SUSWE

vector Frequency Inverter
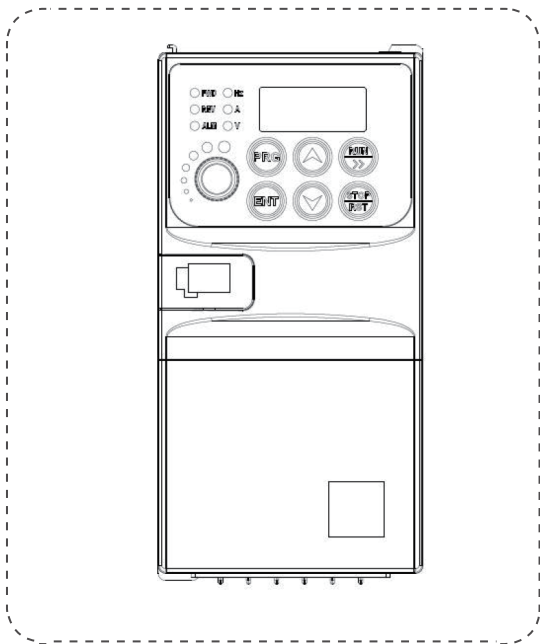
SU-600

SU-600 series

operating specification Manual   V1.0

please read this specification carefully before use
and please safety keep for future reference.

SUSWE

SU-600series
vector frequency converter

operating specification Manual

Thanks for you selecting and using our SU-600 frequency converter products.

Please read this specification manual carefully before using to use this product correctly and safely.

Please read [safety notices] carefully before using.

Please keep this manual properly so that it is convenient for you to check and read when required. Any questions please contact our customer service staff to ask for technical support, our professionals will do best to service for you.

This operating manual provided the relate information of SU-600 frequency converter, the contents include:

◇ safety notices of frequency converter

◇ installation and inspection of frequency converter

◇ wiring instruction of frequency converter

◇ operation instruction of frequency converter

◇ all parameters instruction

◇ communication agreement instruction

◇ troubleshooting

This operating manual suitable to be consulted by the below operators:

◇ system design and model select staffs

◇ installation or wiring staffs

◇ debugging staffs

◇ maintain or maintenance staffs

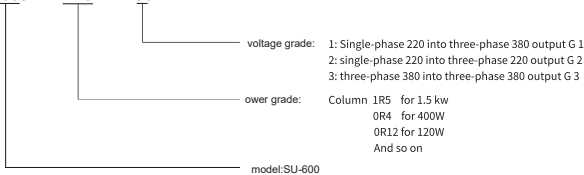# Catalogue

chapter 1 product information

1.1 Naming rules

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SU-600  -  1R5  -  G3
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voltage grade:　1: Single-phase 220 into three-phase 380 output G 1
2: single-phase 220 into three-phase 220 output G 2
3: three-phase 380 into three-phase 380 output G 3

ower grade:　Column 1R5　for 1.5 kw
0R4　for 400W
0R12 for 120W
And so on

model:SU-600

1.2 SU-600 frequency converter series index

Frequency Converter mode	Power supply Capacity (KVA)	Rated input current (A)	Rated output current (A)	Adapted motor	
				kW	HP
Single Phase 220V into three phase 380V 50HZ/60HZ					
SU600-0R75G1	1.5	3.4	2.5	0.75	1
SU600-1R5G1	3	5.0	3.7	1.5	2
SU600-2R2G1	4	5.8	5	2.2	3
SU600-3R7G1	5.9	10.5	9	3.7	5
SU600-5R5G1	8.9	14.6	13	5.5	7.5
SU600-7R5G1	11	21	17	7.5	10
SU600-11R0G1	17	26	25	11	15
SU600-15R0G1	21	35	32	15	20
Single Phase 220V into three phase 220V 50HZ/60HZ					
SU600-0R75G2	1.5	8.2	4	0.75	1
SU600-1R5G2	3	14	7	1.5	2
SU600-2R2G2	4	23	9.6	2.2	3
SU600-3R7G2	5.5	31	17	3.7	4
SU600-5R5G2	8.9	26	25	5.5	5
SU600-7R5G2	21	35	32	7.5	10
SU600-11R0G2	25	50	37.5	11	15
SU600-15R0G2	32	68	40	15	20
Three-phase 380V into three-phase 380V 50HZ/60HZ					
SU600-0R75G3	1.5	3.6	2.5	0.75	1
SU600-1R5G3	3	5.1	4.1	1.5	2
SU600-2R2G3	4	6	5.8	2.2	3
SU600-3R7G3	6.1	10.5	9	4	5
SU600-5R5G3	8.9	14	13	5.5	7.5
SU600-7R5G3	11	21	17	7.5	10
SU600-11R0G3	17	26	25	11	15
SU600-15R0G3	21	35	32	15	20

SU-600value vector specification

2. Product technical indicators and specifications

input	Rated voltage, and frequency		Three-phase (G3 series) 380V; 50 / 60 HZ Three-phase (G2 series) 220V: 50 / 60 HZ
	Allowable range of voltage changes		Three-phase (G3 series) 320V ~460V Three-phase (G2 series) 190V~250V
output	voltage		G3 series; 0~380V G2 series; 0~220V
	frequency		V / F control, simple vector control: 0.0~999.9HZ Advanced vector control, torque control: 0.5~300.0HZ
	overload capacity		110% long term 150% 1 min 180% 5s
	control method		V / F control, simple vector control, advanced vector control, torque control
control characteristic	Frequency to set the resolution	Simulation end input	And 0.1% of the maximum output frequency
		Digital setting	0.1HZ
	Frequency accuracy	analog input	Within 0.2% of the maximum output frequency
		digital input	Set within 0.01% of the output frequency
	V/F control	V / F curve (voltage and frequency characteristic)	Three ways: the first is the linear torque characteristic curve, the second is the square torque characteristic curve, and the third is the user set V / F curve
		Recurrent ascension	Manual setting: 0.0~30.0% of the rated output Automatic lifting: the lifting torque is automatically determined according to the output current and the motor parameters
		Automatic current limiting and pressure limiting	During acceleration, deceleration or stable operation, the stator current and voltage of the motor are automatically detected and suppressed according to a unique algorithm to minimize the possibility of system fault trip
		voltage frequency characteristics	The output pressure frequency ratio is automatically adjusted according to the motor parameters and the unique algorithm
	V/F control	Recurrent characteristics	starting torque: 100% Rated torque at 5.0Hz (VF control) 150% rated torque at 1.0Hz (vector control)
		Current and voltage suppression	The whole current closed-loop control, completely avoid current impact, with perfect overflow pressure suppression function
	Undervoltage inhibition during operation		Especially for users with low grid voltage and frequent grid voltage fluctuations, the system can maintain the longest possible operating time according to unique algorithms and residual energy distribution strategies for the longest possible operating time even within the allowable voltage range
Typical function	Multi-section speed operation		The 7-segment programmable multisegment speed control, and multiple operation modes are optional.
	PID control RS485 Communications		Built-in PID controller (pre-set frequency). Standard configuration of 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 ~ 20 mA (upper and lower limit optional)
		digital input	Operation panel setting, RS485 interface setting, UP / DOWN terminal control, can also be combined with analog input
	output signal	relay output	1-way relay output (TA, TC), up to 17 meaning choices
		analog output	1 analog signal output, the output range is flexibly set between 0-20 mA or 0-10 V, which can realize the output of physical quantities such as set frequency and output frequency
	Automatic voltage stabilization operation		According to the need, dynamic pressure, static pressure and unstable pressure can be selected to obtain the most stable operation effect
	Add and deceleration time setting		0.1S~999.9min Continuous setting can be set
	braking	dynamic braking	The energy braking starting voltage, return voltage and energy braking rate can be adjusted continuously

	DC injection braking	Start frequency of shutdown DC brake: 0.00~ [F0.05] upper limit frequency Brake time: 0.0~30.0s; Brake current: 0.0%~50.0% rated voltage of the motor
	Low noise operation	Carrier frequency 2.0KHZ~20.0KHZ is continuously adjustable to minimize motor noise
	counter	One internal counter for easy system integration
	Run the function	Upper and lower limit frequency setting, frequency jump operation, reverse operation limit, turn difference frequency compensation, feedback amount, RS485 communication, frequency increasing, decreasing control, fault self-recovery operation, etc
show	The operating panel is shown	running state	Output frequency, output current, output voltage, motor speed, set frequency, module temperature, PID setting, feedback amount, analog input and output, etc
		The alarm content	Record multiple operating parameters, such as output frequency, set frequency, output current, output voltage, DC voltage, and module temperature, during the latest fault
defencive function			Over current, over voltage, under voltage, module fault, electronic thermal relay, overheating, short circuit, internal memory fault, etc
environment	ambient temperature		-10℃ ~ + 40℃ (ambient temperature is 40℃ ~50℃, please decrease for use)
	The surrounding humidity		5% ~ 95% RH, anhydrous bead condensation
	surrounding environment		Indoor (no direct sunlight, no corrosion, flammable gas, no oil fog, dust, etc.)
	height		Over 1000 meters, 10% for every 1000 meters
structure	levels of protection		IP20
	cooling-down method		Air-cooled, with fan control
way to install			Wall hanging type, cabinet type

