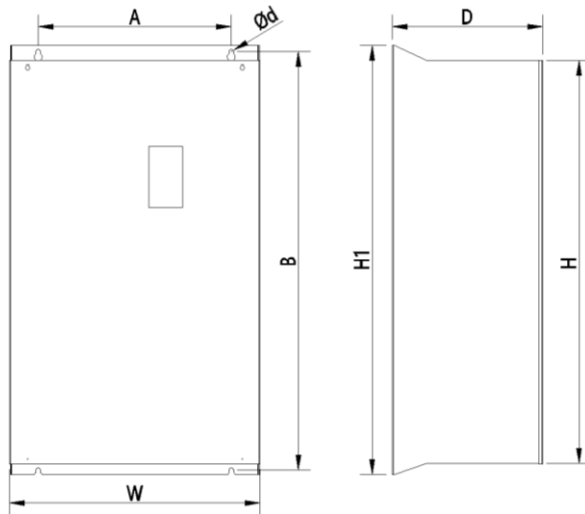


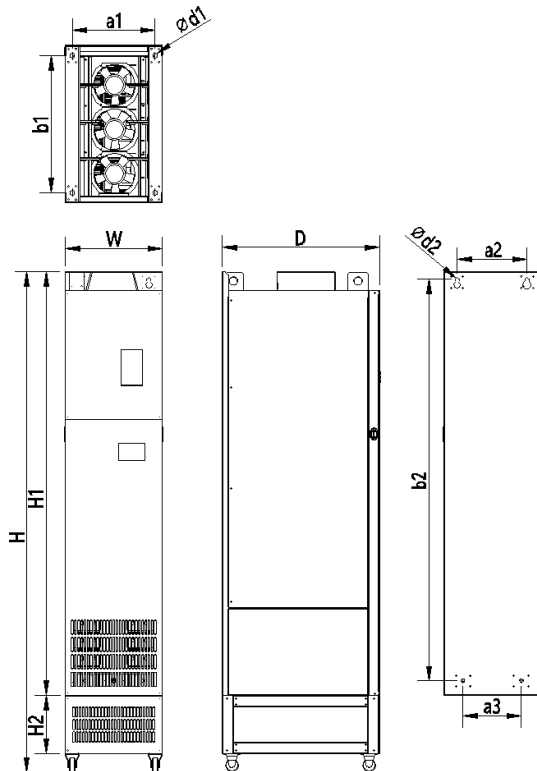
| VPFUJI-T90 |

Vector Control Frequency Inverter For Synchronous Motor User's Manual



SIZE C

SIZE	Model	W	H	H1	D	A	B	Ø d
C	FR45GT90-4J FR55GT90-4J	300	500	540	252	200	522	9
C	FR75GT90-4J	338	546	576	256.5	270	560	9
C	FR90GT90-4J FR110GT90-4J	338	550	580	300	270	564	9
C	FR132GT90-4J FR160GT90-4J	400	871.5	915	310	320	895	11



SIZE D

SIZE	Model	Outline dimension (mm)					Installation Size (mm)			Wall-mounted Size (mm)			
		W	H	H1	H2	D	a1	b1	d1	a2	a3	b2	d2
D	FR185GT90-4J	300	1445	1180	200	500	250	430	14	220	150	1135	13
	FR200GT90-4J												
	FR220GT90-4J												
D	FR250GT90-4J	330	1595	1330	200	545	280	475	14	220	185	1275	13
D	FR280GT90-4J	325	1495	1230	200	545	275	470	14	225	185	1175	14
	FR315GT90-4J												
D	FR350GT90-4J	335	1720	1455	200	545	285	470	14	240	200	1380	14
	FR400GT90-4J												
	FR450GT90-4J												

2. Technology Features

Item		T9000
Basic function	Control Mode	V/F control Sensorless flux vector control (SVC) (Above 3.7K) Close-loop vector control (FVC) (Above 3.7KW)
	Maximum frequency	0~600Hz
	Carrier frequency	0.5kHz~8kHz The carrier frequency is automatically adjusted based on the load features.
	Input frequency resolution	Digital setting: 0.01Hz Analog setting: Maximum frequency x 0.025%
	Start torque	G Type: 0.5Hz/150% (SVC) ; P Type: 0.5Hz/100%
	Speed range	1: 100 (SVC)
	Speed stability accuracy	±0.5% (SVC)
	Overload capacity	G Type: 60s for 150% of the rated current, 3s for 180% of the rated current. P Type: 60s for 120% of the rated current, 3s for 150% of the rated current.
	Torque boost	Auto-boost; Customized boost: 0.1%~30.0%
	V/F Curve	Straight-line V/F curve Multi-point V/F curve N-power V/F curve (1.2-power, 1.4-power, 1.6-power, 1.8-power, square)

	V/F separation	2 types: complete separation; half separation
	Ramp Mode	Straight-line ramp. Four groups of acceleration/deceleration time with the range of 0.00`6500.0s
	DC braking	DC braking frequency: 0.00Hz~Maximum frequency Braking time: 0.0s~36.0s Braking action current value: 0.0%~100.0%
	JOG control	JOG frequency range: 0.00Hz~50.00Hz。 JOG acceleration/deceleration time: 0.0s~6500.0s。
	Simple PLC、Multiple preset speeds	It implements up to 16 speeds via the simple PLC function or combination of terminal states
	Onboard PID	It realizes process-controlled closed loop control system easily
	Auto voltage regulation (AVR)	It can keep constant output voltage automatically when the mains voltage changes
	Overvoltage/overcurrent stall control	The current and voltage are limited automatically during the running process so as to avoid frequent tripping due to over voltage/over current
	Rapid current limit	It helps to avoid frequent over current faults of the AC drive.
	Torque limit and control	It can limit the torque automatically and prevent frequent over current tripping during the running process. Torque control can be implemented in the FVC mode.
Individualized functions	High performance	Control of asynchronous motor are implemented through the high-performance current vector control technology
	Rapid dip ride through	The load feedback energy compensates the voltage reduction so that the AC drive can continue to run for a short time
	Rapid current limit	It helps to avoid frequent over current faults of the AC drive.
	Timing control	Timing range: 0.0Min~6500.0Min
	Communication methods	R S - 4 8 5
Running	Command source	Operation panel/Control terminals/Serial communication port You can perform switchover between these

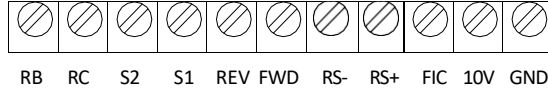
		sources in various ways.
	Frequency source	There are ten frequency sources. Digital setting, analog voltage setting, analog current setting, pulse setting, serial port setting. You can perform switchover in various ways.
	Auxiliary frequency source	There are ten auxiliary frequency sources. It can implement fine tuning of auxiliary frequency and frequency synthesis.
	Input terminal	Standard: 4 digital input terminals (Below 5.5KW) /6 digital input terminals (Above 7.5KW) ; 1 analog input terminal (Below 5.5KW) /2 analog input terminals (Above 7.5KW) ; 1 voltage input (only support for 0~10V, above 7.5KW) , 1 voltage input(0~10V) or current input (4~20mA)
	Output terminal	1 High-speed pulse output terminal (Open-collector) (Above 3.7KW) 1 replay output terminal (Below 5.5KW) /2 replay output terminals (Above 7.5KW) 1 analog output terminal (3.7KW~5.5KW) /2 analog output terminal (Above 7.5KW) , Support for 4~20mA current output or 0~10V voltage output
Display and operation panel	LED display	It displays the parameters
	Key locking and function selection	It can lock the keys partially or completely and define the function range of some keys so as to prevent mal-function.
	Protection mode	Motor short-circuit detection at power-on, input/output phase loss protection, over current protection, over voltage protection, under voltage protection, overheat protection and overload protection
Environment	Installation location	Indoor, free from direct sunlight, dust, corrosive gas, combustible gas, oil smoke, vapor, drip or salt.
	Altitude	Lower than 1000m
	Ambient temperature	-10℃~+40℃ (de-rated if the ambient temperature is between 40℃~50℃)
	Humidity	Less than 95%RH, without condensing
	Vibration	Less than 5.9m/s ² (0.6g)

	Storage temperature	− 20℃~+ 60℃
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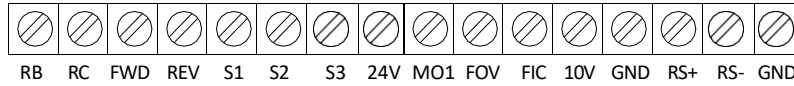
Model	Input voltage	Rated output power (kW)	Rated input current (A)	Rated output current (A)	Motor Power (KW)
FR0.4GT90-2J	AC220V±15% 1PH	0.4	5.4	2.5	0.4
FR0.75GT90-2J		0.75	7.2	5.0	0.75
FR1.5GT90-2J		1.5	10	7.0	1.5
FR2.2GT90-2J		2.2	16	11.0	2.2
FR3.7GT90-2J		3.7	23	16.5	3.7
FR0.4GT90-4J	3PH AC380V±15%	0.4	3.4	1.2	0.4
FR0.75GT90-4J		0.75	3.8	2.5	0.75
FR1.5GT90-4J		1.5	5	3.7	1.5
FR2.2GT90-4J		2.2	5.8	5.0	2.2
FR3.7GT90-4J		3.7	10.0	9.0	3.7
FR5.5GT90-4J		5.5	15.0	13.0	5.5
FR7.5GT90-4J		7.5	20.0	17.0	7.5
FR11GT90-4J		11	26.0	25.0	11
FR15GT90-4J		15	35.0	32.0	15
FR18.5GT90-4J		18.5	38.0	37.0	18.5
FR22GT90-4J		22	46.0	45.0	22
FR30GT90-4J		30	62	60	30
FR37GT90-4J		37	76	75	37
FR45GT90-4J		45	90	90	45
FR55GT90-4J		55	105	110	55
FR75GT90-4J		75	140	150	75
FR90GT90-4J		90	160	176	90
FR110GT90-4J		110	210	210	110
FR132GT90-4J		132	240	253	132
FR160GT90-4J		160	290	300	160
FR185GT90-4J		185	330	340	185
FR200GT90-4J		200	370	380	200
FR220GT90-4J		220	410	420	220
FR250GT90-4J		250	460	470	250
FR280GT90-4J		280	500	520	280
FR315GT90-4J		315	580	60	315
FR350GT90-4J		350	620	640	350
FR400GT90-4J		400	670	690	400
FR450GT90-4J		450	790	790	450

