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Chapter 1 Safety Precautions and Product Models

1.1 Safety Precautions

▲ It cannot be installed in an environment containing explosive gas, otherwise there is a danger of explosion.

▲ Wiring must be performed by qualified personnel, otherwise there is a danger of electric shock. Make sure that the input power is completely disconnected before wiring.

work, otherwise there is a danger of electric shock.

▲ After the device is powered on, do not touch the control terminals, internal circuit boards and their components, otherwise there is a danger of electric shock.

▲ When using the grounding terminal of the inverter, please ground it correctly and reliably according to the national electrical safety regulations and other relevant standards.

▲ Turn off the power, within 5 minutes after the keyboard display goes out, do not touch the circuit board and any parts in the machine, and you must use the meter to confirm that the machine has been discharged

After completion, the operation in the machine can be carried out, otherwise there is a danger of electric shock.

▲ Never connect AC power to the output terminals (U, V, W) of the inverter, and the incoming power line can only be connected to R, S, T (or single-phase power inverters)

L1, L2) terminals.

▲ Human body static electricity may damage the MOS devices inside the device. If anti-static measures are not taken, do not touch printed circuit boards and IGBTs and other devices.

▲ Do not drop metal foreign objects such as screws and washers into the inverter, otherwise there is a risk of fire and damage to the inverter.

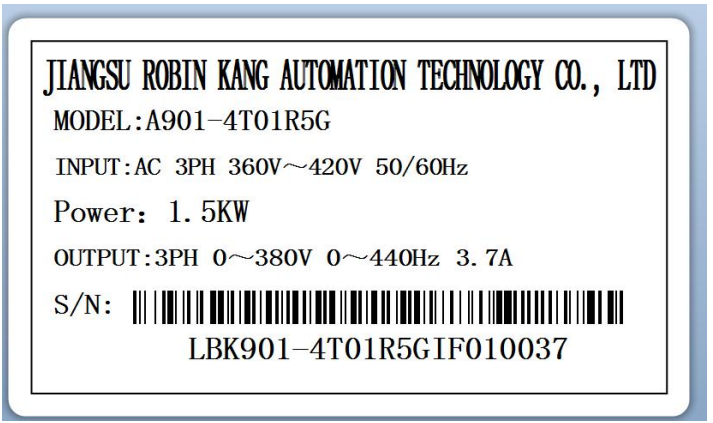
▲ Never connect AC 220V to the internal control terminals of the inverter, otherwise the inverter will be seriously damaged.

▲ If overcurrent protection occurs after startup, please confirm the external wiring is correct, and then power on and run.

▲ Do not stop by pulling the brake (power off), and disconnect the power after the motor stops running.

▲ Do not install the device in direct sunlight.

1.2 Inverter nameplate description:



1.3 Product series

Voltage level	Rated power (KW)	Rated output current (A)	Adapter motor (KW)
380V three-phase	0.75	2.3	0.75
	1.5	3.7	1.5
	2.2	5	2.2
	4.0	9	4
	5.5	13	5.5
	7.5	17	7.5
	11	24	11
	15	33	15
	18.5	39	18.5
	22	45	22
	30	62	30
	37	75	37

1.4 Product technical indicators and specifications

INPUT	rated voltage, frequency	Three phase (4T# series) 380V; 50/60Hz Single phase (2 S# series) 220 V; 50/60Hz	
	voltage allowed Range of change	Three phase (4T# series) 320V ~ 460V Single-phase (2S# series) 16 0V ~ 260 V	
output	Voltage	4T# series ; 0 ~ 460V 2S# series ; 0 ~ 260V	
	frequency	Low frequency mode: 0 ~ 300Hz High frequency mode: 0 ~ 3000Hz	
	overload capacity	Model G: 110% long-term 150% 1 minute 180% 5 seconds P-type machine: 105% long-term 120% 1 minute 150% 1 second	
control method		V/F control, advanced V/F control, V/F separation control, current vector control	
Control characteristics	Frequency setting Resolution	Analog input	0.1% of maximum output frequency
		digital setting	0.01Hz
	Frequency accuracy	analog input	Within 0.2% of maximum output frequency
		digital input	Within 0.01% of the set output frequency
	V/F Control	V/F curve (voltage frequency characteristic)	The reference frequency can be set arbitrarily between 5 and 600Hz, the multi-point V/F curve can be set arbitrarily, and various fixed curves such as constant torque, low reduction torque 1, low reduction torque 2, and square torque can also be selected.

		Torque boost	Manual setting: 0.0 to 30.0% of rated output Automatic lifting: automatically determine the lifting torque according to the output current and combined with the motor parameters
		Automatic current and voltage limiting	No matter in the process of acceleration, deceleration or stable operation, the motor stator current and voltage are automatically detected, and they are suppressed within the allowable range according to a unique algorithm, minimizing the possibility of system fault tripping
Control characteristics	Sensor-less vector control	Voltage frequency characteristics	Automatically adjust output voltage-frequency ratio according to motor parameters and unique algorithm
		Torque characteristics	Starting torque: 150% rated torque at 3.0Hz (VF control) 180% rated torque at 0.5Hz (current vector control without PG, flux vector control) 180% rated torque at 0.05Hz (with PG current vector control) Steady-state accuracy of running speed: ≤±0.2% rated synchronous speed Speed fluctuation: ≤±0.5% rated synchronous speed Torque response: ≤50ms with PG vector control, no PG vector control, magnetic flux vector control ≤20ms

		Motor parameter self-determination	Without any restriction, the automatic detection of parameters can be completed under the static and dynamic conditions of the motor to obtain the best control effect
		Current and Voltage Rejection	Full current closed-loop control, completely avoid current impact, with perfect over-current and over-voltage suppression function
	running Under-voltage suppression	Especially for users with low grid voltage and frequent grid voltage fluctuations, even if the voltage is lower than the allowable voltage range, the system can maintain the longest possible running time according to the unique algorithm and residual energy distribution strategy	
Typical function	multi-speed and Wobble operation	16-segment programmable multi-segment speed control, multiple operation modes are optional. Wobble frequency operation: preset frequency, center frequency adjustable, state memory and recovery after power failure	
	PID control RS485 communication	Built-in PID controller (preset frequency). Standard configuration RS485 communication function, a variety of communication protocols are optional, with linkage synchronization control function	
	Frequency setting	analog input	DC voltage 0 ~ 10V, DC current 0 ~ 20mA (upper and lower limit optional)
		digital input	Operation panel setting, RS485 interface setting, UP/DW terminal control, and various combination settings with analog input
	output signal	digital output	2 OC outputs and 1 fault relay output (TA, TB, TC), up to 16 meaning options

		Analog output	2 channels of analog signal output, the output range can be set flexibly between 0~20mA or 0~10V, which can realize the output of physical quantities such as set frequency and output frequency
	Automatic voltage stabilization operation	According to your needs, you can choose three ways: dynamic voltage regulation, static voltage regulation, and unregulated voltage to obtain the most stable operation effect.	
	acceleration, deceleration time setting	0.1s ~ 3600min can be set continuously, S type and linear mode are optional	
	brake	Dynamic braking	The starting voltage of dynamic braking, hysteresis voltage and dynamic braking rate are continuously adjustable
		DC braking	Start frequency of DC braking at stop: 0.00 ~ 【F0.16】upper limit frequency Braking time: 0.0 ~ 100.0s; Braking current: 0.0% ~ 150.0% rated current
		Flux Brake	0 ~ 100 0: Invalid
	low noise operation	The carrier frequency is continuously adjustable from 1.0KHz to 16.0KHz to minimize motor noise	
	Speed tracking speed restart function	It can realize smooth restart of running motor and restart after momentary power failure	
	counter	One internal counter for easy system integration	

	run function	Upper and lower limit frequency setting, frequency jump operation, reverse operation limit, slip frequency compensation, RS485 communication, frequency increase and decrease control, fault self-recovery operation, etc.

show	Operation panel display	run state	Output frequency, output current, output voltage, motor speed, set frequency, module temperature, PID setting, feedback, analog input and output, etc.
		Call the police content	The last six fault records, the output frequency, set frequency, output current, output voltage, DC voltage, module temperature and other 6 operating parameters records when the latest fault trips
Protective function			Overcurrent, overvoltage, undervoltage, module failure, electronic thermal relay, overheating, short circuit, input and output phase loss, abnormal motor parameter tuning, internal memory failure, etc.
surroundings	ambient temperature		-10℃ ~ + 50℃
	ambient humidity		5% ~ 95%RH, no condensation
	surroundings		Indoor (no direct sunlight, no corrosion, flammable gas, no oil mist, dust, etc.)
	altitude		Derate usage above 1000 meters, derate 10% for every 1000 meters rise
structure	Protection class		IP20
	cooling method		Air-cooled with fan control
Installation method			wall-mounted, cabinet

Chapter two Inverter installation and wiring

Danger

1. Before wiring, please confirm that the input power is cut off.
There is a risk of electric shock and fire.
2. Ask electrical engineering professionals to perform wiring work.
There is a risk of electric shock and fire.
3. The ground terminal must be grounded reliably.
There is a risk of electric shock and fire.
4. After the emergency stop terminal is connected, be sure to check whether its action is .
Risk of injury. (The responsibility for wiring is borne by the user)
5. Do not touch the output terminals directly. The output terminals of the frequency ls.
There is a risk of electric shock and short circuit.
6. Be sure to install the terminal cover before turning on the power. When removing thet.
There is a risk of electric shock.
7. Cut off the power supply, and wait another 5 to 8 minutes to let the remaining elect.
There is a danger of residual voltage on electrolytic capacitors.

注意

1. Please confirm whether the power supply voltage of the incoming line is consistent withter.
Risk of injury and fire.
2. Please connect the braking resistor or braking unit according to the wiring diagram.
There is a risk of fire.
3. It is best to use a screwdriver and wrench with the specified torque to tighten the terminals.
There is a risk of fire.
4. Do not connect the input power cord to the output U, V, W terminals.
Voltage applied to the output terminals will cause internal damage to the inverter
5. Do not remove the front panel cover, only remove the terminal cover when wiring.
Internal damage to the inverter may result.

2.1 **Use environment**

① No corrosive gas, vapor, dust and oily dust, not exposed to direct sunlight.

② Places of non-floating dust and metal particles.

③ Ambient humidity 20% ~ 90% RH .

④ Vibration is less than 5.9m/s2 (0.6g)

⑤ No electromagnetic interference place.

⑥ The operating ambient temperature is -10 ℃ ~ 40 ℃. If the ambient temperature exceeds 40 ℃, please place it in a well-ventilated place.

⑦ In the non-standard environment, please use the electric control box or the remote control method, and pay attention to ventilation and heat dissipation. The life of the inverter is closely related to the installation environment and use, but

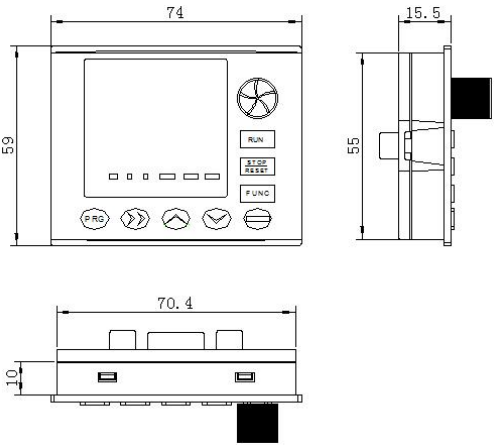
Even if everything meets the requirements of the installation environment, if it is used continuously for a long time, the life of the electrolytic capacitors in it will not exceed 5 years, and the life of the cooling fan will not exceed 5 years.

about 3 years. We recommend that you update or maintain the inverter in advance.

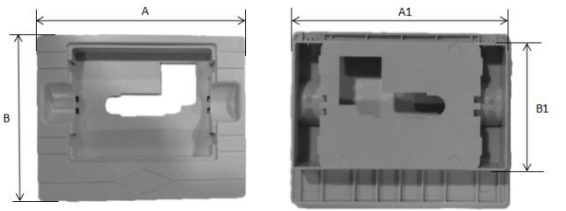
2.2 **Installation direction and space**

In order to make the cooling cycle effect well, the inverter must be installed vertically, and there must be enough space between its top, bottom, left, right, and adjacent items or baffles (walls).

2.3.1 **Dimensions of the keyboard**

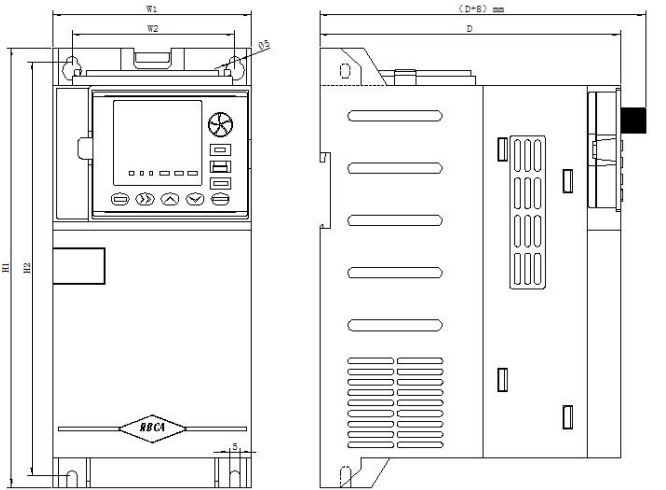


2.3.2 **The size of the opening of the external keyboard**

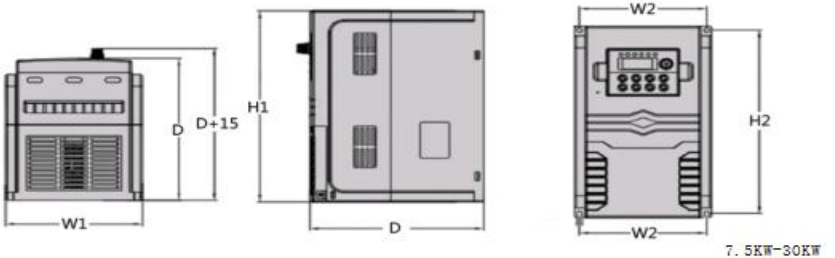


Dimensions (mm)		(Inner frame) Hole size (mm)	
A	B	A1	B1
105	83	100.5	60
For 0.75- 37 KW			

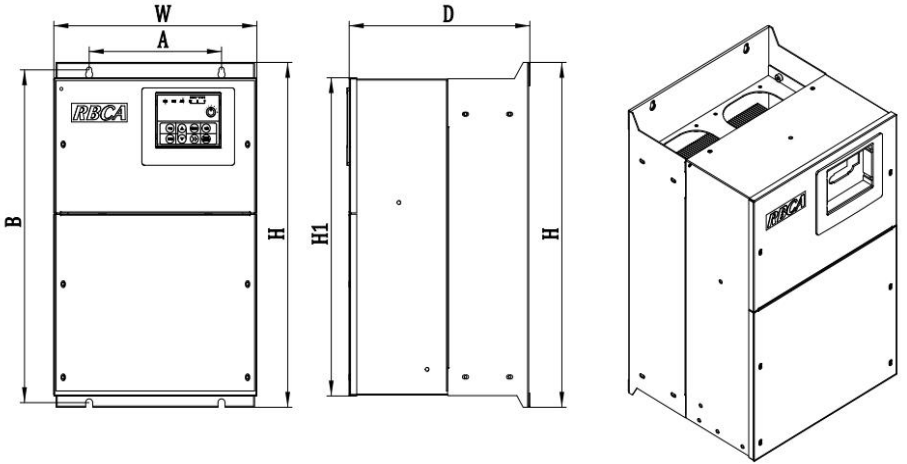
2.4 Product dimensions and installation dimensions (unit : MM)



Voltage level	Inverter model	Power (kw)	Dimensions (mm)			Installation size (mm)			Packaging size (mm)			Net weight (kg)
			W1	H1	D	W2	H2	Φ	long	width	high	
380V three-phase	A901-4T0R75G	0.75	78	170	125	60	161	5	195	132	172	1.06
	A901-4T01R5G	1.5										1.06
	A901-4T02R2G	2.2										1.1
	A901-4T0004G	4	95	210	145	78	198	5	245	175	210	1.88
	A901-4T05R5G	5.5										1.91
	A901-4T07R5G	7.5	140	240	178	130	230	5	300	210	250	3.14
	A901-4T0011G	11										3.36



Voltage level	Inverter model	Power (kw)	Dimensions (mm)			Installation size (mm)			Packaging size (mm)			Net weight (kg)
			W1	H1	D	W2	H2	Φ	long	width	high	
	A901-4T0015G	15	205	320	195	188	305	7	398	285	270	5.28
	A901-4T18R5G	18.5										5.32
	A901-4T0022G	22										5.6
	A901-4T0030G	30										5.74


W
A
B
H
D
H1
H
PBCA
PBCA

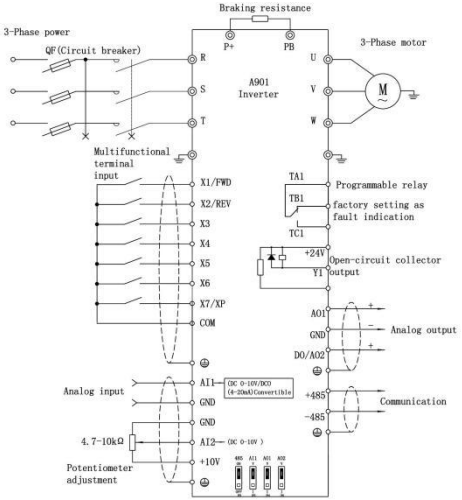
Voltage level	Inverter model	Power (kw)	Dimensions (mm)			Installation size (mm)			Packaging size (mm)			Net weight (kg)
			W	H	D	A	B	Φ	long	width	high	
380V three-phase	A901-4T0 037G	37	225	370	205	150	357	8	420	290	280	10.45

2.5 Basic Operation Wiring

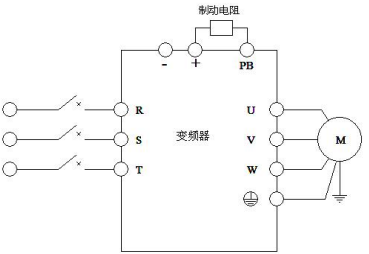
The wiring part of the inverter is divided into the main circuit and the control circuit. The user can lift off the cover of the output/input terminal, at this time, the main circuit terminal and the controller can be seen.