3. Installation and wiring of the frequency converter

3.1 Notes for installation

danger
1. Before wiring, please confirm that the input power supply is cut off. Danger of electric shock and fire.
2. Ask electrical engineering professionals to conduct wiring operations. Danger of electric shock and fire.
3. The grounding terminal must be reliably grounded. (380V: Special 3rd earth) Danger of electric shock and fire.
4. After the emergency stop terminal is connected, it must check whether the action is effective. There was a danger of injury.(The wiring responsibility is borne by the user)
5. Do not touch the output terminal directly. The output terminal of the frequency converter is Risk of having an electric shock and causing a short circuit.
6. Always install the terminal cover before power on. When removing the outer cover, always Risk of electric shock.
7. Cut off the power supply, and wait 5 to 8 minutes to let the remaining power in the machine There is a danger of residual voltage on the electrolytic capacitor.
8. Non-professional technical personnel, do not check and conduct maintenance work. Risk of electric shock.

⚠ pay

1. **Please confirm whether the power supply voltage of the incoming line is consistent with the**
   In danger of injury and fire.
2. **Connect the brake resistance or the brake unit.**
   There is a danger of a fire.
3. **It is best to choose a screwdriver and wrench with a specified torque to tighten the terminal.**
   There is a danger of a fire.
4. **Do not connect the input power cord to the output U, V and W terminals.**
   Adding the voltage to the output terminal will cause internal damage to the frequency converter
5. **Do not remove the front panel cover. Only remove the terminal cover when wiring.**
   May cause internal damage to the frequency converter.

3.2、shape diagram

a. External lead keyboard base dimensions
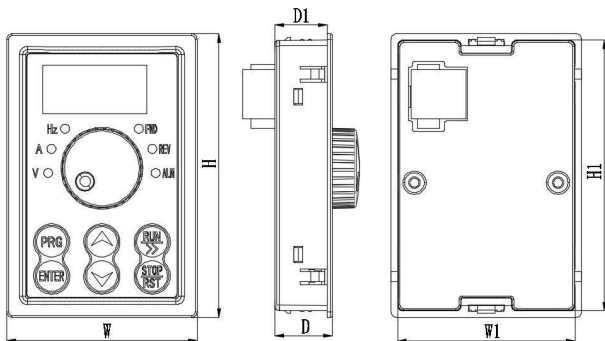
Hole size of keyboard base				Keyboard thickness	
W	W1	H	H1	D	D1
53㎜	49.4㎜	79㎜	75.4㎜	15.9㎜	14.5㎜

b. Form size of the whole machine
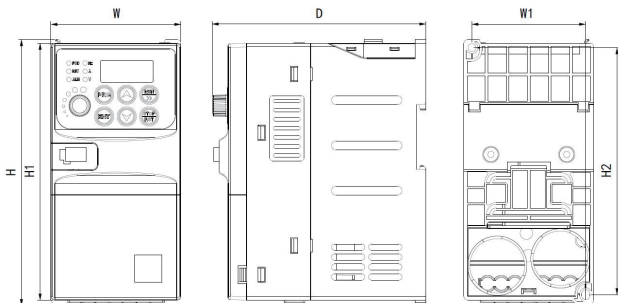
model	H2 (mm)	W1 (mm)	H (mm)	H1 (mm)	W (mm)	D (mm)	mounting hole (mm)
	installation size		Peripheral dimensions				
0.4KW-2.2KW	136.5	63	147	142	72	118.4	4
3.7KW-5.5KW	172.5	78	185	182	87	138	4

3.3 Basic operation wiring

The frequency converter wiring part is divided into the main circuit and the control circuit. The user can open the lid of the output / input terminal to see the main loop terminal and the control loop terminal, and the user must connect correctly according to the wiring circuit below.
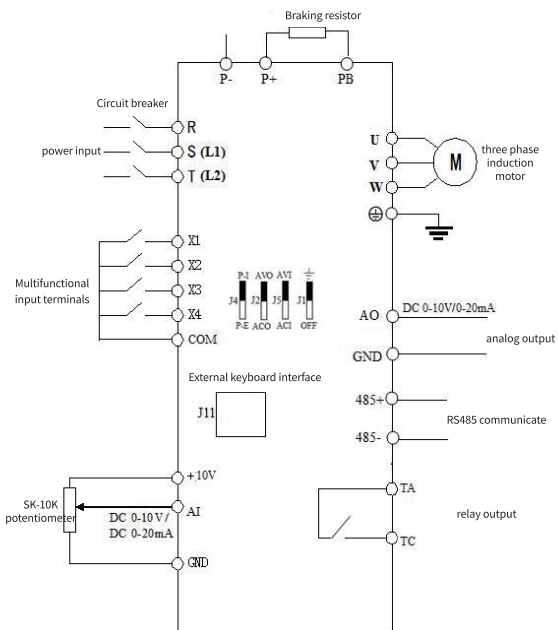
3.4 Control loop terminal

10V	GND	AI	AO	485+	485−	X1	X2	X3	X4	COM	TA	TC

3.5 0.4KW-2.2KW main loop terminal

R	S/L1	T/L2	U	V	W	⏚

3.6 3.7KW-5.5KW main loop terminal

R	S	T	P+	PB	U	V	W	⏚

3.7 Description of the main control board jumper line

J1	
File	It means that the master control panel is ground
OFF keep off	Indicates the master panel ground off (default off)
J2	
AVO file	Indicates the analog volume AO output voltage signal, 0-10V
ACO keep off	Represents the analog AO output current signal, 0-20 mA
J4	
P-I file	Indicates that selecting a built-in keyboard potentiometer (the default is valid)
P-E keep off	It represents the selection of an external keyboard potentiometer
J5	
AVI keep off	Indicates the analog AI input voltage signal, 0-10V
ACI keep off	Represents the analog AI input current signal, 0-20 mA

3.8 Wiring precautions

① When replacing the motor, the input power supply of the frequency converter must be switched off.
② Switch the motor or the power frequency power supply only when the frequency converter stops output.
③ In order to minimize the influence of electromagnetic interference, when the electromagnetic contactor and relay used are equally close to the frequency converter, the additional surge absorption device should be considered.
④ Do not connect the AC input power supply to the frequency converter output terminals U, V, W.
⑤ The external control line of the frequency converter should be equipped with an isolation device or a shielding line.
⑥ The input command signal line should be wired separately besides shielding, preferably away from the main circuit line.
⑦ When the carrier frequency is less than 4 KHz, the maximum distance between the frequency converter and the motor should be within 50 meters. When the carrier frequency is greater than 4 KHz, this distance should be reduced appropriately, and the wiring should be laid in the metal pipe.
⑧ When the frequency converter is equipped with peripheral equipment (filters, reactors, etc.), the insulation resistance to the ground should be measured first with a 1000 volt to megohm meter, to ensure that it is not low after 4 megohm.
⑨ The phase capacitor or resistance absorber can not be installed at the output ends of the frequency converter U, V and W.
⑩ If the frequency converter needs to start frequently, do not turn off the power supply. The COM / RUN of the control terminal must be used for start and stop operation to avoid damage to the rectification bridge.
⑪ In order to prevent accidents, grounding terminal G must be reliably grounded (grounding impedance should be below 100 Ω), otherwise there will be leakage situation.
⑫ When the main circuit wiring, please choose the wiring diameter specifications in accordance with the relevant provisions of the national electrical regulations.

4. protocol

1. RTU mode and format

When the controller communicates on the Modbus bus in RTU mode, every 8-bit bytes in the information is divided into two 4-bit 16-decimal characters. The main advantage of this mode is that the density of its transmitted characters is higher than the ASCII mode at the same baud rate, and each information must be transmitted continuously.

(1) The format of each byte in the RTU mode

Coding system: 8-bit binary, hex-system 0-9, A-F.
Data bit: 1 starting bit, 8 bits of data (low send first), stop bit for 1 bit, parity bit can be selected.(Reference RTU data frame is the sequence diagram)
Error check zone: cyclic redundancy check (CRC).

