

E. Failure and damage caused by obstacles other than the machine (such as external equipment factors);

F. Tear up the product identification without authorization (e.g.: nameplate).

3. When the product fails or damages, please fill in the contents of the Product Warranty Card correctly and in detail.

4. The maintenance fee shall be charged in accordance with the newly adjusted Maintenance Price List of our company.

5. This warranty card will not be reissued under general circumstances, please be sure to keep this card, and the product will be presented to the maintenance personnel during the warranty.

6. If you have any problem during the service process, please contact our agent or our company in time.

7. The Company has the right to interpret the Agreement.

Customer care center