To control the circuit terminal, the user must connect the wiring circuit correctly according to the following diagram.

A901变频器


Braking resistance
3-Phase power
QF(Circuit breaker)
P+
PB
3-Phase motor
R
S
T
A901
Inverter
U
V
W
M
Multifunctional
terminal
input
X1/FWD
X2/REV
X3
X4
X5
X6
X7/XP
COM
TA1
Programmable relay
TB1
factory setting as
fault indication
TC1
+24V
Y1
Open-circuit collector
output
AO1
GND
DO/AO2
Analog output
Analog input
AI1
OOC 0-10V/DCO
(4-20mA)Convertible
GND
GND
+485
-485
Communication
4.7-10kΩ
AI2
(OC 0-10V)
+10V
Potentiometer
adjustment
485
AI1
AO1
AO2

2.6 Main circuit terminal wiring



2.7 Schematic diagram of main circuit terminals

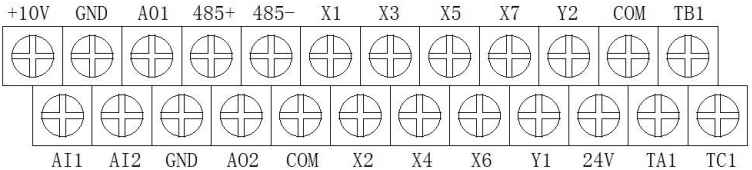
R	S	T	P+	PB	U	V	W	G

A901-0.75KW-5.5KW

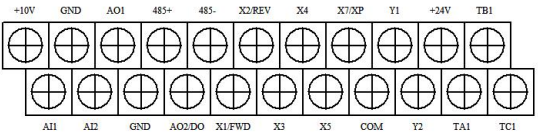
⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
P-	**P+**	**PB**	**R**	**S**	**T**	**U**	**V**	**W**	⏚
7.5KW-30KW									

⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
P+	**PB**	**R**	**S**	**T**	**U**	**V**	**W**	⏚
37KW								

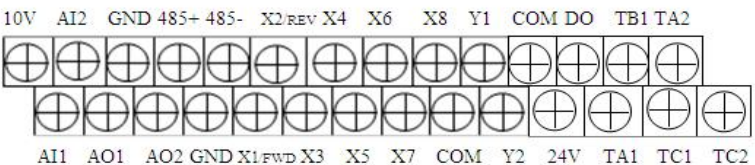
2.8 Schematic diagram of control circuit terminals



0.75 kW-11kW control circuit terminal diagram



15 kW-30kW control circuit terminal diagram



37 kW control loop schematic

2.9 Control circuit terminal function table

Control circuit terminal function description			
category	Terminal designation	Function Description	Specification
Multi-function digital input terminal	X1	X(X1, X2, X3, X4, X5, X6, X7, X8)~COM are short-circuited, and their functions are set by parameters F7.00~F7.07 respectively (common terminal: COM)	INPUT, 0 ~ 24V level signal, active low level, 5mA
	X2		
	X3		
	X4		
	X5		
	X7		
	X8		
	X6	In addition to being used as a common multi-function terminal, X6 can also be	

		programmed as a high-speed pulse input port. For details, please refer to the function description of P7.05	
Digital signal output terminal	Y1	Multi-function programmable open collector output 2 channels, programmable as a switch output terminal with multiple functions. (Public: COM)	OUTPUT, the maximum load current is not more than 50mA
	Y2		
	DO	Programmable definition of pulse signal output terminals with multiple functions, up to 13 types. Please refer to P6.23 output terminal function introduction. (Public: COM)	OUTPUT, the output frequency range is set by P6.32~P6.35, the highest frequency can be up to 50KHz

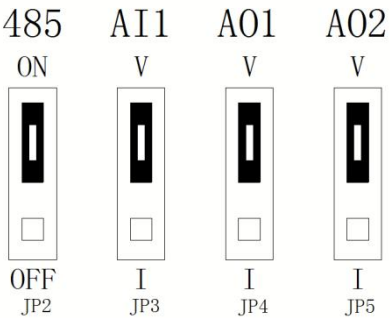
Analog input and output terminals	AI1	AI1 receives analog voltage/current input, voltage and current are selected by jumper CN4 (AI1 jumper terminal), the factory default input voltage, if you want to input current, just short the jumper cap between the middle and the other end; AI2 only Receives voltage input. For the setting of the range, see the description of function codes P6.00~P6.11. (Reference ground: GND)	INPUT, input voltage range: 0 ~ 10V (input impedance: 100K),input current range: 0 ~ 20mA (input impedance: 500Ω)
	AI2		
	AO1	AO1/AO 2 provides analog voltage/current output, which can represent 13 kinds of physical quantities. AO1 outputs voltage and current by jumper CN3 (AO1 jumper terminal), A02 outputs voltage and current by jumper CN7 (A02 jumper terminal) Select, the factory default output voltage, if	OUTPUT, 0~10V DC voltage; the output voltage of AO1 and AO2 terminals is the PWM waveform from the central
	AO2		

		you want to output the current, just short the jumper cap between the middle and the other end; . For details, please refer to the description of function codes P6.21 and P6.22. (Reference ground: GND)	processing unit. The magnitude of the output voltage is proportional to the width of the PWM waveform
Relay output terminal	TA1/TA2	Two programmable relay output terminals, TA1/TA2, TB1/TB2, TC1/TC2 can reach 99 types. For details, please refer to P7.20 Out terminal function introduction	TA-TB: Normally closed; TA-TC: Normally open. Contact capacity: 250VAC/2A (COS θ =1); 250VAC/1A (COS θ =0.4), 30VDC/1A
	TB1/TB2		
	TC1/TC2		
Power	+24V	24V is the common power supply for the	Maximum output

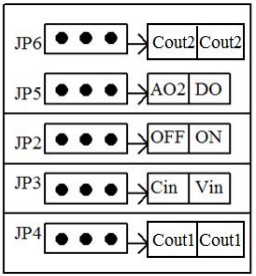
interface		circuit of the digital signal input terminal	current 200mA
	+10V	10V is the common power supply for the circuit of the analog input and output terminals	Maximum output current 20mA
	COM	Digital signal and +24V power reference ground	Internally isolated from GND
	GND	Analog signal and +10V power reference ground	Internally isolated from COM
Communication Interface	485+	RS485 signal + terminal	Standard RS485 communication interface, not isolated from GND, please use twisted pair or shielded wire
	485-	RS485 signal-side	

▲ Control terminal AI1 can input both voltage signal and current signal, while AI2 can only input voltage signal; the user should use it according to the type of signal,
Make corresponding jumper selections on the main control board.
▲ Connecting weak analog signals is easily affected by external interference, so the wiring should be as short as possible. The external control line of the inverter needs to be equipped with an isolation device or a
Use shielded wire and require grounding.
▲ In addition to shielding, the input command signal line and frequency meter should also be routed separately, preferably away from the main circuit wiring.
▲ Control loop wiring should be greater than 0.75mm ^{2} , and shielded twisted pair is recommended. Control circuit terminal wiring should be tin-lined or cold-pressed metal joints.
▲ When connecting an analog signal output device, there may be a malfunction due to the interference of the inverter. Connect a capacitor or ferrite bead.

2.10 Toggle switch and corresponding relationship



0.75 kW -11 kW toggle switch and corresponding relationship

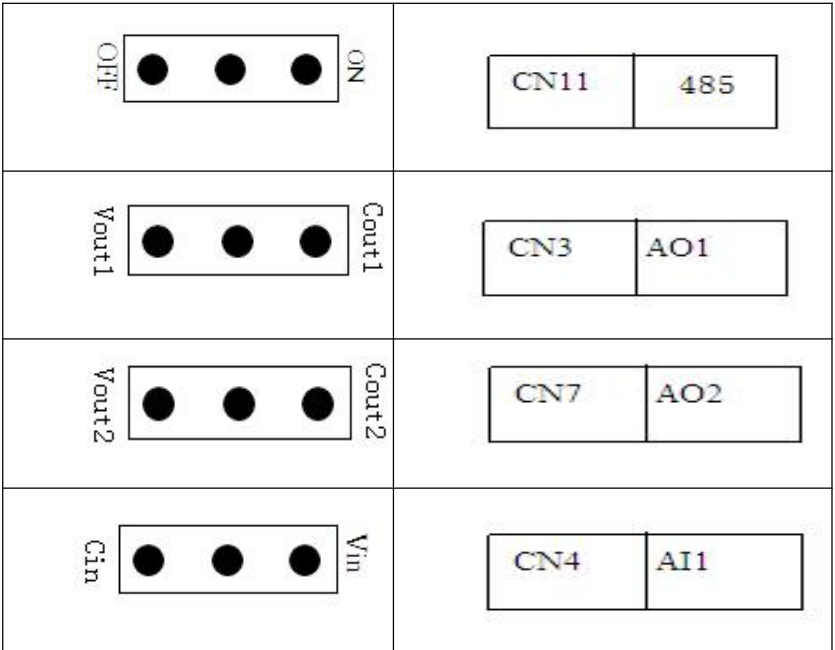


JP6	
Vout2 gear	Indicates the AO2 output voltage signal
JP5	
AO2 block	Indicates that AO2 of AO2/DO is valid and outputs a voltage signal
DO block	Indicates that DO of AO2/DO is valid, output pulse signal
JP2	
OFF block	Indicates that the matching resistance on the 485 communication is not connected
ON block	Indicates that the matching resistance on the 485 communication is connected
JP3	
Cin block	Indicates AI1 input current signal

Vin block	Indicates AI1 input voltage signal
JP4	
Vout1 file	Indicates the AO1 output voltage signal
Cout1 block	Indicates the AO1 output current signal

15 kW -30 kW toggle switch and corresponding relationship

CN11	
OFF block	Indicates that the matching resistance on the 485 communication is not connected
ON block	Indicates that the matching resistance on the 485 communication is connected
CN3	
Vout1 block	Indicates the AO1 output voltage signal
Cout1 block	Indicates the AO1 output current signal
CN7	
Vout2 block	Indicates the AO2 output voltage signal
Cout2 block	Indicates the AO2 output current signal
CN4	
Cin block	Indicates AI1 input current signal
Vin block	Indicates AI1 input voltage signal


OFF
ON
CN11
485
Vout1
Cout1
CN3
AO1
Vout2
Cout2
CN7
AO2
Cin
Vin
CN4
AI1

37 kW toggle switch and corresponding relationship

2.11 Wiring Precautions

① When replacing the motor, the input power of the inverter must be cut off.

② The motor can be switched or the power frequency power supply can be switched only when the inverter stops outputting.

③ In order to reduce the influence of electromagnetic interference as much as possible, when the electromagnetic contactor and relay used are close to the inverter, the installation of surge absorbing device should be considered.

④ Do not connect the AC input power to the output terminals U, V, W of the inverter.

⑤ The external control line of the inverter needs to be isolated or shielded.

⑥ In addition to shielding, the input command signal wiring should also be routed separately, preferably away from the main circuit wiring.

⑦ When the carrier frequency is less than 4KHz, the maximum distance between the inverter and the motor should be within 50 meters. When the carrier frequency is greater than 4KHz, the distance should be appropriately reduced.
This wiring is preferably laid in a metal pipe.

⑧ When the inverter is equipped with peripheral equipment (filters, reactors, etc.), first measure its insulation resistance to ground with a 1000-volt megger to ensure that it is not lower than
4 megohms.

⑨ Do not install phase-advancing capacitors or resistance-capacitance absorption devices at the U, V, W output ends of the inverter.

⑩ If the inverter needs to be started more frequently, do not turn off the power supply, and must use the COM/RUN of the control terminal to start and stop the operation to avoid damage to the rectifier bridge.

⑪ In order to prevent accidents, the ground terminal G must be grounded reliably (the ground impedance should be below 100Ω), otherwise there will be leakage.

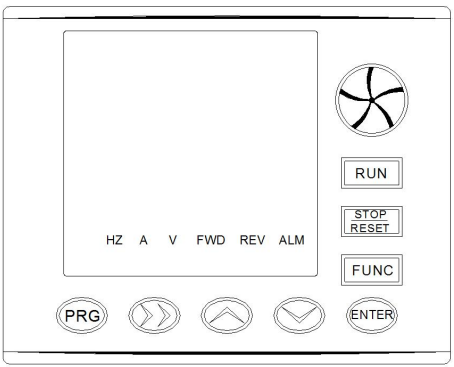
When the main circuit is wired, the selection of the wire diameter specification should be carried out in accordance with the relevant provisions of the national electrical regulations.

2.12 Backup circuit

When the inverter fails or trips, it may cause a large shutdown loss or other unexpected failures. In this case, it is recommended to increase the equipment circuit to ensure safety. Note: The backup circuit must be confirmed and tested in advance to ensure that the phase sequence of the power frequency and the frequency conversion are consistent.

Chapter 3 Operation panel and operation method

3.1 Operation panel key description:



button	name	Function Description
	Program/Escape key	Enter or exit programming conditions
	Shift/Monitor key	In the editing state, you can select the modification bit of the set data; in other states, you can switch to display the monitoring parameters
	Enter	Enter lower menu or data confirmation
	multifunction key	In operation keyboard mode, press this key to switch between forward and reverse rotation or jog operation and frequency clear according to the setting of function parameter PE.01
	run key	In the operation keyboard mode, press this key and the inverter enters the running state
	Stop/Reset key	When the inverter is in normal running state, if the running command channel of the inverter is set to the keyboard stop effective mode, press this key and the inverter will stop according to the set mode. When the inverter is in the fault state, pressing this key will reset the inverter and return to the normal stop state
	Analog potentiometer	It is used for frequency setting; when P0.07=0, the encoder can give frequency digital encoder and increase/decrease key for linkage control
	Increment key	Increment of data or function code (when pressing continuously, the increment speed can be increased)
	Decrement key	Decrement of data or function code (when pressing continuously, the decreasing speed can be increased)

3.2 Description of LED digital tube and indicator light:

project			Function Description
Status light	digital display		Display the current running status parameters and setting parameters of the inverter
	LED	Hz, A, V	The unit of the physical quantity corresponding to the current digital tube display

	indicator		parameters (current is ampere A, voltage is volt V, frequency is Hertz Hz)
		ALM	Warning indicator, indicating that the inverter is currently in over-current or over-voltage suppression state or fault alarm state
		FWD	When the inverter is running forward, the indicator light is green
		REV	When the inverter is running in reverse, the indicator light is red
		REMOTE	This light will be on when remote control

Table 3-1 Description of LED digital tube and indicator light

unit light	LED indicator	A	The current digital tube display parameter unit is current ampere, and the LED indicator A lights up
		V	The current digital tube displays the parameter unit voltage volt, and the LED indicator V lights up
		Hz	The current digital tube displays the parameter unit frequency Hz, and the LED indicator Hz lights up
		percentage%	The current digital tube display parameters are percentages, and the LED indicators Hz and V are lit
		Speed r/min	The current digital tube display parameter is the speed, and the LED indicators Hz and A are lit
		Linear speed m/s	The current digital tube display parameter is the linear speed, and the LED indicators V and A are lit
		temperature ℃	The current digital tube display parameter is temperature, and the LED indicators V, A and Hz are lit

Table 3-2 Unit indicator and combination description

3.3 Monitoring parameter display status

The display state of the operation keyboard is divided into four states: power-on initialization display, function code parameter and monitoring parameter display, fault alarm state display, and running state parameter display. After the machine is powered on, the digital tube (LED) will display the character "P.OFF", and then enter the set frequency display state.

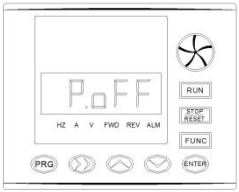
The inverter is in the stop state, the operation keyboard displays the stop state monitoring parameters, and the factory default is the digital setting frequency. As shown in Figure 3-2, the unit indicator shows the unit of this parameter in Hz.

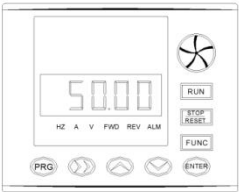
Press the button to display different monitoring parameters of the shutdown state (the default settings are the main set frequency, bus voltage, and two monitoring parameters in turn). For other monitoring parameters, the display function can be set by function code PE.10 ~PE.11. For details, please refer to the function parameter table PE.10~PE.11. The ten digit is 1 (main and auxiliary display alternately), and the monitoring parameters of the shutdown state are automatically displayed in a cycle every 1s; you can also enter the monitoring menu interface through the key, and check the monitoring parameters one by one through the combination of the key and the key.

3.4 **Running** parameter **display status**

After the inverter receives a valid running command, it enters the running state, the operation keyboard displays the running state monitoring parameters, and the factory default is the output frequency. As shown in Figure 3-3, the unit indicator shows the unit of this parameter in Hz.

Press the button to display the running status monitoring parameters cyclically (the default settings are output frequency, output current, and two monitoring parameters). For other monitoring parameters, the display function can be set by function code PE.08~PE.09. For details, please refer to the function parameter table PE.08~PE.09 for operating status monitoring parameter selection and setting; you can also set PE.12 without pressing the key. The ten digit is 1 (main and auxiliary display alternately), and the running status monitoring parameters are automatically displayed in a cycle every 1s; you can also enter the monitoring menu interface through the key, and check the monitoring parameters one by one through the combination of the key and the key.





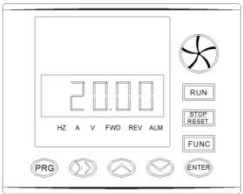


Figure 3-1 Power-on parameter display status Figure 3-2 Shutdown parameter display status Figure 3-3 Running parameter display status

Power-on initialization, display "P.oFF" Display the set frequency "50.00" when stopped Displaying the output frequency "20.00" when running

3.5 Fault alarm display status

Fault alarm display The inverter detects a fault signal, that is, it enters the fault alarm display state and displays the fault code (as shown in Figure 3-4): press the button to view the relevant parameters after shutdown; to view the fault information, press the button to enter the programming Status query D group parameters. After the fault is identified and eliminated, the fault reset operation can be performed by operating the keys of the keyboard, control terminals or communication commands. If the fault persists, the fault code will remain displayed.