(2) RTU data frame bit sequence diagram

tape parity check

Start	1	2	3	4	5	6	7	8	Par	Stop

No odd parity

Start	1	2	3	4	5	6	7	8	Stop

2, read and write function code description:

FC	function declaration
03	Read the register
06	Write register

3. Register address

Register function	address
Control command input	2000H
Monitoring parameter reading (d-00-d-31)	1000H~001FH
Communication frequency setting	2001H
User parameter setting (F 0.00 to F 8.06)	0000H~0806H
Parameter setting of the manufacturer (F9.00~F9.10)	0900H~090AH

4. Parameter and address description of the communication protocol:

function declaration	Address definition	Data meaning description	R/W
Communication control command	2000H	0001H: Stop 0012H: Forward turn operation 0013H: Forward point operation 0022H: reverse operation 0023H: reverse point operation	W
Communication to set the frequency address	2001H	The set frequency range of communication is-10000 to 10000. Note: The communication set frequency is the percentage relative to the maximum frequency, ranging from-100.00% to 100.00%).	W
Communication control command	2002H	0001H: External fault input 0002H: Fault reset	W
Read the description of the operation / shutdown parameters	2102H	Set frequency (two decimal places)	R
	2103H	Output frequency (two decimal places)	R
	2104H	Output current (to one decimal place)	R
	2105H	Bus voltage (one decimal place)	R
	2106H	Output voltage (one decimal place)	R
	2107H	Analog input AI (two decimal places)	R
	2108H	continue to have	R
	2109H	Current gauge values	R
	210AH	motor speed	R
	210BH	Analog output AO (two decimal places)	R
	210CH	continue to have	R
	210DH	Frequter temperature (one decimal place)	R

	210EH	PID feedback value (two decimal places)	R
	210FH	PID Setpoint (two decimal places)	R
	2110H	continue to have	R
	2111H	Pulse input frequency	R
	2112H	The current failure	R
	2113H	The current timing	R
	2114H	Enter terminal status	R
	2115H	Output terminal status	R
	2116H	BIT 0: operation / downtime BIT 1: forward turn / reverse BIT 2: click on it BIT 3: DC brake BIT 4: reserved BIT 5: Overvoltage limit BIT 6: constant speed and frequency reduction BIT 7: Overflow limit BIT 8 ~ 9:00-zero speed / 01-acceleration / 10-deceleration / 11-uniform speed BIT 10: Overload forecast alarm BIT 11: reserved BIT 12 ~ 13 Run command channel: 00-Panel / 01-Terminal / 10-Communication BIT 14 ~ 15 Bus voltage status: 00-normal / 01-LV protection / 10-overvoltage protection	R
	2101H	Bit 0: Run Bit 1: shutdown Bit 2: click on it Bit 3: forward Bit 4: reverse Bit 5 to Bit 7: reserved Bit 8: Communication given Bit 9: Analog volume signal input Bit 10: Communication run command channel Bit 11: Parameter lock Bit 12: In operation Bit 13: A little moving command Bit 14 to Bit 15: reserved	R
Read the fault code description	2100H	00: No abnormality 01: The module failure 02: Overvoltage 03: Temperature failure 04: frequency converter overload 05: Motor overload 06: External failure 07~09: Retention 10: Accelerate medium and overflow 11: Overcurrent 12: Overcurrent in constant speed 13: Keep	R

		14: Underpressure
		15: Keep
		16: RS485 communication fault
		17: Tube burst failure
		18: Keep
		19: Dual CPU communication failure
		20: Keep
		21: Keep
		22: Current detection fault
		23: Keep
		24: Keep
		25: Output phase deficiency

5,03 Read the function mode:

I nquiry information frame format (Send frame):

Address	01H
Function	03H
Starting data address	21H
	02H
Data(2Byte)	00H
	02H
CRC CHK Low	6FH
CRC CHK High	F7H

This section of data analysis:

01H is the frequency converter address
03H is the read function code
2102H, is the starting address
0002H is the number of read addresses, and 2102H and 2103H
F76FH Is the 16-bit CRC effect of the code

R esponse information frame format (return frame):

Address	01H
Function	03H
DataNum*2	04H
Data1[2Byte]	17H
	70H
Data2[2Byte]	00H
	00H
CRC CHK Low	FEH

CRC CHK High	5CH

This section of data analysis:

01H is the frequency converter address
03H is the read function code
04H is the product of the read item * 2
1770H is the data to read 2102H (set frequency)
0000H is the data that is read at 2103H (output frequency)
The 5 CFEH is the 16-bit CRC check code

6,06H write function mode

I nquiry information frame format (Send frame):

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

This section of data analysis:

01H is the frequency converter address
06H is the write function code
The 2000H is the control command address
0001H, for the shutdown command
43 CAH is the 16-bit CRC test code

Response information frame format (return frame):

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

Data analysis: If set correctly, return the same input data.

5. exception handling

Common anomalies and countermeasures in Table 4-2:

abnormal phenomena		Possible causes and countermeasures
The motor does not turn	The keyboard is not displayed	Check whether the power failure, whether the input power supply is short of phase, and whether the input power supply cord is wrongly connected
	The keyboard is not displayed, but the in-machine charging indicator light is on	Check whether there are problems in the wiring and socket related to the keyboard, and measure the voltage of the control power supply in the machine to confirm whether the switching power supply works normally. If the switching power supply does not work normally, check whether the switch power supply inlet line (+, -) socket is well connected, whether the vibration is damaged or the voltage regulator pipe is normal.
	The motor has a buzzing sound	The motor load is too heavy, try to reduce the load
	No abnormalities were found	Confirm whether it is in the trip state or has not reset after the trip, whether it is in the state of power drop again, 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, can try the method of restoring the factory value.
		Confirm that the running instruction is given
		Check that the operating frequency is set to 0
The motor cannot increase and slow down smoothly		The acceleration and deceleration time setting is not appropriate, increase the acceleration and deceleration time
		The current limit is set too small, and the limit is increased
		Overvoltage protection action during deceleration to increase the deceleration time
		The carrier frequency setting is not appropriate, the load is too heavy or the oscillation occurs
		Heavy load, and insufficient torque. V / F mode increase torque value, if still can't meet the requirements, can switch to simple vector control mode, pay attention to the motor parameters should match the actual value, if still can not meet the requirements, it is recommended to switch to advanced vector control mode, still pay attention to the motor parameters is consistent with the actual value, and the best motor parameter tuning.
		Motor power does not match the frequency converter power. Set the motor parameters to the actual value
		One tow multiple motors. Please change the torque lift mode to the manual lift mode
The motor can rotate but cannot adjust the speed		The upper and lower frequency limits are not appropriate
		The frequency setting is low, or the frequency gain setting is too small
		Check whether the used speed regulation mode coincides with the set frequency given
		Check whether the load is too heavy and is in the overvoltage stall or overcurrent limit state
The motor can rotate but cannot adjust the speed		The load fluctuates frequently to minimize its changes
		The frequency converter is seriously inconsistent with the motor rating. Please set the motor parameters to the actual value
		Frequency setting potentiometer poor contact or frequency given signal fluctuation. Change to a given mode of digital frequency or increase the filter time constant of the analog input signal
The motor rotates in the opposite direction		Adjust the phase sequence of the output terminals U, V, and W
		Set the running direction (F0.12=1) to reverse
		For directional uncertainty caused by output phase deficiency, check the motor wiring immediately

Table 4-2 Common abnormal phenomena and countermeasures

6. parameter declaration

○ - -Parameters that can be modified in any state- -Parameters that cannot be modified in running state ◆ - -actual detection parameters, unable to modify ◇ - -manufacturer parameters, only by the manufacturer and prohibited by users

F0 group-Basic running parameters					
FC	name	content	Set the scope	Factory setting	change
F0. 00	Functional macro definition	0: General mode 1: Single pump constant pressure water supply mode 2~3: Keep 4: Engraver machine mode 5~10: Hold on	0～10	0	×

F0. 01	Motor control mode	0: VF control 1: Advanced VF control 2: Simple vector control 3: Advanced vector control 4: Torque control	0～4	0	×
F0. 02	Run the command channel selection	0: Panel runs the command channel 1: Terminal run command channel 2: Communication running command channel	0～2	0	○
F0. 03	Frequency given the choice	0: Panel potentiometer 1: number given 1, operation panel ▲, ▼ key adjustment 2: Number given 2, terminal UP / DOWN adjustment 3: AI simulation given (0~10V / 0 ~ 20 mA) 4: combination given 5: Keep 6: Communication given 7: Keep Note: Select the combination for timing, and select the combination for mode in F1.15.	0～7	0	○
F0. 04	Maximum output frequency	The maximum output frequency is the highest frequency allowed by the converter and is the benchmark for acceleration and deceleration.	MAX｛50. 0, 【F0.05】｝～ 999. 9Hz	50. 0Hz	×
F0. 05	upper limiting frequency	The operating frequency cannot exceed this frequency	MAX｛0. 1, 【F0.06】｝～ 【F0.04】	50. 0Hz	×
F0. 06	Lower limit frequency	The running frequency cannot be below this frequency	0. 0～上限频率	0. 0Hz	×
F0. 07	Lower bound frequency reaches the processing	0: Zero speed operation 1: operating at lower limit frequency 2: stop	0～2	0	×
F0. 08	Run the frequency number setting	This setpoint is the frequency number given the initial value	0. 0～上限频率	10. 0Hz	○
F0. 09	Digital frequency control	LED single bit: power-out storage 0: Storage 1: No storage LED ten-place: shutdown maintenance 0: Keep 1: Don't keep LED 100 bits: UP / DOWN negative frequency regulation 0: invalid 1: valid LED thousand bits: PID, PLC frequency superposition selection 0: invalid 1:F0.03+PID 2:F0.03+PLC	0000～2111	0000	○
F0. 10	acceleration time	It takes the time for the inverter to accelerate from the zero frequency to the maximum output frequency	0. 1～999. 9S 0. 4～4. 0KW	机型设定	○