3. Terminal Configuration

3.1. 1PH/220V 0.4~2.2KW & 3PH/380V 0.4~2.2KW (VF control)

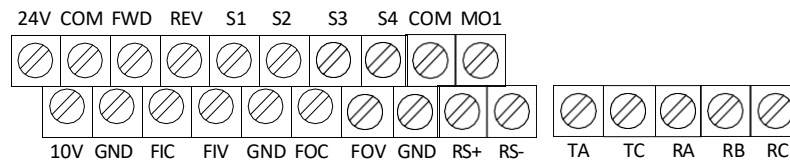


3.2. 1PH/220V 0.4~3.7KW & 3PH/380V 0.4~5.5KW (vector control)



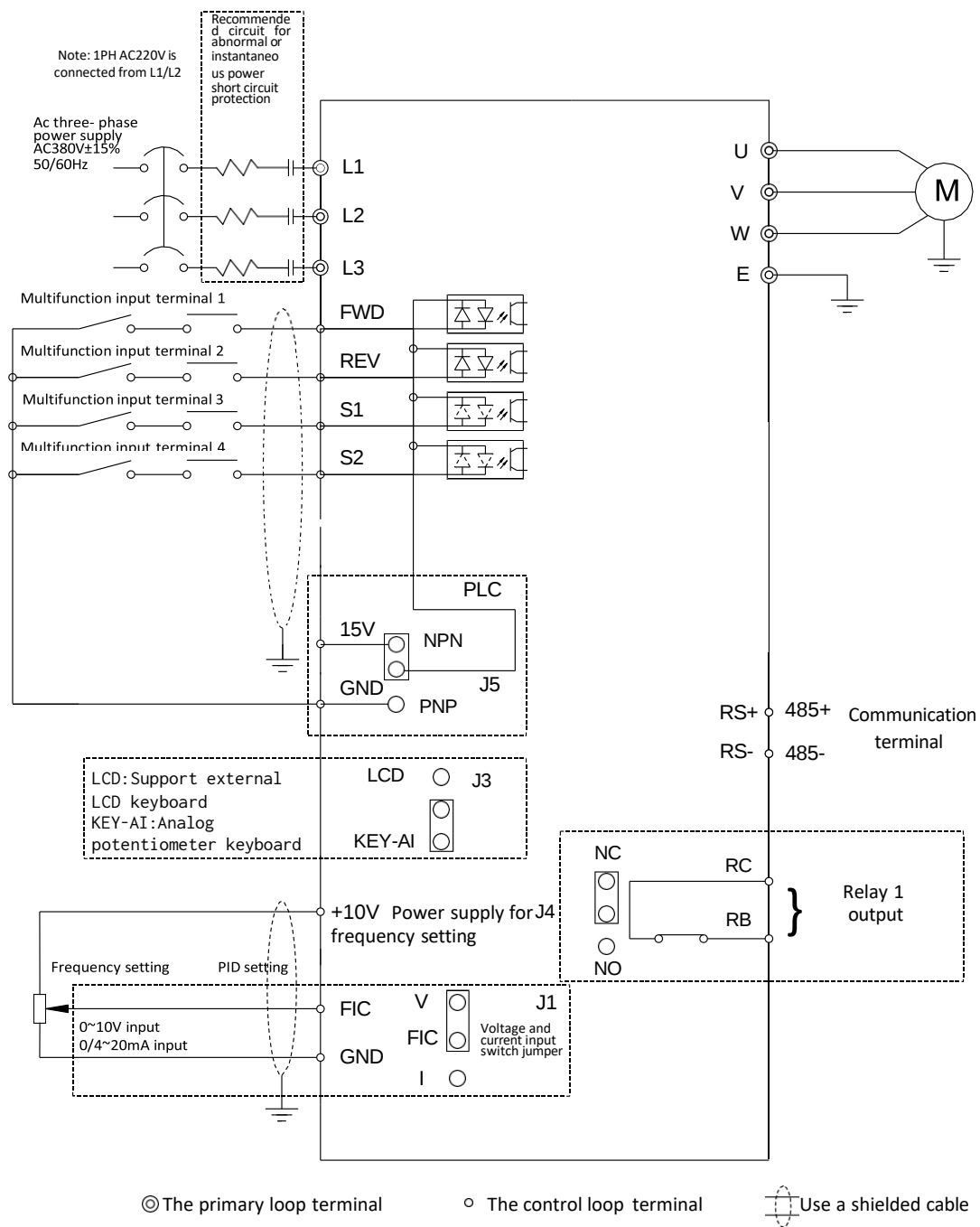
Note: S3 terminal only supports NPN function, while other FWD, REV, S1, S2 can support PNP and NPN function.

3.3. 220V/5.5~7.5KW & 380V/7.5KW above

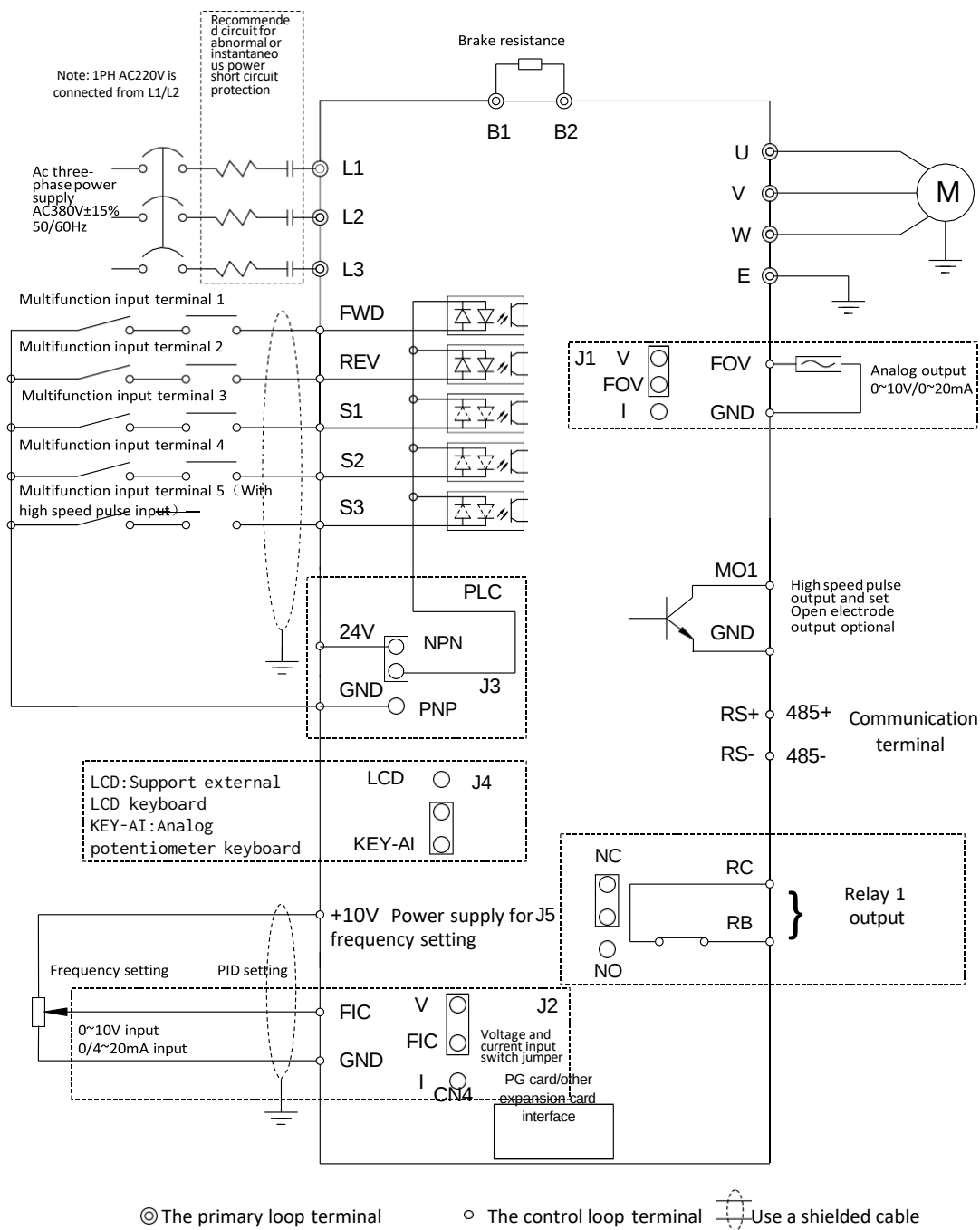


4. Wiring Diagram

1) 1PH/220V 0.4~2.2KW & 3PH/380V 0.4~2.2KW (VF control)

