PDS7 inverter Manual

1. BE1 inverter comprehensive technical characteristics

Item		Specification
Basic control function	Control method	V/F control
	Upper limit frequency	0～999,9Hz
	Carrier frequency settings	0.5kHz～16kHz
	Input frequency resolution	Digital settings：0.1Hz Simulation settings：Maximum frequency×0.025%
	Start torque	G type machine：0.5Hz/150% P type machine：0.5Hz/100%
	Speed regulation	1：100
	Overload ability	G type machine：150% of rated current 60s；180% of rated current 3s。 P type machine：120% of rated current 60s； 150% of rated current 3s。
	Torque improvement	Manual torque improvement 0.1%~30.0%
	Acceleration and deceleration curve	Four kinds of acceleration and deceleration time，acceleration and deceleration time span 0.0~999.9s
	DC brake	DC brake frequency：0.0Hz~Maximum frequency　Brake time：0.0s~36.0s Current value of braking action：0.0%~100.0%
	Dot move control	Dot move frequency range：0.0Hz~50.0Hz. Dot move acceleration and deceleration time0.0s~999.9s。
	PLC、Multi -speed operation	Multi -stage speed operation through built -in PLC or control terminal
	Built -in PID special software	Integrated and enhanced PID control algorithm: It has functions of dormant, awakening, anti -freezing, disconnect detection, high and low voltage alarm, water deficiency detection, water shortage, automatic operation after water, automatic reset and other functions.
	Automatic voltage adjustment（AVR）	When the power grid voltage changes, it can automatically keep the output voltage constant
	Communication method	RS -485
	Protective function	Output lack of phase protection, over current protection, over voltage protection, under voltage protection, overload protection, etc.
Input output	Input terminal	2 digital input terminals, Two analog input terminals, each supports 0 ～ 10V voltage input or 4 to 20mA current input jumper Select 4-20mA, 4mA corresponding to 1.00V, 20mA corresponding to 5.00V
	Frequency source	A variety of frequency sources: number given, analog voltage given, analog current given, serial port given. Can be switched in various ways.
	Support multiple	Operating panel given, control terminal given, serial

	command sources	communication port given. Can be switched in various ways
	Output terminal	1 transistor output terminal 1 relay output terminal

	LED display	Displayed parameters
Keypad operation	Key lock and function selection	Realize the partial or complete locking of the keys, and define the scope of action of some keys to prevent misuse
Environment	Place of use	Indoor, free from direct sunlight, dust, corrosive gas, flammable gas, oil mist, water vapor, dripping water or salt, etc.
	Altitude	Lower than 1000m
	Ambient temperature	−10℃~＋40℃（The ambient temperature is 40℃~50℃, please use with derating）
	Humidity	Smaller than 95%RH，no condensation
	Vibration	Smaller than 5.9m/s2（0.6g）
	Storage temperature	−20℃~＋60℃

2. Keyboard description

1. Indicator light description

Indicator name	Function Description
FWD	Forward run indicator
REV	Reverse indicator light
RUN	Running light
STOP	Stop light

2. Button description

Button name	Function Description
PRG	Programming key: menu entry or exit
ENTER DISP	Confirmation key or shift key: short press is the shift key, long press is the confirmation key
△	Increment key: increment of data or function code
▽	Decrement key: Decrement of data or function code
RUN	Run key: used for running operation when the keyboard

		controls the start and stop
	STOP RESET	Stop/reset key: In the running state, press this key to stop the operation; in the fault alarm state, use this key to reset the fault.

3.Wiring

Single-phase 220V main circuit terminal

PE　L1　L2　U　V　W
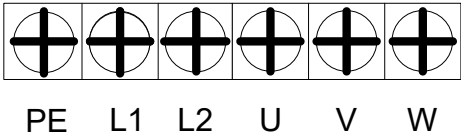
Three-phase 380V main circuit terminal

PE　R　S　T　U　V　W
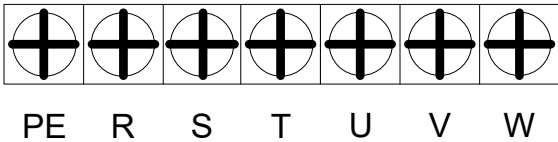
Main circuit terminal description

Name	Terminal description
PE	Ground terminal
L1、L2	Single-phase power input
R、S、T	Three-phase power input
U、V、W	Connect the motor

Single-phase 220V main circuit wiring diagram
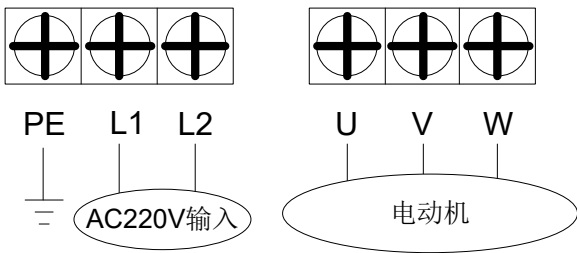
PE　L1　L2　U　V　W

AC220V输入　电动机

Three-phase 380V main circuit wiring diagram

PE　R　S　T　U　V　W

AC380V输入　电动机

Control circuit terminal

RAB RC MO1 24V GND S2 S1 FIV FIC 10V 5V RS+ RS-

（可选）
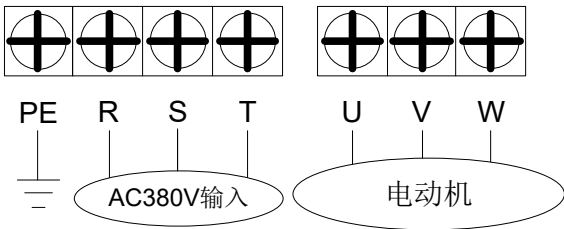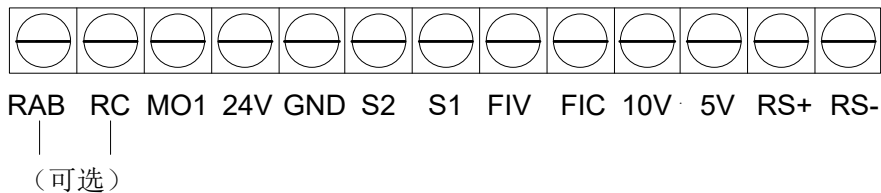
Control circuit terminal description

Terminal name	Function definition description	Remark
S1	Multi-function input terminal	The multi-function input terminals S1~S3 can be set specifically through parameters, and it is valid when the set terminal is closed with COM
S2	Multi-function input terminal	
24V	24V Auxiliary power	Maximum current 100mA
10V	Power supply for frequency setting	Maximum current 20mA
5V	Power supply for frequency setting	Maximum current 20mA
FIV	Analog input terminal	0~10V/0~20mA
FIC	Analog input terminal	0~10V/0~20mA
COM	Public end	
RS+	RS485 Communication +	
RS-	RS485 Communication -	
RAB、RC	Relay output contact (optional)	Normally open
MO1	Transistor output	

