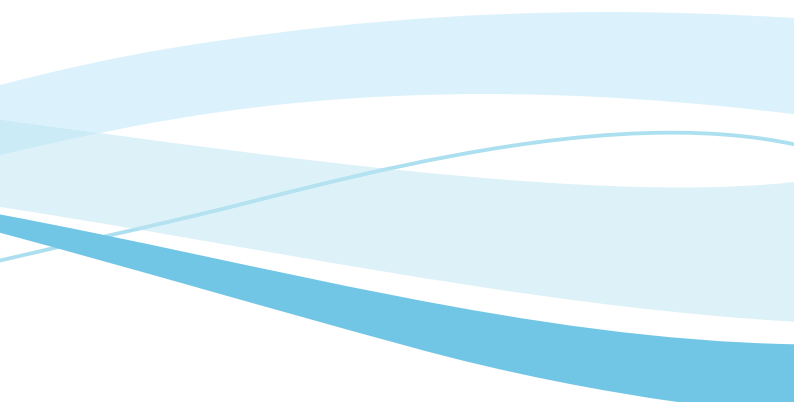
（L2.0.2）

860S

USER MANUAL FOR ELECTRIC CURRENT VECTOR TYPE INVERTER



PREFACE

First of all, thank you for buying the 860S series frequency converter!

This manual provides the user with the type selection, installation, parameter setting, field debugging, fault diagnosis and daily maintenance and maintenance. In order to use this series of frequency converter correctly, please read this manual carefully in advance, and please keep it properly for later use.

Safety precautions

- This product must be installed and maintained by professional personnel. Any injury and loss caused by the violation has nothing to do with the company.
- Please confirm that the voltage level of the input power supply is consistent with the rated voltage level of the frequency converter; the wiring position on the power input terminal (R, S, T) and output terminal (U, V, W) is correct; and check whether there is the short circuit in the peripheral circuit and whether the connected circuit is fastened, otherwise the drive will be damaged!
- Any part of the frequency converter does not require a pressure test, the product has been tested when the factory. Otherwise, it will cause an accident!
- The frequency converter must be covered with the cover plate before the power on. Otherwise, it may cause an electric shock!
- Never connect the input power to the output terminal (U, V, W). Do not connect to the wrong line! Otherwise, there is a risk of explosion and damage to the property!
- Do not touch and operate the frequency converter with wet hands, otherwise there is a danger of electric shock!
- Do not use the method of contact breaker to control the start and stop of the drive, otherwise the equipment will be damaged!
- Confirm that when the inverter voltage is lower than DC36V, only ten minutes after the power failure. Otherwise, the residual charge on the capacitor will cause harm to people!
- Personnel without professional training should not repair and maintain the inverter, otherwise it will cause personal injury or equipment damage!
- Parameters must be set after replacing the inverter, and all plug and removable broadcast parts must be broadcast and pulled in the case of power failure!
- If parameter identification is required, please pay attention to the danger of injury in motor rotation. Otherwise, it may cause an accident!
- Do not arbitrarily change the parameters of the frequency converter manufacturer at will. Otherwise, it may cause the damage to the equipment!
- Do not repair and maintain the equipment with electricity. Otherwise, there is a danger of electric shock!
- Before the first use and regular inspection, the motor insulation inspection should be done to prevent damage to the frequency converter due to the insulation failure of the motor winding. During the insulation inspection, the motor connection must be separated from the frequency converter. It is recommended to use the 500V voltage type megohm meter, and ensure that the measured insulation resistance is not less than 5M Ω. If the customer needs to operate above 50Hz, please consider the endurance of the mechanical device.
- Standard adaptation motor is a quadrupole rat cage induction motor. If this motor is not used, please select the frequency converter according to the rated current of the motor. Do not change the three-phase frequency converter in the 860S series to two-phase use, otherwise it will cause failure or damage to the frequency converter. In the area with an altitude of more than 1000M, the heat dissipation effect of the frequency converter becomes poor due to the thin air, so it is necessary to reduce the forehead to use it. For this situation, please consult with our company for technical consultation.

Naming rule

860S - 4T 0015 G B

Frequency converter series

The classification of voltage	
2S	Single phase 220V
4T	Three phase 380V

Adapt motor power

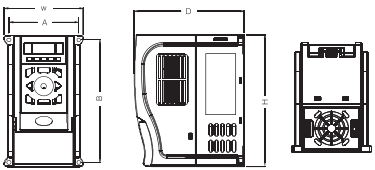
Brake unit	
empty	non
B	With brake unit

Type	
G	General type
P	Fan pump type

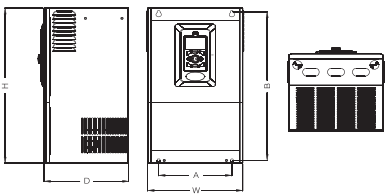
MODEL : 860S-4T0037GB/4T0055PB
POWER : 3.7kW 9A/5. 5kW 13A
INPUT : 3PH AC380V 50Hz/60Hz
OUTPUT : 3PH AC0V~380V 0Hz-500Hz
S.N : Bar code

Characteristic	0007	0015	⋱	0750	7500
Adaptation motor (kW)	0.75	1.5	⋱	75	750

Product outer dimensions diagram and mounting hole sizes



Plastic structural outer dimension and mounting size schematic diagram

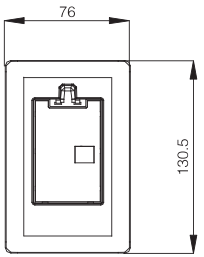


Sheet metal structural outer dimension and
Mounting size schematic diagram

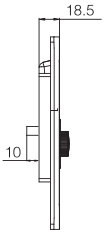
Plastic structural outer dimensions and mounting sizes