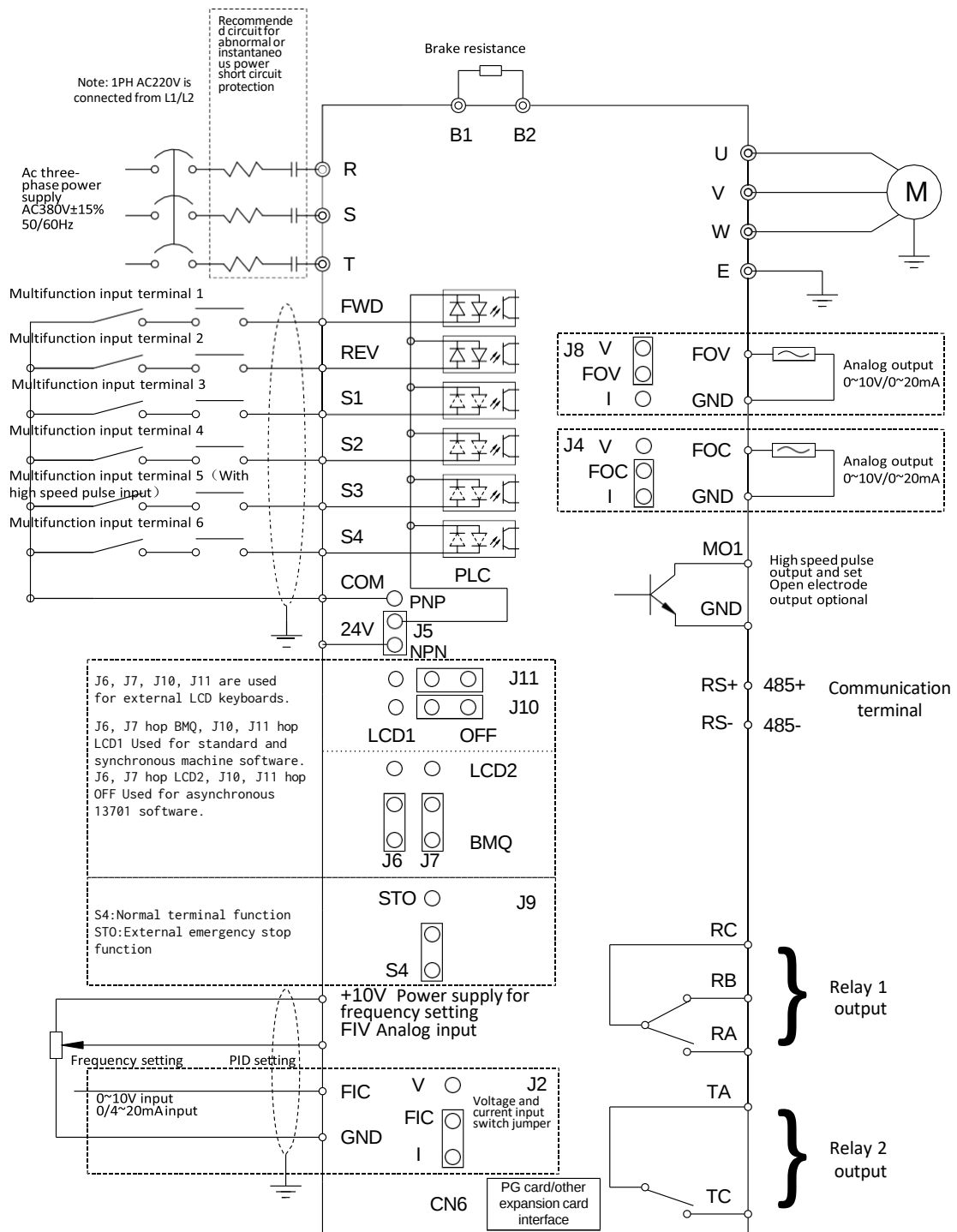


2) 1PH/220V 0.4~3.7KW & 3PH/380V 0.4~5.5KW (vector control)



Note: Terminals B1 and B2 are only available for products above 220V/2.2kW & 380V/3.7kW.

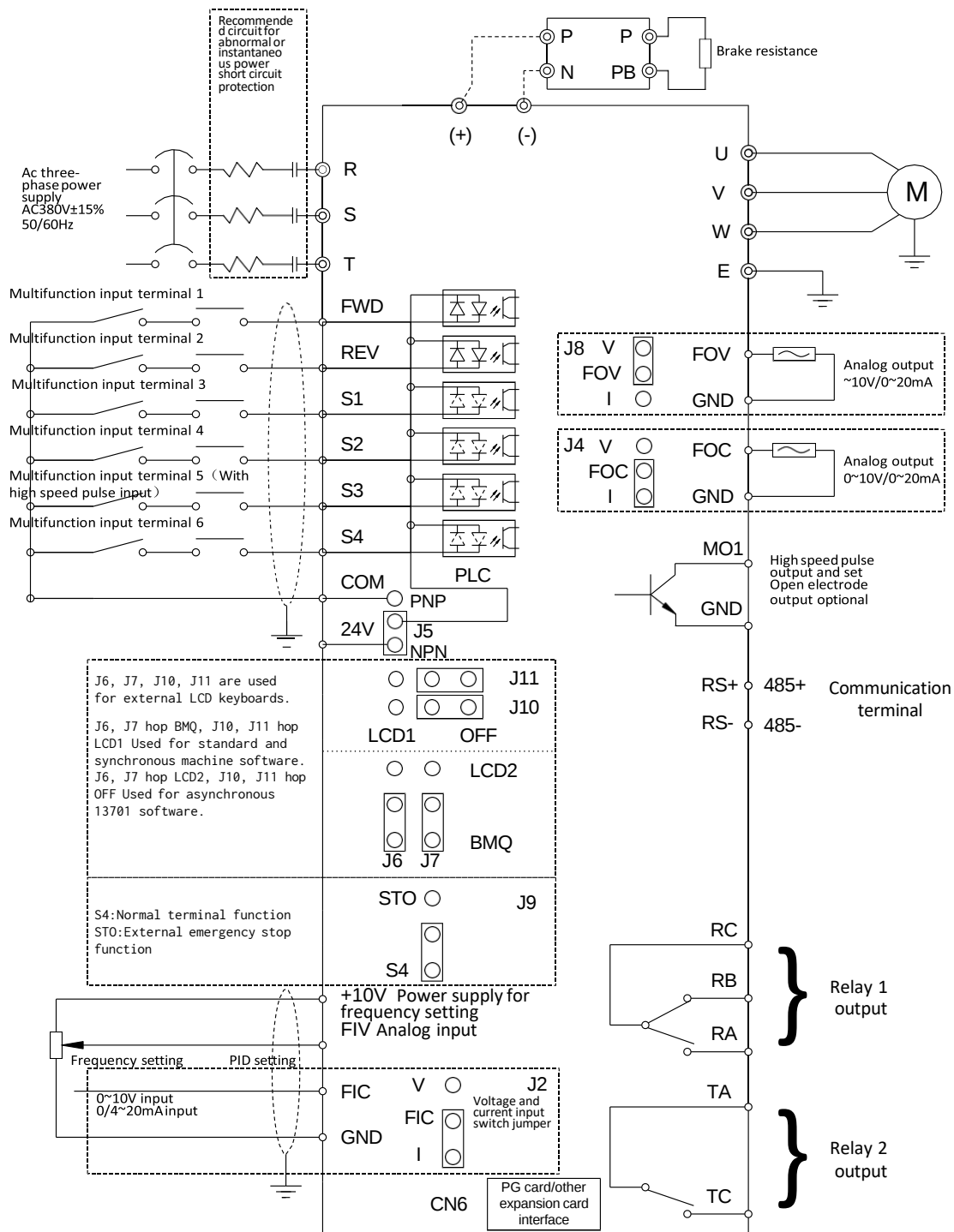
3) 220V/5.5~7.5KW & 380V 7.5KW-160KW



◎ The primary loop terminal ○ The control loop terminal ⊕ Use a shielded cable

Note: 220V/5.5-7.5kW&380V17.5-37kW standard built-in brake unit 45kW-160kW brake unit optional.

4) 380V 185KW-450KW



◎ The primary loop terminal ○ The control loop terminal

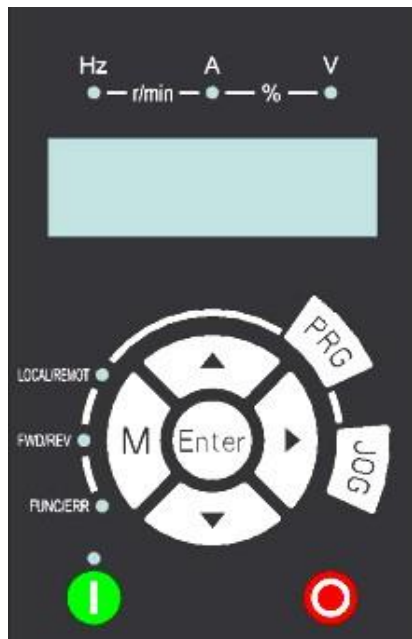
Use a shielded cable

5. Keypad Description

1) 0.4KW-5.5KW



2) 7.5KW-450KW



3) Function key description

Key	Name	Description
PRG	Programming key	Entry or escape of first-level menu
ENTER	Data enter key	Progressively enter menu and confirm parameters
▲	UP Increment Key	Progressively increase data or function codes

	DOWN Decrement Key	Progressively decrease data or function codes
	Shift Key	In parameter setting mode, press this button to select the bit to be modified. In stop and running display modes, cyclically displays parameters by shift key.
	Run key	Start to run the inverter in keypad control mode
	Stop/Fault reset key	In running status, restricted by P7.02, can be used to stop the inverter. When fault alarm, can be used to reset the inverter without any restriction.
JOG	Shortcut Key	Determined by function code P7.01 0: No function 1: Switchover between operation panel command and remote operation command. It indicates the switchover between the current command source and operation panel control (local operation) . If the current command source is operation panel control, the key is invalid. 2: Switch between forward and reverse, it only valid when command source is operation panel channel. 3: Forward JOG 4: Reverse JOG
M	No function	

4) Indicator light description

Indicator Light Name	Indicator light description
Hz	Frequency unit
A	Current unit
V	Voltage unit
FWD/REV	Extinguished: Forward operation Light on: Reverse operation
LOCAL/REMOT	Extinguished: Local operation Flickering: Terminal operation Light on: Communication control
FUNC/ERR	Extinguished: Running state Flickering: Pre-alarm of overload Light on: Fault

	Extinguished: Stop mode Flickering: In the process of auto-tuning Light on: Running mode
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6. List of Function parameters

If PP-00 is set to a non-zero number, parameter protection is enabled. You must enter the correct user password to enter the menu. To cancel the password protection function, enter with password and set PP-00 to 0.