Control Panel Toggle Switch Instructions

Toggle switch name	Toggle switch description
J1	FIC, V short circuit for voltage input; FIC, I short circuit for current input
J3	FIV, V short circuit for voltage input; FIV, I short circuit for current input

Basic wiring diagram

Single phase 220V：
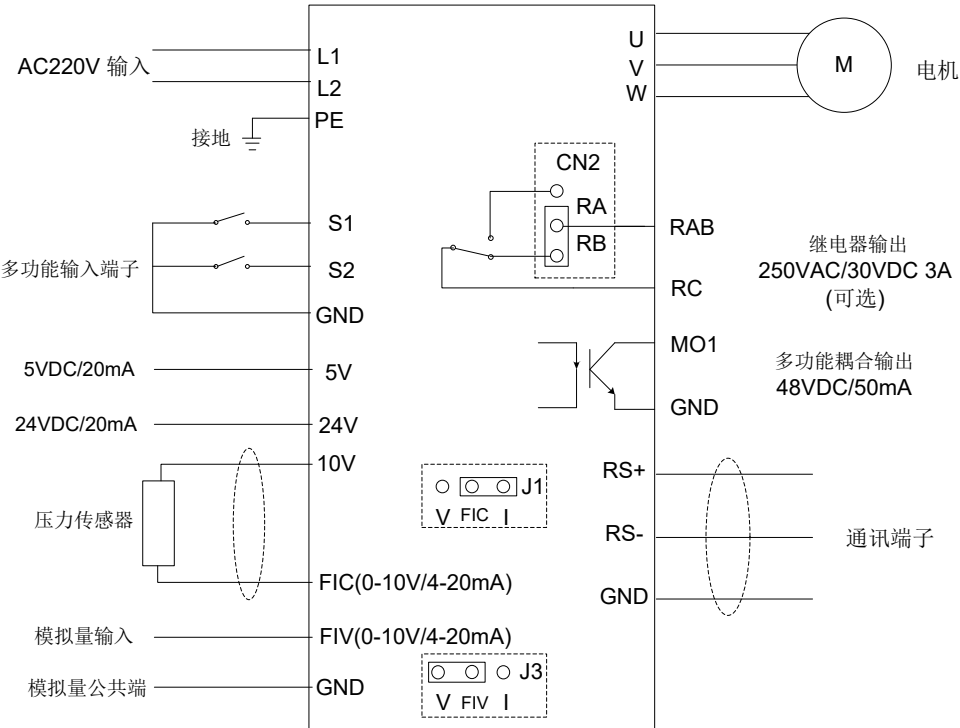
Three phase 380V：

4.Appearance and installation dimensions

5.Inverter series models

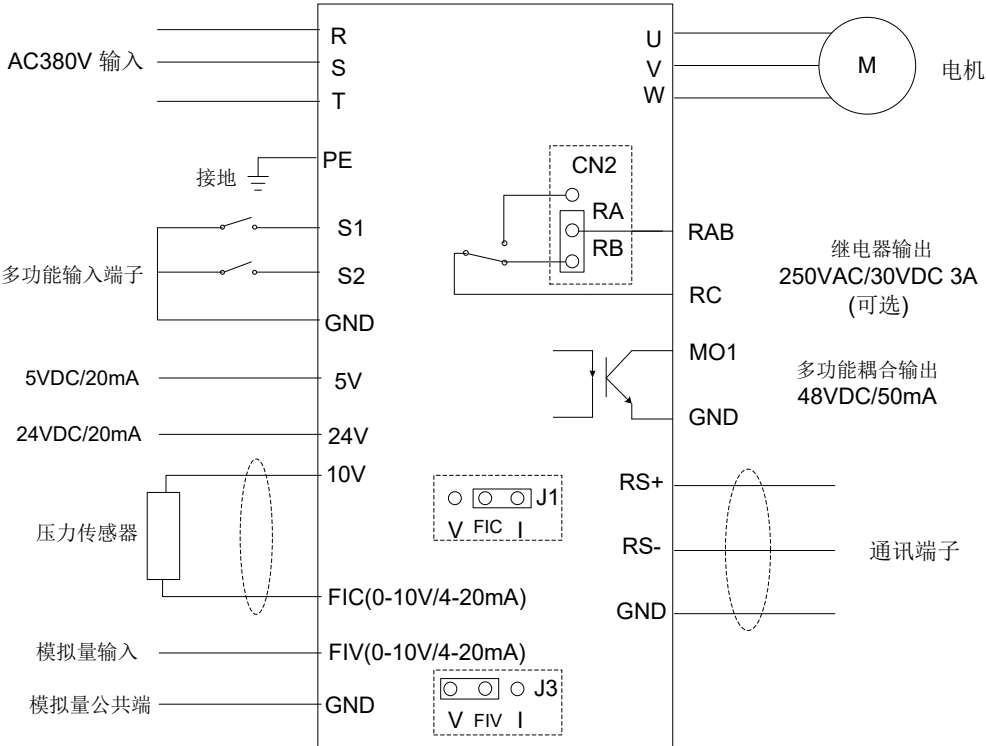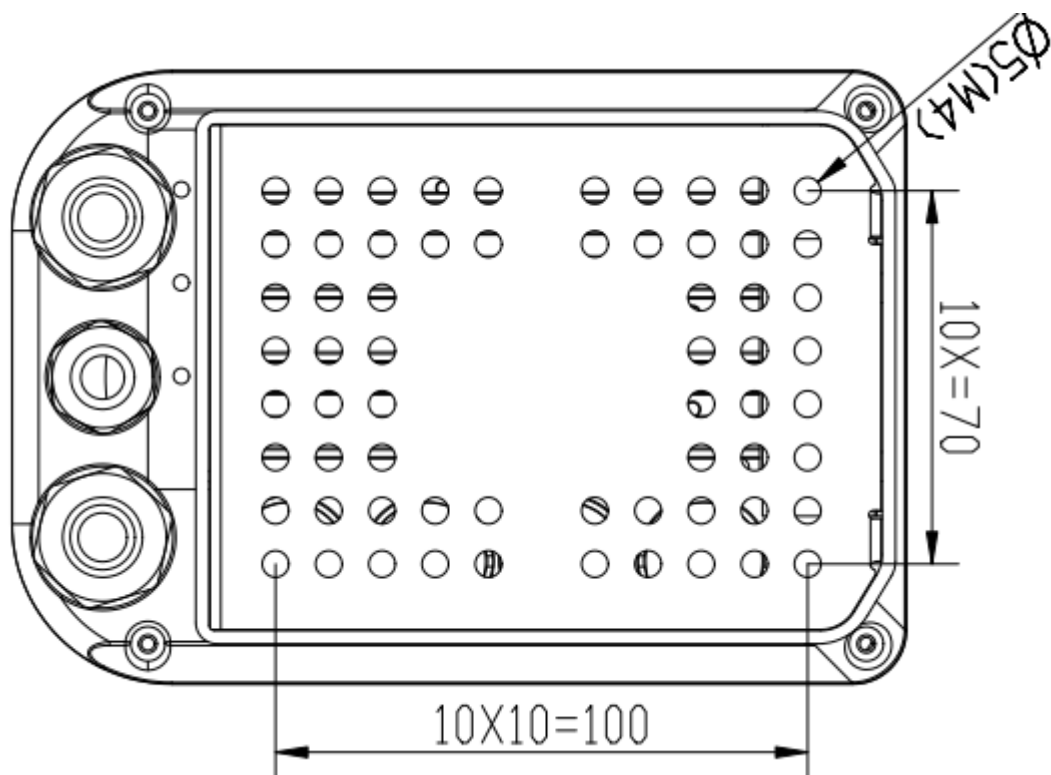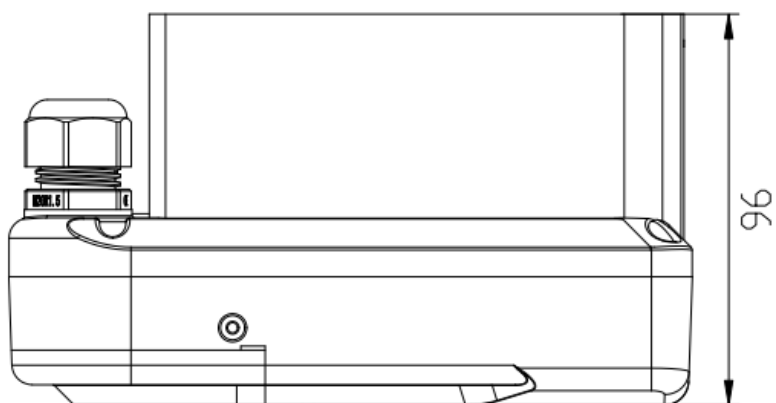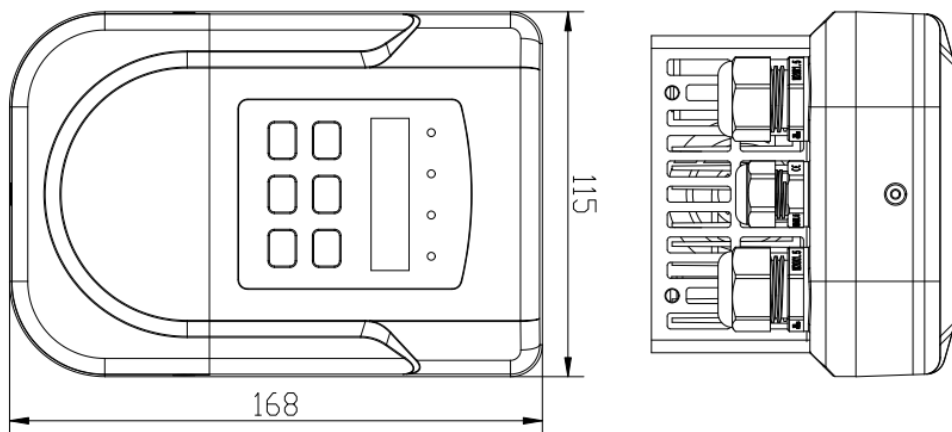| Inverter model	Input voltage	Applicable motor (kW)	Main loop path (mm²)	Air circuit breaker (A)	Electrom agnetic contactor (A)	Rated input current (A)	Rated output current (A)	output frequency (Hz)
PDS7-0R7P2	1PH 220V 50/60Hz	0.75	1.0	25	13	7.2	5	999.9
PDS7-1R5P2		1.5	1.5	25	18	10	7	999.9
PDS7-2R2P2		2.2	2.0	25	25	13	9	999.9
PDS7-0R7P4	3PH 380V 50/60Hz	0.75	0.5	10	6	3.5	2.1	999.9
PDS7-1R5P4		1.5	1.0	10	9	5	3.7	999.9
PDS7-2R2P4		2.2	1.0	10	10	5.8	5	999.9

6.Brief table of function parameters

"☆"：Indicates that the setting value of this parameter can be changed when the inverter is in stop or running state；

"★"：Indicates that the setting value of this parameter cannot be changed when the inverter is running;

"●"：Indicates that the value of this parameter is the actual detection record value and cannot be changed;

" * "：Indicates that the parameter is a "manufacturer's parameter", which is limited to the setting of the manufacturer, and the user is prohibited from operating it;

Function code	Name	Predetermined area	Factory default	Revise
P0 Basic Function Group				
P000	Show selection settings	0: set frequency; 1: running frequency; 2: output current; 3: Rotating speed; 4: Bus voltage; 5: Output voltage; 6: Reserved; 7: Display PID and set PID feedback; 15: pulse count	0	☆
P001	Set frequency	Unit:0.1Hz,		●