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FC	name	Set the scope		Factory setting	change
F0. 11	deceleration time	The time required for the inverter to slow down from the maximum output frequency to the zero frequency	7. 5S 5. 5∼7. 5KW 15. 0S		
F0. 12	Operation direction setting	0: Forward turn 1: reverse 2: No reversal	0∼2	0	○
F0. 13	V/F curve setting	0: Linear curve 1: Square curve 2: Multipoint VF curve	0∼2	0	×
F0. 14	Recurrent lift	Manual torque lift which is the percentage relative to the motor voltage	0. 0∼30. 0%	Model setting	○
F0. 15	Torque lift cutoff frequency	This setting is the lift cut-off frequency point for the manual torque lift	0. 0∼50. 0Hz	15. 0Hz	×
F0. 16	The carrier frequency setting	For the occasion of silent operation, the carrier frequency can be appropriately increased to meet the requirements, but increasing the carrier frequency will increase the heat value of the frequency converter.	2. 0∼16. 0KHz 0. 4∼3. 0KW 4. 0KHz 4. 0∼7. 5KW 3. 0KHz	Model setting	×
F0. 17	The V / F frequency value, F1		0.1∼ F2	12.5Hz	×
F0. 18	V / F voltage value V1		0.0∼ V2	25. 0%	×
F0. 19	The V / F frequency value, F2		F1 ∼ F3	25. 0Hz	×
F0. 20	V / F voltage value V2		V1∼V3	50. 0%	×
F0. 21	The V / F frequency value, F3		F2 ∼ rated frequency of motor [F4.03]	37.5Hz	×
F0. 22	V / F voltage value V3		V2 ∼ 100.0%*Uoute (rated voltage of motor [F4.00])	75. 0%	×
F0. 23	User password	Set any non-zero number for 3 minutes or a power failure to take effect.	0∼9999	0	○
F0. 24	Frequency display resolution selection	0:0.1Hz 1:1Hz Note: To set this parameter, be sure to check the maximum output frequency (F0.04), the frequency upper limit (F0.05), the motor rated frequency (F4.03) and other parameters related to the frequency.	0∼1	0	○

The V/F curve figure (F0.17–F0.22): vertical axis V, horizontal axis F, showing Rated, V3, V2, V1 levels against F1, F2, F3, max points.

F1 group-auxiliary running parameters					
FC	name	Set the scope		Minimum unit	Factory setting	change

F1. 00	Start way	LED bit: starting mode 0: start from the starting frequency 1: first DC brake and then start from the starting frequency 2: Keep LED ten: power failure or abnormal restart mode 0: invalid 1: start from the starting frequency LED hundred bits: reserved LED thousand bits: retain	0000~0012	00	×
F1. 01	frequency of starting		0. 0~50. 0Hz	1. 0Hz	○
F1. 02	Start the DC brake voltage		0. 0~50. 0 %× motor rated voltage	0. 0%	○
F1. 03	Start the DC brake time		0. 0~30. 0s	0. 0s	○
F1. 04	Downtime method	0: deceleration shutdown 1: Free shutdown	0~1	0	×
F1. 05	Stop time DC brake starting frequency		0.0~ to upper limit frequency	0. 0Hz	○
F1. 06	Shutdown of the DC brake voltage		0. 0~50. 0 %× motor rated voltage	0. 0%	○
F1. 07	Stop the DC brake time		0. 0~30. 0s	0. 0s	×
F1. 08	Shutdown for the DC brake waiting time		0. 00~99. 99s	0. 00s	×
F1. 09	Set the moving frequency of the positive turningpoint	Set the point movement forward and reverse frequency	0. 0~50. 0Hz	10. 0Hz	○
F1. 10	Inse the point frequency setting				
F1. 11	Point motion acceleration time	Set the point dynamic acceleration and deceleration time	0. 1~999. 9S 0. 4~4. 0KW 10. 0S	Model setting	○
F1. 12	Point motion deceleration time		5. 5~7. 5KW 15. 0S		

F1. 13	Jump frequency	By setting the jump frequency and range, the frequency converter can avoid the mechanical resonance point of the load.	0.0～to upper limit frequency	0. 0Hz	○
F1. 14	Jump range		0. 0～10. 0Hz	0. 0Hz	○
F1. 15	Frequency combination in a given way	0: potentiometer + digital frequency 1 1: potentiometer + digital frequency 2 2: potentiometer + AI 3: Digital frequency: 1 + AI 4: Digital frequency: 2 + AI 5: Digital frequency of 1 + multisegment speed 6: Digital frequency of 2 + multisegment speed 7: potentiometer + multistage speed 8: AI + PLC (same superposition) 9: Keep	0～9	0	×
F1. 16	Programmable operation control (simple PLC operation)	LED bit: PLC enable control 0: invalid 1: valid LED ten place:, operation mode selection 0: Single cycle 1: Continuous circulation 2: Keep the final value after a single cycle LED 100 bits: Start mode 0: start from the first paragraph to start 1: start from the stage of shutdown (failure) time 2: Start from the stage and frequency of the shutdown (fault) time LED thousand bits: power out storage selection 0: no storage 1: storage	0000～1221	0000	×
F1. 17	Multi-segment speed frequency 1	Set the segment speed-1 frequency	−Upper limit frequency～upper limit frequency	5. 0Hz	○
F1. 18	Multi-segment speed frequency 2	Set the segment speed of 2 frequency	−Upper limit frequency～upper limit frequency	10. 0Hz	○
F1. 19	Multi-segment speed frequency 3	Set the segment speed of 3 frequency	−Upper limit frequency～upper limit frequency	15. 0Hz	○
F1. 20	Multi-segment speed frequency 4	Set the segment speed of 4 frequency	−Upper limit frequency～upper limit frequency	20. 0Hz	○
F1. 21	Multi-segment speed frequency 5	Set the segment speed of 5 frequency	−Upper limit frequency～upper limit frequency	25. 0Hz	○
F1. 22	Multi-segment speed frequency 6	Set the segment speed of 6 frequency	−Upper limit frequency～upper limit frequency	37. 5Hz	○
F1. 23	Multi-segment speed frequency 7	Set the segment speed of 7 frequency	−Upper limit frequency～upper limit frequency	50. 0Hz	○
F1. 24	Phase 1 run time	Set speed 1 running time (selected by [F1.35], default to seconds)	0. 0～999. 9s	10. 0s	○
F1. 25	Phase 2 run time	Set speed 2 running time (selected by [F1.35], default to seconds)	0. 0～999. 9s	10. 0s	○
F1. 26	Phase 3 run time	Set speed 3 running time (selected by [F1.35], default to seconds)	0. 0～999. 9s	10. 0s	○
F1. 27	Phase 4 run time	Set segment speed 4 running time (unit selected by [F1.35], default to seconds)	0. 0～999. 9s	10. 0s	○
F1. 28	Phase 5 run time	Set segment speed 5 running time (unit selected by [F1.35], default to seconds)	0. 0～999. 9s	10. 0s	○
F1. 29	Phase 6 run time	Set segment speed 6 running time (unit selected by [F1.35], default to seconds)	0. 0～999. 9s	10. 0s	○
F1. 30	Phase 7 run time	Set segment speed 7 running time (unit selected by [F1.35], default to seconds)	0. 0～999. 9s	10. 0s	○

FC	name	Set the scope	Minimum unit	Factory setting	change
F1.31	Stage acceleration and deceleration time selection of 1	LED single bit: stage 1 acceleration and deceleration time 0~1 LED ten place: stage 2 acceleration and deceleration time 0~1 LED 100 bit: stage 3 acceleration and deceleration time 0~1 LED thousand bit: stage 4 acceleration and deceleration time 0~1	0000~1111	0000	○
F1.32	Phase acceleration and deceleration time selection of 2	LED single bit: stage 5 acceleration and deceleration time 0~1 LED ten place: stage 6 acceleration and deceleration time 0~1 LED 100: stage 7 acceleration and deceleration time 0~1 LED thousand: reserved	000~111	000	○
F1.33	Acceleration time 2	Set the acceleration and deceleration time of 2	0.1~999.9s 0.4~4.0KW 10.0s 5.5~7.5KW 15.0s	10.0s	○
F1.34	Slow down time 2				○
F1.35	Time unit selection	LED single bit: process PID time unit LED ten places: simple PLC time unit LED 100 bits: conventional acceleration and deceleration time unit LED thousand bits: reserved 0: In 1 second 1:1 point in the unit 2: In units of 0.1 seconds	000~211	000	×
F1.36	Forward and reverse dead zone time	The transition time of the inverter to transition from forward operation to reverse operation, or from reverse operation to forward operation.	0.0~999.9s	0.0	○