Rated output power (kW)	Input voltage	A (mm)	B (mm)	H (mm)	W (mm)	D (mm)	Installation aperture (mm)
0.4~2.2	Single phase 220V Scope: -15%~+15%	90	157	170	101	142	5
0.75~2.2	Three phase 380V Scope: -15%~+15%	90	157	170	101	142	5
3.7		111	183	197	129	175	5
5.5~7.5		137	237	256	157	190	5

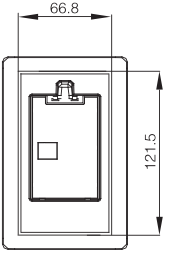
External Keyboard Dimensions



Front

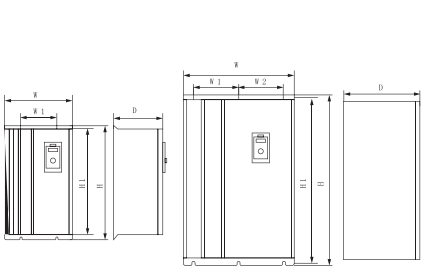


Side

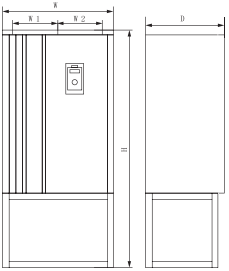


Back (hole size)

Sheet metal structural outer dimension and mounting size schematic diagram



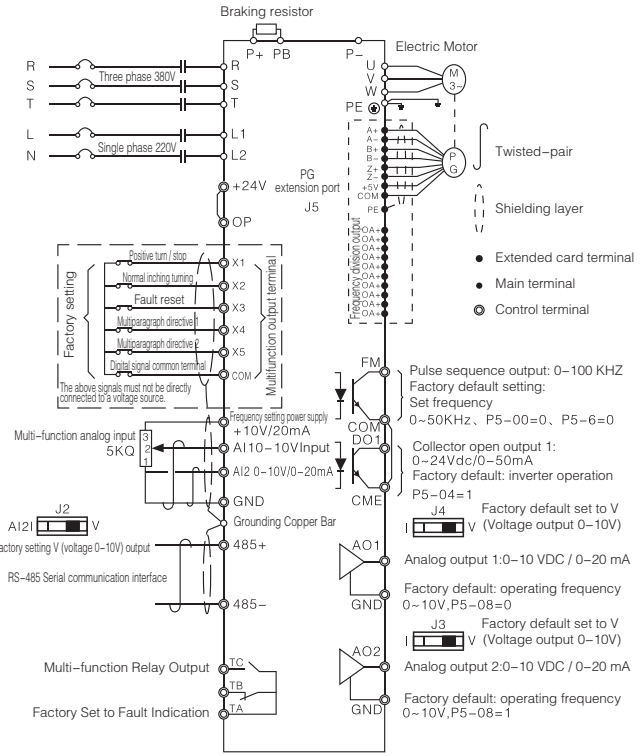
Sheet metal structural outer dimension and mounting size schematic diagram (Hanging type)



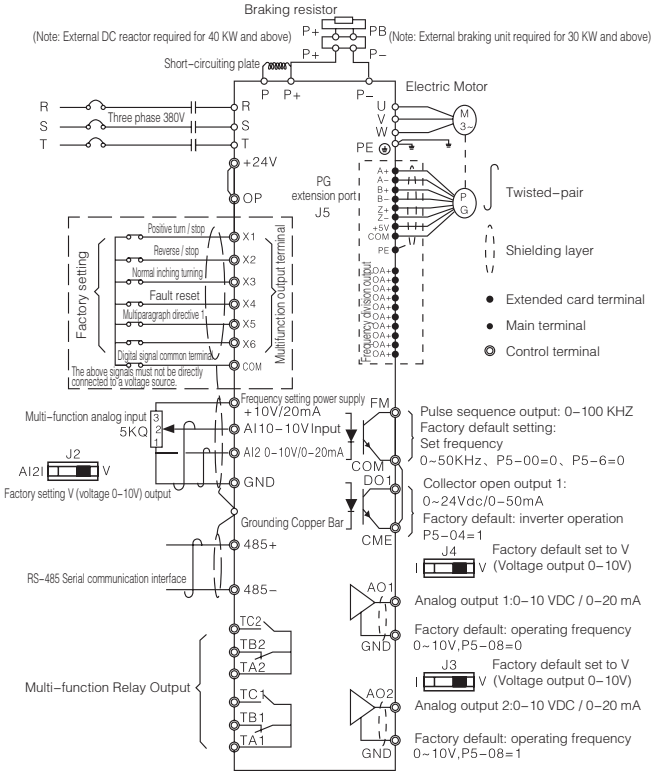
(Cabinet type)

Hang type							
Type	External size			Installation size			Installation aperture
kW	H(mm)	W(mm)	D(mm)	H1(mm)	W1(mm)	W2(mm)	mm
11-15	340	204	214	325	150		Φ6
18.5-22	360	224	214	345	150		Φ6
30-37	460	260	264	440	200		Φ8
45-75	570	380	263	547.5	240		Φ10
90-132	610	400	286	587.5	240		Φ12
160-220	760	500	355	735	200	200	Φ12
250-400	862	750	455	832	250	250	Φ12
450-560	1122	950	505	1092	350	350	Φ12
630-750	1045	1050	505	1015	400	400	Φ12