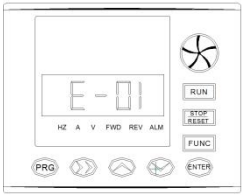


Figure 3-4 Overcurrent fault alarm display during acceleration

Notice:

For some serious faults, such as inverter module protection, overcurrent, overvoltage, etc., without confirming that the fault has been eliminated, do not force the fault reset operation and run it again to avoid damage to the inverter.

3.6 Function code editing display status

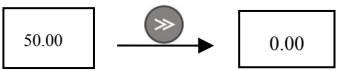
In the state of shutdown, running or fault alarm, press the PRG key to enter the editing state (if a user password is set, the editing state can be entered after entering the password, see the password release instructions), and the editing state is displayed in the second-level menu mode. ENTER Press the button to enter step by step. In the function parameter display state, press the key to store ENTER PRG the parameters, and press the key to save the modified parameters, and only return to the upper-level menu.

3.7 View monitoring parameters

Example 1: Display switching of monitoring parameters

the monitoring interface, ≫ after pressing the key, the parameter value corresponding to the monitoring parameter will be automatically switched and displayed according to the FD group state monitoring parameter setting.

The indicator corresponding to the unit lights up. For example, on the monitoring interface, press to ≫ switch to output frequency D-00, and the indicator light corresponding to the unit "Hz" will light up.

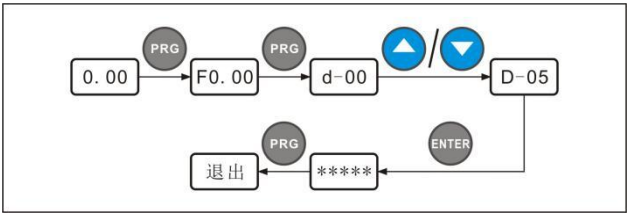


Example 2: Check the monitoring parameter item d-05 (output current)
Law one:

① PRG Press the key to enter the programming state, the digital tube displays the function parameter P0.00, press the PRG key again, the digital tube displays the function parameter d-00, the flashing digit stays at the one digit, adjust the ▲ key or ▼ key until the monitoring code item displays d-05.

② ENTER Press the button , you will see the data corresponding to d-05, and at the same time, the indicator light corresponding to the unit "A" will be on.

③ PRG Press the button to exit the monitoring state.



Law two:

Press the key in the interface of the specific monitoring mode to jump to the next monitoring parameter item d-xx, the ENTER ≫ key to adjust the flashing bit is in the one digit of the monitoring code, and then Adjust the ▲ key or ▼ key until the monitoring code displays d-05, and then press method 1 to ②operate ③.

Example 3: Fault status query fault monitoring parameters

illustrate:

①The user can query the monitoring parameters of group D by pressing the button in the fault state , the query range is d-00 ~ d-57 PRG

②When the user queries the fault parameters, if the fault is not cleared, it will automatically switch back to the fault alarm display state after stopping the operation for 5S.

③The fault codes are displayed in d-48~d-57 (current and previous three).

3.8 Setting of function code parameters

The functional parameter system of this inverter includes function codes F0~FF, fault code group E and monitoring code group D. Each function group includes several function codes. Function

The code is identified by the function code group number + function code number, for example, "F5.08" means the No. 8 function code of the fifth group function.
Example of function code setting:

Example 1: Change the forward jog frequency setting from 5Hz to 10Hz (F1.20 is changed from 5.00Hz to 10.00Hz)

① PRG Press the key to enter the programming state, the LED digital tube displays the function parameter F0.00, and the blinking digit stays at the one digit.

② ≫ Press the key , you can see that the blinking digit moves in the hundreds, tens, and ones digit of the function item.

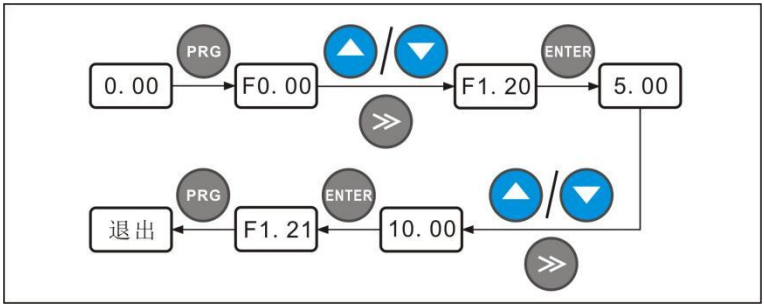
③ Press the ▲ key or ▼ key to change the corresponding digit. LED digital tube displays F1.20.

④ ENTER Press the button , you will see the data corresponding to P1.20 (5.00), and at the same time, the indicator light corresponding to the unit Hz will be on.

⑤ Press ≫ , the flashing digit reaches the highest digit "5", press the ▲ key five times, and change it to 10.00.

⑥ ENTER Press the key to save the value of F1.20 and automatically display the next function code (F1.21).

⑦ PRG Press the key to exit the programming state.



3.9 Operation to enter function code editing state after setting user password

The user password setting function is used to prohibit unauthorized personnel from viewing and modifying function parameters. The factory setting value of user password F0.00 is "00000", the user
Parameter settings can be performed in this interface (note that the parameter settings here are not restricted by password protection, but are restricted by other conditions, including but not limited to
Modification cannot be modified, monitoring parameter content, etc.).

When setting the user password, enter five digits, press the key to confirm, and the password will take effect automatically after 3 minutes or when the power is turned off directly. ENTER After the password takes effect, if it is incorrect Set the password, the keyboard displays "-Err-", then check other function codes, except the password item (the password item displays "00000"), all display "-----", the user cannot set the function code parameters. After the password is set successfully, the keyboard displays "-En--", and then the function code can be viewed and modified.

When you need to change the password, select the F0.00 function code, press ENTER the key to enter the password verification state, after the password verification is successful, enter the modification state, enter the
Enter a new password and press the button to confirm, the password is changed successfully, and the password will take

effect automatically after 3 minutes or if the power is turned off directly.

Example 1 : After changing the user password "22222" to "55555", check the function code F1.02

① Press the key to enter the programming state, the LED digital tube displays the function parameter F0.00, and the blinking digit stays at the one digit.

② Press the key , you can see that the blinking digit moves in the hundreds, tens, and ones digit of the function item.

③ Press the key or key to change the corresponding digit; the LED digital tube displays F1.02.

④ Press the key , you will see the data "-----" corresponding to F1.02.

⑤ After pressing the key to enter F1.03, repeat operations 2 and 3 to check the data "00000" corresponding to F0.00.

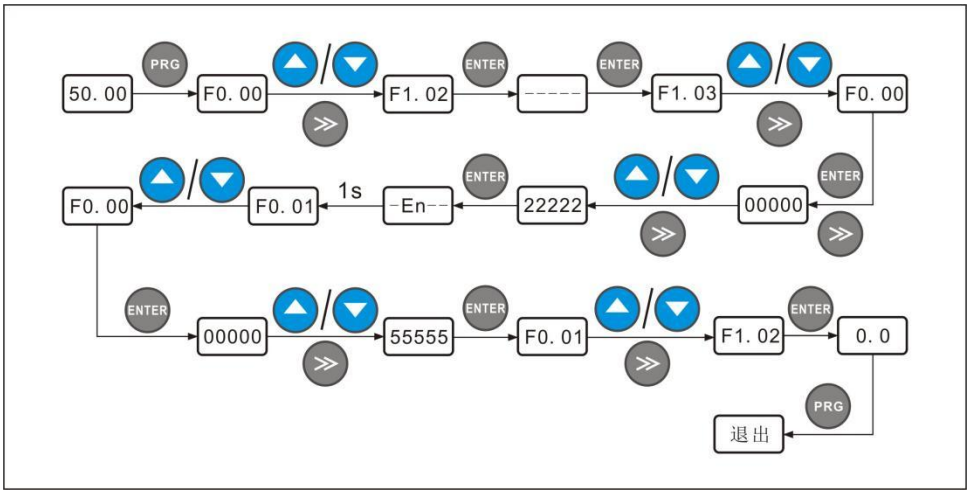
⑥ Press the key or key to change the corresponding digit, the LED digital tube displays "22222", and the password is set.

⑦ Press the button , you will see "-En--" displayed on the digital tube, and at the same time, the function code will display F0.01.

⑧ Repeat operations 2 and 3, check the data "00000" corresponding to F0.00, change it to "55555", press the button to complete the password modification, enter
Item F0.01.

⑨ Repeat operations 2 and 3, check the data "0.0" corresponding to F1.02, and modify it by key or key.

⑩ Press the button to exit the programming state


50. 00
PRG
F0. 00
F1. 02
ENTER

ENTER
F1. 03
F0. 00
00000
ENTER
22222
ENTER
-En-
1s
F0. 01
F0. 00
ENTER
00000
55555
ENTER
F0. 01
F1. 02
ENTER
0. 0
PRG
退出

Chapter 4 Monitoring Parameter Group and Fault Recording, Parameter Brief List and Instructions for Use

4.1 Monitoring parameter group and fault record

Group D - monitoring parameter group and fault record

function code	name	Predetermined area	smallest unit	Factory setting	Change
d-00	Output frequency	0.00 ~ Maximum output frequency【F0.15】	0.01Hz	0.00	◆
d-01	set frequency	0.00 ~ Maximum output frequency【F0.15】	0.01Hz	0.00	◆
d-02	Motor estimated frequency	0.00 ~ Maximum output frequency【F0.15】 Note: The motor running frequency converted from the estimated speed of the motor	0.01Hz	0.00	◆
d-03	Main set frequency	0.00 ~ Maximum output frequency【F0.15】	0.01Hz	0.00	◆
d-04	Auxiliary setting frequency	0.00 ~ Maximum output frequency【F0.15】	0.01Hz	0.00	◆
d-05	Output current	0.0 ~ 6553.5A	0.1A	0.0	◆
d-06	The output voltage	0 ~ 999V	1V	0	◆
d-07	output torque	-200.0 ~ +200.0%	0.1%	0.0%	◆
d-08	Motor speed (RPM/min)	0 ~ 36000（RPM/min）	1	0	◆
d-09	Motor power factor	0.00 ~ 1.00	0.01	0.00	◆
d-10	Running speed (m/s)	0.01 ~ 655.35(m/s)	0.01 m/s	0.00	◆
d-11	Set line speed (m/s)	0.01 ~ 655.35(m/s)	0.01 m/s	0.00	◆
d-12	Bus voltage (V)	0 ~ 999V	1V	0	◆
d-13	Input voltage (V)	0 ~ 999V	1V	0	◆
d-14	PID set value (V)	0.00 ~ 10.00V	0.01V	0.00	◆
d-15	PID feedback value (V)	0.00 ~ 10.00V	0.01V	0.00	◆

d-16	Analog input AI1 (V/mA)	0.00V/0.00mA ~ 10.00V/20.00mA	0.01V	0.00	◆
d-17	Analog input AI2(V)	0.00 ~ 10.00V	0.01V	0.00	◆
d-18	Pulse frequency input (KHz)	0.00 ~ 50.00KHz	0.01KHz	0.00	◆
d-19	Analog output AO1(V/mA)	0.00 ~ 10.00V/20mA	0.01V	0.00	◆
d-20	Analog output AO2(V)	0.00 ~ 10.00V	0.01V	0.00	◆
d-21	Input terminal status	0 ~ 7FH Note: After expanding into binary, it means X7/X6/X5/X4/X3/X2/X1 from high to low	1	0	◆
d-22	Output terminal status	0 ~ FH Note: After expanding into binary, it means from high to low for R2/R1/Y2/Y1	1	0	◆
d-23	Inverter running status	0 ~ FFFFH BIT0: run/stop BIT1: Reverse/Forward BIT2: running at zero speed BIT3: reserved BIT4: Accelerating BIT5: Decelerating BIT6: Constant speed running BIT7: During pre-excitation BIT8: Tuning of motor parameters BIT9: In overcurrent limit BIT10: Overvoltage limit in progress BIT11: Torque limiting BIT12: In speed limit BIT13: Speed Control BIT14: Torque control	1	0	◆

		BIT15: reserved			
d-24	Current segment number of multi-speed	0 ~ 15	1	0	◆
d-25	Pulse frequency output (Hz)	0 ~ 50000Hz	1Hz	0	◆
d-26	reserve	—	—	0	◆
d-27	current count value	0 ~ 65535	1	0	◆
d-28	Set count value	0 ~ 65535	1	0	◆
d-29	Current timing value (s)	0 ~ 65535s	1S	0	◆
d-30	Set timing value (s)	0 ~ 65535s	1S	0	◆
d-31	current length	0.000 ~ 65.535(KM)	0.001KM	0.000	◆
d-32	set length	0.000 ~ 65.535(KM)	0.001KM	0.000	◆
d-33	Radiator temperature 1	0.0℃ ~ +110.0℃	0.1℃	0.0	◆
d-34	Radiator temperature 2	0.0℃ ~ +110.0℃	0.1℃	0.0	◆
d-35	The cumulative running time of the machine (H)	0 ~ 65535H	1H	0	◆
d-36	The cumulative power-on time of the machine (H)	0 ~ 65535H	1H	0	◆
d-37	Fan cumulative running time (H)	0 ~ 65535H	1H	0	◆
d-38	Cumulative power consumption (low level)	0 ~ 9999KWH	1KWH	0	◆
d-39	Cumulative power consumption (high)	0 ~ 9999KWH (*10000)	1KWH	0	◆
d-40	PID pressure feedback	0.00 ~ 60.00 (MPa, Kg)	0.01 (MPa, Kg)	0.00	◆
d-41	Output Power	0.0 ~ 6553.5KW	0.1KW	0.0	◆
d-42	PID pressure setting	0.00 ~ 60.00 (MPa, Kg)	0.01	0.00 _	◆

d-43	Special model monitoring parameters (reserved)	—	—	0	◆
d-44	Special model monitoring parameters (reserved)	—	—	0	◆
d-45	Special model monitoring parameters (reserved)	—	—	0	◆
d-46	Special model monitoring parameters (reserved)	—	—	0	◆
d-47	Special model monitoring parameters (reserved)	—	—	0	◆
d-48	Types of the first three failures	0 ~ 27	1	0	◆
d-49	Types of first and second faults	0 ~ 27	1	0	◆
d-50	Last failure type	0 ~ 27	1	0	◆
d-51	Current fault type	0 ~ 27	1	0	◆
d-52	Operating frequency at current fault	0.00 ~【F0.16】Maximum frequency	0.01Hz	0.00	◆
d-53	Output current at current fault	0.0 ~ 6553.5A	0.1A	0.0	◆
d-54	Bus voltage at current fault	0 ~ 999V	1V	0	◆
d-55	Input terminal status at current fault	0 ~ 7FH Note: After expanding into binary, it means X7/X6/X5/X4/X3/X2/X1 from high to low	1	0	◆
d-56	Output terminal status at current fault	0 ~ FH Note: After expanding into binary, it means from high to low for R1/Y2/Y1	1	0	◆

d-57	Inverter running state at current fault	0 ~ FFFFH	1	0	◆

4.2 Function parameter table

function code	name	Predetermined area	smallest unit	Factory setting	Change
F0.00	user password	0 ~ 65535 Note 1: 0 ~ 9: No password protection Note 2: Password setting is successful, it will take 3 minutes to take effect Note 3: Write protection is invalid for this parameter and cannot be initialized	1	0	○
F0.01	Control software version number	1.00 ~ 99.99	0.01	1.12	◆
F0.02	Panel software version number	1.00 ~ 99.99	0.01	1.00	◆
F0.03	Inverter rated power	0.4 ~ 999.9KW （G/P）	0.1KW	Model setting	◆
F0.04	Inverter model selection	0: G type (constant torque load type) 1: P type (fan, water pump type load type) Note 1: After setting to F type, the motor parameters are automatically refreshed, and it can be used as the first gear without changing any parameters Note 2: This parameter cannot be initialized , please modify it manually	1	0	×

F0.05	control method	0: Common V/F control (manual torque boost) 1: Advanced V/F control (automatic torque boost) 2: Open loop current vector control (SVC) 3: Reserved 4: Separate V/F control Note: this The parameter cannot be initialized, please modify it manually	1	Model setting	×
F0.06	Run command channel selection	0: Operation panel running command channel 1: Terminal running command channel 2: Communication running command channel	1	0	○
F0.07	Main frequency source A selection	0: Digital given 1 (panel ▲/▼ keys, encoder +F0.12) 1: Digital given 2 (terminal UP/DOWN adjustment +F0.13) 2: Digital given 3 (communication setting) 3: AI1 analog given (0 ~ 10V/20mA) 4: AI2 analog given (0 ~ 10V) 5: Pulse given (0 ~ 50KHZ) 6: Simple PLC setting 7: Multi-speed running setting 8: PID control setting Fixed 9: Panel potentiometer	1	9	○

F0.08	Auxiliary frequency source B selection	0: Digital given 1 (panel ▲/▼ keys, encoder +F0.12) 1: Digital given 2 (terminal UP/DOWN adjustment +F0.13) 2: Digital given 3 (communication setting) 3: AI1 analog given (0 ~ 10V/20mA) 4: AI2 analog given (0 ~ 10V) 5: Pulse given (0 ~ 50KHZ) 6: Simple PLC setting 7: Multi-speed operation setting 8: PID control setting Fixed 9: Panel potentiometer (compatible with encoder) 10: Panel potentiometer	1	3	○

F0.09	Frequency source given method	0: Main frequency source A 1: A+K*B 2: A-K*B 3: | A-K*B | 4: MAX(A, K*B) 5: MIN(A, K*B) 6 : Switch from A to K*B (A takes precedence over K*B) 7: Switch from A to (A+K*B) (A takes precedence over A+K*B) 8: Switch from A to (AK*B) (A takes precedence over AK*B) Note 1: Frequency switching needs to be realized through terminal cooperation Note 2: Compared with this frequency source setting method, the wobble frequency control has a higher priority	1	0	○
F0.10	Digital given 1 control	LED one's digit: power-off storage 0: storage 1: not stored LED ten 's digit: shutdown hold 0	1	000	○