P002	Output frequency	Unit:0.1Hz		●
P003	Output current	Unit:0.01A		●
P004	Rotating speed	Unit:RMP		●
P005	DC bus voltage	Unit:0.1V		●
P006	Inverter temperature	Unit:1 °C		●
P007	PID display	Unit：0.01		●
P008	Power on time	Frequency conversion power-on accumulative time, unit: hour		●
P009	The output voltage	Frequency conversion operation output voltage, unit: 1V		●
P010	Fault record 1	0: No fault 2: Acceleration overcurrent 3: deceleration overcurrent 4: constant speed overcurrent 5: acceleration overvoltage 6: deceleration overvoltage 7: constant speed overvoltage		●
P011	Fault record 2			●
P012	Fault record 3			●

P013	Reserve	8: Snubber resistor overload 9: Undervoltage 10: Inverter overload 11: Motor overload 14: module overheating 16: abnormal communication; 24: low water supply pressure 27: high water supply pressure; 28: no water alarm 29: The power-on time is reached			●
P014	Frequency of recent failure setting	Unit:0.1Hz,			●
P015	Recent fault output frequency	Unit:0.1Hz,			●
P016	Recent fault output current	Unit:0.0A,			●
P017	Recent fault DC voltage	Unit:0.1V,			●
P018	Reserve				●
P0.20	Output Power	Unit:0.1KW			●
P021	Input terminal	Bit0-S1;　Bit1-S2;　Bit2-S3;			●
P022	Output terminal	Bit0: 1- YA/ YC action;　0-YA /YC no action Bit1: 1- RA/ RC action; 0- RA/ RC no action			●
P023	FIC Voltage	0.00~10.00V			●
P027	Fault state	0: No fault 2: Acceleration over current 3: deceleration over current 4: constant speed over current 5: acceleration over voltage 6: deceleration over voltage 7: constant speed over voltage 8: Snubber resistor overload 9: Under voltage 10: Inverter overload 11: Motor overload 14: module overheating 15: external fault 16: Abnormal communication; 24: Low water supply pressure 27: high water supply pressure; 28: no water alarm 29: The power-on time is reached 31: PID feedback lost during runtime			●
P028	Operating status	0: stop; 1 forward; 2: reverse			●