Cabinet type							
Type	External size			Installation size			Installation aperture
kW	H(mm)	W(mm)	D(mm)	H1(mm)	W1(mm)	W2(mm)	mm
160-220	1065	500	355		200	200	Φ12
250-400	1329	750	455		250	250	Φ12
450-560	1644	950	505		350	350	Φ12
630-750	1625	1050	505		400	400	Φ12



0.75kW-7.5kW Wiring diagram



11kW-400kW Wiring diagram

Main loop terminal diagram

Main diagram terminal terminal diagram (single phase 0.4~2.2kW)

Main circuit connection terminal diagram (three-phase 0.75kW~2.2kW)

Drawing of main loop stewed terminal (three-phase 3.7kW)

Terminal diagram of main circuit connection (three-phase 55kW~7.5kW)

Main circuit connection terminal diagram (three-phase 11kW~15kW)

Main circuit connection terminal diagram (three-phase 18.5kW~22kW)

Terminal diagram of main loop connection (30kW~37kW)

Terminal diagram of main loop connection (45~132kW)

Terminal diagram of main loop connection line (160kW~750kW)

Description of the main circuit terminal of the single-phase frequency converter:

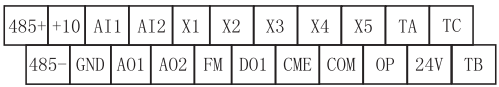
Terminal mark	Name	Explain
L1、L2	Single-phase power supply input terminal	Single-phase 220V AC power supply connection point
U、V、W	Inverter output terminal	Connect to the three-phase electric motor
⏚ / E	Earth terminal	Earth terminal

Note: When the external brake resistance of the single-phase frequency converter is connected through the right side of the plastic shell.

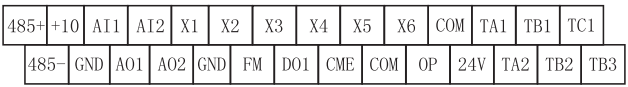
Description of the main circuit terminal of the three-phase frequency converter:

Terminal mark	Name	Explain
R、S、T	Three-phase power supply input terminal	AC input three-phase power connection point
(P1)P+、P-	Positive and negative terminals of the DC bus line	Connecting point of the external brake unit
P+、PB	Brake resistance connection terminal	22kW and below external reactor connection point
P、P+	External reactor connection terminal	45kW and above frequency converter can be external reactor
U、V、W	Inverter output terminal	Connect to the three-phase electric motor
⏚ / E	Earth terminal	Earth terminal

Terminal of the control loop:



Control circuit terminal wiring diagram for models with 7.5kW and below



Control circuit terminal wiring diagram for models with 11kW and above

860S control terminal labeling:

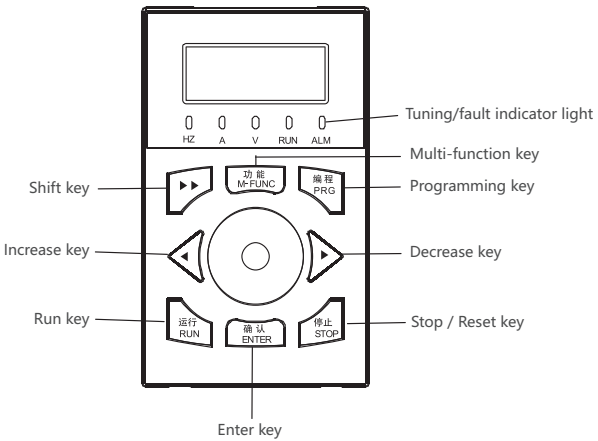
Terminal marking	Description of terminal function	Factory setting
X1-OP	Multi-function numbers input terminal	When the multifunctional digital input is selected on (ON), the action current is 16 mA; When open (OFF), the allowable leakage current is 10 μA
X2-OP		
X3-OP		
X4-OP		
X6-OP		
X5-OP	High-speed pulse input terminal	In addition to serving as a multifunctional input terminal, it can also be used as a highspeed pulse input channel with a maximum input frequency: 100 kHz
+24V-COM	24V power supply	+24V 200mA
COM	The common end of the digital control signal	A common terminal of the multifunctional input output terminal
TA-TB	Normally closed terminal	Resistance load 5A(N.O.)/3A(N.C.) 240VAC 5A(N.O.)/3A(N.C.) 24VAC Emotional load 1.5A(N.O.)/0.5A(N.C.) 240VAC 1.5A(N.O.)/0.5A(N.C.) 24VDC
TA/TC	Normally open terminal	
OP	External power supply input terminal	Factory default connection to +24V When driving X1~X6 with external signals, OP needs to be connected to the external power supply and disconnected from +24V
DO1-CME	Digital Output	Optical coupling isolation, bipolar open circuit collector output. Output voltage paradigm Around : 0 ~ +24 V output current range : 0 mA ~ 50 mA. The digital output CME is internally isolated from the digital input COM, but the CME is short-connected with the COM outside at the factory, The default DO1 is a 24 V driver, and when the DO1 is driven with an external power supply, the CME must be disconnected from the COM
FM-COM	High speed pulse output	Control by the parameter P5-00 "FM terminal output mode selection" when output as high-speed pulse output, the output frequency 0-100 kHz when output as open collector, the same specification as DO1 specification
10V-GND	Power supply is used for the speed setting	Power supply for analog frequency setting +10VDC 20mA (variable resistance 3~5KΩ)
AI1-GND	Analog voltage and frequency command	Impedance: 47kΩ, range: 0 ~ +10VDC/4 ~ 20mA =0 ~ maximum output frequency 0.75kW-7.5kW has only voltage input
AI2-GND	Analog voltage / current frequency means	1) When placing short wiring in (Vi), it accept 0~10V voltage signal, impedance: 47KΩ, range: 0~10VDC = 0~maximum output frequency 2) When placing the short wiring in (Ii), it accepts 4-20 mA current signal, impedance: 250Ω, range: 4~20mA = 0~maximum output frequency
AO1-GND	Analog voltage output / current output	Impedance: 470Ω Output current: 20mA MAX Resolution ratio: 8 bits Range: 0 ~ 10VDC, 020mA
AO2-GND	Analog voltage output	Impedance: 47KΩ Resolution ratio: 10 bits Range: 0-10VDC, 0-20mA, 0.75kW-7.5kW Only the voltage output exists
GND	Analog control signal common end	Analog signal common terminal