F2 group-analog and numerical input and output parameters

FC	name	Set the scope	Minimum unit	Factory setting	change
F2.00	AI input lower limit voltage	Set the AI upper and lower limit voltage	0.00~【F2.01】	0.00V	○
F2.01	AI input upper limit voltage		【F2.01】~10.00V	10.00V	○
F2.02	The lower AI limit shall be set accordingly	Setting the upper and lower limits of the AI corresponds to the setting, which corresponds to the percentage of the upper limit frequency [F0.05].	−100.0%~100.0%	0.0%	○
F2.03	The upper limit of AI is set accordingly			100.0%	○
F2.04 ~ F2.07	continue to have	—	—	0	◆
F2.08	Filtering time constant of the simulated input signal	This parameter is used to filter the input signals of the AI and panel potentiometer to eliminate the influence of interference.	0.1~5.0s	0.1s	○
F2.09	Simulated input shake stabilization deviation limit	When the analog input signal shows frequent fluctuations near a given value, the frequency fluctuation caused by this fluctuation can be suppressed by setting F2.09.	0.00~0.10V	0.00V	○
F2.10	AO analog quantity output terminal function selection	0: Output frequency 1: output current 2: motor speed 3: Output voltage 4:AI 5: Keep	0~5	0	○
F2.11	AO bottoming	Set the upper and lower limits of the AO output	0.00~10.00V/	0.00V	○
F2.12	AO output upper limit		0.00~20.00mA	10.00V	○

F2. 13	Input terminal X1 function	0: control end idle 1: forward point control 2: reverse point control 3: Forward rotation control (FWD) 4: Reverse Control (REV) 5: three-line operation control 6: free shutdown control 7: External shutdown signal input (STOP) 8: External reset signal input (RST)	0～60	3	×
F2. 14	Input terminal X2 function	9: External fault open input 10: frequency increase instruction (UP) 11: Frequency decreasing instruction (DOWN) 13: Multi-segment speed selection of S1 14: multiple speed selection S2 15: multiple speed selection S3 16: running command channel forced for terminal 17: running command channel forced for communication	0～60	4	×
F2. 15	Input terminal X3 function	18: Stop the DC brake command 19: The frequency will switch to AI 20: frequency switches to digital frequency 1 21: frequency switches to digital frequency 2 22: reserved 23: Counter zero clearance signal 24: Counter trigger signal	0～60	8	×
F2. 16	Input terminal X4 function	25: timer reset signal 26: Timer-trigger signal 27: acceleration and deceleration time selection 28: Suspension pause (stop at current frequency) 29: pendulum frequency reset (back to center frequency) 30: External shutdown / reset signal input (STOP / RST)	0～60	0	×
F2. 17	continue to have	41: Terminal detection pulse shutdown (stop after a few seconds of no change in voltage level on the terminal, time F2.35)	0～60s	2	×
		30~60: Retention	–	0	×
F2. 18	The FWD / REV terminal control mode	0: Second-line control mode 1 1: Second-line control mode 2 2: Three-line control mode 1 3: Three-line control mode 2 4: Three-line control mode 3 5: Keep	0～5	0	×
F2. 19		0: Invalid terminal running command when powered on 1: The terminal running command is valid when powered up	0～1	0	×
F2. 20	R Output Settings	0: Idle. 1: The frequency converter is ready for operation 2: converter in operation 3: converter in operation at zero speed 4: External fault shutdown 5: inverter fault 6: frequency / speed arrival signal (FAR) 7: Frequency / speed level detection signal (FDT) 8: Output frequency reaches the upper limit 9: Output frequency reaches the lower limit 10: Frequter overload forecast alarm	0～20	5	○
F2. 21	continue to have	11: Timer overflow signal 12: Counter detects the signal 13: Counter to reset the signal 14: Auxiliary motor	–	0	○

FC	name	Set the scope	Minimum unit	Factory setting	change
		15: Is turning 16: Reverse 17: output the indicator signal when the output frequency drops to the speed detection level 18~20: Retention			
F2. 22	R closure delay	A delay when the relay R state changes to which the output changes	0. 0~255. 0s	0. 0s	×
F2. 23	R disconnection delay				
F2. 24	Frequency reaches the FAR detection amplitude	The output frequency is in the positive and negative detection width of the set frequency, and the terminal outputs the effective signal (low level).	0. 0Hz~15. 0Hz	5. 0Hz	○
F2. 25	The FDT level setpoint	FDT 水平设定值 / FDT 滞后值 时间 T 时间	0. 0Hz~ upper limit frequency	10. 0Hz	○
F2. 26	FDT lag values		0. 0~30. 0Hz	1. 0Hz	○
F2. 27	FDT lag values	This function code is the frequency modification rate when setting the frequency of the UP / DOWN terminal, that is, the UP / DOWN terminal and the COM terminal for one second, the amount of frequency change.	0. 1Hz~99. 9Hz/s	1.0Hz/s	○
F2. 28	The UP / DOWN terminal modification rate	0: indicates the level trigger mode 1: represents the pulse trigger mode Note: X1~X4 corresponds to 1H, 2H, 4H and 8H.	0~FH	0	○
F2. 29	Ininput pulse trigger mode (X1~X4)	0: A positive logic, that is, the Xi terminal is effectively connected to the public end, and the disconnect is invalid 1: Inverse logic, that is, the connection between the Xi terminal and the public end is invalid, and the disconnection is valid Note: X1~X4 corresponds to 1H, 2H, 4H and 8H.	0~FH	0	○
F2. 30	X1 Filter coefficient	To set the sensitivity of the input terminals. If the digital input terminal is prone to interference and causes misoperation, this parameter can be increased to enhance the anti-interference ability, but the sensitivity of the input terminal. 1: represents 2MS scan time units	0~9999	5	○
F2. 31	X2 filtering coefficient		0~9999	5	○
F2. 32	X3 filtering coefficient		0~9999	5	○
F2. 33	X4 Filter coefficient		0~9999	5	○
F2. 34	continue to have	–		0	○
F2. 35	Shutdown delay time	If there is no change in the high or low level of the terminal within the time range set in this parameter, the frequency converter will stop. This function is effective in both panel and terminal control.	0. 0~60s	2	×
The F3 group- -the PID parameters					
FC	name	Set the scope	Minimum unit	Factory setting	change

F3. 00	The PID function setting	LED single bit: PID adjusting property 0: Invalid 1: Positive effect When the feedback signal is greater than the PID, the inverter output frequency is required to decrease (i. e., reduce the feedback signal). 2: Negative effect When the feedback signal is greater than the PID, the inverter output frequency is required to increase (i. e., reduce the feedback signal). LED ten place: PID to the quantitative input channel 0: The keyboard potentiometer PID to quantification is given by the potentiator on the operator panel. 1: Number given The PID ration is given by the number and set by the function code F3.01. 2: Pressure given (MPa, Kg) Set the given pressure by setting F3.01, F3.18. LED 100 bits: PID feedback quantity input channel 0: AI 1: Keep LED thousand bits: PID Sleep selection 0: not valid 1: Ordinary dormancy F 3.10 to F 3.13.2: Perturbation dormancy The same parameter setting as the dormancy mode selection 0, if the PID feedback value is within the range of F3.14 set value, maintain the sleep delay time and enter the disturbed sleep. When the feedback value is less than the recovery threshold (PID polarity is positive), recover immediately.	0000~2122	1010	×
F3. 01	Set the quantitative number	The operation keyboard is used to set the quantification of PID control, and this function is valid only if the PID given channel is number (F3.00 ten is 1 or 2). If F3.00 ten is 2, used as the pressure given, this parameter is consistent with the unit of F3.18.	0. 0~100. 0%	0. 0%	○
F3. 02	Feedback channel gain	When the feedback channel is not consistent with the set channel level, the feedback channel signal.	0. 01~10. 00	1. 00	○
F3. 03	proportional gain P	The speed of PID adjustment speed is set by the two parameters of proportional gain and integration time. It requires the fast adjustment speed to increase the proportional gain and reduce the integration time, and the slow adjustment speed to reduce the proportional gain and increase the integration time. In general, the differential time is not set.	0. 01~5. 00	2. 00	○
F3. 04	integration time Ti		0. 1~50. 0s	1. 0s	○
F3. 05	rate time Td		0. 1~10. 0s	0. 0s	○
F3. 06	sampling period T	The larger the sampling period, the slower the response, but the better the inhibition effect on the interference signal, which is not necessary to be set.	0. 1~10. 0s	0. 0s	○