Function code	Name	Setting range	Factory default	Revise
P100	Digital frequency setting	0.0~P105	0.0 Hz	☆

P101	Main frequency source X selection	0: Digital frequency setting (UP/DOWN can be modified, power-off memory) 1: FIV analog input 2: FIC analog input 3: reserved 4: UP/DOWN mode (power-off memory) 5: RS485 communication frequency setting 6: Multi-segment instructions 7: Simple PLC 8: PID	3	★
P102	Operation setting selection	0: keyboard 1: I O terminal 2: Communication 3: Power on and run automatically, (Special reminder, pay attention to safety!)	0	★
P104	Reverse effective setting	0: disable inversion 1: can be reversed	1	☆
P105	Maximum operating frequency	Minimum operating frequency~999.9Hz	50.0 Hz	☆
P106	Minimum operating	0.00~Maximum operating frequency	0.0 Hz	☆
P107	Acceleration time 1	0~6000.0S	Change	☆
P108	Deceleration time 1	0~6000.0S	Change	☆
P109	VF Maximum voltage	VF intermediate voltage~500.0V	Change(220.0)	★
P110	VF base frequency	VF middle frequency~Maximum operating frequency	50.0Hz	★
P111	VF intermediate voltage	VF minimum voltage~VF Maximum voltage	Change	★
P112	VF middle frequency	VF minimum voltage~ VF base frequency	2.5 Hz	★
P113	VF minimum voltage	0~ VF intermediate voltage	Change	★
P114	VF minimum frequency	0~ VF middle frequency	1.2 Hz	★
P115	Carrier frequency	1.0K~ 15.0K	Change	☆
P116	Reserve	Reserve		
P117	Parameter initialization	8: Initial factory default value	0	★
P118	Parameter lock	1: Parameter lock 0: Parameter unlock	0	★
P119	Running direction	0: same direction; 1 opposite direction	0	☆

P120	Auxiliary frequency Y source	0: Digital frequency setting (UP/DOWN can be modified, power-off memory) 1: FIV analog input 2: FIC analog input 3: Reserve 4: UP/DOWN mode (power-off memory) 5: Rs485 communication frequency setting 6: Multi-segment instructions 7: Simple PLC 8: PID			★
P121	Frequency source selection	Units: frequency source selection 0: main frequency source X 1: The main and auxiliary operation results (the operation relationship is determined by the tens digit) 2: Switch between main frequency source X and auxiliary frequency source Y 3: Switch between the main frequency source X and the main and auxiliary calculation results 4: Switch between auxiliary frequency source Y and main and auxiliary calculation results Tens place: main and auxiliary operation relationship of frequency source 0: main + auxiliary 1: Main-Auxiliary 2: The maximum value of both 3: The minimum valueof both	0		☆
P122	Auxiliary frequency source Y range selection	0: relative to the maximum frequency 1: relative to frequency source X	0		☆
P123	Auxiliary frequency source Y range	0%～150%	100%		☆
P124	Auxiliary frequency source bias frequency during superposition	0.0Hz~ maximum frequency P1.05	0.0Hz		☆
P125	Runtime frequency command UP/DOWN benchmark	0: running frequency; 1 set frequency	1		★
P126	Upper limit frequency	lower limit frequencyP1.06 ~ maximum frequency P1.05	50.0 Hz		☆
P127	Acceleration and deceleration time base frequency	0: maximum frequency; 1 set frequency; 2: 100hz	0		★
Function Code	**Name**	**Predetermined Area**	**Factory Default**	**Change**	

		P2 Group			
P200	Start method	0：Regular start	0	☆
P201	Parking method	0：Slow down and stop 1: Free parking	0	☆
P202	Start frequency	0.0~50.0 Hz	0.5 Hz	☆
P203	Stop frequency	0.0~50.0Hz	0.5 Hz	☆
P204	DC braking output	0~10.0% Motor rated voltage	0.0%	★
P205	DC braking time at startup	0.0~100.0S	0.0	☆
P206	DC braking output voltage at stop	0~10.0% Motor rated voltage	0.0%	☆
P207	DC braking time at stop	0.0~100.0S	0.0	☆
F2.08	Torque boost	0~20.0%	change	☆
F2.09	Motor rated voltage	0~500.0V	380.0V	☆
F2.10	Motor rated current	0.1-999.9A (Inverter>30kw) 0.01-99.99A (Inverter<=30kw)	change	☆
F2.11	Motor no-load current ratio	0-100%	50%	☆
F2.12	Motor rated speed	0~6000r/min	1460	☆
F2.13	Number of poles	0~20	4	☆
F2.14	Motor rated slip	0~10.00 Hz	2.50 Hz	☆
F2.15	Motor rated frequency	0-400.00 Hz	50.00 Hz	☆

Function Code	Name	Predetermined Area	Factory Default	Change
		P3 Group		
P300	FIV minimum input	0.00V~P302（When selecting current, 4mA corresponds to 1.00V）	0.00V	☆
P301	FIV maximum input	P301~10.00V（When selecting current, 20mA corresponds to 5.00V）	10.00V	
P302	FIV input filter time	0.00~10.00S	0.10S	
P303	FIC minimum input	0.00V~P304（When selecting current, 4mA corresponds to 1.00V）	0.00V	
P304	FIC maximum input	P303~10.00V（When selecting current, 20mA corresponds to 5.00V）	10.00V	☆
P305	FIC input filter time	0.00~10.00S	0.10S	☆

P310	Analog low-end frequency	0~999.9HZ	0.0Hz	☆
P311	Analog low-end direction	0/1：Forward Reverse	0	☆
P312	Analog high-end frequency	0~999.9HZ	50.0Hz	☆
P313	Analog high-end direction	0/1：Forward Reverse	0	☆
P314	reserve			
P315	S1	0：no function 1: Inching; 2：Forward inching; 3：Reverse inching; 4：Forward and Reverse; 5: Run 6：Forward running (FWD); 7：Reverse operation (REV) 8：Stop (three-wire operation control); 9： Multi-stage command terminal 1 10：Multi-stage command terminal 2; 11：Multi-stage command terminal 3 12：Multi-stage command terminal 4; 13：Acceleration and deceleration time selection terminal 1; 14：Acceleration and deceleration time selection terminal 2;	6	★
P316	S2	15：Terminal UP; 16：Terminal DOWN 17：Free parking;	7	★
P317	S3	18：Fault reset (RESET)	18	★
P323	MO1	0：no output 1：The inverter is running; 2：Frequency arrival 3：Fault output (fault shutdown) 4：Running at zero speed (effective at stop) 5：Frequency up to 1 6：Frequency up to 2 7：accelerating 8：decelerating	1	☆
P324	Reserve	9：Brown-out status output 10：Timer 1 arrives 11：Timer 2 arrives		