* Analog control signal line specification: 18 AWG(0.75mm^2), shelter and isolation cable.

OPERATION AND DISPLAY

Introduction of the operation and display panel

With the operation panel, it can modify the functional parameters, monitor the working status of the frequency converter and control the operation (start and stop) of the frequency converter. The appearance and functional areas are shown in the following figure:



● Function indicator light description:
Hz: Frequency status indicator lamp
A: Current indicator lamp
V: Voltage indicator lamp
RUN: When the light is on, the frequency converter is in operation
ALM: When the light is on, the frequency converter is in a fault state

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

List of functional parameters

P0 Basic function group				
FC	Name	Set the scope	Factory default value	Change
P0-00	GP type is shown	1: Model G (constant torque load model) 2: P type (fan and water pump load model)	Type confirm	★
P0-01	1st Motor control mode	0: Speed sensor free vector control (SVC) 1: Speed sensor free vector control (FVC) 2: V/F control	2	●
P0-02	Command source selection	0: Operation panel command channel (LED out) 1: Terminal command channel (LED bright) 2: Communication command channel (LED flashing)	0	↗
P0-03	Main frequency source X selection	0: Digital setting (Non-volatile) 1: Digital setting (Volatile) 2: AI1 (Analog input 1) 3: AI2 (Analog input 2) 4: Potentiometer setting adjustable by keyboard 5: PULSE setting (X6) 6: Multi-segment command 7: Simple PLC (Programmable logic controller) 8: PID (Proportional-integral-derivative) Control setting 9: Communication command	4	●
P0-04	Secondary frequency source Y selection	Same as P0-03 (Main frequency source X selection)	0	↗
P0-05	Auxiliary frequency source y range selection during overlay	0: relative to maximum frequency 1: relative to frequency source X	0	↗
P0-06	Y range of auxiliary frequency source during overlay	0% ~ 150%	100%	↗
P0-07	Frequency source superposition selection	Ones place: Selection of the frequency source 0: Primary frequency source X 1: Result of primary and secondary operation (determined by the tens place) 2: Switch between primary frequency source X and auxiliary frequency source Y 3: Switch between primary frequency source X and the result of primary-secondary operation 4: Switch between auxiliary frequency source Y and the result of primary-secondary operation Tens place: Relationship of primary and secondary frequency sources in operation 0: Primary plus secondary 1: Primary minus secondary 2: Maximum of the two 3: Minimum of the two	00	↗
P0-08	Preset frequency	0.00Hz ~ Maximum frequency (P0-10)	50.00Hz	↗
P0-09	Running direction	0: default direction 1: opposite the default direction	0	↗
P0-10	Maximun-frequency	50.00Hz ~ 500.00Hz	50.00Hz	●
P0-11	Upper limit frequency source	0: P0-12 setting 1: AI1 2: AI2 3: Keyboard adjustable potentiometer setting 4: PULSE pulse setting 5: Communication given	0	●

P0-12	Upper limiting frequency	Lower limit frequency P0-14 to maximum frequency P0-10	50.00Hz	✓
P0-13	Upper limit frequency bias	0.00Hz ~ the maximum frequency P0-10	0.00Hz	✓
P0-14	Lower limit frequency	0.00Hz ~ upper limit frequency P0-12	0.00Hz	✓
P0-15	Carrier frequency	0.5KHz ~ 16.0KHz	Model determination	✓
P0-16	Carrier frequency is adjusted with the temperature	0: No 1: Yes	1	✓
P0-17	Acceleration time 1	0.00S ~ 65000S	Model determination	✓
P0-18	Slow down time 1	0.00S ~ 65000S	Model determination	✓
P0-19	Time unit of acceleration and deceleration	0: 1s 1: 0.1s 2: 0.01s	1	●
P0-21	Adaid frequency source bias frequency when superposition	0.00Hz ~ the maximum frequency P0-10	0.00HZ	●
P0-22	Frequency command resolution	2 : 0.01Hz	2	●
P0-23	Digital setting frequency shutdown memory selection	0: No memory 1: memory	0	✓
P0-24	Motor selection	0: Motor parameter group 1 1: Motor parameter group 2	0	●
P0-25	Acceleration of deceleration time reference frequency	0: Maximum frequency (P0-10) 1: Set the frequency 2: 100Hz	0	●
P0-26	Runtime requirement rate instruction UP / DOWN baseline	0: Operating frequency 1: Set frequency	0	●
P0-27	Command source bundle frequency source	Ones place: Command binding selection for the operation panel 0: No binding 1: Digital setting frequency 2: AI1 3: AI2 4: Keyboard Adjustable Potentiometer 5: PULSE Pulse setting 6: Multi-speed 7: Simple PLC 8: PID 9: Communication command Tens place: Command binding selection for terminal Hundreds place: Command binding selection for communication commands Thousands place: Command binding selection for automatic operation	0	●