F0.11	Digital given 2 control	: hold 1: not hold bit: reserved	1	000	○
F0.12	Frequency source digital 1 setting	0.00Hz～【F0.16】upper limit frequency	0.01Hz	50.00	○
F0.13	Frequency source digital 2 setting	0.00Hz～【F0.16】upper limit frequency	0.01Hz	50.00	○
F0.14	Auxiliary frequency source weight coefficient K setting	0.01～10.00	0.01	1.00	○
F0.15	Maximum output frequency	Low frequency: MAX{50.00, [F0.16]}～300.00 High frequency: MAX{50.0, [F0.16]}～3000.0	0.01Hz	50.00	×
F0.16	upper limit frequency	【F0.17】～【F0.15】	0.01Hz	50.00	○
F0.17	lower frequency	0.00Hz～【F0.16】	0.01Hz	0.00	○

F0.18	Frequency output mode selection	LED ones digit: high and low frequency mode selection 0: low frequency mode (0.00 ~ 300.00Hz) 1: high frequency mode (0.0 ~ 3000.0Hz) LED ten digit: acceleration and deceleration reference selection 0: based on the maximum output frequency 1: based on the target output The frequency is the reference LED hundreds digit: reserved LED thousand digit: reserved Note: high frequency mode is only valid for VF control	1	00	×
F0.19	Acceleration time 1	0.1 ~ 3600.0S 0.4 ~ 4.0KW 7.5S 5.5 ~ 30.0KW 15.0S 37.0 ~ 132.0KW 30.0S 160.0 ~ 630.0KW 60.0S	0.1S	Model setting	○
F0.20	Deceleration time 1		0.1S	Model setting	○
F0.21	Running direction setting	0: Forward rotation 1: Reverse rotation 2: Reverse rotation prevention	1	0	×

F0.22	Carrier frequency setting	1.0 ~ 16.0KHz 0.4 ~ 4.0KW 6.0KHz 1.0 ~ 16.0KHz 5.5 ~ 30KW 4.5KHz 1.0 ~ 16.0KHz 37 ~ 132KW 3.0KHz 1.0 ~ 10.0KHz 160 ~ 630KW 1.8KHz 1.0 ~ 5.0 KHz	0.1KHz	Model setting	○
Group F1 - Auxiliary Operation Parameters					
F1.00	Starting method	0: Start with starting frequency 1: Start with DC braking + starting frequency 2: Start with speed tracking	1	0	×
F1.01	Starting frequency	0.00 ~ 50.00Hz Note: When F0.18=1 (high frequency mode), the upper limit of the starting frequency is 500.0Hz	0.01Hz	1.00	○
F1.02	Starting frequency hold time	0.0 ~ 6000.0s	0.1s	0.0	○
F1.03	Starting DC braking current	0.0 ~ 150.0%*Motor rated current	0.1%	0.0%	○
F1.04	Start DC braking time	0.0 ~ 100.0s	0.1s	0.0	○
F1.05	Acceleration and deceleration method	0: Linear acceleration/deceleration 1: S-curve acceleration/deceleration	1	0	×
F1.06	Time ratio at the beginning of the S-curve	10.0 ~ 50.0%	0.1%	20.0%	○

F1.07	The proportion of time at the end of the S-curve	10.0 ~ 50.0%	0.1%	20.0%	○
F1.08	stop mode	0: Decelerate to stop 1: Coast to stop	1	0	×
F1.09	DC braking starting frequency at stop	0.00 ~ 【F0.16】Maximum frequency	0.01Hz	0.00	○
F1.10	DC braking waiting time at stop	0.0 ~ 100.0s	0.1s	0.0	○
F1.11	Stop DC braking current	0.0 ~ 150.0%*Motor rated current	0.1%	0.0%	○
F1.12	DC braking time at stop	0.0 ~ 100.0s	0.1s	0.0	○
F1.13	Acceleration time 2	0.1 ~ 3600.0S 0.4 ~ 4.0KW 7.5S 5.5 ~ 30.0KW 15.0S 37.0 ~ 132.0KW 40.0S 160.0 ~ 630.0KW 60.0S	0.1	Model setting	○
F1.14	deceleration time 2		0.1	Model setting	○
F1.15	Acceleration time 3		0.1	Model setting	○
F1.16	Deceleration time 3		0.1	Model setting	○
F1.17	Acceleration time 4		0.1	Model setting	○
F1.18	Deceleration time 4		0.1	Model setting	○
F1.19	Acceleration and deceleration time unit	0: seconds 1: minutes 2: 0.1 seconds	1	0	○

	selection				
F1.20	Jog forward running frequency setting	0.00 ~ 【F0.16】Maximum frequency	0.01Hz	5.00	○
F1.21	Jog reverse running frequency setting	0.00 ~ 【F0.16】Maximum frequency	0.01Hz	5.00	○
F1.22	Jog acceleration time setting	0.1 ~ 3600.0S 0.4 ~ 4.0KW 7.5S 5.5 ~ 30.0KW 15.0S	0.1s	Model setting	○
F1.23	Jog deceleration time setting	37.0 ~ 132.0KW 40.0S 160.0 ~ 630.0KW 60.0S	0.1s	Model setting	○
F1.24	Inching interval time setting	0.0 ~ 100.0s	0.1s	0.1	○
F1.25	Hop Frequency 1	0.00 ~ upper limit frequency	0.01Hz	0.00	○
F1.26	Hop Frequency 1 Range	0.00 ~ upper limit frequency	0.01Hz	0.00	○
F1.27	Hop Frequency 2	0.00 ~ upper limit frequency	0.01Hz	0.00	○
F1.28	Hop Frequency 2 Range	0.00 ~ upper limit frequency	0.01Hz	0.00	○
F1.29	Hop Frequency 3	0.00 ~ upper limit frequency	0.01Hz	0.00	○
F1.30	Hop Frequency 3 Range	0.00 ~ upper limit frequency	0.01Hz	0.00	○

F1.31	Action when the set frequency is lower than the lower limit frequency	0: run at the lower limit frequency 1: run at zero frequency after the delay time (no delay at start-up) 2: stop after the delay time (no delay at start-up)	1	0	×
F1.32	Stop delay time when the frequency is lower than the lower limit frequency (simple sleep)	0.0 ~ 3600.0s	0.1	0.0	○
F1.33	Zero frequency braking current	0.0 ~ 150.0%*Motor rated current	0.1	0.0	×
F1.34	Forward and reverse dead time	0.0 ~ 100.0s	0.1s	0.0	○
F1.35	Forward and reverse switching mode	0: Zero-crossing frequency switching 1: Over-starting frequency switching	1	0	×
F1.36	Emergency stop backup deceleration time	0.1 ~ 3600.0s	0.1s	1.0	○
F1.37	DC braking current holding time at stop	0.0 ~ 100.0s	0.1s	0.01	○
Group F2 - Motor Parameters					
F2.00	Motor type selection	0: AC asynchronous motor 1: Permanent magnet synchronous motor (reserved)	1	0	×

		Note 1: This parameter cannot be initialized, please modify it manually			
F2.01	Motor rated power	0.4 ~ 999.9KW	0.1KW	Model setting	×
F2.02	Motor rated frequency	0.01Hz ~ 【F0.15】Maximum frequency	0.01Hz	50.00	×
F2.03	Motor rated speed	0 ~ 60000RFM	1RFM	Model setting	×
F2.04	Motor rated voltage	0 ~ 999V	1V	Model setting	×
F2.05	Motor rated current	0.1 ~ 6553.5A	0.1A	Model setting	×
F2.06	Asynchronous motor stator resistance	0.001 ~ 20.000Ω	0.001Ω	Model setting	×
F2.07	Asynchronous motor rotor resistance	0.001 ~ 20.000Ω	0.001Ω	Model setting	×
F2.08	Asynchronous motor stator and rotor inductance	0.1 ~ 6553.5mH	0.1mH	Model setting	×
F2.09	Asynchronous motor stator and rotor mutual inductance	0.1 ~ 6553.5mH	0.1mH	Model setting	×
F2.10	Asynchronous motor no-load current	0.01 ~ 655.35A	0.01A	Model setting	×

F2.11-F2.15	reserve	—	—	0	◆
F2.16	Motor Tuning Options	0: No action 1: Static tuning 2: No-load full tuning	1	0	×
F2.17	Asynchronous motor pre-excitation holding time	0.00 ~ 10.00S 0.4 ~ 4.0KW 0.02S 5.5 ~ 30KW 0.05S 37 ~ 132KW 0.10S 160 ~ 630KW 0.20S Note: This parameter is invalid for VF control	0.01S	Model setting	×
Group F3 - reserved parameters					
Group F4 - Speed loop and torque control parameters					
F4.00	Speed loop (ASR1) proportional gain	0.0 ~ 12.5	0.1	3.0	○
F4.01	Speed loop (ASR1) integration time	0.00 ~ 25.00S	0.001S	0.50	○
F4.02	ASR1 filter time constant	0.000 ~ 0.100S	0.001S	0.000	○
F4.03	Switch low frequency	0.00Hz ~ 【F4.07】	0.01Hz	5.00	○

F4.04	Speed loop (ASR2) proportional gain	0.0 ~ 12.5	0.1	2.0	○
F4.05	Speed loop (ASR2) integration time	0.00 ~ 25.00S	0.01S	1.00	○
F4.06	ASR2 filter time constant	0.000 ~ 0.100S	0.001S	0.000	○
F4.07	switch high frequency	【F4.03】 ~ 【F0.16】Maximum frequency	0.01Hz	10.00	○
F4.08	Vector control positive slip compensation coefficient (electric state)	50.0% ~ 200.0%* rated slip frequency	0.1%	100.0%	○
F4.09	Vector control negative slip compensation coefficient (braking state)	50.0% ~ 200.0%* rated slip frequency	0.1%	100.0%	○
F4.10	Speed and torque control options	0: Speed 1: Torque 2: Condition valid (terminal switching)	1	0	×
F4.11	Speed and torque switching delay	0.01 ~ 1.00S	0.01S	0.05	×
F4.12	Torque command selection	0: Keyboard digital setting 1: AI1 2: AI2 3: Communication setting	1	0	○

F4.13	Keyboard digital setting torque	-200.0% ~ 200.0%*motor rated current	0.1%	0.0%	○
F4.14	Speed limit channel selection 1 (forward) in torque control mode	0: Keyboard number given 1 1: AI1 2: AI2	1	0	○
F4.15	Speed limit channel selection 1 (reverse) in torque control mode	0: Keyboard number given 2 1: AI1 2: AI2	1	0	○
F4.16	Keyboard number limited speed 1	0.0 ~ 100.0%*【F0.15】Maximum frequency	0.1%	100.0%	○
F4.17	Keyboard number limited speed 2	0.0 ~ 100.0%*【F0.15】Maximum frequency	0.1%	100.0%	○
F4.18	Torque rise time	0.0 ~ 10.0S	0.1S	0.1	○
F4.19	Torque fall time	0.0 ~ 10.0S	0.1S	0.1	○
F4.20	Electric torque limitation in vector mode	G type: 0.0% ~ 200.0%*motor rated current 180.0% P type: 0.0% ~ 200.0%*motor rated current 120.0%	0.1%	Model settings	○

F4.21	Braking torque limitation in vector mode	G type: 0.0% ~ 200.0%*motor rated current 180.0% P type: 0.0% ~ 200.0%*motor rated current 120.0%	0.1%	Model settings	○
F4.22	Torque detection action selection	0: Invalid detection 1: Continue to run after over-torque is detected during constant speed 2: Continue to run after over-torque is detected during running 3: Cut off output after over-torque is detected during constant speed 4: Over-torque is detected during running Cut 5: Continue to run after detecting insufficient torque at constant speed 6: Continue to run after detecting insufficient torque during operation 7: Cut off the output after detecting insufficient torque at constant speed 8: Cut off the output after detecting insufficient torque during operation	1	0	×
F4.23	Torque detection level	G type: 0.0% ~ 200.0%*motor rated current 150.0% P type: 0.0% ~ 200.0%*motor rated current 110.0%	0.1%	Model settings	×

F4.24	Torque detection time	0.0 ~ 10.0S	0.1S	0.0	×
F4.25	Static friction coefficient cut-off frequency	0.00 ~ 300.00Hz	0.01Hz	10.00	○
F4.26	Static friction coefficient setting	0.0 ~ 200.0	0.1	0.0	○
F4.27	Static friction coefficient maintenance time	0.00 ~ 600.00s	0.01S	0.00	×
Group F5 - VF Control Parameters					
F5.00	V/F curve setting	0: Linear curve 1: Drop torque curve 1 (1.3 power) 2: Drop torque curve 2 (1.5 power) 3: Drop torque curve 3 (1.7 power) 4: Square curve 5: User set V /F curve (determined by F5.01 ~ F5.06)	1	0	×
F5.01	V/F frequency value F1	0.00 ~ Frequency value F2	0.01Hz	12.50	×
F5.02	V/F voltage value V1	0.0 ~ Voltage value V2	0.1%	25.0%	×
F5.03	V/F frequency value F2	Frequency value F1 ~ Frequency value F3	0.01Hz	25.00	×
F5.04	V/F voltage value V2	Voltage value V1 ~ Voltage value V3	0.1%	50.0%	×
F5.05	V/F frequency value F3	Frequency value F2 ~ 【F2.02】motor rated frequency	0.01Hz	37.50	×

F5.06	V/F voltage value V3	Voltage value V2 ~ 100.0%*【F2.04】motor rated voltage	0.1%	75.0%	×
F5.07	Torque boost settings	0.0 ~ 30.0%*motor rated voltage【F2.04】 Note: 0.0 means the torque boost value is 0, not automatic boost	0.1%	Model settings	×
F5.08	Torque boost cut-off frequency	0.00 ~ Motor rated frequency	0.01Hz	15.00	×
F5.09	V/F control slip frequency compensation	0.0 ~ 200.0%*Rated slip	0.1%	0.0%	○
F5.10	V/F control slip compensation filter coefficient	1 to 10	1	3	○
F5.11	V/F control torque compensation filter coefficient	0 ~ 10	1	Model setting	○
F5.12	Separate V/F control selection	0: VF half-separate mode, voltage open-loop output 1: VF half-separate mode, voltage closed-loop output 2: VF completely separated mode, voltage open-loop output 3: VF completely separated mode, voltage closed-loop output Note 1: When VF separation control is selected Please turn off the dead zone compensation	1	0	×

		function of the inverter. Note 2: The concept of semi-separation is that the frequency and voltage of the inverter still maintain the relationship between frequency conversion and voltage conversion during the starting process. When the frequency reaches the set frequency, the voltage and frequency are separated.			
F5.13	Voltage given channel	0: digital given 1: AI1 2: AI2	1	0	○
F5.14	Voltage feedback channel for voltage closed-loop output	0: AI1 1: AI2 Note: This parameter is only valid for closed-loop output mode	1	0	×
F5.15	Digitally set output voltage value	0.0 ~ 200.0%*motor rated voltage Note: In open-loop output mode, the maximum output voltage is 100.0% of motor rated voltage	0.1%	100.0%	○
F5.16	Deviation limit of voltage closed-loop adjustment	0.0 ~ 5.0%*Motor rated voltage	0.1%	2.0%	×
F5.17	VF curve maximum voltage in semi-separated mode	0.0 ~ 100.0%*Motor rated voltage Note: This voltage represents the output voltage of the inverter	0.1%	80.0%	×

F5.18	Controller adjustment period of voltage closed-loop output	0.01 ~ 10.00s	0.01S	0.10	×
F5.19	Voltage rise time	0.1 ~ 3600.0S Note: This parameter is only valid for voltage open-loop output mode after complete separation	0.1S	10.0	○
F5.20	Voltage fall time		0.1S	10.0	○
F5.21	Voltage feedback disconnection processing	0: Alarm and maintain operation with the voltage at the moment of disconnection 1: Alarm and reduce the voltage to the limit voltage to operate 2: Protection action and coast to stop	1	0	×
F5.22	Voltage feedback disconnection detection value	0.0 ~ 100.0%*motor rated voltage	0.1%	2.0%	○
F5.23	Voltage feedback disconnection detection time	0.0 ~ 100.0S	0.1S	10.0	○
F5.24	Limiting voltage for voltage feedback disconnection	0.0 ~ 100.0%*Motor rated voltage Note: This voltage represents the output voltage of the inverter. Reasonable setting of this parameter can prevent equipment damage caused by voltage overshoot at the moment of disconnection	0.1%	80.0%	○
F5.25	Bus voltage under-voltage detection value	0 ~ 1000V Note: 0 is invalid, if the bus voltage is lower than this parameter value, it will report "E-34".	1V	0	○

F5.26	Bus under-voltage fault reset value	0 ~ 1000V Note: If the bus voltage reaches the set value, the under-voltage fault "E-34" will automatically reset and start.	1V	0	○
Group F6 - analog and pulse input and output parameters					
F6.00	AI1 input corresponds to physical quantity	0: Speed command (output frequency, -100.0% ~ 100.0%) 1: Torque command (output torque, -200.0% ~ 200.0%) 2: Voltage command (output voltage, 0.0% ~ 200.0%*motor rated voltage)	1	0	×
F6.01	AI1 input lower limit	0.00V/0.00mA ~ 10.00V/20.00mA	0.01V	0.00	○
F6.02	AI1 lower limit corresponds to physical quantity setting	-200.0% ~ 200.0% Note: The range is related to F6.00	0.1%	0.0%	○
F6.03	AI1 input upper limit	0.00V/0.00mA ~ 10.00V/20.00mA	0.01V	10.00	○
F6.04	The upper limit of AI1 corresponds to the physical quantity setting	-200.0% ~ 200.0% Note: The range is related to F6.00	0.1%	100.0%	○
F6.05	AI1 input filter time	0.00S ~ 10.00S	0.01S	0.05	○

F6.06	AI2 input corresponds to physical quantity	0: Speed command (output frequency, -100.0% ~ 100.0%) 1: Torque command (output torque, -200.0% ~ 200.0%) 2: Voltage command (output voltage, 0.0% ~ 200.0%*motor rated voltage)	1	0	×
F6.07	AI2 input lower limit	0.00V ~ 10.00V	0.01V	0.00	○
F6.08	AI2 lower limit corresponds to physical quantity setting	-200.0% ~ 200.0% Note: The range is related to F6.06	0.1%	0.0%	○
F6.09	AI2 input upper limit	0.00V ~ 10.00V	0.01V	10.00	○
F6.10	The upper limit of AI2 corresponds to the physical quantity setting	-200.0% ~ 200.0% Note: The range is related to F6.06	0.1%	100.0%	○
F6.11	AI2 input filter time	0.00S ~ 10.00S	0.01S	0.05	○
F6.12	Analog input anti-shake deviation limit	0.00V ~ 10.00V	0.01V	0.00	○
F6.13	Zero frequency operation threshold	Zero frequency hysteresis ~ 50.00Hz Note: When F0.18=1 (high frequency mode), the upper limit of the value of this function code is 500.0Hz	0.01Hz	0.00	○