FC	name	Set the scope		Minimum unit	Factory setting	change
F3.07	Deviation limit	The deviation limit is the ratio of the absolute value of the system feedback to the deviation of the given quantification. When the feedback is within the deviation limit, the PID adjustment does not move.		0.0～20.0%	0.0%	○
F3.08	Closed loop preset frequency	Frequency and operation time of frequency converter before PID is put into operation		0.0～上限频率	0.0Hz	○
F3.09	Preset the frequency hold time			0.0～999.9s	0.0s	×
F3.10	Sleep valve value coefficient	If the actual feedback value is greater than the set value and the output frequency reaches the lower frequency, the inverter enters the sleep state (i. e., zero speed operation) after the delay waiting time defined by F3.12; this value is the percentage of the PID set value.		0.0～150.0%	100.0%	○
F3.11	Awakening valve value coefficient	If the actual feedback value is less than the set value, the frequency converter after the delayed waiting time defined by F3.13; this value is a percentage of the PID set value.		0.0～150.0%	90.0%	○
F3.12	Sleep delay time	Set the sleep delay time		0.0～999.9s	100.0s	○
F3.13	Wake up delay time	Set the wake-up delay time		0.0～999.9s	1.0s	○
F3.14	Deviation between feedback and set pressure during sleep	This functional parameter is only valid for disturbed dormancy mode		0.0～10.0%	0.5%	○
F3.15	Doom tube detection delay time	Set the tube burst detection delay time		0.0～130.0s	0.0S	○
F3.16	High pressure test valve value	When the feedback pressure is greater than or equal to this set value, the fault is reported "EPA0" after the F3.15 burst delay. When the feedback pressure is less than this set value, the fault "EPA0" is automatically reset; this threshold is the percentage of the given pressure.		0.0～200.0%	150.0%	○
F3.17	Low pressure detection valve value	When the feedback pressure is less than this set value, report the burst fault "EPA0" after F3.15 delay. When the feedback pressure is greater than the set value, "EPA0" will automatically reset; this threshold is the percentage of the given pressure.		0.0～200.0%	50.0%	○
F3.18	Sensor range	Set the maximum range of the sensor		0.00～99.99（MPa、Kg）	10.00MPa	○

F4 group-Advanced functional parameters

FC	name	Set the scope		Minimum unit	Factory setting	change
F4.00	The motor is rated power			0.0～2000.0KW		×
F4.01	The motor is rated voltage	Motor parameter setting		0～500V；380V 0～250V；220V		×
F4.02	Rated current of motor			0.1～999.9A		×
F4.03	Rated frequency of motor			1.0～999.9Hz	50.0Hz	×
F4.04	Motor rated speed			0～9999RPM		×
F4.05	No-load current of motor	Set the motor		0.1A～【F4.01】		×
F4.06	AVR function	0: invalid 1: The whole process is effective 2: Invalid only for deceleration		0～2	0	○
F4.07	Cooling fan control	0: Automatic control mode 1: The power-on process is always running		0～1	0	○
F4.08	Number of automatic reset	When the number of barrier reset is set to 0, there is no automatic reset function, which can only be manually reset. 10 means that the number of barriers is not limited, that is, countless times.		0～10	0	×

F4. 09	Automatic fault reset interval time	Set the fault automatic reset interval time	0. 5～25. 0s	3. 0s	×
F4. 10	Energy consumption brake start voltage	If the internal DC side voltage of the converter is higher than the energy braking start voltage, the built-in brake unit moves.	330 ～ 380/660 ～ 800V	350/780V	○
F4. 11	Energy consumption braking action ratio	The brake resistance is connected at this time, the voltage energy released inside the frequency converter will be released through the brake resistance, and the DC voltage will fall back.	10～100%	100%	○
F4. 12	Overmodulation function selection	0: Invalid 1: valid	0～1	0	×
F4. 13	PWM pattern	0: full frequency seven segment 1: full frequency five segment 2: seven paragraphs to five paragraphs 3: Single-phase Asynchronous motor	0～3	0	×
F4. 14	Transfer difference compensation coefficient	The asynchronous motor will cause the speed to drop. Using the rotation compensation can make the motor speed close to its synchronous speed, so that the motor speed control accuracy is higher. This coefficient is only valid for ordinary V / F and simple vectors.	0～200%	100%	×
F4. 15	Transfer difference compensation mode	0: Invalid 1: low-frequency compensation Note: This parameter is valid for advanced V / F	0～1	0	×
F4. 16	Motor parameters by self-learning	0: invalid 1: Static self-learning (STAR immediately, END 1S,)	0～1	0	×
F4. 17	Motor stator resistance		0. 00～200. 00 Ω	Model setting	○
F4. 18	Motor rotor resistance	After changing the rated motor power F4.17, F4.01, F4.02, F4.04, F4.05, F4.18~F4.20 are automatically updated to the motor default parameters of the corresponding power.	0. 00～200. 00 Ω	Model setting	○
F4. 19	Motor fixed, rotor mutual sense		0. 00～200. 00mH	Model setting	○
F4. 20	Motor is set, the rotor leakage sense		0. 00～200. 00mH	Model setting	○
F4. 21	Speed loop (ASR 1) proportional gain		1～100	30	×
F4. 22	The velocity loop (ASR 1) integration time		0. 01～10. 00S	0. 50	○
F4. 23	Switch low frequency	Function codes F4.21~F4.26 are valid in the vector control mode. The speed response properties of the vector control are changed by setting the proportional gain P and the integration time I.	0. 0～10. 0Hz	5. 0	×
F4. 24	Speed loop (ASR 2) proportional gain		1～100	20	○
F4. 25	The velocity loop (ASR 2) integration time		0. 01～10. 00S	1. 00	○
F4. 26	Switch High Point Frequency		【F4. 23】 ～ 320. 0Hz	10. 0	×
F4. 27	Vector transfer difference compensation	In the vector control mode, this parameter is used to adjust the speed accuracy of the motor. When the motor is heavy, the speed is low, the parameter is increased, otherwise the parameter is reduced.	50%～200%	100	○
F4. 28	The velocity loop filtering time constant	Set the speed loop filtering time constant	0. 000～1. 000S	0. 008	○
F4. 29	continue to have	—	—	0	◆
F4. 30	Speed loop torque limit	This set point is the percentage of the rated current of the motor	0. 0%～200. 0%	170. 0	○
F4. 31	Recurrent instruction selection	0: keyboard number given 1: AI 2: reserved	0～2	0	×

F4.32	The torque number is given	This set point is the percentage of the rated current of the motor	0.0%～200.0% * The rated current of the motor	150.0	○
F4.33	Torque controls the forward maximum frequency	Used to set the forward or reverse maximum operating frequency under torque control mode.	0.0～3200.0Hz	50.0	○
F4.34	Torque control of the reverse maximum frequency		0.0～3200.0Hz	50.0	○
F4.35	Recurrent up time	Torque rise / fall time defines the time when the torque rises from 0 to maximum or falls from maximum to 0.	0.00～1.00S	0.00	○
F4.36	Torque drop time		0.00～1.00S	0.00	○

F5 group-protective function parameters

FC	name	Set the scope	Minimum unit	Factory setting	change
F5.00	Protection Settings	LED single bit: motor overload protection selection 0: invalid 1: valid LED ten place: PID feedback line break protection 0: invalid 1: protection action and free shutdown LED 100 bit: 485 communication failure processing 0: protection action and free shutdown 1: alarm but maintain the status quo operation 2: alarm and stop in the set way LED thousand: shock suppression selection 0: invalid 1: valid	0000～1211	0001	×
F5.01	Motor overload protection factor	The overload protection coefficient of the motor is the percentage of the rated current value of the motor to the rated output current value of the frequency converter.	30%～110%	100%	×
F5.02	Under-pressure protection level	This function code specifies the allowable lower limit voltage of the DC bus when the frequency converter is working normally.	50～280/50～480V	180/360V	×
F5.03	Reduced-down voltage limit factor	This parameter is used to adjust the ability of the inverter to suppress overvoltage during deceleration.	0: 关闭，1～255	1	×
F5.04	Overpressure limit level	The overvoltage limit level defines the action voltage during the overvoltage stall protection	350 ～ 400/660 ～ 850V	375/700V	×
F5.05	Accelerated current limiting coefficient	This parameter is used to regulate the ability of the frequency converter to suppress overflow during acceleration.	0: 关闭，1～99	10	×
F5.06	Constant-speed current limiting coefficient	This parameter is used to regulate the ability of the frequency converter to suppress overflow at a constant speed.	0: 关闭，1～10	0	×
F5.07	Current limit level	The current limit level defines the current threshold of the automatic current limiting action, and the set value is the percentage relative to the rated current of the converter.	50%～200%	160%	×
F5.08	Feedback on the breakline detection value	This value is the percentage of PID. When the feedback value of PID is continuously less than the feedback break detection value, the frequency converter will make corresponding protection action according to the setting of F5.00, which is invalid when F5.08=0.0%.	0.0～100.0%	0.0%	×
F5.09	Feedback break detection time	Delay time before the protection action after the feedback disconnection occurs.	0.1～999.9S	10.0s	×
F5.10	Frequter overload forecast alarm level	The current threshold of the inverter overload forecast alarm action is the percentage relative to the rated current of the frequency converter.	0～150%	120%	○
F5.11	frequency converter overload forecast alarm delay	The output current of the inverter ranges from the overload forecast alarm level amplitude (F5.10) to the delay time between the output overload pre-alarm signal.	0.0～15.0s	5.0s	×