P1 First motor parameters				
FC	Name	Set the scope	Factory default value	Change
P1-00	Motor type selection	0: ordinary assynchronous motor 1: variable frequency assynchronous motor	0	●
P1-01	The motor is rated power	0.1kW ~ 1000.0kW	Model determination	●
P1-02	The motor is rated voltage	1V ~ 380V	Model determination	●
P1-03	Motor face fixed current	0.01A~655.35A (frequency converter power <=55kW) 0.1A~6553.5A (frequency converter power >55kW)	Model determination	●

P1-04	Rated frequency of motor	0.01Hz ~ The maximum frequency	Model determination	●
P1-05	Motor rated speed	1RPM ~ 65535RPM	Model determination	●
P1-06	Asynchronous motor stator resistance	0.001Ω ~ 65.535Ω (Frequency converter power <=55kW) 0.0001Ω ~ 6.5535Ω (Frequency converter power >55kW)	Tuning parameters	●
P1-07	Asynchronous motor rotor resistance	0.001Ω ~ 65.535Ω (Frequency converter power <=55kW) 0.0001Ω ~ 6.5535Ω (Frequency converter power >55kW)	Tuning parameters	●
P1-08	Asynchronous motor mixed sense resistance	0.01MH ~ 655.35MH (Frequency converter power <=55kW) 0.001MH ~ 65.535MH (Frequency converter power >55kW)	Tuning parameters	●
P1-09	Mutual inductive resistance of asynchronous motor	0.1MH ~ 6553.5MH (Frequency converter power <=55kW) 0.01MH ~ 655.35MH (Frequency converter power >55kW)	Tuning parameters	●
P1-10	No-load current of Asynchronous motor	0.01A ~ P1-03 (Frequency converter power <=55kW) 0.1A ~ P1-03 (Frequency converter power >55kW)	Tuning parameters	●
P1-27	Number of encoder lines	1 ~ 65535	1024	●
P1-28	Encoder type	0: ABZ incremental encoder 2: rotary transformer	0	●
P1-30	ABZ incremental encoder AB phase sequence	0: Forward 1: Reverse	0	●
P1-34	Rotary transformer pole-log	1 ~ 65535	1	●
P1-36	Speed feedback PG break detection time	0.0S: Non-action 0.1S ~ 10.0S	0.0S	●
P1-37	Select the spectrum	0: No operation 1: Asynchronous machine stationary part parameter tuning 2: Asynchronous machine dynamic full tuning 3: Asynchronous machine stationary full tuning	0	●

P2 First motor vector control parameters				
FC	Name	Set the scope	Factory default value	Change
P2-00	The velocity-ring proportional gain of 1	1 ~ 100	30	↗
P2-01	The velocity loop integration time 1	0.01S ~ 10.00S	0.50S	↗
P2-02	Switch frequency 1	0.00 ~ P2-05	5.00HZ	↗
P2-03	The velocity-loop proportional gain of 2	1 ~ 100	20	↗
P2-04	The velocity loop integration time 2	0.01S ~ 10.00S	1.00S	↗
P2-05	Switch frequency 2	P2-02 ~ The maximum frequency	10.00Hz	↗
P2-06	Vector-controlled turn-difference gain	50% ~ 200%	100%	↗
P2-07	SVC velocity feedback loop filtering	0.000S ~ 0.100S	0.050S	↗
P2-09	Torque upper limit source under speed control mode	0: Function code P2-10 setting 1: AI1 2: AI2 3: Keyboard adjustable potentiometer 4: PULSE Pulse setting 5: Communication command 6: MIN(AI1,AI2) 7: MAX(AI1,AI2) The full range of options 1-7 corresponds to P2-10	0	↗

P2-10	Set the torque upper number under speed control mode	0.0% ~ 200.0%	150.0%	✓
P2-13	Excitation regulation proportional gain	0 ~ 60000	2000	✓
P2-14	Excitation regulation of integral gain	0 ~ 60000	1300	✓
P2-15	Torque regulation proportional gain	0 ~ 60000	2000	✓
P2-16	Torque adjustment integral gain	0 ~ 60000	1300	✓
P2-17	The velocity loop integral property	0: Invalid; 1: Valid	0	✓
P3 V/F control parameters				
FC	Name	Set the scope	Factory default value	Change
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 10: VF Complete Separation Mode 11: VF Partial Separation Mode	0	✓
P3-01	Recurrent ascension	0.0%: (Automatic torque increase) 0.1%~30.0%	Model determination	✓
P3-02	Torque lift cutoff frequency	0.00Hz ~ the maximum frequency	50.00Hz	✓
P3-03	Multipoint V/F frequency point 1	0.00Hz ~ P3-05	0.00Hz	✓
P3-04	Multipoint V/F voltage point 1	0.0% ~ 100.0%	0.0%	✓
P3-05	Multipoint V/F frequency point 2	P3-03 ~ P3-07	0.00Hz	✓
P3-06	Multipoint V/F voltage point 2	0.0% ~ 100.0%	0.0%	✓
P3-07	Multipoint V/F frequency point 3	P3-05~Motor rated frequency (P1-04)	0.00Hz	✓
P3-08	Multi-point V/F voltage point 3	0.0% ~ 100.0%	0.0%	✓
P3-09	The VF transition compensation gain	0.0% ~ 200.0%	0.0%	✓
P3-10	V/F over impact gain	0 ~ 200	64	✓
P3-11	V/F oscillation suppresses the benefit	0 ~ 100	Model determination	✓
P3-13	Voltage source separated by the VF	0: Number setting (P3-14) 1: AI1 2: AI2 3: Keyboard Potentiometer 4: PULSE Pulse setting (X6) 5: Multi-segment command 6: Simple PLC 7: PID 8: Communication command Note: 100.0% corresponds to the motor rated voltage	0	✓
P3-14	Voltage number setting of the VF division	0V ~ Motor rated voltage	0V	✓
P3-15	Voltage acceleration time for the VF separation	0.0S ~ 1000.0S Note: It represents the time from 0V to the motor's rated voltage.	0.0S	✓