Parameters menu the user customizes are not protected by password. Group P is the basic function parameters, Group D is to monitor the function parameters. The symbols in the function code table are described as follows:

"☆": The parameter can be modified when the AC drive is in either stop or running state.

"★": The parameter cannot be modified when the AC drive is in the running state.

"●": The parameter is the actually measured value and cannot be modified.

"*": The parameter is factory parameter and can be set only by the manufacturer.

Standard Function Parameters:

Function code	Parameter Name	Setting range	Default	Property
Group P0 Standard Function Parameters				
P0.00	G/P type display	1: G type (Constant torque load) 2: P type (variable torque load e.g. fan and pump)	Model dependent	●
P0.01	Control mode selection	0: No PG (speed sensor) vector control 1: With PG (speed sensor) vector control 2: V/F control	2	★
P0.02	Command source selection	0: Operation panel control (LED off) 1: Terminal control (LED on) 2: Communication control (LED linking)	0	☆
P0.03	Main frequency source X selection	0: Digital setting (P0.08 preset frequency, can modify the UP/DOWN, power lost don't memory) 1: Digital setting (P0.08, preset frequency, can modify the	0	★

		UP/DOWN, power lost memory) 2: Potentiometer on operation panel (below 5.5KW) FIV (above 7.5KW) 3: FIC 4: Reserved 5: PULSE (S3, Above 3.7KW) 6: Multistage instruction 7: Simple PLC 8: PID 9: Communication setting		
P0.04	Auxiliary frequency source Y selection	The same as P0.03 (frequency source X selection)	0	★
P0.05	Auxiliary frequency source superposition Y range selection	0: Relative to the maximum frequency 1: Relative to the main frequency source X	0	☆
P0.06	Auxiliary frequency source superposition Y range	0%~150%	100%	☆
P0.07	Frequency source superposition selection	Unit's digit (Frequency source) 0: Main frequency source X 1: X and Y operation(operation relationship determined by ten's digit) 2: Switchover between X and Y 3: Switchover between X and "X and Y operation" 4: Switchover between Y and "X and Y operation" Ten's digit (X and Y operation) 0: X+Y 1: X-Y 2: Both the maximum 3: Both the minimum	00	☆
P0.08	Frequency preset	0.00Hz~maximum frequency (P0.10)	50.00Hz	☆
P0.09	Rotation direction	0: Same direction	0	☆

		1: Reverse direction		
P0.10	Maximum frequency	50.00Hz~600.00Hz	50.00Hz	★
P0.11	Upper limit frequency source	0: P0.12 setting 1: Potentiometer on operate panel (below 5.5KW) FIV (above 7.5KW) 2: FIC 3: Reserved 4: PULSE (S3, above 3.7KW) 5: Communication setting	0	★
P0.12	Upper limit frequency	Frequency lower limit P0.14~Maximum frequency P0.10	50.00Hz	☆
P0.13	Upper limit frequency offset	0.00Hz~Maximum frequency P0.10	0.00Hz	☆
P0.14	Frequency lower limit	0.00Hz~Upper limit frequency P0.12	0.00Hz	☆
P0.15	Carrier frequency	0.5kHz~16.0kHz	Model dependent	☆
P0.16	Carrier frequency adjustment with temperature	0: No 1: Yes	1	☆
P0.17	Acceleration time 1	0.00s~65000s	Model dependent	☆
P0.18	Deceleration time 1	0.00s~65000s	Model dependent	☆
P0.19	Acceleration/Deceleration time unit	0: 1s 1: 0.1s 2: 0.01s	1	★
P0.21	Frequency offset of auxiliary frequency source for X and Y operation	0.00Hz~Maximum frequency P0.10	0.00Hz	☆
P0.22	Frequency instruction resolution	2: 0.01Hz	2	★
P0.23	Retentive of digital setting frequency upon power	0: Not retentive 1: Retentive	0	☆
P0.25	Acceleration/Deceleration time base frequency	0 : Maximum frequency (P0.10) 1: Set frequency 2: 100Hz	0	★
P0.26	Base frequency for UP/DOWN modification during running	0: Running frequency 1: Set frequency	0	★

P0.27	Binding command source to frequency source	Unit's digit: Binding operation panel command to frequency source 0:No binding 1:Frequency source by digital setting 2: Potentiometer on operation panel (below 5.5KW) FIV (above 7.5KW) 3: FIC 4: Reserved 5: PULSE (S3, above 3.7KW) 6:Multi-Reference 7:Simple PLC 8:PID 9:Communication setting Ten's digit: Binding terminal command to frequency source Hundred's digit: Binding communication command to frequency source	0000	☆
Group P1 Motor parameter				
P1.00	Motor type selection	0: Common asynchronous motor 1: Variable frequency asynchronous motor	0	★
P1.01	Rated motor power	0.1kW~1000.0kW	Motor dependent	★
P1.02	Rated motor voltage	1V~2000V	Motor dependent	★
P1.03	Rated motor current	0.01A~655.35A (AC drive power ≤55kW) 0.1A~6553.5A (AC drive power >55kW)	Motor dependent	★
P1.04	Rated motor frequency	0.01Hz~maximum frequency	Motor dependent	★
P1.05	Rated motor rotational speed	1rpm~65535rpm	Motor dependent	★
P1.06	Stator resistance (asynchronous motor)	0.001Ω~65.535Ω (AC drive power ≤55kW) 0.0001Ω~6.5535Ω (AC drive power >55kW)	Tuned parameter	★

P1.07	Rotor resistance (asynchronous motor)	0.001Ω~65.535Ω (AC drive power ≤55kW) 0.0001Ω~6.5535Ω (AC drive power >55kW)	Tuned parameter	★
P1.08	Leakage inductive reactance (asynchronous motor)	0.01mH~655.35mH (AC drive power ≤55kW) 0.001mH~65.535mH (AC drive power >55kW)	Tuned parameter	★
P1.09	Mutual inductive reactance (asynchronous motor)	0.1mH~6553.5mH (AC drive power ≤55kW) 0.01mH~655.35mH (AC drive power >55kW)	Tuned parameter	★
P1.10	No-load current (synchronous motor)	0.01A~P1.03 (AC drive power ≤55kW) 0.1A~P1.03 (AC drive power >55kW)	Tuned parameter	★
P1.27	Encoder pulses per revolution	1~65535	1024	★
P1.28	Encoder type	0: ABZ incremental encoder 2: Resolver	0	★
P1.30	AB phase sequence of ABZ incremental encoder AB phase sequence	0: Forward 1: Reverse	0	★
P1.31	Encoder install angle	0.0~359.9°	0.0°	★
P1.34	Rotation pole logarithm	1~65535	1	★
P1.36	Speed feedback PG card break line detection time	0.0: No action 0.1s~10.0s	0.0	★
P1.37	Auto tuning selection	0: No operation 1: static auto-tuning 2: dynamic auto-tuning 3: complete static auto-tuning	0	★
Group P2 Motor vector control parameter				
P2.00	Speed loop proportional gain 1	1~100	30	☆
P2.01	Speed loop integral time 1	0.01s~10.00s	0.50s	☆
P2.02	Switchover frequency 1	0.00~P2.05	5.00Hz	☆
P2.03	Speed loop proportional gain 2	1~100	20	☆
P2.04	Speed loop integral time 2	0.01s~10.00s	1.00s	☆
P2.05	Switchover frequency 2	P2.02~Maximum frequency	10.00Hz	☆
P2.06	Vector control slip gain	50%~200%	100%	☆

P2.07	Time constant of speed loop filter	0.000s~0.100s	0.015s	☆
P2.08	Vector control over-excitation gain	0~200	64	☆
P2.09	Torque upper limit source in speed control mode	0: P2.10 1: Potentiometer on operation panel (below 5.5KW) FIV (above 7.5KW) 2: FIC 3: Reserved 4: PULSE (S3, above 3.7KW 5: Communication setting 6 : MIN (Potentiometer on operation panel, FIC) (below 5.5KW) MIN (FIV,FIC) (above 7.5KW) 7 : MAX (Potentiometer on operation panel, FIC) (below 5.5KW) MAX(FIV,FIC)(above 7.5KW) The full range of 1-7 is correspond to P2.10	0	☆
P2.10	Torque upper limit setting in speed control mode (electrical)	0.0%~200.0%	150.0%	☆
P2.11	Torque upper limit instruction selection in speed control mode (generation)	0: P2.10 1: Potentiometer on operation panel (below 5.5KW) FIV (above 7.5KW) 2: FIC 3: Reserved 4: PULSE (S3, above 3.7KW 5: Communication setting 6 : MIN (Potentiometer on operation panel, FIC) (below 5.5KW) MIN (FIV,FIC) (above 7.5KW) 7 : MAX (Potentiometer on operation panel, FIC) (below 5.5KW) MAX(FIV,FIC)(above 7.5KW) 8: P2.12 setting Full range of 1-7	0	☆

		corresponding to P2.12		
P2.12	Torque upper limit digital setting in speed control mode (generation)	0.0%~200.0%	150.0%	☆
P2.13	Excitation adjustment proportional gain	0~60000	2000	☆
P2.14	Excitation adjustment integral gain	0~60000	1300	☆
P2.15	Torque adjustment proportional gain	0~60000	2000	☆
P2.16	Torque adjustment integral gain	0~60000	1300	☆
P2.17	Speed loop integral property	Unit's digit: integral separation 0: Disabled 1: Enabled	0	☆
P2.21	Maximum torque coefficient of field weakening	50%~200%	100%	☆
P2.22	Generation power limit enabled	0: Disabled 1: Enabled always 2: Enabled when constant speed 3: Enabled when deceleration	0	☆
P2.23	Generation power upper limit	0.0%~200.0%	Model dependent	☆
Group P3 V/F control parameters				
P3.00	V/F curve setting	0: Linear V/F 1: Multi-point V/F 2: Square V/F 3: 1.2-power V/F 4: 1.4-power V/F 6: 1.6-power V/F 8: 1.8-power V/F 9: Reserved 10: VF complete separation 11: VF half separation	0	★
P3.01	Torque boost	0.0%: (fixed torque boost) 0.1%~30.0%	Model dependent	☆
P3.02	Cut-off frequency of torque boost	0.00Hz~Maximum frequency	50.00Hz	★
P3.03	Multi-point VF frequency 1	0.00Hz~P3.05	0.00Hz	★
P3.04	Multi-point voltage 1	0.0%~100.0%	0.0%	★