F5.12	Point action priority enables	0: Invalid 1: When the inverter is running, the highest priority	0～1	0	×
F5.13	Inhibition coefficient of oscillations		0～200	30	○
F5.14	The amplitude inhibition coefficient	When the motor shocks, set F5.00 thousand bits effective, open the shock suppression function, and adjust by setting the shock suppression coefficient. In general, increase the shock suppression coefficient F5.13, F5.14 to F5.16; in special situations, F 5.13 to F 5.16.	0～12	5	○
F5.15	The lower limit of the oscillation suppression frequency		0.0～【F5.16】	5.0Hz	○
F5.16	Oscillatory suppression at the ceiling frequency		【F5.15 】 ～ 【F0.05】	45.0Hz	○
F5.17	Wave-by-wave flow restriction selection	LED bits: Select 0 in acceleration: Invalid 1: valid LED ten: select 0 in deceleration: Invalid 1: valid LED 100 bits: selected from the constant speed 0: Invalid 1: valid LED thousand bits: dead area compensation selection 0: Invalid 1: valid Note: Dead zone compensation is only valid for F0.01.	000～1111	1011	×
F5.18	Output is missing the phase protection detection factor	When the ratio of maximum and minimum value in three-phase output current is greater than this coefficient and the duration exceeds 6 seconds, the inverter reports the output current imbalance fault EPLI, this parameter cannot be set too small, it is recommended to set above 2.00; the output missing phase protection is invalid at F5.18=0.00.	0.00～20.00	2.00	○
F5.19	The decrease coefficient of the instantaneous power drop frequency	Set the instantaneous drop frequency drop coefficient	0：瞬停不停功能无效 1～9999	0	○
F5.20	Instant power drop frequency point	Set the instantaneous power drop frequency drop point	220V:180～330V 250V 380V:300～550V 450V	Model setting	×
F5.21	Low-frequency carrier is used for automatic adjustment	0: invalid 1: valid	0～1	1	×

F6 group-Communication parameters

FC	name	Set the scope	Minimum unit	Factory setting	change
F6.00	This machine address	Set the local address, 0 is the broadcast address.	0～247	1	×
F6.01	MODBUS Communication configuration	LED individual bit: Baud rate selection 0:9600BPS 1:19200BPS 2:38400BPS LED ten-place: data format 0: No check 1: Double check 2: Strange verification LED 100 bits: communication response mode 0: Normal response 1: Only only to the slave address 2: No response 3: The slave does not respond to the free shutdown command of the host in broadcast mode LED thousand bits: reserved	0000～0322	0000	×

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FC	name	Set the scope	Minimum unit	Factory setting	change
F6.02	Communication timeout check-out time	If the machine does not receive the correct data signal within the time interval defined by this function code, then the machine considers that the communication is faulty, the inverter will decide whether to protect or maintain the communication failure action mode; when this value is set to 0.0, the RS485 communication timeout will not be checked out.	0.1~100.0s	0.0s	×
F6.03	This machine response delay	This function code defines the intermediate time interval between receiving the end of the inverter data frame and sending the response data frame to the upper computer computer. If the response time is less than the system processing time, the system processing time shall prevail.	0~200ms	5ms	×
F6.04	Proportion continuum coefficient	This function code is used to set the weight coefficient of the frequency command received by the slave machine through the RS485 interface, and the actual operating frequency of the local machine is equal to the function code value multiplied by the frequency setting instruction value received through the RS485 interface. In the connection control, this function code can set the proportion of multiple frequency converter operating frequency.	0.01~10.00	1.00	○
F6.05	continue to have	–	–	0	×
F7 group – Supplementary functional parameters					
FC	name	Set the scope	Minimum unit	Factory setting	change
F7.00	Counting and timing mode	LED bit: count reaches processing 0: Weekly count, stop the output 1: Single week count, continue to output 2: Cycle count, stop the output 3: Cycle count, continue to output LED ten tens: reserved LED 100 bits: timing arrival processing 0: Weekly timing, stop the output 1: Weekly timing, continue to output 2: Cycle the timing, and stop the output 3: cycle timing, continue to output LED thousand bits: reserved	000~303	103	×
F7.01	Counter reset value setting	Sets the counter-reset value	【F7.02】~9999	1	○
F7.02	Counter detection value setting	Set the counter detection value	0~【F7.01】	1	○
F7.03	Timeline time setting	Set timing time	0~9999s	0s	○
F7.04 ~ F7.07	continue to have	–	–	0	○
F7.08	Pop frequency control	0: Prohibit 1: valid	0~1	0	×
F7.09	Amplitude control	0: Fixed swing The swing reference value is the maximum output frequency (F0.04). 1: Change the swing The swing amplitude reference value is the given channel frequency.	0~1	0	×
F7.10	Start mode selection of swing frequency shutdown	0: Start in the state of memory before shutdown 1: Start starting again	0~1	0	×
F7.11	Pressing frequency amplitude	The pendulum frequency amplitude is the percentage relative to the maximum output frequency (F0.04).	0.0~100.0%	0.0%	○
F7.12	The jump frequency	This function code refers to the range of rapid decline after the frequency reaches the upper frequency of the swing frequency process. Of course, it also refers to the range of rapid increase after the frequency reaches the lower frequency of the swing frequency. This value is the percentage relative to the pendulum frequency amplitude (F7.11).	0.0~50.0%	0.0%	○

F7. 13	The time of swing frequency rise	Running time from the swing frequency to the swing frequency.	0. 1～3600. 0s	5. 0	○
F7. 14	The drop time of swing frequency	Running time from the upper swing frequency to the lower swing frequency.	0. 1～3600. 0s	5. 0	○
F7. 15	Upper limit frequency delay	Set the upper and lower limits of swing frequency.	0. 1～3600. 0s	5. 0	○
F7. 16	Lower lower frequency delay		0. 1～3600. 0s	5. 0	○

F8 group-Management and display parameters

FC	name	Set the scope	Minimum unit	Factory setting	change
F8. 00	Run to monitor the primary parameter project selection	For example, F8.00=2, to select the output voltage (d-02), then the default display item in the main monitoring interface is the current output voltage value.	0～31	0	○
F8. 01	Downtime monitors the main parameter item selection	For example, F8.01=3, select the bus voltage (d-03), then the default display item in the main monitoring interface is the current bus voltage value.	0～31	1	○
F8. 02	Run Secondary display (valid for dual display only)	For example, F8.02=4, to select the output current (d-02), then the default display item in the main monitoring interface is the current output voltage value.	0～31	4	○
F8. 03	Downtime auxiliary display (valid for dual display only)	For example, F8.03=3, to select the bus voltage (d-03), then the default display item in the main monitoring interface is the current bus voltage value.	0～31	3	○
F8. 04	Motor speed display coefficient	Used to correct the speed scale display error, no effect on the actual speed.	0. 01～99. 99	1. 00	○
F8. 05	Parameter initialization	0: No operation The frequency converter is in the normal parameter reading and writing state. Function code setpoint. Whether it can be changed is related to the setting status of the user password and the current working status of the frequency converter. 1: restore the factory setting All user parameters shall restore the factory settings according to the model. 2: Clear the fault record Clear up the contents of the fault record (d-19~d-24). After the operation is completed, this function code will automatically clear the 0.	0～2	0	×
F8. 06	continue to have	--	0	0	×

The F9 group- -the manufacturer's parameters

FC	name	Set the scope	Minimum unit	Factory setting	change
F9. 00	Manufacturer password	1～9999	1	****	◇