P4 Input terminal				
FC	Name	Set the scope	Factory default value	Change
P4-00	X1 Terminal function selection	0: No function 1: Forward run (FWD) 2: Reverse run (REV) 3: Three-wire operation control 4: Forward jog (FJOG) 5: Reverse jog (RJOG) 6: Terminal UP 7: Terminal DOWN 8: Free coasting 9: Fault reset (RESET) 10: Run pause 11: External fault open input 12: Multi-segment instruction terminal 1 13: Multi-segment instruction terminal 2 14: Multi-segment instruction terminal 3 15: Multi-segment instruction terminal 4 16: Acceleration/deceleration time selection terminal 1 17: Acceleration/deceleration time selection terminal 2 18: Frequency source switch 19: UP/DOWN setting reset (terminal, keyboard) 20: Operation command switch terminal 21: Acceleration/deceleration prohibited 22: PID pause 23: PLC status reset 24: Oscillation pause 25: Counter input 26: Counter reset 27: Length count input 28: Length reset 29: Torque control prohibited 30: PULSE (pulse) frequency input (only for X6) 32: Immediate DC braking 33: External fault closed input 34: Frequency modification enable 35: PID action direction reverse 36: External stop terminal 1 37: Control command switch terminal 2 38: PID integral pause 39: Frequency source X and preset frequency switch 40: Frequency source Y and preset frequency switch 41: Motor selection terminal 1 42: Motor selection terminal 2 43: PID parameter switch 44: User-defined fault 1 45: User-defined fault 2 46: Speed control/torque control switch 47: Emergency stop 48: External stop terminal 2 49: Deceleration DC braking 50: Running time reset	1	●
P4-01	X2 Terminal function selection		4	●
P4-02	X3 Terminal function selection		9	●
P4-03	X4 Terminal function selection		12	●
P4-04	X5 Terminal function selection		13	●
P4-05	X6 Terminal function selection		0	●

P4-10	X filtering time	0.000S ~ 1.000S	0.010S	✓
P4-11	Terminal command mode	0: Two-wire configuration 1 1: Two-wire configuration 2 2: Three-wire configuration 1 3: Three-wire configuration 2	0	•
P4-12	Rate of change of the terminal UP / DOWN	0.001Hz/S ~ 65.535Hz/S	1.00Hz/S	✓
P4-13	AI Curve 1 minimum input	0.00V ~ P4-15	0.00V	✓
P4-14	R curve 1 minimum input corresponds to the setting	-100.0% ~ +100.0%	0.0%	✓
P4-15	AI curve 1 max input	P4-13 ~ +10.00V	10.00V	✓
P4-16	AI line 1 the maximum entry corresponding setting	-100.0% ~ +100.0%	100.0%	✓
P4-17	The AI1 filtering time	0.00s ~ 10.00s	0.10S	✓
P4-18	AI Curve 2 minimum input	0.00V ~ P4-20	0.00V	✓
P4-19	A Curve 2 The minimum input corresponds to the setting	-100.0% ~ +100.0%	0.0%	✓
P4-20	AI curve 2 maximum input	P4-18 ~ +10.00V	10.00V	✓
P4-21	The AI is set accordingly by the maximum input of line 2	-100.0% ~ +100.0%	100.0%	✓
P4-22	The A12 filtering time	0.00s ~ 10.00s	0.10s	✓
P4-23	Keyboard potentiometer minimum input	0.0V ~ P4-25	0.01V	✓
P4-24	Minimum keyboard potentiometer input corresponds to setting	-100.0% ~ +100.0%	0.0%	✓
P4-25	Keyboard potentiometer maximum input	P4-23 ~ +10.00V	10.00V	✓
P4-26	Maximum keyboard potentiometer input corresponds to setting	-100.0% ~ +100.0%	100.0%	✓
P4-27	Keyboard potentiometer filter time	0.00s ~ 10.00s	0.10S	✓
P4-28	PULSE minimum input	0.00KHZ ~ P4-30	0.00KHZ	✓
P4-29	PULSE minimum input corresponds to setting	-100.0% ~ 100.0%	0.0%	✓
P4-30	PULSE maximum input	P4-28 ~ 100.00KHZ	50.00KHZ	✓
P4-31	PULSE maximum input setting	-100.0% ~ 100.0%	100.0%	✓
P4-32	The PULSE filtering time	0.00S ~ 10.00S	0.10S	✓
P5 Output terminal				
FC	Name	Set the scope	Factory default value	Change
P5-00	FM terminal output mode selection	0: Pulse output (FMP) 1: Switch volume output (FMR)	0	✓