P3.05	Multi-point VF frequency 2	P3.03~P3.07	0.00Hz	★
P3.06	Multi-point voltage 2	0.0%~100.0%	0.0%	★
P3.07	Multi-point VF frequency 3	P3.05~rated motor frequency (P1.04)	0.00Hz	★
P3.08	Multi-point voltage 3	0.0%~100.0%	0.0%	★
P3.09	V/F slip compensation gain	0.0%~200.0%	0.0%	☆
P3.10	V/F over-excitation gain	0~200	64	☆
P3.11	V/F oscillation suppression gain	0~100	Model dependent	☆
P3.13	Voltage source for V/F separation	0: Digital setting (P3.14) 1 : Potentiometer on operation panel (below 5.5KW) FIV (above 7.5KW) 2: FIC 3: Reserved 4: PULSE (S3 , above 3.7KW 5: Multi- reference 6: Simple PLC 7: PID 8: Communication setting Note: 100.0% corresponding to the rated motor voltage	0	☆
P3.14	Voltage digital setting for V/F separation	0V~rated motor voltage	0V	☆
P3.15	Voltage acceleration time for V/F separation	0.0s~1000.0s Note: it indicated the time for the voltage change from 0V to rated motor voltage	0.0s	☆
P3.16	Voltage deceleration time for V/F separation	0.0s~1000.0s Note: it indicated the time for the voltage change from the rated motor voltage to 0V	0.0s	☆
P3.17	Stop mode selection for V/F separation	0: Frequency/voltage independent decline to 0 1 : After voltage decline to 0 then decline the frequency	0	☆
P3.18	Action current of the over current lost speed	50%~200%	150%	★
P3.19	Over current lost speed enabled	0: Disabled 1: Enabled	1	★
P3.20	Over current lost speed	0~100	20	☆

	suppression gain			
P3.21	Triple-speed suppression of action current compensation coefficient	50%~200%	50%	★
P3.22	Action voltage of the over voltage lost speed	650.0V~800.0V	770.0V	★
P3.23	Over voltage lost speed enabled	0: Disabled 1: Enabled	1	★
P3.24	Suppression frequency gain of over voltage lost speed	0~100	30	☆
P3.25	Suppression voltage gain of over voltage lost speed	0~100	30	☆
P3.26	Maximum rising frequency limit of over voltage lost speed	0~50Hz	5Hz	★
Group P4 Input terminal				
P4.00	FWD terminal function selection	0: No function 1: Forward RUN (FWD) 2: Reverse RUN (REV) 3: Three-line control 4: Forward JOG (JOGF) 5: Reverse JOG (JOGR) 6: Terminal UP 7: Terminal DOWN 8: Coast to stop 9: Fault reset (RESET) 10: Run pause 11: Normally open(NO) input of external fault 12: Multi-reference terminal 1 13: Multi-reference terminal 2 14: Multi-reference terminal 3 15: Multi-reference terminal 4 16: Terminal 1 for acceleration/deceleration time selection 17: Terminal 2 for acceleration/deceleration time selection 18: Frequency source switchover 19: UP/DOWN setting clear	1	★
P4.01	REV terminal function selection		4	★
P4.02	S1 terminal function selection		9	★
P4.03	S2 terminal function selection		12	★
P4.04	S3 terminal function selection		13	★
P4.05	S4 terminal function selection		0	★
P4.06	Reserved		0	★
P4.07	Reserved		0	★

		(terminal、operation panel) 20: Command source switchover terminal 21: Acceleration/Deceleration prohibited 22: PID pause 23: PLC status reset 24: Swing pause 25: Counter input 26: Counter reset 27: Length count input 28: Length reset 29: Torque control prohibited 30: PULSE frequency input (Enabled only for S3, above 3.7KW) 31: Reserved 32: Immediate DC braking 33: Normally closed (NC) input of external fault 34: Frequency modification enabled 35: Reverse PID action direction 36: External stop terminal 1 37: Command source switchover terminal 2 38: PID integral pause 39: Switchover between main frequency source X and preset frequency 40: Switchover between auxiliary frequency source Y and preset frequency 41~42: Reserved 43: PID parameter switchover 44~45: Reserved 46: Speed control /Torque control switchover 47: Emergency stop 48: External stop terminal 2 49: Deceleration DC braking 50: Clear the current running		
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		time 51-59:Reserved		
P4.10	X filter time	0.000s~1.000s	0.010s	☆
P4.11	Terminal command mode	0: Two-line mode 1 1: Two-line mode 2 2: Three-line mode 1 3: Three-line mode 2	0	★
P4.12	Terminal UP/DOWN rate	0.001Hz/s~65.535Hz/s	1.00Hz/s	☆
P4.13	FI curve 1 minimum input	0.00V~P4.15	0.00V	☆
P4.14	Corresponding setting of FI curve 1 minimum input	-100.0%~+100.0%	0.0%	☆
P4.15	FI curve 1 maximum input	P4.13~+10.00V	10.00V	☆
P4.16	Corresponding setting of FI curve 1 maximum input	-100.0%~+100.0%	100.0%	☆
P4.17	FI curve 1 filter time	0.00s~10.00s	0.10s	☆
P4.18	FI curve 2 minimum input	0.00V~P4.20	0.00V	☆
P4.19	Corresponding setting of FI curve 2 minimum input	-100.0%~+100.0%	0.0%	☆
P4.20	FI curve 2 maximum input	P4.18~+10.00V	10.00V	☆
P4.21	Corresponding setting of FI curve 2 maximum input	-100.0%~+100.0%	100.0%	☆
P4.22	FI curve 2 filter time	0.00s~10.00s	0.10s	☆
P4.23	FI curve 3 minimum input	-10.00V~P4.25	-10.00V	☆
P4.24	Corresponding setting of FI curve 3 minimum input	-100.0%~+100.0%	-100.0%	☆
P4.25	FI curve 3 maximum input	P4.23~+10.00V	10.00V	☆
P4.26	Corresponding setting of FI curve 3 maximum input	-100.0%~+100.0%	100.0%	☆
P4.27	FI curve 3 filter time	0.00s~10.00s	0.10s	☆
P4.28	PULSE minimum input	0.00kHz~P4.30	0.00kHz	☆
P4.29	Corresponding setting of PULSE minimum input	-100.0%~100.0%	0.0%	☆
P4.30	PULSE maximum input	P4.28~100.00kHz	50.00kHz	☆
P4.31	Corresponding setting of PULSE maximum input	-100.0%~100.0%	100.0%	☆
P4.32	PULSE filter time	0.00s~10.00s	0.10s	☆
P4.33	FI curve selection	Unit's digit: Potentiometer on operation panel /FIV curve selection 1: Curve 1 (2 points, See P4.13~P4.16) 2: Curve 2 (2 points, See	321	☆

		P4.18~P4.21) 3: Curve 3 (2 points, See P4.23~P4.26) 4: Curve 4 (4 points, See C6.00~C6.07) 5: Curve 5 (4 points, See C6.08~C6.15) Ten's digit: FIC curve selection, Same as FIV Hundred's digit: Reserved		
P4.34	Setting selection for FI less than minimum input	Unit's digit: Potentiometer on operation panel/Setting for FIV less than minimum input 0: Corresponds to the minimum input settings 1:0.0% Ten's digit: Setting selection for FIC less than minimum input (same as FIV)	000	☆
P4.35	FWD delay time	0.0s~3600.0s	0.0s	★
P4.36	REV delay time	0.0s~3600.0s	0.0s	★
P4.37	S1 delay time	0.0s~3600.0s	0.0s	★
P4.38	S terminal valid mode selection 1	0: High level valid 1: Low level valid Unit's digit: FWD Ten's digit: REV Hundred's digit: S1 Thousand's digit: S2 Ten thousand's digit: S3	00000	★
P4.39	S terminal valid mode selection 2	0: High level valid 1: Low level valid Unit's digit: S4 Ten's digit: Reserved Hundred's digit: Reserved Thousand's digit: Reserved Ten thousand's digit: Reserved	00000	★
Group P5 Output terminals				
P5.00	MO1 terminal output mode selection	0: Pulse output (YOP) 1: Switch signal output (YOR)	0	☆
P5.01	YOR output function selection	0: No output 1: AC drive running 2: Fault output (fault stop)	0	☆
P5.02	Relay function selection on control board	3: Frequency-level detection	2	☆

	(RA-RB-RC/RB-RC)	FDT1 output		
P5.03	Relay function selection (TA-TC)	4: Frequency reached 5 : Zero-speed running(no output at stop)	0	☆
P5.04	Reserved	6: Motor overload pre-warning	1	☆
P5.05	Reserved	7: AC drive overload pre-warning 8: Setting count value Reached 9: Designated count value reached 10: Length reached 11: PLC cycle complete 12: Accumulative running time reached 13: Frequency limited 14 : Torque limited 15: Ready for RUN 16: FIV>FIC 17: Frequency upper limit reached 18: Frequency lower limit reached (Relate to running) 19: Under voltage state output 20: Communication setting 21 : (Reserved) 22: (Reserved) 23: Zero-speed running 2 (having output at stop) 24: Accumulative power-on time reached 25: Frequency level detection FDT2 output 26: Frequency 1 reached output 27: Frequency 2 reached output 28: Current 1 reached output 29: Current 2 reached output 30: Timing reached output 31 : FIV input limit exceeded 32 : Load becoming 0 33: Reverse running	4	☆