P325	RAB,RC	12：PLC cycle completion indication 13：reserve 14：PID upper limit 15：PID lower limit 16：4~20mA disconnection 17：Motor overload pre-alarm 18：Inverter overload pre-alarm 27：Set count pulse value arrival 28：The specified count pulse value arrives 29: Constant pressure water supply Power frequency relay output 30: ready to run READY	3	☆
P3.28	Switch value filter time	0.000s～1.000s	0.010s	☆
P3.29	Terminal command mode	0: two-wire1;　1：two-wire 2;　2：three-wire1 3：three-wire2	0	★
P3.30	Terminal UP/DOWN rate of change	0.01Hz/s～99.99Hz/s	1.00Hz/s	☆
P3.31	Output terminal active state selection	0：positive logic；1：negative logic Units：YA-YC tens place：RA- RC	H.000	☆
P3.32	S1delay time	0.0s～999.9s	0.0s	☆
P3.33	S2 delay time	0.0s～999.9s	0.0s	☆
P3.34	S3 delay time	0.0s～999.9s	0.0s	☆
P3.35	Terminal effective mode selection 1	0：high level efficient ； 1：low level efficient Units: S1 Tens place: S2 Hundreds: S3 Thousands: reserve	0000	★

Function Code	Name	Predetermined Area	Factory Default	Change
		P4 Group		
F4.00	Jog frequency setting	0.0~Maximum operating frequency	5.0Hz	☆
F4.01	acceleration time 2	0~999.9S	10.0s	☆
F4.02	acceleration time 2	0~999.9S	10.0s	☆
F4.03	acceleration time 3	0~999.9S	10.0s	☆
F4.04	acceleration time 3	0~999.9S	10.0s	☆

F4.05	acceleration time 4/jog acceleration time	0~999.9S	2.0s	☆
F4.06	Deceleration time 4/ Jog deceleration time	0~999.9S	2.0s	☆
P407	set counter value	0~9999	100	☆
P408	Specifies the counter value	0~9999	50	☆
P409	Acceleration torque limit level	50~200%	150%	☆
P410	Overflow stall suppression gain	0~100%	20%	☆
P411	Deceleration Overvoltage Prevention Selection	0：invalid；1：efficient	1	☆
P412	VF over excitation gain	0~100%	10	☆
P413	Overvoltage stall suppression gain	0~200%	50%	☆
P414	Brake pipe operating voltage	220V class：370.0V	变动	☆
P415	Reserve			☆
P416	Boot Protection Selection	0：Protect， 1：not protected	1	☆
P417	Instantaneous power failure action selection	0: invalid; 1: slow down; 2: Deceleration stop	0	☆
P420	Fault automatic reset times	0~20	0	☆
P421	Fault automatic reset interval time	0.1s~100.0s	1.0s	☆
P422	Reserve		0	☆
P423	Overcurrent detection level	0~200.0% (If the current lasts for P424 time and exceeds P423, it will report fault motor overload	0.0%	☆
P424	Past the current detection time	0~999.9S	10.0S	☆
P425	Frequency-arrival frequency setting (FDT1)	0.0Hz~maximum frequency	0.0Hz	☆
P426	Frequency 2 arrival frequency setting (FDT2)	0.0Hz~maximum frequency	0.0Hz	☆
P427	Timer 1 setting	0.0S~999.9S	10.0S	☆
P428	No. 2 timer setting	0.0S~999.9S	20.0S	☆
P430	Frequency detection hysteresis value (FDT1）	0.0%~100.0%（FDT1 或 FDT2)level）	5.0%	☆
P431	Jump frequency 1	0.00Hz~maximum frequency	0.00Hz	☆

Function Code	Name	Predetermined Area	Factory Default	Change
P432	Jump frequency 2	0.00Hz～maximum frequency	0.00Hz	☆
P433	Hop Frequency Amplitude	0.00Hz～maximum frequency	0.00Hz	☆

Function Code	Name	Predetermined Area	Factory Default	Change
		P5 Group		
P500	PLC shutdown, Power-down memory selection	Units: stop memory selection 0: Stop without memory 1: Shutdown memory Tens place: power-down memory selection 0: no memory when power off 1: power-off memory	00	☆
P501	PLC open method	0: If P101=7, the PLC is turned on, otherwise the PLC is not turned on 1: PLC open		
P502	Simple PLC operation mode	0 or 1：Stop at the end of a single run 2 or 3：keep looping 4：Keep the final value at the end of a single run	0	☆
P503	multi-speed frequency1	0.0~maximum operating frequency	5.0 Hz	☆
P504	multi-speed frequency2	0.0~maximum operating frequency	10.0 Hz	☆
P505	multi-speed frequency3	0.0~maximum operating frequency	20.0 Hz	☆
P506	multi-speed frequency4	0.0~maximum operating frequency	25.0 Hz	☆
P507	multi-speed frequency5	0.0~maximum operating frequency	30.0 Hz	☆
P508	multi-speed frequency6	0.0~maximum operating frequency	35.0 Hz	☆
P509	multi-speed frequency7	0.0~maximum operating frequency	40.0 Hz	☆
P510	multi-speed frequency8	0.0~maximum operating frequency	45.0 Hz	☆
P511	multi-speed frequency9	0.0~maximum operating frequency	50.0 Hz	☆
P512	multi-speed frequency10	0.0~maximum operating frequency	10.0 Hz	☆
P513	multi-speed frequency11	0.0~maximum operating frequency	10.0 Hz	☆
P514	multi-speed frequency12	0.0~maximum operating frequency	10.0 Hz	☆
P515	multi-speed frequency13	0.0~maximum operating frequency	10.0 Hz	☆