P5-01	The FMR output function selection	0: No output 1: Frequency converter running 2: Fault output (Fault stop) 3: Frequency level detection PDT1 output 4: Frequency reached 5: Zero speed operation (No output when stopped) 6: Motor overload pre-alarm 7: Frequency converter overload pre-alarm 8: Set value reached 9: Target value reached 10: Length reached 11: Simple PLC cycle complete 12: Accumulated operating time reached 13: Frequency limiting 14: Torque limiting 15: Ready for operation 16: AI1 > AI2 17: Upper limit frequency reached 18: Lower limit frequency reached (Related to operation) 19: Under-voltage output 20: Communication setting 21: Reserved 22: Reserved 23: Zero speed operation 2 (Outputs even when stopped) 24: Accumulated power-up time reached 25: Frequency level detection PDT2 output 26: Frequency 1 reached output 27: Frequency 2 reached output 28: Current 1 reached output 29: Current 2 reached output 30: Timer reached output 31: AI1 input exceeded limit 32: Load drop 33: Reverse operation 34: Zero current state 35: Module temperature reached 36: Output current exceeded limit 37: Lower limit frequency reached (Outputs even when stopped) 38: Alarm output (Continues operation) 39: Motor overtemperature pre-alarm 40: Current operating time reached	0	✓
P5-02	Control board relay, device 1 function selection (TA1-TB1-TC1)		2	✓
P5-03	Control board Relay, device 2 function selection (TA1-TB1-TC1) (11KW and above standard equipment)		0	✓
P5-04	DO 1 output function selection		1	✓
P5-05	Expansion card DO 2 output function selection		4	✓
P5-06	The FMP output function selection	0: Running frequency 1: Set frequency 2: Output current 3: Output torque 4: Output power 5: Output voltage 6: PULSE input (100.0% - 100.0kHz) 7: AI1 8: AI2 9: Panel potentiometer 10: Length 11: Memory value 12: Communication setting 13: Motor speed 14: Output current (100.0% corresponds to 1000.0A) 15: Output voltage (100.0% corresponds to 1000.0V)	0	✓
P5-07	A01 output function selection		0	✓
P5-08	A02 output function selection		1	✓

P5-09	FMP output the maximum frequency	0.01kHz ~ 100.00kHz	50.00kHz	✓
P5-10	A01 Zero-bias coefficient	-100.0% ~ +100.0%	0.0%	✓
P5-11	A01 gain	-10.00 ~ +10.00	1.00	✓
P5-12	A02 Zero-bias coefficient	-100.0% ~ +100.0%	0.0%	✓
P5-13	A02 gain	-10.00 ~ +10.00	1.00	✓
P5-17	Y1 output delay time	0.0S ~ 3600.0S	0.0s	✓
P5-18	Relay1 output delay time	0.0S ~ 3600.0S	0.0S	✓
P6 Start and stop control				
FC	Name	Set the scope	Factory default value	Change
P6-00	Starting mode	0: Direct start 1: Speed tracking and restarting 2: Pre-excitation start (AC asynchronous machine)	0	✓
P6-01	Speed tracking method	0: Start from the shutdown frequency 1: Start at zero speed 2: Starting with the maximum frequency	0	●
P6-02	Speed tracking fast and slow	1 ~ 100	20	✓
P6-03	Start frequency	0.00Hz ~ 10.00Hz	0.00Hz	✓
P6-04	Start the frequency hold time	0.0S ~ 100.0S	0.0S	●
P6-05	Start the DC brake current / pre-excitation current	0% ~ 100%	0%	●
P6-06	Start the DC braking time / pre-excitation time	0.0S ~ 100.0S	0.0S	●
P6-07	Add deceleration mode	0: Line acceleration and deceleration 1: S Curve acceleration and deceleration A 2: S Curve acceleration and deceleration B	0	●
P6-08	S curve start period time scale	0.0% ~ (100.0%-P6-09)	30.0%	●
P6-09	S curve end period time scale	0.0% ~ (100.0%-P6-08)	30.0%	●
P6-10	Stopping method	0: Slow down and stop 1: Free parking	0	✓
P6-11	Stopping DC brake starting frequency	0.00Hz ~ the maximum frequency	0.00Hz	✓
P6-12	Stopping DC brake wait time	0.0S ~ 100.0S	0.0S	✓
P6-13	Stopping DC brake current	0% ~ 100%	0%	✓
P6-14	Stopping DC brake time	0.0S ~ 100.0S	0.0S	✓
P6-15	Braking usage rate	0% ~ 100%	100%	✓
P7 Keyboard and display				
FC	Name	Set the scope	Factory default value	Change
P7-01	The MF.K key function selection	0: MF.K Invalid 1: Switch between the operation panel command channel and the remote command channel (terminal command channel or communication command channel) 2: Forward/Reverse switch 3: Forward jog 4: Reverse jog	3	●

P7-02	The STOP / RESET key function	0: The STOP/RES key stop function is effective only in the keyboard operation mode 1: The STOP/RES key stop function is effective in any operation mode	1	↗
P7-03	LED run display parameter 1	0000 ~ FFFF BIT00: Running frequency 1 (Hz) BIT01: Set frequency (Hz) BIT02: Motherboard voltage (V) BIT03: Output voltage (V) BIT04: Output current (A) BIT05: Output power (kW) BIT06: Output torque (%) BIT07: X input status BIT08: DO output status BIT09: AI1 voltage (V) BIT10: AI2 voltage (V) BIT11: AI3 voltage (V) BIT12: Count value BIT13: Length value BIT14: Load speed display BIT15: PID setting	1F	↗
P7-04	LED run display parameter 2	0000 ~ FFFF BIT00: PID feedback BIT01: PLC phase BIT02: PULSE input pulse frequency (kHz) BIT03: Running frequency 2 (Hz) BIT04: Remaining run time BIT05: AI1 voltage before correction (V) BIT06: AI2 voltage before correction (V) BIT07: AI3 voltage before correction (V) BIT08: Line speed BIT09: Current power-on time (hour) BIT10: Current run time (min) BIT11: PULSE input pulse frequency (Hz) BIT12: Communication set value BIT13: Encoder feedback speed (Hz) BIT14: Main frequency X display (Hz) BIT15: Auxiliary frequency Y display (Hz)	0	↗
P7-05	LED shutdown to display the parameters	0000 ~ FFFF BIT00: Set frequency (Hz) BIT01: Bus voltage (V) BIT02: X input status BIT03: DO output status BIT04: AI1 voltage (V) BIT05: AI2 voltage (V) BIT06: AI3 voltage (V) BIT07: Count value BIT08: Length value BIT09: PLC phase BIT10: Load speed BIT11: PID setting BIT12: PULSE input pulse frequency (kHz)	33	↗