		34: Zero current state 35: Module temperature reached 36: Output current limit exceeded 37: Frequency lower limit reached (having output at stop) 38: Alarm output(Keep running) 40: Current running time reached 41: Fault		
P5.06	YOP output function selection	0: Running frequency 1: Setting frequency 2: Output current 3:	0	☆
P5.07	FOV output function selection (above 3.7KW	Output torque 4: Output power 5: Output voltage 6: PULSE input (100.0% corresponding to 100.0kHz)	0	☆
P5.08	FOC output function selection (above 7.5KW	7: FIV 8: FIC 9: Reserved 10 : Length 11: Count value 12: Communication setting 13: Motor rotational speed 14 : Output current (100.0% corresponding to 1000.0A) 15: Output voltage (100.0% corresponding to 1000.0V) 16: Motor output torque (Actual value, corresponding to the motor percentage)	1	☆
P5.09	YOP output maximum frequency	0.01kHz~100.00kHz	50.00kHz	☆
P5.10	FOV bias coefficient	-100.0%~+100.0%	0.0%	☆
P5.11	FOV gain	-10.00~+10.00	1.00	☆
P5.12	FOC bias coefficient	-100.0%~+100.0%	0.0%	☆
P5.13	FOC gain	-10.00~+10.00	1.00	☆
P5.17	YOR output delay time	0.0s~3600.0s	0.0s	☆

P5.18	RA-RB-RC/RB-RC output delay time	0.0s~3600.0s	0.0s	☆
P5.19	TA-TC output delay time	0.0s~3600.0s	0.0s	☆
P5.20	Reserved	0.0s~3600.0s	0.0s	☆
P5.21	Reserved	0.0s~3600.0s	0.0s	☆
P5.22	Output terminal valid mode selection	0: Positive logic 1: Negative logic Unit's digit: YOR Ten's digit: RA-RB-RC/RB-RC Hundred's digit: TA-TC Thousand's digit: FOV (Above 3.7KW) Ten thousand's digit: FOC (above 7.5KW)	00000	☆
Group P6 Start/Stop parameter				
P6.00	Start mode	0: Direct start 1: Rotational speed tracking restart 速度跟踪再启动 2: Pre-excited start (AC asynchronous motor) 3: SVC quick start	0	☆
P6.01	Rotational speed tracking mode	0: Start from the stop frequency 1: Start from 0 2: Start from maximum frequency	0	★
P6.02	Rotational speed tracking	1~100	20	☆
P6.03	Startup frequency	0.00Hz~10.00Hz	0.00Hz	☆
P6.04	Startup frequency holding time	0.0s~100.0s	0.0s	★
P6.05	Startup DC braking current/Pre-excited current	0%~100%	0%	★
P6.06	Startup DC braking time/Pre-excited time	0.0s~100.0s	0.0s	★
P6.07	Acceleration/Deceleration mode	0: Straight-line acceleration/deceleration 1: S curve acceleration/deceleration A 2: Dynamic S curve acceleration/deceleration	0	★
P6.08	S curve of beginning	0.0%~ (100.0%-P6.09)	30.0%	★

	segment time proportional			
P6.09	S curve of end segment time proportional	0.0%~ (100.0%-P6.08)	30.0%	★
P6.10	Stop mode	0: Deceleration to stop 1: Coast to stop	0	☆
P6.11	Initial frequency of stop DC braking	0.00Hz~maximum frequency	0.00Hz	☆
P6.12	Waiting time of stop DC braking	0.0s~100.0s	0.0s	☆
P6.13	Stop DC braking current	0%~100%	0%	☆
P6.14	Stop DC braking time	0.0s~100.0s	0.0s	☆
P6.15	Brake use rate	0%~100%	100%	☆
P6.18	Rotational speed tracking current	30%~200%	Model dependent	★
P6.21	Demagnetization time (Valid for SVC)	0.00~5.00s	Model dependent	☆
P6.23	Over-excitation selection	0: Not effective 1: Effective only when deceleration 2: Effective always	0	☆
P6.24	Over-excitation suppression current value	0~150%	100%	☆
P6.25	Over-excitation gain	1.00~2.50	1.25	☆
Group P7 Operation display and Display				
P7.01	JOG function parameter	0: No function 1: Switchover between operation panel command and remote operation command. It indicates the switchover between the current command source and operation panel control (local operation) . If the current command source is operation panel control, the key is invalid. 2: Switchover between forward and reverse through JOG, it only valid when command source is operation panel channel. 3: Forward Jog	0	★

		(JOG-FWD) 4: Reverse Jog (JOG-REV)		
P7.02	STOP/RESET key function	0: STOP/RESET key enabled only in operation panel control 1: STOP/RESET key enabled in any operation mode	1	☆
P7.03	LED display running parameter 1	0000~FFFF Bit00: Running frequency 1 (Hz) Bit01: Setting frequency (Hz) Bit02: Bus voltage (V) Bit03: Output voltage (V) Bit04: Output current (A) Bit05: Output power (kW) Bit06: Output torque (%) Bit07: S input status Bit08: MO1 output status Bit09: FIV/Voltage of potentiometer on operation panel (V) Bit10: FIC Voltage (V) Bit11: Reserved Bit12: Count value Bit13: Length value Bit14: Load speed display Bit15: PID setting	1F	☆
P7.04	LED display running parameter 2	0000~FFFF Bit00: PID feedback Bit01: PLC stage Bit02: Pulse input frequency(kHz) Bit03: Running frequency 2 (Hz) Bit04: Remaining running time Bit05: FIV/Voltage of potentiometer on operation panel before correction (V) Bit06: FIC voltage before correction (V) Bit07: Reserved Bit08: Motor rotational speed Bit09: Current power-on	0	☆

		time(Hour) Bit10: Current running time (Min) Bit11: Pulse input frequency(Hz) Bit12: Communication setting value Bit13: Speed feedback of Encoder(Hz) Bit14: Main frequency X display(Hz) Bit15:Auxiliary frequency Y display (Hz)		
P7.05	LED display stop parameter	0000~FFFF Bit00: Set frequency (Hz) Bit01: Bus voltage (V) Bit02: S input status Bit03: MO1 output status Bit04: FIV/Voltage of potentiometer on operation panel(V) Bit05: FIC voltage (V) Bit07: Count value Bit08: Length value Bit09: PLC stage Bit10: Load speed Bit11: PID setting Bit12: Pulse input frequency(kHz)	33	☆
P7.06	Load speed display coefficient	0.0001~6.5000	1.0000	☆
P7.07	Heatsink temperature of inverter IGBT	0.0℃~120.0℃	-	●
Group P8 Auxiliary Functions				
P8.00	JOG running frequency	0.00Hz~maximum frequency	2.00Hz	☆
P8.01	JOG acceleration time	0.0s~6500.0s	20.0s	☆
P8.02	JOG deceleration time	0.0s~6500.0s	20.0s	☆
P8.03	Acceleration time 2	0.00s~65000s	Model dependent	☆
P8.04	deceleration time 2	0.0s~65000s	Model dependent	☆
P8.05	Acceleration time 3	0.0s~65000s	Model dependent	☆

P8.06	deceleration time 3	0.0s~65000s	Model dependent	☆
P8.07	Acceleration time 4	0.0s~65000s	Model dependent	☆
P8.08	deceleration time 4	0.0s~65000s	Model dependent	☆
P8.09	Jump frequency 1	0.00Hz~maximum frequency	1.00Hz	☆
P8.10	Jump frequency 2	0.00Hz~maximum frequency	0.00Hz	☆
P8.11	Frequency jump amplitude	0.00Hz~maximum frequency	0.01Hz	☆
P8.12	Forward/Reverse rotation dead-zone time	0.0s~3000.0s	0.0s	☆
P8.13	Reverse control	0: Enabled 1: Disabled	0	☆
P8.14	Running mode when set frequency lower than frequency lower limit	0: Run at frequency lower limit 1: Stop 2: Run at zero speed	0	☆
P8.15	Droop control	0.00Hz~10.00Hz	0.00Hz	☆
P8.16	Accumulative power-on time threshold setting	0h~65000h	0h	☆
P8.17	Accumulative running time threshold setting	0h~65000h	0h	☆
P8.18	Startup protection	0: No protect 1: Protect	0	☆
P8.19	Frequency detection value (FDT1)	0.00Hz~maximum frequency	50.00Hz	☆
P8.20	Frequency detection hysteresis (FDT1)	0.0%~100.0% (FDT1 level)	5.0%	☆
P8.21	Detection range of frequency reached	0.0%~100.0% (maximum frequency)	0.0%	☆
P8.22	Jump frequency during the process of acceleration/deceleration	0: Disabled 1: Enabled	0	☆
P8.25	Frequency switchover point between acceleration time 1 and acceleration time 2	0.00Hz~maximum frequency	0.00Hz	☆
P8.26	Frequency switchover point between deceleration time 1 and deceleration time 2	0.00Hz~maximum frequency	0.00Hz	☆
P8.27	Terminal JOG preferred	0: Disabled 1: Enabled	0	☆
P8.28	Frequency detection value (FDT2)	0.00Hz~maximum frequency	50.00Hz	☆