Group d-Monitoring the parameter group

FC	name	scope	Minimum unit	Factory setting	change
d-00	Output Frequency (Hz)	0. 0～999. 9Hz	0. 1Hz	0. 0Hz	◆
d-01	Set Frequency (Hz)	0. 0～999. 9Hz	0. 1Hz	50. 0Hz	◆
d-02	output voltage (V)	0～999V	1V	0V	◆
d-03	busbar voltage (V)	0～999V	1V	Model setting	◆
d-04	output (A)	0. 0～999. 9A	0. 1A	0. 0A	◆
d-05	Motor rotation speed (rpm)	0～60000rpm	1rpm	Model setting	◆
d-06	Analog input to A1 (V / mA)	0. 00～10. 00V/0. 00～20. 00mA	0. 01V/0. 01mA	0. 00V/mA	◆

d-07	continue to have	–		0	0	◆
d-08	Simulated for AO transmission (V / mA)	0. 00~10. 00V/0. 00~20. 00mA		0. 01V/0. 01mA	0. 00V/mA	◆
d-09	continue to have	–		–	0	◆
d-10	The PID pressure setting value	0. 00~10. 00V/0. 00~99. 99(MPa、Kg)		0. 01V/(MPa、Kg)	0. 00V/(M Pa、Kg)	◆
d-11	The PID pressure feedback value	0. 00~10. 00V/0. 00~99. 99(MPa、Kg)		0. 01V/(MPa、Kg)	0. 00V/(M Pa、Kg)	◆
d-12	Current gauge values	0~9999s		1s	0s	◆
d-13	Current time value (s)	0~9999s		1s	0s	◆
d-14	Input terminal status (X1-X4)	0~FH		1H	0H	◆
d-15	output state (R)	0~1H		1H	0H	◆
d-16	The module temperature is at (℃)	0. 0~132. 3℃		0. 1℃	0. 0	◆
d-17	Software Upgrade Date (year)	2010~2026		1	2023	◆
d-18	Software upgrade date (month, day)	0~1231		1	0109	◆
d-19	The second fault code	0~19		1	0	◆
d-20	Last recent fault code	0~19		1	0	◆
d-21	Output frequency (Hz) at the latest failure	0. 0~999. 9Hz		0. 1Hz	0. 0Hz	◆
d-22	Output current at the latest fault (A)	0. 0~999. 9A		0. 1A	0. 0V	◆
d-23	Bus voltage at the last fault (V)	0~999V		1V	0V	◆
d-24	The module temperature is (℃) at the latest failure	0. 0~132. 3℃		0. 1℃	0. 0℃	◆
d-25	Accumulated operation time of the frequency converter (h)	0~9999h		1h	0h	◆
d-26	Frequency converter state	0~FFFF H BIT 0: operation / downtime BIT 1: reverse / forward turn BIT 2: click on it BIT 3: DC brake BIT 4: reserved BIT 5: Overvoltage limit BIT 6: constant speed and frequency reduction BIT 7: Overflow limit BIT 8 ~ 9:00-zero speed / 01-acceleration / 10-deceleration / 11-uniform speed BIT 10: Overload forecast alarm BIT 11: reserved BIT 12 ~ 13 Run command channel: 00-panel / 01-terminal / 10-reserved BIT 14 ~ 15 Bus voltage status: 00-normal / 01-LV protection / 10-overvoltage protection		1H	0H	◆
d-27	software release	1. 00~99. 99		0. 01	2. 00	◆
d-28	Power model	0. 10~99. 9KW		0. 01KW	Model setting	◆
d-29	Motor estimation frequency	0.0~ Maximum output frequency [F0.04] Note: Motor operating frequency converted from the motor estimated speed		0. 1Hz	0. 0Hz	◆
d-30	output torque	−200~+200%		1%	0%	◆
d-31	input voltage (V)	0~999V		1V	0V	◆

Group E-The fault code				
fault code	name	Possible cause of failure	trouble shooting	code name
EOC1	Overflow in the accelerated operation	The acceleration time is too short	Extend the acceleration time	1
		The frequency converter power is too small	Choose the frequency converter with a large power level	
		Improper V / F curve or torque lift setting	Adjust the V / F curve or the torque lift amount	
EOC2	Overcurrent during the deceleration operation	The deceleration time is too short	Extend the deceleration time	2
		The frequency converter power is too small	Choose the frequency converter with a large power level	
EOC3	Overflow during running at a constant speed	The voltage of the grid is low	Check input power	3
		Mutations or abnormalities occurred in the load	Check the load or reduce the load for mutations	
		The frequency converter power is too small	Choose the frequency converter with a large power level	
EHU1	Overvoltage in the deceleration operation	Input voltage exception	Check input power	4
		Start the motor in rotation	Set to start after DC braking	
EHU2	Overvoltage in the deceleration operation	The deceleration time is too short	Extend the deceleration time	5
		Input voltage exception	Check input power	
EHU3	Overpressure in running at uniform speed	Input voltage exception	Check input power	6
EHU4	Overpressure during shutdown	Input voltage exception	Check the power voltage	7
ELU0	Under pressure in operation	Input voltage is abnormal or the relay is not engaged	Check the power supply circuit or seek the service from the manufacturer	8
ESC1	Under pressure in operation	Frequter output short circuit or grounding	Check motor wiring	9
		Frequency converter instantaneous overcurrent	See Overflow Countermeasures	
		The control board is abnormal or seriously disturbed	Seek for services from the manufacturer	
		Power device damage	Seek for services from the manufacturer	
E-OH	Radiator overheating	The ambient temperature is too high	Reduce ambient temperature	10
		Fan damage	Change the fan	
		The air duct is blocked	Unclog the air duct	
EOL1	Frequency converter overload	Improper V / F curve or torque lift setting	Adjust the V / F curve and the torque lift amount	11
		The power grid voltage is too low	Check the power grid voltage	
		The acceleration time is too short	Extend the acceleration time	
		The motor load is heavy	Choose a larger power frequency converter	
EOL2	Motor overload	Improper V / F curve or torque lift setting	Adjust the V / F curve and the torque lift amount	12
		The power grid voltage is too low	Check the power grid voltage	
		Motor blocking rotation or load mutation is too large	Check the load	
		Motor overload protection factor is not set correctly	Set the motor overload protection factor correctly	
E-EF	External equipment failure	External equipment fault input terminal is closed	Disconnect the external equipment fault input terminal and clear the fault (note the check cause)	13
EPOF	Dual CPU communication failure	A CPU communication failure	Seek for services from the manufacturer	14
EPID	PID feedback disconnection	The PID feedback line is loose	Check feedback connection	15
		The feedback amount is less than the disconnection detection value	Adjust the test input threshold value	
E485	A RS485 communication failure	Does not match the upper machine port rate	Adjust the Porter rate	16
		And RS485 channel interference	Check whether the communication line is shielded, whether the wiring is reasonable, and if necessary, consider and connect the filter capacitor	
		Communication timeout	retry	
ETUN	Motor tuning fault	Motor parameter is set wrong	Reset the motor parameters	17
ECCF	Current detection failure	Current sampling circuit fault	Seek for services from the manufacturer	18
		Auxiliary power failure		

EEEP	EEPROM Read and write error	EEPROM hitch	Seek for services from the manufacturer	19
EPLI	Output phase-deficiency protection	Outputs U, V, and W have a missing phase	Check the output wiring	20
EPAO	Fault of explosive pipe	The feedback pressure is less than the low pressure detection threshold or is equal to the high pressure detection threshold	Test the feedback line or adjust the high and low pressure valves	22

7. Description of the macro parameter setting

Functional macro definition	set up parameters	Automatically modify the parameter list	Commissioning steps and terminal wiring
Single-pump constant-pressure water supply mode	F0.00=1	F0.02=1；F0.06=20.0； F3.00=1021；F3.01=5.0； F3.12=5.0；F8.00=11； F8.01=11；F8.02=10； F8.03=10。	Step1: determine the sensor feedback type, AI factory default input voltage feedback signal (AVI), can also select the input current feedback signal (ACI) through the code switch; Step2: terminal wiring, if the pressure gauge is 0~10V output, connect the signal line of the pressure gauge to the AI and the other two wires to + 10V and GND; if the output is 0 ~ 20 mA, connect the pressure gauge signal line to the AI and the other wire to 10V; Step3: parameter initialization (F8.05=1); Step4: Set the sensor range (F3.18); Step6: Set the target pressure, set by parameter F3.01 or by up and down the keyboard.
Carver mode	F0.00=4	F0.02=1；F0.04=400.0； F0.05=400.0； F1.17=100.0；F1.18=150.0； F1.19=200.0；F1.20=250.0； F1.21=300.0；F1.22=350.0； F1.23=400.0；F2.15=13； F2.16=14；F2.17=15；F2.19=1； F4.03=400.0。	Step1: terminal wiring, switch (control start and stop) two wires connected to X1 and GND; Step2: parameter initialization (F8.05=1); Step3: Function macro selection (F0.00=4).

8. Certificate of Qualification

The product is inspected to meet the quality standard and is allowed to leave the factory.
Printing certificate