P516	multi-speed frequency14	0.0~maximum operating frequency	10.0 Hz	☆
P517	multi-speed frequency15	0.0~maximum operating frequency	10.0 Hz	☆
P518	PLC operation hours 1	00s（h）～9999 s（h）	100s（h）	☆
P518	PLC operation hours 2	00s（h）～9999 s（h）	100s（h）	☆
P520	PLC operation hours 3	00s（h）～9999 s（h）	100s（h）	☆
P521	PLC operation hours 4	00s（h）～9999 s（h）	100s（h）	☆
P522	PLC operation hours 5	00s（h）～9999 s（h）	100s（h）	☆
P523	PLC operation hours 6	00s（h）～9999 s（h）	0s（h）	☆
P524	PLC operation hours 7	00s（h）～9999 s（h）	0s（h）	☆
P525	PLC operation hours 8	00s（h）～9999 s（h）	0s（h）	☆
P526	PLC operation hours 9	00s（h）～9999 s（h）	0s（h）	☆
P527	PLC operation hours 10	00s（h）～9999 s（h）	0s（h）	☆
P528	PLC operation hours 11	00s（h）～9999 s（h）	0s（h）	☆
P529	PLC operation hours 12	00s（h）～9999 s（h）	0s（h）	☆
P530	PLC operation hours 13	00s（h）～9999 s（h）	0s（h）	☆
P531	PLC operation hours 14	00s（h）～9999 s（h）	0s（h）	☆
P532	PLC operation hours 15	00s（h）～9999 s（h）	0s（h）	☆
P533	PLC Running direction low	0～9999	0	☆
P534	Reserve		0	☆
P535	Reserve			☆
P536	PLC running direction high	0～6	0	☆
P537	PLC elapsed time unit	0：s（Second） 1：h（Hour）	0	☆
P538	Multi-speed 1 selection	0：P5.03	0	☆

P539	PLC first stage acceleration and deceleration time selection	0~3	0	☆
P540	PLC 2nd stage acceleration and deceleration time selection	0~3	0	☆
P541	PLC 3rd stage acceleration and deceleration time selection	0~3	0	☆
P542	PLC fourth stage acceleration and deceleration time selection	0~3	0	☆
P543	PLC Fifth stage acceleration and deceleration time selection	0~3	0	☆
P544	PLC Sixth stage acceleration and deceleration time selection	0~3	0	☆
P545	PLC Seventh stage acceleration and deceleration time selection	0~3	0	☆
P546	PLC Eighth stage acceleration and deceleration time selection	0~3	0	☆
P547	PLC Ninth stage acceleration and deceleration time selection	0~3	0	☆
P548	PLC Tenth stage acceleration and deceleration time selection	0~3	0	☆
P549	PLC Eleventh stage acceleration and deceleration time selection	0~3	0	☆
P550	PLC Twelfth stage acceleration and deceleration time selection	0~3	0	☆
P551	PLC Thirteenth stage acceleration and deceleration time selection	0~3	0	☆

P552	PLC Fourteenth stage acceleration and deceleration time selection	0～3	0	☆
P553	PLC Fifteenth stage acceleration and deceleration time selection	0～3	0	☆
P554	Wobble frequency setting method	0：relative to center frequency 1：relative to the maximum frequency	0	☆
P555	Swing frequency	0.0%～100.0%	0.0%	☆
P556	Kick frequency amplitude	0.0%～50.0%	0.0%	☆
P557	swing cycle	0.1s～999.9s	10.0s	☆
P558	Triangular wave rise time of wobble frequency	0.1%～100.0%	50.0%	☆

Function Code	Name	Predetermined Area	Factory Default	Change
P6 Group				
P600	PID open method	0：If P101=8, PID is valid, otherwise it is invalid; 1：PID is valid 2：PID conditional run	0	☆
P601	PID operating mode	0: negative feedback mode 1: positive feedback mode	0	☆
P602	PID target selection	0: digital setting P6.04 given 1: Choose FIV as target value 2: Choose FIC as target value	0	☆
P603	PID Feedback options	0: select FIV as feedback 1: Select FIC as feedback	0	☆
P604	PID Value given	0.0Bar ~ P614	2.50Bar	☆
P605	PID Upper limit	P6.06~P614	10.00Bar	☆
P606	PID lower limit	0.0Bar~P6.05	0.00Bar	☆
P607	PID-P	0.0~600.0%	100.0%	☆
P608	PID-I	0.0~10.00S	2.00S	☆
P609	PID-D	0.0~9.999S	0.000S	☆

P610	The maximum value of the positive direction of the two output deviations	0.00%～100.00%	2.00%	☆
P611	Sleep frequency	0.00~maximum frequency If the Sleep frequency is 0, it will not sleep。	25.0HZ	☆
P612	Sleep time	0.00~6000S	10S	☆
P613	Sleep wakeup value	0.00~P614 During sleep, if the P613 is lower than the target pressure, it will wake up.	0.50	☆
P614	Range	0.00~50.00bar	10.00bar	☆
P615	PID display digit	1~4	4	☆
P616	PID show decimal point	0~4	2	☆
P617	Maximum number of operating pumps	Range 1~4	4	
P618	Main pump selection	1：Main pump；0：Slave pump	0	☆
P619	multi-pump mode	0	0	☆
P620	PID deviation limit	0.0~100.0% of Range P614	0.1%	☆
P621	PID Feedback loss alarm mode	0: no alarm; 1: Alarm does not stop, the alarm code is "20", and the inverter should stay at the last frequency before the signal is interrupted. . 2: Alarm shutdown: fault code "20", the inverter should stop.	0	☆
P622	PID Feedback loss detection value	Range: 0-10.00V (If you choose 4~20mA, less than 2mA is disconnected; Then set P622=2mA*250ohm=0.50V)	0.50V	☆
P623	PID Feedback loss detection time	0.0s～20.0s	1.0s	☆
P624	PID inversion cut-off frequency	0.00～maximum frequency	0.00Hz	☆
P625	PID Differential clipping	0.00%～99.99%	0.10%	☆
P626	PID given change time	0.00～99.99s	0.00s	☆
P627	PID feedback filter time	0.00～60.00s	0.00s	☆
P628	PID output filter time	0.00～60.00S	0.00s	☆
P629	reserve			
P630	PID proportional gain P2	0.0~600.0%	200.0%	☆

P631	PID proportional gain I2	0.0~10.00S	0.50S	☆
P632	PID proportional gain D2	0.0~9.999S	0.000S	☆
P633	PID parameter switch condition	0: do not switch 1: switch via S terminal 2: Automatic switching according to the	0	☆
P634	PID parameter switching deviation 1	0.0%～PA.20	5.0%	☆
P635	PID parameter switching deviation 2	PA.19～100.0%	10.0%	☆
P636	PID initial value	0.0%～100.0%	0.0%	☆
P637	PID initial value hold time	0.00～99.99s	0.00s	☆
P638	reserve			☆
P639	PID integral attribute	Units: Integral separation 0: invalid 1: valid Tens place: whether to stop integration after the output reaches the limit 0: continue scoring 1: stop integrating	00	☆
P640	PID stop operation	0: no operation when shutdown; 1: operation when shutdown	0	☆
P641	Water shortage pressure detection value	0.00 bar ~ P604 (Set to 0.00bar, no detection)	0.50bar	☆
P642	After the high pressure or low pressure alarm, P642 after a delay, automatically reset the high voltage fault,	1) After the high pressure alarm, after the pressure returns to normal, P642 will automatically reset the high pressure fault after a delay, 2) After the low-voltage alarm, P642 will automatically reset the low-voltage fault after a delay, If P642=0, after the high pressure or low pressure alarm, it will not reset, the range is 0~9999S	10S	☆
P643	Low water pressure alarm detection time	During operation, if the pressure is lower than P606 and P643 continues, it will report "low water pressure fault" and stop, fault code "LP"; if P643=0, low pressure fault will not be detected	10S	☆
P644	Water shortage alarm detection time	0~9999S	100S	☆