F6.14	Zero frequency hysteresis	0.00 ~ zero frequency operation threshold	0.01Hz	0.00	○
F6.15	Physical quantity corresponding to external pulse input	0: Speed command (output frequency, -100.0% to 100.0%) 1: Torque command (output torque, -200.0% to 200.0%)	1	0	×
F6.16	External pulse input lower limit	0.00 ~ 50.00kHz	0.01kHz	0.00	○
F6.17	The physical quantity setting corresponding to the lower limit of the external pulse	-200.0% ~ 200.0% Note: The range is related to F6.15	0.1%	0.0%	○
F6.18	External pulse input upper limit	0.00 ~ 50.00kHz	0.01kHz	50.00	○
F6.19	Physical quantity setting corresponding to the upper limit of external pulse	-200.0% ~ 200.0% Note: The range is related to F6.15	0.1%	100.0%	○
F6.20	External pulse input filter time	0.00S ~ 10.00S	0.01S	0.05	○
F6.21	AO1 multi-function analog output terminal function selection	0: Output frequency (before slip compensation) 1: Output frequency (after slip compensation) 2: Set frequency 3: Motor speed (estimated value) 4: Output current 5: Output voltage	1	0	○

F6.22	AO2 multi-function analog output terminal function selection	6: Bus voltage 7: PID given value 8: PID feedback value 9: AI1 10: AI2 11: Input pulse frequency 12: Torque current 13: Magnetic flux current 14: Communication setting	1	4	○
F6.23	DO multi-function pulse output terminal function selection		1	11	○
F6.24	AO1 output lower limit corresponds to physical quantity	-200.0% ~ 200.0%	0.1%	0.0%	○
F6.25	AO1 output lower limit	0.00 ~ 10.00V	0.01V	0.00	○
F6.26	AO1 output upper limit corresponds to physical quantity	-200.0% ~ 200.0%	0.1%	100.0%	○
F6.27	AO1 output upper limit	0.00 ~ 10.00V	0.01V	10.00	○
F6.28	AO2 output lower limit corresponds to physical quantity	-200.0% ~ 200.0%	0.1%	0.0%	○
F6.29	AO2 output lower limit	0.00 ~ 10.00V	0.01V	0.00	○
F6.30	The physical quantity corresponding to the upper limit of AO2 output	-200.0% ~ 200.0%	0.1%	100.0%	○

F6.31	AO2 output upper limit	0.00 ~ 10.00V	0.01V	10.00	○
F6.32	DO output lower limit corresponds to physical quantity	-200.0% ~ 200.0%	0.1%	0.0%	○
F6.33	DO output lower limit	0.00 ~ 50.00kHz	0.01kHz	0.00	○
F6.34	DO output upper limit corresponds to physical quantity	-200.0% ~ 200.0%	0.1%	100.0%	○
F6.35	DO output upper limit	0.00 ~ 50.00kHz	0.01kHz	50.00	○
F6.36	AI multi-point curve selection	LED ones digit: AI1 multi-point curve selection 0: Disable 1: Valid LED tens digit: AI2 multi-point curve selection 0: Disable 1: Valid LED hundreds digit: Analog input signal selection 0: AI1 and AI2 input signal 0 ~ 10V 1: AI1 input signal 4 ~ 20mA, AI2 input signal 0 ~ 10V 2: AI2 input signal 4 ~ 20mA, AI1 input signal 0 ~ 10V 3: AI1 and AI2 input signal 4 ~ 20mA LED thousand digit: reserved	1	00	×
F6.37	AI1 curve minimum input	0.00 ~ 【F6.39】	0.01V	0.00	○

F6.38	AI1 curve minimum input corresponding setting	-200.0% ~ 200.0% Note: The range is related to F6.00	0.1%	0.0%	○
F6.39	AI1 curve inflection point 1 input	【F6.37】 ~ 【F6.41】	0.01V	3.00	○
F6.40	AI1 curve inflection point 1 input corresponding setting	-200.0% ~ 200.0% Note: The range is related to F6.00	0.1%	30.0%	○
F6.41	AI1 curve inflection point 2 input	【F6.39】 ~ 【F6.43】	0.01V	6.00	○
F6.42	AI1 curve inflection point 2 input corresponding setting	-200.0% ~ 200.0% Note: The range is related to F6.00	0.10%	60.0%	○
F6.43	AI1 curve maximum input	【F6.41】 ~ 10.00	0.01V	10.00	○
F6.44	AI1 curve maximum input corresponding setting	-200.0% ~ 200.0% Note: The range is related to F6.00	0.10%	100.0%	○
F6.45	AI2 curve minimum input	0.00 ~ 【F6.47】	0.01V	0.00	○
F6.46	AI2 curve minimum input corresponding setting	-200.0% ~ 200.0% Note: The range is related to F6.06	0.10%	0.0%	○
F6.47	AI2 curve inflection point 1 input	【F6.45】 ~ 【F6.49】	0.01V	3.00	○

F6.48	AI2 curve inflection point 1 input corresponding setting	-200.0% ~ 200.0% Note: The range is related to F6.06	0.10%	30.0%	○
F6.49	AI2 curve inflection point 2 input	【F6.47】 ~ 【F6.51】	0.01V	6.00	○
F6.50	AI2 curve inflection point 2 input corresponding setting	-200.0% ~ 200.0% Note: The range is related to F6.06	0.10%	60.0%	○
F6.51	AI2 curve maximum input	【F6.49】 ~ 10.00	0.01V	10.00	○
F6.52	AI2 curve maximum input corresponding setting	-200.0% ~ 200.0% Note: The range is related to F6.06	0.10%	100.0%	○
F6.53	AI1 input voltage protection upper limit	【F6.54】 ~ 10.00V	0.01V	6.80	○
F6.54	AI1 input voltage protection lower limit	0.00 ~ 【F6.53】	0.01V	3.10	○
Group F7 - digital input and output parameters					

F7.00	Input terminal X1 function (when F8.21 is a non-zero value, the default function is No. 58)	0: Control terminal idle 1: Forward running (FWD) 2: Reverse running (REV) 3: Three-wire running control 4: Forward jogging control 5: Reverse jogging control 6: Free stop control 7: External reset Signal input (RST) 8: External equipment fault normally open input 9: External equipment fault normally closed input 10: Emergency stop function (brake at the fastest speed) 11: External stop control 12: Frequency increasing command 13: Frequency decreasing command 14: UP/DOWN terminal frequency reset 15: Multi-speed selection 1 16: Multi-speed selection 2 17: Multi-speed selection 3 18: Multi-speed selection 4 19: Acceleration and deceleration time selection	1	1	×
F7.01	Input terminal X2 function (when F8.21 is a non-zero value, the default function is No. 59)		1	2	×

F7.02	Input terminal X3 function (when F8.21 is a non-zero value, the default function is No. 60)	TT1 20: Acceleration and deceleration time selection TT2 21: Running command channel Selection 1 22: Running command channel selection 2 23: Inverter acceleration/deceleration prohibition command 24: Inverter running prohibition command 25: Run command switch to panel 26: Run command switch to terminal 27: Run command switch to communication 28: Auxiliary frequency clear Zero 29: Switch between frequency source A and K*B 30: Switch between frequency source A and A+K*B 31: Switch between frequency source A and A-K*B 32: Reserved 33: PID control input	1	4	×
F7.03	Input terminal X4 function (when F8.21 is a non-zero value, the default function is No. 61)		1	7	×

F7.04	Input terminal X5 function (when F8.21 is a non-zero value, the default function is No. 62)	34: PID control pause 35: Wobble frequency Control input 36: Wobble frequency control pause 37: Wobble frequency state reset 38: PLC control input 39: PLC pause 40: PLC reset 41: Counter reset signal input 42: Counter trigger signal input 43: Timing trigger input 44: Timing reset Input 45: External pulse frequency input (only valid for X7) 46: Length reset 47: Length count input (only valid for X7) 48: Speed and torque control switching 49: Torque control prohibition 50~57: Reserved 58: Start/Stop 59: Run Enable 60: Interlock 1 61: Interlock 2 62: Interlock 3 63: PFC Start/Stop 64: A frequency switch to B and run 65: The first group of PIDs is switched to the	1	8	×
F7.05	Input terminal X6 function (when F8.21 is a non-zero value, the default function is No. 63)		1	0	×
F7.06	Input terminal X7 function (high-speed pulse input)		1	45	×

		second group of PIDs			
F7.07	reserve	—	—	0	◆
F7.08	Switch filter times	1 ~ 10 1: Represents 2MS scan time unit	1	5	○
F7.09	Terminal function detection selection at power-on	0: Terminal running command is invalid when power on 1: Terminal running command is valid when power on	1	0	○
F7.10	Input terminal valid logic setting (X1 ~ X7)	0 ~ 7FH 0 means positive logic, that is, the connection between the Xi terminal and the common terminal is valid, and the disconnection is invalid. 1 means inverse logic, that is, the connection between the Xi terminal and the common terminal is invalid, and the disconnection is valid.	1	00	×
F7.11	FWD/REV terminal control mode	0: Two-wire control mode 1 1: Two-wire control mode 2 2: Three-wire control mode 1 3: Three-wire control mode 2	1	0	×
F7.12	UF/DOWN terminal frequency modification rate	0.01 ~ 50.00Hz/S Note: When F0.18=1 (high frequency mode), the upper limit of the value of this function code is 500.0Hz/S	0.01Hz/S	1.00	○
F7.13	reserve	—	—	0	◆

F7.14	Y1 output delay time	0.0 ~ 100.0s	0.1S	0.0	×
F7.15	Y2 output delay time	0.0 ~ 100.0s	0.1S	0.0	×
F7.16	R1 output delay time	0.0 ~ 100.0s	0.1S	0.0	×
F7.17	R2 output delay time	0.0 ~ 100.0s	0.1S	0.0	×
F7.18	Open collector output terminal Y1 setting	0: No output 1: Inverter running forward 2: Inverter running in reverse 3: Fault output 4: Frequency/speed level detection signal (FDT1) 5: Frequency/speed level detection signal (FDT2) 6: Frequency/speed arrival Signal (FAR) 7: Inverter zero speed running indication 8: Output frequency reaches upper limit 9: Output frequency reaches lower limit 10: Set frequency lower limit reaches during	1	0	×

F7.19	Open collector output terminal Y2 setting	running 11: Inverter overload alarm signal 12: Counter detection signal output 13 : Counter reset signal output 14: Inverter is ready to run 1 15: One cycle of programmable multi-speed operation completed 16: Programmable multi-speed stage operation completed 17: Upper and lower limit of swing frequency 18: Current limiting action	1	0	×

F7.20	Programmable relay R1 output	19: Over-voltage stall In action 20: Under-voltage lockout stop 21: In sleep 22: Inverter alarm signal (PID disconnection, RS485 communication failure, panel communication failure, EEFROM read and write failure, encoder disconnection alarm, etc.) 23: AI1>AI2 24: Length reached output 25: Timing time reached 26: Dynamic braking action 27: DC braking action 28: Magnetic flux braking action 29: Torque limiting 30: Over-torque indication 31: Auxiliary motor 1	1	3	×

F7.21	Programmable relay R2 output	32: Auxiliary motor 2 33: Accumulated running time reaches 34~49: Multi-speed or simple PLC running stage number indication 50: Running indication signal 51: Temperature arrival indication 52: Inverter stop or zero-speed running indication 53: Reserved 54: Reserved 55: Communication setting Fixed 56: Inverter is ready to run 2 57: AI1 input over-voltage 58: Output current exceeds limit 59: Interlock 1 output 60: Interlock 2 output 61: Interlock 3 output 62: Frequency and current detection levels reach the output at the same time	1	0	×
F7.22	Output terminal valid logic setting (Y1 ~ Y2)	0 ~ 3H 0: Indicates positive logic, that is, the connection between the Yi terminal and the common terminal is valid, and the disconnection is invalid 1: Represents the inverse logic, that is, the connection between the Yi terminal and the common terminal is invalid, and the disconnection is valid	1	0	×

F7.23	Frequency reaches FAR detection width	0.0 ~ 100.0%*【F0.15】Maximum frequency	0.1%	10.0%	○
F7.24	FDT1 detection method	0: Speed set value 1: Speed detection value	1	0	○
F7.25	FDT1 level setting	0.00Hz ~ 【F0.16】upper limit frequency	0.01Hz	50.00	○
F7.26	FDT1 hysteresis value	0.0 ~ 100.0%*【F7.25】	0.1%	2.0%	○
F7.27	FDT2 detection method	0: Speed set value 1: Speed detection value	1	0	○
F7.28	FDT2 level setting	0.00Hz ~ 【F0.16】upper limit frequency	0.01Hz	25.00	○
F7.29	FDT2 hysteresis value	0.0 ~ 100.0%*【F7.28】	0.1%	4.0%	○
F7.30	count arrival processing	0: stop counting, stop output 1: stop counting, continue output 2: loop counting, stop output 3: loop counting, continue output	1	3	×
F7.31	count start condition	0: Always start when power on 1: Start when running, stop when stopped	1	1	×
F7.32	Counter reset value setting	【F7.33】 ~ 65535	1	0	○
F7.33	Counter detection value setting	0 ~ 【F7.32】	1	0	○

F7.34	Timed arrival processing	0: stop timing, stop output 1: stop timing, continue output 2: cycle timing, stop output 3: cycle timing, continue output	1	3	×
F7.35	timing start condition	0: Always start when power on 1: Start when running, stop when stopped	1	1	×
F7.36	Timing time setting	0 ~ 65535S	1S	0	○
F7.37	Y1 off delay time	0.0 ~ 100.0s	0.1S	0.0	×
F7.38	Y2 off delay time	0.0 ~ 100.0s	0.1S	0.0	×
F7.39	R1 off delay time	0.0 ~ 100.0s	0.1S	0.0	×
F7.40	R2 off delay time	0.0 ~ 100.0s	0.1S	0.0	×
Group F8 - PID control parameters					
F8.00	PID operation input mode	0: Automatic 1: Manual input through the defined multi-function terminal	1	0	×

F8.01	PID given channel selection	0: Digital setting 1: AI1 2: AI2 3: Pulse setting 4: RS485 communication 5: Pressure setting (MPa, Kg) 6: Panel potentiometer setting	1	0	○
F8.02	Given digital setting	0.0 ~ 100.0%	0.1%	50.0%	○
F8.03	PID feedback channel selection	0: AI1 1: AI2 2: AI1+AI2 3: AI1-AI2 4: MAX{AI1, AI2} 5: MIN{AI1, AI2} 6: Pulse reference 7: RS485 communication	1	0	○

F8.04	PID Controller Advanced Features Settings	LED units digit: PID polarity selection 0: positive 1: negative LED tens digit: proportional adjustment characteristics (reserved) 0: constant proportional integral adjustment 1: automatic proportional and integral adjustment LED hundreds digit: integral adjustment characteristics 0: when the frequency reaches the upper and lower limits , stop the integral adjustment 1: when the frequency reaches the upper and lower limits, continue the integral adjustment LED thousand digit: reserved	1	000	×
F8.05	Proportional gain KP1	0.01 ~ 100.00	0.01	5.00	○
F8.06	Integration time Ti1	0.01 ~ 10.00s	0.01s	0.05	○
F8.07	Differential time Td1	0.01 ~ 10.00s 0.0: No differentiation	0.01s	0.00	○
F8.08	Sampling period T	0.01 ~ 10.00s 0.00: Automatic	0.01s	0.10	○
F8.09	Deviation limit	0.0 ~ 100.0%	0.1%	0.0%	○

F8.10	Closed-loop preset frequency	0.00 ~ upper limit frequency	0.01Hz	0.00	○
F8.11	Preset frequency hold time	0.0 ~ 3600.0s	0.1s	0.0	×
F8.12	sleep mode	0: Invalid 1: Sleep when the feedback pressure exceeds or is lower than the sleep threshold 2: Sleep when the feedback pressure and output frequency are stable 3: Sleep when the feedback pressure is higher than the lower limit threshold of frequency reduction	1	1	×
F8.13	Sleep shutdown mode selection	0: Decelerate to stop 1: Coast to stop	1.00	0	○
F8.14	Deviation between feedback and set pressure when entering sleep	0.0 ~ 10.0% Note: This function parameter is only valid for the second sleep mode	0.1%	0.5%	○
F8.15	sleep threshold	0.0 ~ 200.0% Note: The threshold is the percentage of the given pressure, this function parameter is only valid for the first sleep mode	0.1%	100.0%	○
F8.16	wake up threshold	0.0 ~ 200.0% Note: The threshold is the percentage of the given pressure	0.1%	90.0%	○

F8.17	sleep delay time	0.0 ~ 3600.0s	0.1S	100.0	○
F8.18	wake up delay time	0.0 ~ 3600.0s	0.1S	5.0	○
F8.19	pump delay time	0.0 ~ 3600.0s	0.1S	10.0	○
F8.20	Decrease pump delay time	0.0 ~ 3600.0s	0.1S	10.0	○
F8.21	water supply enable	0: Invalid 1: PFC valid 2: SPFC valid	1	0	×
F8.22	Terminal access and disconnection delay	0.0 ~ 6000.0s	0.1S	0.1	○
F8.23	polling time	0.0 ~ 6000.0h	0.1h	48.0	○
F8.24	Reduce pump lower limit frequency	0.0 ~ 600.00HZ	0.01Hz	35.00	×
F8.25	Sensor range	0.00 ~ 60.00 (MPa, Kg)	0.01	10.00	○
F8.26	pressure setting	0.00 ~ 【F8.25】(MPa, Kg)	0.01	5.00	○
F8.27	Main pump start delay	0.0 ~ 3600.0s	0.1S	0.3	○
F8.28	Auxiliary pump start mode selection	0: Direct start 1: Soft start	1	0	×