P8.29	Frequency detection hysteresis (FDT2)	0.0%~100.0% (FDT2 level)	5.0%	☆
P8.30	Any frequency reaching detection value 1	0.00Hz~maximum frequency	50.00Hz	☆
P8.31	Any frequency reaching detection amplitude 1	0.0%~100.0% (maximum frequency)	0.0%	☆
P8.32	Any frequency reaching detection value 2	0.00Hz~maximum frequency	50.00Hz	☆
P8.33	Any frequency reaching detection amplitude 2	0.0%~100.0% (maximum frequency)	0.0%	☆
P8.34	Zero current detection level	0.0%~300.0% 100.0% corresponding to rated motor current	5.0%	☆
P8.35	Zero current detection delay time	0.01s~600.00s	0.10s	☆
P8.36	Output over-current threshold	0.0% (no detection) 0.1%~300.0% (rated motor current)	200.0%	☆
P8.37	Output over-current detection delay time	0.00s~600.00s	0.00s	☆
P8.38	Any current reaching 1	0.0%~300.0% (rated motor current)	100.0%	☆
P8.39	Any current reaching 1 amplitude	0.0%~300.0% (rated motor current)	0.0%	☆
P8.40	Any current reaching 2	0.0%~300.0% (rated motor current)	100.0%	☆
P8.41	Any current reaching 2 amplitude	0.0%~300.0% (rated motor current)	0.0%	☆
P8.42	Timing function selection	0:Disabled 1:Enabled	0	☆
P8.43	Timing duration source	0: P8.44 1: FIV/potentiometer on operation panel 2: FIC 3: Reserved 100% of analog input corresponds to the value of P8.44	0	☆
P8.44	Timing duration	0.0Min~6500.0Min	0.0Min	☆
P8.45	FIV input voltage lower limit protection value	0.00V~P8.46	3.10V	☆
P8.46	FIV input voltage upper limit protection value	P8.45~10.00V	6.80V	☆
P8.47	Module temperature	0°C~100°C	75°C	☆

	threshold			
P8.48	Cooling fan control	0: Fan working during running 1: Fan working continuously	0	☆
P8.49	Wakeup frequency	Dormant frequency (P8.51) ~ maximum frequency (P0.10)	0.00Hz	☆
P8.50	Wakeup delay time	0.0s~6500.0s	0.0s	☆
P8.51	Dormant frequency	0.00Hz~wakeup frequency (P8.49)	0.00Hz	☆
P8.52	Dormant delay time	0.0s~6500.0s	0.0s	☆
P8.53	Current running time reached	0.0Min~6500.0Min	0.0Min	☆
P8.54	Output power correction coefficient	0~200%	100%	☆
P8.55	Emergency deceleration time	0~6553.5s	Model dependent	☆
Group P9: Fault and Protection				
P9.00	Motor overload protection selection	0: Disabled 1: Enabled	1	☆
P9.01	Motor overload protection gain	0.20~10.00	1.00	☆
P9.02	Motor overload warning coefficient	50%~100%	80%	☆
P9.03	Over voltage stall gain	0~100	30	☆
P9.04	Protection voltage of over voltage stall	120%~150%	130%	☆
P9.07	Short-circuit to ground upon power on	0: Disabled 1: Enabled	1	☆
P9.09	Fault auto reset times	0~20	0	☆
P9.10	YO action selection during fault auto reset	0: No act 1: Act	0	☆
P9.11	Time interval of fault auto reset	0.1s~100.0s	1.0s	☆
P9.12	Input phase lost/contact suction protection selection	Unit's digit: Input phase lost protection Ten's digit: contactor suction protection 0: disabled 1: enabled	00	☆
P9.13	Output phase loss protection selection	0: Disabled 1: Enabled Unit's digit: output phase loss	1	☆

		protection Ten's digit: output phase loss protection before running		
P9.14	1st fault type	0: No fault 1: Reserved 2: Over-current during acceleration 3: Over-current during deceleration 4: Over-current at constant speed 5: Over-voltage during acceleration 6: Over-voltage during deceleration 7: Over-voltage at constant speed 8: Over-load of butter resistance 9: Under voltage 10:AC drive overload 11: Motor overload 12: Input Phase lost		•
P9.15	2nd fault type	13: Power output phase loss 14: Module overheat 15: External equipment fault 16: Communication fault 17: Contactor fault 18: Current detection fault 19: Motor auto-tuning fault 20: Encoder/PG card fault 21: Parameters read-write fault 22: AC drive hardware fault 23: Short circuit to ground 24: Reserved 25: Reserved	—	•
P9.16	3rd (latest) fault type	26:Running time reached 27: User-defined fault 1 28: User-defined fault 2 29: Power-on time reached 30: Load becoming 0 31: PID feedback lost during	—	•

		running 40: Fast limit overtime 41: Switchover motor when running 42: Speed deviation too large 43: Motor over speed 45: Motor over temperature 51: Initial position fault		
Group PA PID function				
PA.00	PID setting source	0: PA.01 1: FIV/potentiometer on operation panel 2: FIC 3: Reserved 4: PULSE (S3, above 3.7KW 5: Communication setting 6: Multi-reference	0	☆
PA.01	PID digit setting	0.0%~100.0%	50.0%	☆
PA.02	PID feedback source	0: FIV/potentiometer on operation panel 1: FIC 2: Reserved 3: FIV-FIC/ potentiometer on operation panel-FIC 4: PULSE (S3, above 3.7KW 5: Communication setting 6: FIV+FIC/ potentiometer on operation panel +FIC 7: MAX (FIV , FIC) / MAX (potentiometer on operation panel , FIC) 8: MIN (FIV , FIC) / MIN (potentiometer on operation panel , FIC)	0	☆
PA.03	PID action direction	0: Forward action 1: Reverse action	0	☆
PA.04	PID setting feedback range	0~65535	1000	☆
PA.05	Proportional gain Kp1	0.0~100.0	20.0	☆
PA.06	Integral time Ti1	0.01s~10.00s	2.00s	☆
PA.07	Differential time Td1	0.000s~10.000s	0.000s	☆
PA.08	Cut-off frequency of PID reverse rotation	0.00~maximum frequency	2.00Hz	☆

PA.09	PID deviation limit	0.0%~100.0%	0.0%	☆
PA.10	PID differential limit	0.00%~100.00%	0.10%	☆
PA.11	PID setting change time	0.00~650.00s	0.00s	☆
PA.12	PID feedback filter time	0.00~60.00s	0.00s	☆
PA.13	PID output filter time	0.00~60.00s	0.00s	☆
PA.14	Reserved	-	-	☆
PA.15	Proportional gain KP1	0.0~100.0	20.0	☆
PA.16	Integral time Ti2	0.01s~10.00s	2.00s	☆
PA.17	Differential time Td2	0.000s~10.000s	0.000s	☆
PA.18	PID parameter switchover condition	0: No switchover 1: Switchover via S terminal 2: Automatic switchover based on deviation 3: Automatic switchover based on running frequency	0	☆
PA.19	PID parameter switchover deviation 1	0.0%~PA.20	20.0%	☆
PA.20	PID parameter switchover deviation 2	PA.19~100.0%	80.0%	☆
PA.21	PID initial value	0.0%~100.0%	0.0%	☆
PA.22	PID initial value holding time	0.00~650.00s	0.00s	☆
PA.25	PID integral property	Unit's digit: Integral separated 0: Invalid 1: Valid Ten's digit: Whether to stop integral operation when the output reaches 0: Continue integral operation 1: Stop integral operation	00	☆
PA.26	Detection value of PID feedback loss	0.0%: Not judging feedback loss 0.1%~100.0%	0.0%	☆
PA.27	Detection time of PID feedback loss	0.0s~20.0s	0.0s	☆
PA.28	PID operation at stop	0: No PID operation at stop 1: PID operation at stop	0	☆
Group PC Multi-Reference and Simple PLC Function				
PC.00	Multi-Reference 0	-100.0%~100.0%	0.0%	☆
PC.01	Multi-Reference 1	-100.0%~100.0%	0.0%	☆
PC.02	Multi-Reference 2	-100.0%~100.0%	0.0%	☆
PC.03	Multi-Reference 3	-100.0%~100.0%	0.0%	☆
PC.04	Multi-Reference 4	-100.0%~100.0%	0.0%	☆

PC.05	Multi-Reference 5	-100.0%~100.0%	0.0%	☆
PC.06	Multi-Reference 6	-100.0%~100.0%	0.0%	☆
PC.07	Multi-Reference 7	-100.0%~100.0%	0.0%	☆
PC.08	Multi-Reference 8	-100.0%~100.0%	0.0%	☆
PC.09	Multi-Reference 9	-100.0%~100.0%	0.0%	☆
PC.10	Multi-Reference 10	-100.0%~100.0%	0.0%	☆
PC.11	Multi-Reference 11	-100.0%~100.0%	0.0%	☆
PC.12	Multi-Reference 12	-100.0%~100.0%	0.0%	☆
PC.13	Multi-Reference 13	-100.0%~100.0%	0.0%	☆
PC.14	Multi-Reference 14	-100.0%~100.0%	0.0%	☆
PC.15	Multi-Reference 15	-100.0%~100.0%	0.0%	☆
PC.16	Simple PLC running mode	0: Stop after the AC drive runs one cycle 1: Keep final values after the AC drive runs one cycle 2: Repeat after the AC drive runs one cycle	0	☆
PC.17	Simple PLC retentive selection	Unit's digit: Retentive upon power failure 0: No 1: Yes Ten's digit: Retentive upon stop 0: No 1: Yes	00	☆
PC.18	Running time of simple PLC reference 0	0.0s (h) ~6500.0s (h)	0.0s (h)	☆
PC.19	Acceleration/deceleration time of simple PLC reference 0	0~3	0	☆
PC.20	Running time of simple PLC reference 1	0.0s (h) ~6500.0s (h)	0.0s (h)	☆
PC.21	Acceleration/deceleration time of simple PLC reference 1	0~3	0	☆
PC.22	Running time of simple PLC reference 2	0.0s (h) ~6500.0s (h)	0.0s (h)	☆
PC.23	Acceleration/deceleration time of simple PLC reference 2	0~3	0	☆
PC.24	Running time of simple PLC reference 3	0.0s (h) ~6500.0s (h)	0.0s (h)	☆
PC.25	Acceleration/deceleration	0~3	0	☆