P645	Delay setting for automatic operation after power on	0:Invalid 1:Valid	0	☆
P646	Water shortage self-reset first 10 times, interval time	0~9999s	600S	☆
P647	Time interval after 10 times of water shortage	0~1000min	60min	☆
P648	Antifreeze setting selection	0:Invalid 1:Valid	0	☆
P649	During sleep, antifreeze waiting time	0~9999s	900s	☆
P650	During sleep, antifreeze waiting time	0~9999s	30s	☆
P651	During sleep, antifreeze operation frequency	0~50.0Hz	15.0Hz	☆
P652	sleep judgment: frequency change<P652/S,starting to judge sleep>	0~10.0Hz	0.5Hz	☆
P653	sleep judgment: the reduce frequency allows the pressure to drop.	0.0~10.0%	0.60%	☆
P654	sleep judgment: the rate of decline per second	0~10.0Hz	0.3Hz	☆
P655	sleep judgment: the times of the frequency of the fall	0~1000	10time	☆
P656	sleep judgment: the frequency is greater than P6.56,not sleep.	0~Maximum frequency P1.05	42.0Hz	☆
P657	PID sampling time	0~1000 ms	4ms	☆
P658	Pump frequency	0.00~Maximum frequency	49.0Hz	
P659	Add pump detection time	0.0~6553.5s	10.0s	
P660	Reduce pump frequency	0.00~Maximum frequency	25.0Hz	
P661	Reduce pump detection time	0.0~6553.5s	10.0s	

Function Code	Name	Setting Range	Default	Change
P662	Pump change time	0.0~6553.5 min	100.0 min	
P663	Contactor pull-in delay time	0.1~100.0s	0.5s	
P664	Contactor off delay time	0.1~100.0s	0.5s	
P665	Available options for individual pumps	0:Invalid 1:Valid Units: Pump No. 1 Tens: Pump No. 2 Hundreds place: Pump No. 3 Thousands place: Pump No. 4	11	
P666	Multi-pump function is valid	0: Standard machine 1: Multi-pump control	0	
P667	Regulator pump selection	0~4	0	
P668	Reserved			
P669	When starting up and running, it is effective to replace the variable frequency pump	0:Invalid 1:Valid	0	
Function Code	**Name**	**Setting Range**	**Default**	**Change**
P700	baud rate	0: 4800BPS; 1: 9600BPS; 2: 19200; 3: 38400;	1	☆
P701	data format	0: no parity (8-N-1) for ASC 1: even parity (8-E-1) for ASC 2: Odd parity (8-O-1) for ASC 3: No parity (8-N-1) for RTU 4: Even parity (8-E-1) for RTU 5: Odd parity (8-O-1) for RTU	3	☆
P702	local address	1~247，0 is broadcast address	1	☆
P703	communication Error Handling	0: no alarm 1: alarm, display Co 2: Jump to the faulty Co and shut down	0	☆
P704	communication timeout	0.0 (invalid), 0.1s~60.0s	0.0	☆

Characteristic Function	Parameter	Display

Function Code	Name	Setting Range	Default	Change
P800	user password	0: locked 1: not locked	1	☆
P802	model selection	1: P type	alteration	☆
P803	Overvoltage protection level setting	400V (LEVEL 220V);	alteration	☆
P804	Low voltage protection level setting	150V (LEVEL 220V);	alteration	☆
P805	Temperature alarm value		alteration	☆
P807	Communication frequency setting decimal point	0: 1 decimal place: 500 means 50.0HZ; 1: 2 decimal places: 5000 means 50.0HZ	0	☆
P812	Digital setting frequency Shutdown memory selection	0: memory; 1: no memory	0	☆
P813	reserved	40~120°C	alteration	
P814	Motor overload factor	0.20~10.00	1.00	☆
P815	PWM switching frequency	0.0~100.0Hz	12.0Hz	☆
P816	Motor overload protection selection	0: forbidden; 1 allowed	0	☆

7. Characteristic Function：

		code
PID constant pressure water supply	constant pressure control	
PID sleep	1) When the pressure is reached, the running frequency is less than the dormant frequency P611, and the duration is longer than the dormant time P612. The frequency drops to 0, enters the dormant state and displays "SLP". 2) When the operating frequency is higher than the dormant frequency P611, and the frequency is stable, the inverter can intelligently identify and enter the dormant state, the relevant parameters are P652~P655. 3) If the frequency is higher than P656, do not judge sleep.	SLP
PID wake up	In sleep, the feedback pressure is less than the set pressure of P613,the inverter wakes up and the PID starts to work.	
Pressure disconnection alarm	If the pressure sensor is disconnected, the inverter will report a fault and display "20", refer to P621	20
No water alarm	When running, the frequency reaches the maximum frequency, the pressure is less than P641, and the duration is greater than P644, it will report "water shortage fault" and stop, fault code "LL", if P641=0, do not detect this fault.	LL
Low water pressure alarm	During operation, if the pressure is lower than P606 and continues to be P643, it will report "low pressure fault" and shut down, and the fault code is "LP". If P643=0, do not detect this fault.	LP
High water pressure alarm	If the pressure is greater than P605, it will report "high pressure fault" and stop the machine, with fault code "HP". If P605=P614, do not detect this fault, after the pressure returns to normal, delay P642s to reset the fault	HP
Power on and run automatically	When P1.02=0, set P645=1, it will run automatically after power on	
Antifreeze function	P648 is effective for antifreeze. After starting, the dormant or non-working inverter lasts longer than P649. At the frequency of P651, it will stop after running for the time of P650. After P649, run for the time of P650 again, and so on.	
Add pump	If the operating frequency is greater than the pumping frequency P658, and the feedback is less than 95% of the set value, and the duration is greater than the pumping time P659, the current pump will switch to power frequency operation and start the next variable frequency operation.	

Reduce pump	If the operating frequency is lower than the pump reduction frequency P660, and the feedback is greater than 95% of the set value, and the duration is longer than the pump reduction time P661, the power frequency pump that was first switched on will stop running according to the principle of first-in, first-out.
Change the pump	When the variable frequency pump is running, if the duration reaches the pump replacement time, it will be replaced to the next variable frequency pump.
Water shortage fault automatic reset function	When a water shortage fault occurs, the inverter will automatically reset the fault and run, and the automatic reset interval time refers to P646 and P647. Shut down after tap water is cut off, and automatically restore normal water supply after tap water is normal. (In the keyboard operation mode, the function of automatic power-on and automatic operation needs to be turned on)
Pressure setting and display	1) The unit Bar of "setting pressure feedback pressure" is displayed on the digital tube at the same time; and other content can be switched to display. 2) Press the up and down keys to adjust the pressure mode, refer to the parameter P602. P602=0: Digital word target value P604, can be set by up and down keys; display pressure screen when changing.