F8.29	Proportional gain KP2	0.01 ~ 100.00	0.01	1.00	○
F8.30	Integration time Ti2	0.01 ~ 10.00s	0.01s	0.10	○
F8.31	Differential time Td2	0.01 ~ 10.00s 0.0: No differentiation	0.01s	0.00	○
F8.32	PID upper limit cutoff frequency	【F8.33】 ~ 300.00Hz	0.01Hz	50.00	×
F8.33	PID lower limit cutoff frequency	-300.00Hz ~ 【F8.32】 Note: When the frequency is lower than -99.99Hz, it is necessary to set the unit digit of F0.18 to 1	0.01Hz	0.00	×
F8.34	Downtime	0.1-100.0s Note: Only useful when F8.12=3.	0.1s	2.0	○
F8.35	Frequency reduction detection time	0.1-100.0s Note: Only useful when F8.12=3.	0.1s	0.0	○
F8.36	Waiting time before down-clocking	0-100.0s Note: It is only useful when F8.12=3.	0.1s	10.0	○

F8.37	Frequency reduction lower limit threshold	【F8.38】-100% Note: It is only useful when F8.12=3.	0.1%	95.0%	○
F8.38	Sleep lower threshold	【F8.37】-【F8.16】 Note: It is only useful when F8.12=3.	0.1%	90%	○
F8.39	Frequency reduction amplitude	0.00-50.00 Note: It is only useful when F8.12=3.	0.01	2.00	○
F8.40	sleep frequency	0.00Hz ~ 【F0.16】	0.01Hz	20.00	×
Group F9 - multi-step speed and PLC operation, swing frequency and fixed length control parameters					
F9.00	PLC operation mode selection	0: Stop after a single cycle 1: Keep the final value running after a single cycle 2: Limited continuous cycle 3: Continuous cycle	1	0	×
F9.01	PLC operation input mode	0: Automatic 1: Manual input through the defined multi-function terminal	1	0	×
F9.02	PLC running power-down memory	0: not memorized 1: memorize the stage and frequency of the power-off time	1	0	×

F9.03	PLC start method	0: Restart from the first stage 1: Start from the stage at the time of stop (fault) 2: Start from the stage and frequency at the time of stop (fault)	1	0	×
F9.04	Limited number of consecutive cycles	1 ~ 65535	1	1	○
F9.05	PLC running time unit selection	0: s 1: m	1	0	×
F9.06	Multi-speed frequency 0	- Upper limit frequency ~ Upper limit frequency	0.01Hz	5.00	○
F9.07	Multi-speed frequency 1	- Upper limit frequency ~ Upper limit frequency	0.01Hz	10.00	○
F9.08	Multi-speed frequency 2	- Upper limit frequency ~ Upper limit frequency	0.01Hz	15.00	○
F9.09	Multi-speed frequency 3	- Upper limit frequency ~ Upper limit frequency	0.01Hz	20.00	○
F9.10	Multi-speed frequency 4	- Upper limit frequency ~ Upper limit frequency	0.01Hz	25.00	○
F9.11	Multi-speed frequency 5	- Upper limit frequency ~ Upper limit frequency	0.01Hz	30.00	○
F9.12	Multi-speed frequency 6	- Upper limit frequency ~ Upper limit frequency	0.01Hz	40.00	○
F9.13	Multi-speed frequency 7	- Upper limit frequency ~ Upper limit frequency	0.01Hz	50.00	○
F9.14	Multi-speed frequency 8	- Upper limit frequency ~ Upper limit frequency	0.01Hz	0.00	○

F9.15	Multi-speed frequency 9	- Upper limit frequency ~ Upper limit frequency	0.01Hz	0.00	○
F9.16	Multi-speed frequency 10	- Upper limit frequency ~ Upper limit frequency	0.01Hz	0.00	○
F9.17	Multi-speed frequency 11	- Upper limit frequency ~ Upper limit frequency	0.01Hz	0.00	○
F9.18	Multi-speed frequency 12	- Upper limit frequency ~ Upper limit frequency	0.01Hz	0.00	○
F9.19	Multi-speed frequency 13	- Upper limit frequency ~ Upper limit frequency	0.01Hz	0.00	○
F9.20	Multi-speed frequency 14	- Upper limit frequency ~ Upper limit frequency	0.01Hz	0.00	○
F9.21	Multi-speed frequency 15	- Upper limit frequency ~ Upper limit frequency	0.01Hz	0.00	○
F9.22	0-speed acceleration and deceleration time	0 ~ 3	1	0	○
F9.23	0th speed running time	0.0 ~ 6553.5S(M)	0.1S(M)	0.0	○
F9.24	1st stage acceleration and deceleration time	0 ~ 3	1	0	○
F9.25	1st stage speed running time	0.0 ~ 6553.5S(M)	0.1S(M)	0.0	○
F9.26	2nd stage acceleration and deceleration time	0 ~ 3	1	0	○

F9.27	2nd stage speed running time	0.0 ~ 6553.5S(M)	0.1S(M)	0.0	○
F9.28	3rd stage acceleration and deceleration time	0 ~ 3	1	0	○
F9.29	3rd stage speed running time	0.0 ~ 6553.5S(M)	0.1S(M)	0.0	○
F9.30	4th speed acceleration and deceleration time	0 ~ 3	1	0	○
F9.31	4th stage speed running time	0.0 ~ 6553.5S(M)	0.1S(M)	0.0	○
F9.32	5th speed acceleration and deceleration time	0 ~ 3	1	0	○
F9.33	5th speed running time	0.0 ~ 6553.5S(M)	0.1S(M)	0.0	○
F9.34	6th speed acceleration and deceleration time	0 ~ 3	1	0	○
F9.35	6th speed running time	0.0 ~ 6553.5S(M)	0.1S(M)	0.0	○
F9.36	7th speed acceleration and deceleration time	0 ~ 3	1	0	○
F9.37	7th speed running time	0.0 ~ 6553.5S(M)	0.1S(M)	0.0	○
F9.38	8th speed acceleration and deceleration time	0 ~ 3	1	0	○
F9.39	8th speed running time	0.0 ~ 6553.5S(M)	0.1S(M)	0.0	○

F9.40	9th speed acceleration and deceleration time	0 ~ 3	1	0	○
F9.41	9th speed running time	0.0 ~ 6553.5S(M)	0.1S(M)	0.0	○
F9.42	10th speed acceleration and deceleration time	0 ~ 3	1	0	○
F9.43	10th speed running time	0.0 ~ 6553.5S(M)	0.1S(M)	0.0	○
F9.44	11th speed acceleration and deceleration time	0 ~ 3	1	0	○
F9.45	11th speed running time	0.0 ~ 6553.5S(M)	0.1S(M)	0.0	○
F9.46	12th speed acceleration and deceleration time	0 ~ 3	1	0	○
F9.47	12th speed running time	0.0 ~ 6553.5S(M)	0.1S(M)	0.0	○
F9.48	The 13th speed acceleration and deceleration time	0 ~ 3	1	0	○
F9.49	13th speed running time	0.0 ~ 6553.5S(M)	0.1S(M)	0.0	○
F9.50	14th speed acceleration and deceleration time	0 ~ 3	1	0	○
F9.51	14th speed running time	0.0 ~ 6553.5S(M)	0.1S(M)	0.0	○
F9.52	15th speed acceleration and deceleration time	0 ~ 3	1	0	○

F9.53	15th speed running time	0.0 ~ 6553.5S(M)	0.1S(M)	0.0	○
F9.54	reserve	—	—	0	◆
F9.55	Wobble frequency control	0: Disable 1: Valid	1	0	×
F9.56	Wobble frequency operation input mode	0: Automatic 1: Manual input through the defined multi-function terminal	1	0	×
F9.57	swing control	0: Fixed swing 1: Variable swing	1	0	×
F9.58	Swing frequency stop and start mode selection	0: Start according to the state memorized before shutdown 1: Restart	1	0	×
F9.59	Wobble frequency state power-down storage	0: Store 1: Do not store	1	0	×
F9.60	Wobble preset frequency	0.00Hz ~ upper limit frequency	0.01Hz	10.00	○
F9.61	Wobble preset frequency waiting time	0.0 ~ 3600.0s	0.1s	0.0	×
F9.62	Wobble amplitude	0.0 ~ 100.0%	0.1%	0.0%	○
F9.63	Kick frequency	0.0 ~ 50.0% (relative swing frequency amplitude)	0.1%	0.0%	○

F9.64	Swing frequency rise time	0.1 ~ 3600.0s	0.1s	5.0	○
F9.65	Wobble fall time	0.1 ~ 3600.0s	0.1s	5.0	○
F9.66	reserve	—	—	0	◆
F9.67	Fixed length control	0: Disable 1: Valid	1	0	×
F9.68	set length	0.000 ~ 65.535(KM)	0.001KM	0.000	○
F9.69	Actual length	0.000 ~ 65.535(KM)	0.001KM	0.000	○
F9.70	length magnification	0.100 ~ 30.000	0.001	1.000	○
F9.71	length correction factor	0.001 ~ 1.000	0.001	1.000	○
F9.72	Measuring shaft circumference	0.10 ~ 100.00CM	0.01CM	10.00	○
F9.73	Number of pulses per shaft revolution (X7)	1 ~ 65535	1	1024	○
Group FA - Protection Parameters					
FA.00	Motor overload	0: Disabled	1	1	×

	protection selection	1: Common motor (electronic thermal relay mode, with compensation at low speed) 2: Variable frequency motor (electronic thermal relay mode, no compensation at low speed)			
FA.01	Motor overload protection factor	20.0% ~ 120.0%	0.1%	100.0%	×
FA.02	Under-voltage protection action selection	0: Disable 1: Enable (under-voltage is regarded as a fault)	1	0	×
FA.03	Under-voltage protection level	220V: 180 ~ 280V 200V 380V: 330 ~ 480V 350V	1V	Model setting	×
FA.04	Over-voltage limit level	220V: 350 ~ 390V 370V 380V: 600 ~ 780V 660V	1V	Model setting	×
FA.05	Deceleration voltage limit factor	0 ~ 100 0: Over-voltage stall protection is invalid	1	Model setting	×
FA.06	Current limit level (valid only in VF mode)	G type: 80% ~ 200%*Inverter rated current 160% P type: 80% ~ 200%*Inverter rated current 120%	1%	Model setting	×
FA.07	Field weakening area current limit selection	0: limited by the current limit level of PA.06 1: limited by the current limit level converted by PA.06	1	0	×
FA.08	Acceleration current limit factor	0 ~ 100 0: The acceleration current limit is invalid	1	Model setting	×

FA.09	Constant speed current limit factor	0 ~ 5000 Note: Setting 0 means constant speed current limit is invalid, 1 ~ 100 means automatic frequency reduction, the larger the coefficient, the faster the frequency reduction rate; 101 ~ 5000 is manual frequency reduction, 101 means 0.01Hz/S, and so on , 5000 means 50.00/S.	1	40	×
FA.10	Load drop detection time	0.1S ~ 60.0S	0.1S	5.0	○
FA.11	Drop load detection level	0 ~ 100%*Inverter rated current 0: Invalid load drop detection	1%	0%	○
FA.12	Overload pre-alarm level	G type: 20% ~ 200%*Inverter rated current 160% P type: 20% ~ 200%*Inverter rated current 120%	1%	Model setting	○
FA.13	Overload pre-alarm delay	0.0 ~ 30.0s	0.1s	10.0	○
FA.14	temperature detection threshold	0.0℃ ~ 90.0℃	0.1℃	65.0℃	×
FA.15	Input and output phase loss protection selection	0: Both disabled 1: Input disabled, output enabled 2: Input enabled, output disabled 3: Both enabled	1	Model setting	×
FA.16	Input phase loss protection delay time	0.0 ~ 30.0s	0.1S	1.0	○

FA.17	Output phase loss protection detection reference	0% ~ 100%*Inverter rated current	1%	50%	×
FA.18	Output current unbalance detection coefficient	1.00 ~ 10.00 1.00: Unbalance detection is invalid Note: Output current unbalance detection and output phase loss detection share the same detection reference parameter FA.17 and fault code E-13	—	1.00	×
FA.19	reserve	—	—	0	◆
FA.20	PID feedback disconnection processing	0: No action 1: Alarm and keep running at the frequency of disconnection 2: Protection action and coast to stop 3: Alarm and decelerate to zero speed according to the set mode	1	0	×
FA.21	Feedback disconnection detection value	0.0 ~ 100.0%	0.1%	0.0%	○
FA.22	Feedback disconnection detection time	0.0 ~ 3600.0S	0.1S	10.0	○
FA.23	reserve	—	—	0	◆
FA.24	RS485 communication abnormal action selection	0: Protection action and free stop 1: Alarm and keep the status quo and continue to run 2: Alarm and stop according to the set stop mode	1	1	×

FA.25	RS485 communication timeout detection time	0.0: Indicates no detection for 0.1 ~ 100.0s Note: No communication timeout detection is performed during shutdown	0.1s	5.0	○
FA.26	Panel communication abnormal action selection	0: Protection action and free stop 1: Alarm and keep the status quo and continue to run 2: Protection action and stop according to the set stop mode	1	1	×
FA.27	Panel communication timeout detection time	0.0 ~ 100.0s	0.1s	1.0	○
FA.28	EEPROM read and write error action selection	0: Protection action and coast to stop 1: Alarm and continue to run	1	0	×
FA.29	Motor overload protection threshold	0 ~ 200%*Motor rated current	1%	150%	○
FA.30	Motor overload protection detection time	0 ~ 60000S	1S	100	○
FA.31	Inverter overload protection threshold	0 ~ 200%*Inverter rated current	1%	150%	○

FA.32	Inverter overload protection detection time	0 ~ 60000S	1S	60	○
FA.33-FA.35	reserve	—	—	0	◆
FB group-RS485 communication parameters					
FB.00	Protocol selection	0: MODBUS 1: Custom	1	0	×
FB.01	local address	0: Broadcast address 1 to 247: Slave station	1	1	×
FB.02	Communication baud rate setting	0: 2400BPS 1: 4800BPS 2: 9600BPS 3: 19200BPS 4: 38400BPS 5: 115200BPS	1	3	×
FB.03	Data Format	0: No parity (N, 8, 1) for RTU 1: Even parity (E, 8, 1) for RTU 2: Odd parity (0, 8, 1) for RTU 3: No parity (N, 1) 8, 2) for RTU 4: Even parity (E, 8, 2) for RTU 5: Odd parity (0, 8, 2) for RTU ASCII mode is temporarily reserved	1	0	×

FB.04	Local answer delay	0 ~ 200ms	1ms	5	×
FB.05	Transmission response processing	0: The write operation has a response 1: The write operation does not respond	1	0	×
FB.06	proportional linkage coefficient	0.01 ~ 10.00	0.01	1.00	○
FB.07	Communication mode selection	LED units digit: Communication mode selection 0: General mode 1: MD380 mode 2: BD600 mode 3: CHF100A mode 4: GD20 mode LED ten digit: broadcast frequency source selection 0: host set frequency 1: host frequency source A 2: host frequency source B LED hundred digit: reserved LED thousand digit: reserved	1	00	×

FB.08	Communication Display Selection	LED one's digit: communication bus voltage display selection 0: normal display 1: enlarged 10 times 2: enlarged 100 times 3: reduced by 10 times 4: reduced by 100 times LED ten's digit: communication current display selection 0: normal display 1: enlarged 10 times 2: Enlarged by 100 times 3: Reduced by 10 times 4: Reduced by 100 times LED hundreds digit: Operating frequency display selection 0: Normal display 1: Enlarged by 10 times 2: Enlarged by 100 times 3: Reduced by 10 times 4: Reduced by 100 times LED thousand digits :reserve	1	000	×
FC group - advanced functions and performance parameters					
FC.00	Dynamic braking function setting	0: Invalid 1: Valid all the way 2: Valid only during deceleration	1	1	×

FC.01	Dynamic braking starting voltage	220V: 340 ~ 380V 360V 380V: 660 ~ 760V 680V	1V	Model setting	○
FC.02	Dynamic braking hysteresis voltage	220V: 10 ~ 100V 5V 380V: 10 ~ 100V 10V	1V	Model setting	○
FC.03	Dynamic braking action ratio	10 ~ 100%	1%	100%	○
FC.04	Power failure restart settings	0: Disabled 1: Start from the starting frequency 2: Start by speed tracking	1	0	×
FC.05	Power failure restart waiting time	0.0 ~ 60.0s	0.1s	5.0	×
FC.06	Fault automatic reset times	0 to 100 is set to 100 to indicate that the number of times is not limited, that is, countless times	1	0	×
FC.07	Fault automatic reset interval time	0.1 ~ 60.0s	0.1	3.0	×
FC.08	Cooling Fan Control	0: Automatic control mode 1: It keeps running during the power-on process 2. The fan operates when the temperature is higher than 50℃, and the fan does not operate when the temperature is lower than 45℃. 3. The fan operates when starting, and does not operate after stopping.	1	0	○

FC.09	Operation restriction function password	0 ~ 65535 Note 1: The password is set successfully, it will take 3 minutes to take effect Note 2: This function parameter cannot be initialized	1	0	○
FC.10	Operation limit function selection	0: Disable 1: Valid Note: This function parameter cannot be initialized	1	0	○
FC.11	limited time	0 ~ 65535(h) Note: This function parameter cannot be initialized	1	0	×
FC.12	Instantaneous power down frequency reduction point	220V: 180 ~ 330V 250V 380V: 300 ~ 550V 450V	1V	Model setting	×
FC.13	Instantaneous power failure frequency reduction coefficient	0: Instantaneous stop non-stop function is invalid 1 ~ 100	1	0	○
FC.14	sag control	0.00 ~ 10.00Hz Note: When the value is 0.00, it is invalid; when F0.18=1 (high frequency mode), the upper limit of the value of this function code is 100.0Hz	0.01Hz	0.00	×
FC.15	Speed Tracking Wait Time	0.1 ~ 5.0S	0.1S	1.0	×
FC.16	Speed tracking current limit level	80% ~ 200%*Inverter rated current	1%	100%	×