	time of simple PLC reference 3			
PC.26	Running time of simple PLC reference 4	0.0s (h) ~6500.0s (h)	0.0s (h)	☆
PC.27	Acceleration/deceleration time of simple PLC reference 4	0~3	0	☆
PC.28	Running time of simple PLC reference 5	0.0s (h) ~6500.0s (h)	0.0s (h)	☆
PC.29	Acceleration/deceleration time of simple PLC reference 5	0~3	0	☆
PC.30	Running time of simple PLC reference 6	0.0s (h) ~6500.0s (h)	0.0s (h)	☆
PC.31	Acceleration/deceleration time of simple PLC reference 6	0~3	0	☆
PC.32	Running time of simple PLC reference 7	0.0s (h) ~6500.0s (h)	0.0s (h)	☆
PC.33	Acceleration/deceleration time of simple PLC reference 7	0~3	0	☆
PC.34	Running time of simple PLC reference 8	0.0s (h) ~6500.0s (h)	0.0s (h)	☆
PC.35	Acceleration/deceleration time of simple PLC reference 8	0~3	0	☆
PC.36	Running time of simple PLC reference 9	0.0s (h) ~6500.0s (h)	0.0s (h)	☆
PC.37	Acceleration/deceleration time of simple PLC reference 9	0~3	0	☆
PC.38	Running time of simple PLC reference 10	0.0s (h) ~6500.0s (h)	0.0s (h)	☆
PC.39	Acceleration/deceleration time of simple PLC reference 10	0~3	0	☆
PC.40	Running time of simple PLC reference 11	0.0s (h) ~6500.0s (h)	0.0s (h)	☆
PC.41	Acceleration/deceleration time of simple PLC reference 11	0~3	0	☆
PC.42	Running time of simple	0.0s (h) ~6500.0s (h)	0.0s (h)	☆

	PLC reference 12			
PC.43	Acceleration/deceleration time of simple PLC reference 12	0~3	0	☆
PC.44	Running time of simple PLC reference 13	0.0s (h) ~6500.0s (h)	0.0s (h)	☆
PC.45	Acceleration/deceleration time of simple PLC reference 13	0~3	0	☆
PC.46	Running time of simple PLC reference 14	0.0s (h) ~6500.0s (h)	0.0s (h)	☆
PC.47	Acceleration/deceleration time of simple PLC reference 14	0~3	0	☆
PC.48	Running time of simple PLC reference 15	0.0s (h) ~6500.0s (h)	0.0s (h)	☆
PC.49	Acceleration/deceleration time of simple PLC reference 15	0~3	0	☆
PC.50	Time unit of simple PLC running	0: s (second) 1: h (hour)	0	☆
PC.51	Reference 0 source	0: Set by PC.00 1: FIV/Potentiometer on operation panel 2: FIC 3: Reserved 4: PULSE 5: PID 6: Set by preset frequency (P0.08) , UP/DOWN can be modified	0	☆
Group PD: Communication Parameters				
PD.00	Baud rate	Unit's digit: MODBUS 0: 300BPS 1: 600BPS 2: 1200BPS 3: 2400BPS 4: 4800BPS 5: 9600BPS 6: 19200BPS 7: 38400BPS 8: 57600BPS 9: 115200BPS	0005	☆

		Ten's digit: Reserved Hundred's digit: Reserved Thousand's digit: Reserved		
PD.01	Data format	0: No check, <8-N-2> 1: Even parity check, <8-E-1> 2 : Odd Parity check, <8-O-1> 3: 8-N-1	3	☆
PD.02	Local address	1~247	1	☆
PD.03	Response delay	0ms~20ms	2	☆
PD.04	Communication timeout	0.0 (Invalid) , 0.1s~60.0s	0.0	☆
PD.05	Data transfer format selection	Unit's digit: MODBUS 0: Non-standard MODBUS protocol 1: Standard MODBUS protocol Ten's digit: Reserved	1	☆
PD.06	Communication reading current resolution	0: 0.01A 1: 0.1A	0	☆
Group PP: User-Defined Function Codes				
PP.00	User password	0~65535	0	☆
PP.01	Parameter Initialization	0: No operation 01: Restore factory settings except motor parameters	0	★
Group C0 Torque control parameter				
C0.00	Speed/Torque control mode selection	0: Speed control 1: Torque control	0	★
C0.01	Torque setting source selection in torque control mode	0: Digital setting 1 (C0.03) 1: : FIV/ Potentiometer on operation panel 2: FIC 3: Reserved 4: PULSE 5: Communication setting 6: MIN (FIV,FIC) / MIN (Potentiometer on operation panel,FIC) 7: MAX (FIV,FIC) / MAX (Potentiometer on operation panel,FIC) (The full range of 1-7 corresponding to the digit setting of C0.03)	0	★
C0.03	Torque digit setting in	-200.0%~200.0%	150.0%	☆

	torque control			
C0.05	Forward maximum frequency in torque control	0.00Hz~maximum frequency	50.00Hz	☆
C0.06	Reverse maximum frequency in torque control	0.00Hz~maximum frequency	50.00Hz	☆
C0.07	Acceleration time in torque control	0.00s~65000s	0.00s	☆
C0.08	Deceleration time in torque control	0.00s~65000s	0.00s	☆
Group C5 Control optimization parameters				
C5.00	DPWM switchover frequency upper limit	0.00Hz~maximum frequency	8.00Hz	☆
C5.01	PWM modulation mode	0: Asynchronous modulation 1: Synchronous modulation	0	☆
C5.02	Dead zone compensation mode selection	0: No compensation 1: Compensation mode 1	1	☆
C5.03	Random PWM depth	0: Random PWM invalid 1~10: PWM carrier frequency random depth	0	☆
C5.04	Rapid current limit	0: Disabled 1: Enabled	1	☆
C5.05	Voltage over modulation coefficient	100~110	105	☆
C5.06	Under voltage threshold setting	210~420	350	☆
C5.08	Dead zone time adjustment	100%~200%	150%	☆
C5.09	Over voltage threshold setting	200.0V~2500.0V	Model dependent	

Monitoring parameters:

Function Code	Parameter Name	Unit
Group D0 Basic monitoring parameters		
D0.00	Running frequency (Hz)	0.01Hz
D0.01	Set frequency (Hz)	0.01Hz
D0.02	Bus voltage (V)	0.1V
D0.03	Output voltage (V)	1V
D0.04	Output current (A)	0.01A
D0.05	Output power (kW)	0.1kW

D0.06	Output torque (%)	0.1%
D0.07	S input status	1
D0.08	MO1 output status	1
D0.09	Potentiometer on operation panel/FIV Voltage (V)	0.01V
D0.10	FIC Voltage (V)	0.01V
D0.11	Reserved	
D0.12	Count value	1
D0.13	Length value	1
D0.14	Load speed display	1
D0.15	PID setting	1
D0.16	PID feedback	1
D0.17	PLC stage	1
D0.18	PULSE input pulse frequency(kHz)	0.01kHz
D0.19	Reserved	
D0.20	Remaining running time	0.1Min
D0.21	Potentiometer on operation panel /FIV voltage before correction	0.001V
D0.22	FIC voltage before correction	0.001V
D0.23	Reserved	
D0.24	Linear speed	1m/Min
D0.25	On the current power-on time	1Min
D0.26	The current running time	0.1Min
D0.27	Input pulse frequency	1Hz
D0.28	Communication setting value	0.01%
D0.29	Reserved	
D0.30	Reserved	
D0.31	Auxiliary frequency Y display	0.01Hz
D0.32	View any memory address values	1
D0.33	Reserved	
D0.34	Motor temperature value	1°C
D0.35	Target torque (%)	0.1%
D0.36	Reserved	1
D0.37	Power factor angle	0.1°
D0.38	Reserved	1
D0.39	Target voltage upon V/F separation	1V
D0.40	Output voltage upon V/F separation	1V

D0.41	Reserved	
D0.42	Reserved	
D0.43	Reserved	
D0.44	Reserved	
D0.45	Fault info	0
D0.58	Z signal counter	1
D0.59	Set frequency (%)	0.01%
D0.60	Running frequency (%)	0.01%
D0.61	AC drive status	1
D0.74	AC drive output torque	0.1
D0.76	Accumulative power consumption low level	0.1 °C
D0.77	Accumulative power consumption high level	1°C
D0.78	Linear speed	1m/min

Fault code list:

Fault code	Name	Fault code	Name
OC1	Over current during acceleration	CE	Communication fault
OC2	Over current during deceleration	rAY	Contact fault
OC3	Over current during constant speed	IE	Current detection fault
OU1	Over voltage during acceleration	TE	Motor auto-tuning fault
OU2	Over voltage during deceleration	PG	Encoder fault
OU3	Over voltage during constant speed	EEP	EEPROM read-write fault
POF	Control power fault	GND	Short circuit to ground fault
LU	Under voltage fault	END1	Accumulative running time reached fault
OL2	AC drive over load	END2	Accumulative power on time reached fault

OL1	Motor over load	LOAD	Load becoming 0 fault
LI	Input phase loss	PIDE	PID feedback lost during running fault
LO	Output phase loss	CBC	Rapid current limit fault
OH	Module over heat	ESP	Speed deviation too large fault
EF	External equipment fault	OSP	Motor over speed fault

VINAPOWER AUTOMATION CO.,LTD

43 Manor 2, Sunrise I, The Manor Central Park, Thanh Liet Commune,
Thanh Tri District, Hanoi City, Vietnam Tel: +84 964468213

<https://vpfujj.vn>

E-mail: vinapower@vpfujj