8.Multi-pump control wiring diagram

Main pump parameters						
Function Code	Name	Content	P117=8 Restore factory defaults	P117=20 2-pump main pump	P117=21 3-pump main pump	P117=22 4-pump main pump
P600	PID opening method	0: If P101=8, PID is valid, otherwise it is invalid; 1: PID is valid 2: PID conditional operation	0	1	1	1
P618	Main pump selection	1: master pump; 0: slave pump	0	1	1	1
P666	Available options for individual pumps	0: invalid 1: valid Units: Pump No. 1 Tens: Pump No. 2 Hundreds place: pump No. 3 Thousands place: No. 4 pump	11	11	111	1111
P614	Range	0.00~50.00bar	10.00	16.00	16.00	16.00
Slave pump parameters First P117=8 then set the following parameters						
Function Code	Name	Content	Slave setting value			
P101	Main frequency source X selection	0: Digital frequency setting (UP/DOWN can be modified, power-off memory) 1: FIV analog input 2: FIC analog input 3: reserved 4: UP/DOWN mode (power-down memory) 5: RS485 communication frequency setting 6: Multi-segment instructions 7: Simple PLC 8: PIDs	5			
P102	Operation setting selection	0: keyboard 1: I O terminal 2: Communication	2			
P702	local address	1~247	Each slave follows this 2, 3, 4			

9. Error pre alarm

Error Code	Fault Content	Possible Cause of Failure	Solution
OC1（2）	Acceleration overcurrent	1: Acceleration time is too short 2: V/F curve setting is unreasonable 3: The motor line is short-circuited to the ground 4: The torque boost setting is too large 5: Grid voltage is too low 6: Start the running motor directly 7: Inverter configuration is unqualified 8: Inverter failure	1: Extend the acceleration time 2: Correctly set the VF curve 3: Check the motor wire insulation 4: Reduce the torque boost setting value 5: Check the power grid 6: Check the load 7: Set speed tracking start 8: Increase the capacity of the frequency converter 9: send for repair
OC2（3）	Deceleration overcurrent	1: The deceleration time is set too short 2: Improper inverter capacity configuration 3: Whether there is interference	1: Extend the deceleration time 2: Increase the capacity of the inverter 3: Solve the source of interference
OC3（4）	Overcurrent during constant speed operation	1: Poor insulation of motor and motor output wire 2: The load fluctuates greatly or there is a slight stuck situation 3: Grid voltage fluctuates 4: Improper configuration of inverter capacity 5: Whether there is a high-power motor starting in the system, causing the grid voltage to drop 6: Is there any source of interference, interfering with the frequency converter	1: Check the motor and motor wire insulation 2: Check whether the load is stuck or poorly lubricated, etc. 3: Check grid voltage 4: Increase the capacity of the frequency converter 5: close to the source of interference

OU1（5）	Accelerated overvoltage	1: Abnormal power supply 2: Improper peripheral line setting (such as using air switch to control start and stop, etc.) 3: Inverter failure	1: Check the power supply voltage 2: Do not use the power circuit breaker to control the start and stop of the inverter 3: send for repair
OU2（6）	Deceleration overvoltage	1: The deceleration time is too short 2: Abnormal power supply voltage 3: Large load inertia 4: Improper configuration of braking resistor 5: Brake parameter setting is unreasonable	1: Extend the deceleration time 2: Check the power supply 3: Install braking unit and braking resistor 4: Reconfigure the braking resistor 5: Correctly set the parameters, such as brake tube action voltage, etc.
OU3（7）	Overvoltage during constant speed operation	1: Abnormal power supply voltage 2: With energy feedback load 3: Improper configuration of braking resistor	1: Check the power supply voltage 2: Install braking unit and braking resistor 3: Reconfirm the braking resistor configuration
POF（8）	Snubber resistor overload	1: Abnormal power supply voltage 2: Power supply voltage phase loss	1: Check the power supply voltage 2: Check whether there is a phase loss in the power supply, circuit breaker, etc.
LU（9）	Undervoltage		
OL1（11）	Motor overload	1: The load is too large 2: Acceleration time is too short 3: The torque boost is too large 4: VF curve setting is unreasonable 5: Grid voltage is too low 6: The motor does not stop steadily, and the inverter starts directly 7: The load fluctuates or is stuck	1: Reduce the load or replace the inverter with a larger gear 2: Extend the acceleration time 3: Reduced torque boost 4: Reset the VF curve 5: Check the grid voltage and increase the capacity of the inverter 6: Use trace startup mode 7: Check the load condition
OL2（12）	Inverter overload		
OH（14）	Module overheating	1: The ambient temperature is too high 2: The air duct is blocked 3: The fan is damaged 4: The thermistor is damaged 5: The inverter module is damaged	1: Reduce the ambient temperature 2: Clean the air duct 3: Replace the fan 4: Replace the thermistor 5: Replace the inverter module
	Communication timeout	1: The upper computer is not working properly 2: The communication line	1: Check the upper computer wiring 2: Check the inverter communication cable

CO（16）		is abnormal 3: Communication parameter PD group setting is incorrect	3: Correctly set the communication parameters
TE（29）	Power-on time arrives	1: The accumulative power-on time reaches the set value	1: Contact the manufacturer
LP（24）	low water pressure alarm (During operation, if the pressure is lower than P606 and continues to P643, it will report "low pressure fault" and stop, fault code "LP". If P643=0, this fault will not be detected)	1: The pressure sensor is wired incorrectly 2: The parameter setting is unreasonable	1: Check the pressure sensor wiring 2: Set parameters correctly
HP（27）	High water pressure alarm (If the pressure is greater than P605, it will report "high pressure fault" and stop, fault code "HP". If P605=P614, this fault will not be detected)		
LL（28）	Water shortage alarm (When running, the frequency reaches the maximum frequency, the pressure is less than P641, and the duration is greater than P644, it will report "water shortage fault" and stop, and the fault code is "LL". If P641=0, this fault will not be detected)	1: The pressure sensor is wired incorrectly 2: The parameter setting is unreasonable 3: There is no water in the pipe	1: Check the pressure sensor wiring 2: Set parameters correctly 3: Check the pipes
20（31）	PID feedback lost	1: Pressure sensor problem 2: The pressure sensor is wired incorrectly 3: The parameter setting is unreasonable	1: Replace the pressure sensor 2: Check the pressure sensor wiring 3: Set parameters correctly
SLP	Prompt that the inverter is sleeping, this is not a fault	-	-