FC.17	Speed tracking speed	1 ~ 125	1	25	×
FC.18	PWM mode	LED one's digit: PWM synthesis mode 0: full frequency seven-segment 1: seven-segment to five-segment LED ten's place: PWM temperature correlation 0: invalid 1: valid LED hundreds's place: PWM frequency correlation 0: both invalid 1: low frequency adjustment, high Frequency adjustment 2: low frequency adjustment, high frequency adjustment 3: low frequency adjustment, high frequency adjustment LED thousand digit: flexible PWM function 0: invalid 1: valid	1	0001	×

FC.19	Voltage control function	LED units digit: AVR function 0: Invalid 1: Valid throughout the whole process 2: Invalid only when decelerating Oscillation suppression selection 0: Invalid 1: Oscillation suppression mode 1 2: Oscillation suppression mode 2 3: Oscillation suppression mode 3		2112	×
FC.20	Oscillation suppression onset frequency	0.00 ~ 300.00Hz	0.01	Model setting	○
FC.21	Flux Brake Selection	0 ~ 100 0: Invalid	1	0	○
FC.22	Energy saving control coefficient	0 ~ 100 0: Invalid 1: Automatic energy-saving operation Note: Energy-saving operation is only valid for ordinary V/F control	1	0	○
FC.23	Multi-speed priority enable	0: Invalid 1: Multi-step speed is given priority over F0.07	1	0	×

FC.24	Jog priority enable	0: Invalid 1: When the inverter is running, the jog priority is the highest	1	0	×
FC.25	special function	LED units digit: AO2 and DO output selection 0: AO2 valid 1: DO valid LED tens digit: IPM fault setting 0: shield this fault 1: this fault is valid LED hundreds digit: input phase loss fault reset selection 0: cannot be reset 1: After the power supply is normal, the LED thousand digit can be reset : reserved	1	010	×
FC.26	Oscillation suppression upper limit frequency	0.00 ~ 300.00Hz	0.01	50.00	○
FC.27	Oscillation suppression coefficient	1 ~ 500	1	50	○
FC.28	Oscillation suppression voltage	0.0 ~ 25.0%*motor rated voltage	0.1%	5.0	○

FC.29	Wave-by-wave current limiting and anti-overvoltage action selection	select 0 in wave-by-wave current limiting acceleration: invalid 1: valid : Valid LED thousand digit: Anti-overvoltage action selection 0: Invalid 1: Valid	1	0011	○
FC.30	Dedicated function selection	LED one's digit: straight up function selection 0: invalid 1: valid	1	00	○
FD group - reserved parameters					
FE.00	LCD language selection (only valid for LCD panel)	0: Chinese 1: English 2: Reserved	1	0	○

FE.01	M-FUNC key function selection	0: JOG (jog control) 1: Switch between forward and reverse rotation 2: Clear the frequency set by the ▲/▼ keys on the panel 3: Switch between local operation and remote operation (reserved) 4: Reverse	1	0	×
FE.02	STOP/RST key function selection	0: Valid only for panel control 1: Valid for both panel and terminal control 2: Valid for both panel and communication control 3: Valid for all control modes	1	3	○
FE.03	STOP key + RUN key emergency stop function	0: Invalid 1: Coast to stop	1	1	○
FE.04	Closed loop display coefficient	0.01 ~ 100.00	0.01	1.00	○
FE.05	Load speed display coefficient	0.01 ~ 100.00	0.01	1.00	○
FE.06	Linear velocity coefficient	0.01 ~ 100.00	0.01	1.00	○
FE.07	Encoder adjustment rate	1 ~ 100	1	70	○
FE.08	Running status monitoring parameter selection 1 (main	0 ~ 57	1	0	○

	display)				
FE.09	Running status monitoring parameter selection 2 (auxiliary display)	0 ~ 57	1	5	○
FE.10	Stop state monitoring parameter selection 1 (main display)	0 ~ 57	1	1	○
FE.11	Stop state monitoring parameter selection 2 (auxiliary display)	0 ~ 57	1	13	○
FE.12	Parameter display mode selection	LED units digit: function parameter display mode selection 0: display all function parameters 1: display only the parameters different from the factory defaults 2: display only the parameters modified after the last power-on (reserved) LED ten digit: monitor parameter display mode selection 0: only display main monitoring parameters 1: alternate display of main and auxiliary (interval time 1S) LED hundreds digit: adjustment frequency display selection 0: display frequency 1: only display status monitoring parameters LED thousand digit: Panel ▲/▼ key adjustment	1	0100	○

		enable 0: valid 1: invalid			
FE.13	parameter initialization	0: No operation 1: All user parameters except motor parameters are restored to factory settings 2: All user parameters are restored to factory settings 3: Clear fault records	1	0	×
FE.14	Parameter write protection	0: All parameters are allowed to be modified (some parameters cannot be modified during operation) 1: Only frequency setting F0.12, F0.13 and this function code are allowed to be modified Code and F0.00 are invalid	1	0	○
FE.15	Parameter copy function	0: No operation 1: Upload parameters to the panel 2: Download all function code parameters to the inverter 3: Download all function code parameters except the motor parameters to the inverter Note 1: When parameter download is selected, the software will determine the inverter power specification Whether it is consistent, if not, the	1	0	×

		parameters related to the model will not be modified. Note 2: Only the external keyboard KB2 has the copy function, and the copying of the ordinary keyboard will increase the error.			
FE.16	Encoder FM start bit selection	0: LED ones digit 1: LED ten digit 2: LED hundreds digit 3: LED thousand digit	1	1	○
FE.17	User macro selection (reserved)	—	—	0	◇

Chapter 5 Communication Protocol

1. RTU mode and format

When the controller communicates on the Modbus bus in RTU mode, each 8-bit byte in the information is divided into two 4-bit hexadecimal characters.

The main advantage of the mode is that it transmits a higher density of characters than the ASCII mode at the same baud rate, and each message must be transmitted continuously.

(1) The format of each byte in RTU mode

Coding system: 8-bit binary, hexadecimal 0-9, AF.

Data bits: 1 -bit start bit, 8-bit data (low-order first), 1-bit stop bit , and parity bits can be selected .

(Refer to the RTU data frame for the sequence diagram)

Error Check Area: Cyclic Redundancy Check (CRC).

(2) RTU data frame bit sequence diagram

with parity

Start	1	2	3	4	5	6	7	8	FAr	Stop

no parity

Start	1	2	3	4	5	6	7	8	Stop

2. Register address and function code of series inverter

(1) Supported function codes

function code	Function Description
03	read multiple registers
06	write a single register
10	Write multiple registers consecutively
13	read a single parameter

(2) Register address

Register function	address
control command input	0x2000
Monitoring parameter reading	0xD000 (0x1D00) ~ 0xD039 (0x1D39)
MODBUS frequency setting	0x2001
MODBUS torque setting	0x2002
MODBUS PID frequency given	0x2003

MODBUS PID feedback setting	0x2004
MODBUS analog output AO1 control	0x2005 (0 ~ 7FFF means 0% ~ 100%)
MODBUS analog output AO2 control	0x2006 (0 ~ 7FFF means 0% ~ 100%)
MODBUS pulse DO output control	0x2007 (0 ~ 7FFF means 0% ~ 100%)
MODBUS digital output terminal control	0x2008 (0 ~ 7FFF means 0% ~ 100%)
parameter settings	0x0000 ~ 0x0F15

(3) 03H Read multiple parameters (up to 8 consecutively read)

I nquiry information frame format:

Address	01H
Function	03H
Starting data address	00H
	01H
Number of Data(Byte)	00H
	02H
CRC CHK High	95H
CRC CHK Low	CBH

Analysis of this data:

01H is the inverter address

03H is read function code

0001H is the starting address similar to F0.01 of the control panel

0002H is the number of items in the read menu, and two items of F0.01 and F0.02

95CBH is a 16-bit CRC verification code

R esponse information frame format (return frame)

Address	01H
Function	03H
DataNum*2	04H
Data1[2Byte]	00H
	64H
Data2[2Byte]	00H
	64H
CRC CHK High	BAH
CRC CHK Low	07H

Analysis of this data:

01H is the inverter address

03H is read function code

04H is the product of the read item*2

0064H is to read the data of item F0.01

0064H is to read the data of item F0.02

BA07H is a 16-bit CRC check code

Example:

name	frame format
Read the data of F0.01 and F0.02	Send frame: 01H 03H 0001H 0002H 95CBH
	Return frame: 01H 03H 04H 0064H 0064H BA07H
Read the data of item F2.01	Send frame: 01H 03H 0201H 0001H D472H
	Return frame: 01H 03H 02H 000FH F840H

Read the monitoring parameters of item d-00 (addresses D000H and 1D00H are common)	Send frame: 01H 03H D000H 0001H BCCAH
	Return frame: 01H 03H 02H 1388H B512H
	Send frame: 01H 03H 1D00H 0001H 8266H
	Return frame: 01H 03H 02H 1388H B512H
Read the status of the inverter when it is stopped (addresses A000H and 1A00H are common, refer to the description of the inverter running status later)	Send frame: 01H 03H A000H 0001H A60AH
	Return frame: 01H 03H 02H 0040H B9B4H
	Send frame: 01H 03H 1A00H 0001H 8312H
	Return frame: 01H 03H 02H 0040H B9B4H
Read the fault code E-19 (address E000H and 1E00H are common, refer to the following inverter fault code table)	Send frame: 01H 03H E000H 0001H B3CAH
	Return frame: 01H 03H 02H 0013H F989H
	Send frame: 01H 03H 1E00H 0001H 8222H
	Return frame: 01H 03H 02H 0013H F989H
Read the pre-alarm code A-18 (address E001H is common to 1E01, refer to the inverter pre-alarm code table below)	Send frame: 01H 03H E001H 0001H E20AH
	Return frame: 01H 03H 02H 0012H 3849H
	Send frame: 01H 03H 1E01H 0001H D3E2H
	Return frame: 01H 03H 02H 0012H 3849H

(4) 06H write a single parameter

I nquiry information frame format:

Address	01H
Function	06H
Starting data address	20H
	00H
Data(2Byte)	00H
	01H
CRC CHK Low	43H

CRC CHK High	CAH

Analysis of this data:

01H is the inverter address

06H is write function code

2000H is the control command address

0001H is the forward rotation command

43A1H is a 16-bit CRC verification code

Response information frame format (return frame):

Address	01H
Function	06H
Starting data address	20H
	00H
Number of Data(Byte)	00H
	01H
CRC CHK High	43H
CRC CHK Low	CAH

This piece of data analysis: returns the same input data if set correctly

Example:

name	frame format
Forward	Send frame: 01H 06H 2000H 0001H 43CAH
	Return frame: 01H 06H 2000H 0001H 43CAH
reverse	Send frame: 01H 06H 2000H 0009H 420CH
	Return frame: 01H 06H 2000H 0009H 420CH

downtime	Send frame: 01H 06H 2000H 0003H C20BH
	Return frame: 01H 06H 2000H 0003H C20BH
Free stop	Send frame: 01H 06H 2000H 0004H 83C9H
	Return frame: 01H 06H 2000H 0004H 83C9H
reset	Send frame: 01H 06H 2000H 0010H 43CAH
	Return frame: 01H 06H 2000H 0010H 43CAH
Forward jog	Send frame: 01H 06H 2000H 0002H 03CBH
	Return frame: 01H 06H 2000H 0002H 03CBH
reverse jog	Send frame: 01H 06H 2000H 000AH 020DH
	Return frame: 01H 06H 2000H 000AH 020DH
Set the parameter of item F8.00 to 1	Send frame: 01H 06H 0800H 0001H 4A6AH
	Return frame: 01H 06H 0800H 0001H 4A6AH
The given frequency of MODBUS is 40HZ	Send frame: 01H 06H 2001H 0FA0H D642H
	Return frame: 01H 06H 2001H 0FA0H D642H
MODBUS PID given value is 5V	Send frame: 01H 06H 2003H 01F4H 721DH
	Return frame: 01H 06H 2003H 01F4H 721DH
MODBUS PID feedback value is 4V	Send frame: 01H 06H 2004H 0190H C237H
	Return frame: 01H 06H 2004H 0190H C237H
MODBUS torque is set to 80%	Send frame: 01H 06H 2002H 0320H 22E2H
	Return frame: 01H 06H 2002H 0320H 22E2H
Validation user password (address AD00H and 1C00H common)	Send frame: 01H 06H AD00H 0001H 68A6H
	Return frame: 01H 06H AD00H 0001H 68A6H

	Send frame: 01H 06H 1C00H 0001H 4F9AH
	Return frame: 01H 06H 1C00H 0001H 4F9AH
Validation operation restriction function password (address AD01H and 1C01H Universal)	Send frame: 01H 06H AD01H 0002H 7967H
	Return frame: 01H 06H AD01H 0002H 7967H
	Send frame: 01H 06H 1C01H 0002H 5E5BH
	Return frame: 01H 06H 1C01H 0002H 5E5BH
MODBUS analog output AO1 control output 5V	Send frame: 01H 06H 2005H 3FFFH C3BBH
	Return frame: 01H 06H 2005H 3FFFH C3BBH
MODBUS analog output AO2 control output 10V	Send frame: 01H 06H 2006H 7FFFH 027BH
	Return frame: 01H 06H 2006H 7FFFH 027BH
MODBUS pulse DO output control output 25KHz	Send frame: 01H 06H 2007H 3FFFH 627BH
	Return frame: 01H 06H 2007H 3FFFH 627BH
MODBUS digital output terminal Y1 control output	Send frame: 01H 06H 2008H 0001H C208H
	Return frame: 01H 06H 2008H 0001H C208H

(5) 10H Write multiple parameters continuously

I nquiry information frame format:

Address	01H
Function	10H
Starting data address	01H
	00H
Number of Data(Byte)	00H

	02H
DataNum*2	04H
Data1(2Byte)	00H
	01H
Data2(2Byte)	00H
	02H
CRC CHK High	2EH
CRC CHK Low	3EH

Analysis of this data:

01H is the inverter address

10H is write function code

0100H is the starting address similar to the F1.00 item of the control panel

0002H is the number of registers

04H is the total number of bytes (2*number of registers)

0001H is the data of item F1.00

0002H is the data of item F1.01

2E3EH is a 16-bit CRC verification code

R esponse information frame format (return frame):

Address	01H
Function	10H
Starting data address	01H
	00H
Number of Data(Byte)	00H
	02H
CRC CHK High	40H
CRC CHK Low	34H

Analysis of this data:

01H is the inverter address

10H is write function code

0100H is to write the data of item F1.00

0002H is the number of items in the write menu, and two items of F1.00 and F1.01

4034H is a 16-bit CRC check code

Example:

name	frame format
Set the parameters of F1.00 and F1.01 The numbers are 1 and 0.02	Send frame: 01H 10H 0100H 0002H 04H 0001H 0002H 2E3EH
	Return frame: 01H 10H 0100H 0002H 4034H
Forward rotation and communication given frequency is 50Hz	Send frame: 01H 10H 2000H 0002H 04H 0001H 1388H 36F8H
	Return frame: 01H 10H 2000H 0002H 4A08H
Set the parameter of item F1.00 to 1	Send frame: 01H 10H 0100H 0001H 02H 0001H 7750H
	Return frame: 01H 10H 0100H 0001H 0035H

(6) 13H Read a single parameter (including attribute, minimum value, maximum value)

I nquiry information frame format:

Address	01H
Function	13H
Starting data address	00H
	0CH
Number of Data(Byte)	00H
	04H

CRC CHK High	45H
CRC CHK Low	CBH

Analysis of this data:

01H is the inverter address

13H is read function code

000CH is the starting address similar to item F0.12 of the control panel

0004H is the number of registers

45CBH is a 16-bit CRC verification code

I nquiry information frame format (return frame):

Address	01H
Function	13H
Starting data address	00H
	12H
Data1(2Byte)	13H
	88H
Data2(2Byte)	03H
	22H
Data3(2Byte)	00H
	00H
Data4(2Byte)	13H
	88H
CRC CHK High	28H
CRC CHK Low	31H

Analysis of this data:

01H is the inverter address

13H is write function code
000CH is the starting address similar to item F0.12 of the control panel
1388H is the parameter value
0322H is the attribute value
0000H is the minimum value
1388H is the maximum value
2831H is a 16-bit CRC check code

Example:

name	frame format
Read the parameter value of item F0.12	Send frame: 01H 13H 000CH 0001H 85CAH
	Return frame: 01H 13H 02H 1388H B1D2H
Read parameter value + attribute value of item F0.12	Send frame: 01H 13H 000CH 0002H C5CBH
	Return frame: 01H 13H 04H 1388H 0322H FCE4H
Read parameter value + attribute value + minimum value of item F0.12	Send frame: 01H 13H 000CH 0003H 040BH
	Return frame: 01H 13H 06H 1388H 0322H 0000H 628BH
Read parameter value + attribute value + minimum value + maximum value of item F0.12	Send frame: 01H 13H 000CH 0004H 45CBH
	Return frame: 01H 13H 08H 1388H 0322H 0000H 1388H 2831H

3. Other register address function description:

Function Description	address definition	Data meaning statement		
		byte	bit	meaning
Inverter running status	A000H(1 A00H)		Bit7	0: no action 1: Overload pre-alarm
			Bit6 ~ Bit5	0 : INV_220V 1 : INV_380V 2 : INV_660V 3 : INV_1140V
			Bit4	0: no action 1: Power-down storage
			B it3	0: no action 1: reset
			Bit2 ~ Bit1	0: no action 1: Static tuning 2: Dynamic tuning
		Byte1	Bit0	0: Operation panel running command

		Byte0	Bit7	channel 1: Terminal running command channel 2: Communication running command channel 3: Reserved
Inverter running status	A000H(1A00H)	Byte0	Bit6	0: no action 1: The bus voltage is normal
			Bit5	0: no action 1: undervoltage
			Bit4	0: no action 1: jog
			Bit3	0: Forward rotation 1: Invert
			Bit2 ~ Bit1	1 : Speed up operation 2 : Deceleration operation 3 : Running at a constant speed
			Bit0	0: stop state 1: Running state
Read the fault code of the inverter	E000H(1E00H)	Address E000H and 1E00H are common (see fault code table, read function code 03H example))		
Read the inverter fault alarm code	E001H(1E01H)	The address E001H is common to 1E01H (see the pre-alarm code table and the example of reading function code 03H)		
User password validation	AD00H(1C00H)	Address AD00H is common to 1C00H (see the example of writing function code 06H)		

Run Restricted Password Validation	AD01H(1C01H)	Address AD00H is common to 1C00H (see the example of writing function code 06H)

4. Inverter fault code table:

error code	keyboard display	accident details
0000H	——	No trouble
0001H	E-01	Overcurrent during accelerated operation
0002H	E-02	Overcurrent during deceleration operation
0003H	E-03	Overcurrent in constant speed operation
0004H	E-04	Overvoltage during accelerated operation
0005H	E-05	Overvoltage during deceleration operation
0006H	E-06	Overvoltage during constant speed operation
0007H	E-07	Bus undervoltage
0008H	E-08	Motor overload
0009H	E-09	Inverter overload
000AH	E-10	Inverter dropped load
000BH	E-11	power module failure
000CH	E-12	Input side phase loss
000DH	E-13	Phase loss or current imbalance on the output side
000EH	E-14	Output short circuit to ground fault
000FH	E-15	Radiator overheating 1
0010H	E-16	Radiator overheating 2
0011H	E-17	RS485 communication failure

0012H	E-18	Keyboard communication failure
0013H	E-19	External device failure
0014H	E-20	Current detection error
0015H	E-21	Motor tuning failure
0016H	E-22	EEPROM read and write failure
0017H	E-23	parameter copy error
0018H	E-24	PID feedback disconnection
0019H	E-25	Voltage feedback disconnection
001AH	E-26	Running time limit reached
001BH	E-27	Coprocessor communication failure
001CH	E-28	Encoder disconnection fault
001DH	E-29	Excessive speed deviation fault
001EH	E-30	Overspeed fault

5. Inverter pre-alarm code table:

warning code	keyboard display	accident details
0000H	——	No trouble
0009H	A-09	Inverter overload pre-alarm
0011H	A-17	RS485 communication failure alarm
0012H	A-18	Keyboard communication failure alarm
0015H	A-21	Motor Tuning Alarm
0016H	A-22	EEPROM read and write failure alarm
0018H	A-24	PID feedback disconnection alarm

6. Control command word format (see the example of writing function code 06H):

address	bit	meaning
2000H	Bit7 ~ Bit5	reserve
	Bit4	0: no action 1: reset
	Bit3	0: Forward rotation 1: Invert
	Bit2 ~ Bit0	100: Free stop 011: Downtime 010: Jog operation 001: run
2008H (press position 1 to output, press position 0 to close)	Bit7 ~ Bit4	reserve
	Bit3	Programmable relay R2 output
	Bit2	Programmable relay R1 output
	Bit1	Open collector output terminal Y2
	Bit0	Open collector output terminal Y1

7. Parameter attribute table:

bit	meaning
Bit15	reserve
Bit14	menu
Bit13	base
Bit12	reset to factory defaults
Bit11	EEPROM

Bit10~Bit9	"○":01 "×":10 "◆":11 "◇":00		
Bit8	symbol		
Bit7~Bit3	1:00000 V:00001 A:00010 rpm:00011 HZ:00100 %:00110 S:01000	KHZ:01100 KW:01010 om:01110 ms:01001 MA:01011 KM:01101 CM:01111	us:10001 HZ/S:10000 mh :10010 C:10011 m/s: 10100 H:10101 KWH:10110
Bit2~Bit0	decimal point		

8. The meaning of the error code that the slave responds to the abnormal information:

error code	illustrate
01H	Illegal function code
02H	illegal address
03H	illegal data
04H	illegal register length
05H	CRC check error
06H	Parameters cannot be modified during operation
07H	Parameters cannot be modified
08H	The upper computer control command is invalid
09H	Parameters are password protected
0AH	wrong password

9. Corresponding communication addresses of all parameters of the series inverter:

function code	mailing address
F0.00 ~ F0.22	0000H ~ 0016H
F1.00 ~ F1.37	0100H ~ 0125H
F2.00 ~ F2.17	0200H ~ 0211H
F3.00 ~ F3.08	0300H ~ 0308H
F4.00 ~ F4.27	0400H ~ 041BH
F5.00 ~ F5.24	0500H ~ 0518H
F6.00 ~ F6.52	0600H ~ 0634H
F7.00 ~ F7.36	0700H ~ 0724H
F8.00 ~ F8.33	0800H ~ 0821H
F9.00 ~ F9.73	0900H ~ 0949H
FA.00 ~ FA.35	0A00H ~ 0A23H
FB.00 ~ FB.07	0B00H ~ 0B07H
FC.00 ~ FC.28	0C00H ~ 0C1CH
FE.00 ~ FE.15	0E00H ~ 0E0FH
FF.00 ~ FF.22	0F00H ~ 0F16H
d-00 ~ d-57	D000H (1D00H) ~ D039H (1D39H)

Notice:

1. In the above examples, the address of the inverter is selected as 01, which is for the convenience of explanation; when the inverter is a slave, the address is set in the range of 1 to 247. If any data in the frame format is changed, check the The code should also be recalculated. You can download the CRC16-bit check code calculation tool on the Internet.

2. The starting address of the monitoring item is D000, and each item is offset with the corresponding hexadecimal value based on this address, and then added to the starting address. For example: the monitoring start item is d- **00** , the corresponding start address is D000H (**1D00H**), now read the monitoring item d- **18** , **18 - 00** = 18, 18 is converted into hexadecimal as 12H, then d-18 The read address is D000H+12H = D012H (**1D00H+12H = 1D12H**), and the addresses D000H and 1D00H are common.

3. The frame format when the response information of the slave is abnormal: inverter address + (80H + function code) + error code + 16-bit CRC check code; if the slave returns the frame is 01H + 83H + 04H + 40F3H; 01H is the slave machine address, 83H is 80H+03H, which means read error, 04H means illegal data length, and 40F3H is 16-bit CRC check code.

10. Read the inverter running state parameter address:

function code	address (hex)	address (decimal)	Function description
d-00	1d00	7424	Output frequency
d-01	1d01	7425	set frequency
d-02	1d02	7426	Motor estimated frequency
d-03	1d03	7427	Main set frequency
d-04	1d04	7428	Auxiliary setting frequency
d-05	1d05	7429	Output current
d-06	1d06	7430	The output voltage
d-07	1d07	7431	output torque
d-08	1d08	7432	Motor speed (RPM/min)
d-09	1d09	7433	Motor power factor
d-10	1d0a	7434	Running speed (m/s)
d-11	1d0b	7435	Set line speed (m/s)
d-12	1doc	7436	Bus voltage (V)
d-13	1d0d	7437	Input voltage (V)
d-14	1d0e	7438	PID set value (V)

d-15	1d0f	7439	PID feedback value (V)
d-16	1d10	7440	Analog input AI1 (V/mA)
d-17	1d11	7441	Analog input AI2(V)
d-18	1d12	7442	Pulse frequency input (KHz)
d-19	1d13	7443	Analog output AO1(V/mA)
d-20	1d14	7444	Analog output AO2(V)
d-21	1d15	7445	Input terminal status
d-22	1d16	7446	Output terminal status
d-23	1d17	7447	Inverter running status
d-24	1d18	7448	Current segment number of multi-speed
d-25	1d19	7449	Pulse frequency output (Hz)
d-26	1d1a	7450	reserve
d-27	1d1b	7451	current count value
d-28	1d1c	7452	Set count value
d-29	1d1d	7453	Current timing value (s)
d-30	1d1e	7454	Set timing value (s)
d-31	1d1f	7455	current length
d-32	1d20	7456	set length

Chapter 6 Abnormal Diagnosis and Exclusion

6.1 Fault information and troubleshooting methods

During operation, if an abnormality occurs, the inverter immediately blocks the PWM output and enters the fault protection state. At the same time, the flashing fault code on the keyboard indicates the current fault information. At the same time, the fault indicator ALM lights up. At this time, you need to check the cause of the fault and the corresponding treatment method according to the methods in this section. If the problem still cannot be solved, please contact our company directly. For the corresponding solutions, please refer to Table 6-1 (A/B) Troubleshooting and troubleshooting.

error code	name	Possible cause of failure	Troubleshooting
E-01	Overcurrent during accelerated operation	Acceleration time is too short (including tuning process)	Extend acceleration time
		Restarting a rotating motor	Set to start after DC braking or start after speed tracking
		Inverter power is too small	Choose a frequency converter with a large power class
		Improper setting of V/F curve or torque boost	Adjust V/F curve or torque boost amount
E-02	Overcurrent during deceleration operation	Deceleration time is too short (including tuning process)	Extend deceleration time
		Inverter power is too small	Choose a frequency converter with a large power class
		Load inertia is too large	External braking resistor or braking unit

E-03	Overcurrent in constant speed operation	low grid voltage	Check input power
		The load is mutated or abnormal	Check load or reduce load sudden change
		Inverter power is too small	Choose a frequency converter with a large power class
E-04	Overvoltage during accelerated operation	Abnormal input voltage (including tuning process)	Check input power
		Restarting a rotating motor	Set to start after DC braking or start after speed tracking
		special potential load	External braking resistor or braking unit
E-05	Overvoltage during deceleration operation	Deceleration time is too short (including tuning process)	Extend deceleration time
		Load inertia is too large	External braking resistor or braking unit
		Abnormal input voltage	Check input power
E-06	Overvoltage during constant speed operation	Abnormal input voltage	Check input power
		special potential load	External braking resistor or braking unit
E-07	Bus undervoltage	The input voltage is abnormal or the contactor (relay) is not picked up	Check the power supply voltage or seek service from the manufacturer
E-08	Motor overload	Improper setting of V/F curve or torque boost	Adjust V/F curve and torque boost amount
		The grid voltage is too low	Check grid voltage
		The motor is blocked or the load suddenly changes too much	Check the load

		Motor overload protection factor setting is incorrect	Correctly set the motor overload protection factor
E-09	Inverter overload	Improper setting of V/F curve or torque boost	Adjust V/F curve and torque boost amount
		The grid voltage is too low	Check grid voltage
		Acceleration time is too short	Extend acceleration time
		The motor is overloaded	Choose a more powerful inverter
E-10	Inverter dropped load	The output current is less than the load drop detection value	Check the load
E-11	power module failure	Inverter output short circuit or ground	Check motor wiring
		Inverter instantaneous overcurrent	See Overcurrent Countermeasures
		Air duct blocked or fan damaged	Clear the air duct or replace the fan
		The control board is abnormal or has serious interference	Seek service from the manufacturer
		Damaged power device	Seek service from the manufacturer
E-12	Input side phase loss	Power input phase loss	Check power and connections
E-13	Phase loss or current imbalance on the output side	Output U, V, W have phase loss	Check output wiring
E-14	Output short circuit to ground Fault	reserve	reserve

E-15	Radiator overheating 1	Ambient temperature is too high	lower ambient temperature
		damaged fan	Replace the fan
E-16	Radiator overheating 2	Air duct blocked	Evacuate the airway
E-17	RS485 communication failure	Does not match the baud rate of the host computer	Adjust the baud rate
		RS485 channel interference	Check whether the communication cable is shielded and whether the wiring is reasonable. If necessary, consider connecting a filter capacitor in parallel.
		Communication timed out	Retry
E-18	Keyboard communication failure	Damaged cable between keyboard and control board	Replacing the cable between the keyboard and the control board
E-19	External device failure	External device fault input terminal is closed	Disconnect the external device fault input terminal and clear the fault (pay attention to check the cause)
E-20	Current detection error	Hall device or amplifier circuit failure	Seek service from the manufacturer
		Auxiliary power failure	
		Poor connection of hall or power board connection	

E-21	Motor tuning failure	Motor parameter setting error	Reset motor parameters
		Inverter and motor power specifications are serious Mismatch	Seek service from the manufacturer
		Tuning Timeout	Check motor wiring
E-22	EEPROM read and write failure	EEPROM failure	Seek service from the manufacturer
E-23	parameter copy error	Data error when the inverter parameters are uploaded to the operation panel	Check the operation panel cable connection
		Data error when parameters are downloaded from the operator panel to the inverter	Check the operation panel cable connection
		Download parameters directly without copying and uploading parameters	Upload parameters first, then download
E-24	PID feedback disconnection	PID feedback line loose	Check feedback connection
		The feedback amount is less than the disconnection detection value	Adjust the detection input threshold
E-25	Voltage feedback disconnection	The feedback amount is less than the disconnection detection value	Adjust the detection input threshold
E-26	Running time limit arrive	Running time limit reached	Seek service from an agent
E-27	coprocessor communication Fault	reserve	reserve

E-28	Encoder disconnection fault	reserve	reserve
E-29	Excessive speed deviation Fault	reserve	reserve
E-3 4	Bus detection fault	reserve	reserve
E-00	Indicates no fault code	reserve	reserve

Table 6-1 (A) Troubleshooting and troubleshooting

advance fault code	name (announcement)	Possible cause of failure	Troubleshooting
A-05	Over-torque pre-alarm	Restarting a rotating motor The load is mutated or abnormal Inverter power is too small	FC.30 Tens bit setting 1
A-09	Inverter overload pre-alarm	Same as E-09	Same as E-09
A-17	RS485 communication failure alarm	Same as E-17	Same as E-17

A-18	Keyboard communication failure alarm	Same as E-18	Same as E-18
A-21	Motor Tuning Alarm	Same as E-21	Same as E-21
A-22	EEPROM read and write failure alarm	Same as E-22	Same as E-22
A-24	PID feedback disconnection alarm	Same as E-24	Same as E-24
A-00	Indicates no alarm	reserve	reserve

Table 6-1 (B) Troubleshooting and troubleshooting

6.2 Exception Handling

When the inverter is running, the common abnormal phenomena and countermeasures are shown in Table 6-2:

unusual phenomenon		Possible causes and countermeasures
Motor	keyboard not showing	Check whether there is a power failure, whether the input power is missing phase, and whether the input power cable is connected incorrectly

does not turn	There is no display on the keyboard, but the charging indicator in the machine is on	Check whether there are problems with the wiring, sockets, etc. related to the keyboard, measure the voltage of each control power supply in the machine, so as to confirm whether the switching power supply is working normally. Well, whether the start-up vibration is damaged or the Zener tube is normal.
	The motor is humming	The motor load is too heavy, try to reduce the load
	No exception found	Confirm whether it is in the trip state or not reset after tripping, whether it is in the state of power off and restarting, whether the keyboard has been reset, whether it has entered the program running state, multi-speed running state, specific running state or non-running state, you can try to restore the factory value approach.
		Check if the run command is given
		Check if the running frequency is set to 0
The motor cannot accelerate and decelerate smoothly		The acceleration/deceleration time setting is inappropriate, increase the acceleration/deceleration time
		The current limit value is set too small, increase the limit value
		Overvoltage protection action during deceleration, increase deceleration time
		The carrier frequency is not set properly, the load is too heavy or there is oscillation

	The load is too heavy and the torque is not enough. Increase the torque boost value in V/F mode. If it still can't meet the requirements, you can use the automatic torque boost mode (A880 defaults to this method). At this time, pay attention to the motor parameters and the actual value. If it still can't If the requirements are met, it is recommended to use the magnetic flux vector control mode. At this time, it is still necessary to pay attention to whether the motor parameters are consistent with the actual values, and it is better to perform motor parameter tuning.
	The motor power does not match the inverter power. Please set motor parameters to actual values
	One tow multiple motors. Please change the torque boost mode to manual lift mode
The motor can rotate but cannot adjust the speed	Inappropriate setting of upper and lower frequency limits
	The frequency setting is too low, or the frequency gain setting is too small
	Check whether the speed control mode used is consistent with the set frequency given
	Check whether the load is too heavy, whether it is in the state of overvoltage stall or overcurrent limit
The speed of the motor fluctuates during operation	The load fluctuates frequently, try to minimize its change
	The frequency converter is seriously out of line with the motor ratings. Please set the motor parameters to actual values
	The frequency setting potentiometer is in poor contact or the frequency setting signal fluctuates. Change to digital frequency given mode or increase filter time constant of analog input signal
The direction of rotation of	Adjust the phase sequence of output terminals U, V, W

the motor is opposite	Set the running direction (P0.21=1) to reverse
	Direction uncertainty caused by output phase loss, please check the motor wiring immediately

Chapter VII Maintenance and Maintenance

7.1 Daily maintenance and maintenance

Changes in the use environment of the inverter, such as the influence of temperature, humidity, smoke, etc., as well as the aging of the internal components of the inverter, may cause various failures of the inverter. Therefore, in the process of storage and use, the inverter must be checked daily and maintained regularly.

When the inverter is running normally, please confirm the following items:

1. Check whether the motor has abnormal sound and vibration.
2. Whether the inverter and motor are abnormally heated.
3. Whether the ambient temperature is too high.
4. Whether the load current value is the same as usual.
5. Whether the cooling fan of the inverter is running normally.

7 .2 Regular maintenance and maintenance

1. Regular maintenance

In order to make the inverter work normally for a long time, it is necessary to carry out regular maintenance and maintenance according to the service life of the electronic components inside the inverter. The service life of the electronic components of the inverter is also different due to the different conditions of use. The maintenance period of the inverter

shown in the table below is for reference only when the user uses it.

2. Regular maintenance

According to the usage, the user can conduct a regular routine inspection of the inverter in a short period of time or every 3 to 6 months to eliminate hidden troubles and ensure long-term high-performance and stable operation.

General inspection content:

1. Check whether the main circuit terminals are in poor contact, and whether there are overheating traces at the connections of cables or copper bars, screws, etc.

2. Check whether the power cables and control wires are damaged, especially whether the outer insulating layer has cracks or cuts.

3. Whether the connection between the power cable and the cold-pressed joint is loose, and whether the insulating wrapping tape at the connection is aging and falling off.

4. Thoroughly clean the dust on the printed circuit board, air duct, etc., and take anti-static measures when cleaning.

5. For the insulation test of the inverter, all connections between the inverter and the power supply and between the inverter and the motor must be removed first, and all the main circuit input and output must be removed.

After the outgoing terminal is reliably short-circuited with the wire, test the ground. Please use a qualified 500V megohmmeter (or the corresponding voltage range of the insulation tester); do not use

Use a faulty meter. It is strictly forbidden to connect only a single main circuit terminal to ground for insulation test, otherwise there will be danger of damage to the inverter. Do not touch the control terminals.Carry out an insulation test, otherwise the inverter will be damaged. After testing, remember to remove all wires shorting the main circuit terminals.