P7-06	Load speed display coefficient	0.0001 ~ 6.5000	1.0000	✓
P7-07	Inverter module, the radiator temperature	0.0℃ ~ 100.0℃	-	★
P7-08	Recfier bridge radiator temperature	0.0℃ ~ 100.0℃	-	★
P7-09	Cumulative running time	0H ~ 65535H	-	★
P7-10	Product number	-	-	★
P7-11	Software version number	-	-	★
P7-12	Load speed shows the decimal number	0: Zero decimal places 1: One decimal place 2: Two decimal places 3: Three decimal places	1	✓
P7-13	Cumulative power time	0H ~ 65535H	-	★
P7-14	Cumulative worship of electricity	0 ~ 65535°	-	★
P8 Assisted function				
FC	Name	Set the scope	Factory default value	Change
P8-00	Point movement operation frequency	0.00Hz ~ the maximum frequency	6.00Hz	✓
P8-01	Point motion acceleration time	0.0S ~ 6500.0S	20.0S	✓
P8-02	Point motion deceleration time	0.0S ~ 6500.0S	20.0S	✓
P8-03	Acceleration time 2	0.0S ~ 6500.0S	Model determination	✓
P8-04	Slow down time 2	0.0S ~ 6500.0S	Model determination	✓
P8-05	Acceleration time 3	0.0S ~ 6500.0S	Model determination	✓
P8-06	Slow down time 3	0.0S ~ 6500.0S	Model determination	✓
P8-07	Acceleration time 4	0.0S ~ 6500.0S	Model determination	✓
P8-08	Slow down time 4	0.0S ~ 6500.0S	Model determination	✓
P8-09	Jump frequency 1	0.00Hz ~ the maximum frequency	0.00Hz	✓
P8-10	Jump frequency 2	0.00Hz ~ the maximum frequency	0.00Hz	✓
P8-11	Jump frequency amplitude	0.00Hz ~ the maximum frequency	0.00Hz	✓
P8-12	Forward and reverse dead zone time	0.0S ~ 3000.0S	0.0S	✓
P8-13	Reverse frequency prohibited	0: Allow 1: Prohibited	0	✓
P8-14	Set the frequency below the lower limit frequency operating mode	0: Run at a lower limit frequency 1: Downtime 2: Zero speed operation	0	✓

P8-15	Drop control	0.00HZ ~ 10.00HZ	0.00HZ	✓
P8-16	Set the cumulative power arrival time	0H ~ 65000H	0H	✓
P8-17	Sets the cumulative run arrival time	0H ~ 65000H	0H	✓
P8-18	Terminal run selection when power up	0: The terminal runs when powered on 1: Invalid terminal operation when powered up	0	✓
P8-19	Frequency detection value (PDT 1)	0.00Hz ~ the maximum frequency	5.0%	✓
P8-20	Frequency detection Lag value (PDT 1)	0.0% ~ 100.0% (PDT1 level)	0.0%	✓
P8-21	Frequency reaches the detected width	0.0% ~ 100.0% (the maximum frequency)	0	✓
P8-23	The addition time 1 compares the change time point to the acceleration time 2	0.00Hz ~ the maximum frequency	0.00Hz	✓
P8-24	The rub point between tree 1 and match time 2	0.00Hz ~ the maximum frequency	0.00Hz	✓
P8-25	Terminal point motion is preferred	0: Invalid 1: Valid	0	✓
P8-26	Frequency detection value (PDT 2)	0.00Hz ~ the maximum frequency	50.00HZ	✓
P8-27	Frequency detection Lag value (PDT 2)	0.0% ~ 100.0% (PDT2 level)	5.0%	✓
P8-28	Arbitrary arrival frequency detection value of 1	0.00Hz ~ the maximum frequency	50.00HZ	✓
P8-29	Any arrival frequency detection width of 1	0.0% ~ 100.0% (the maximum frequency)	0.0%	✓
P8-30	Arbitrary arrival frequency detection value of 2	0.00Hz ~ the maximum frequency	50.00HZ	✓
P8-31	Any arrival frequency detection width 2	0.0% ~ 100.0% (the maximum frequency)	0.0%	✓
P8-32	Zero-current detection level	0.0% ~ 300.0% 100.0% corresponds to the motor rated current	5.0%	✓
P8-33	Zero-current detection delay time	0.01S ~ 600.00S	0.10S	✓
P8-34	Output current exceeds the limit value	0.0% (not tested) 0.1%~300.0%(Rated current of the motor)	200.0%	✓
P8-35	Output current starts to detect delay time	0.00S ~ 600.00S	0.00S	✓
P8-36	Arbitrary arrival current of 1	0.0%~300.0%(Rated current of the motor)	100.0%	✓
P8-37	Any reach current 1 width	0.0%~300.0%(Rated current of the motor)	0.0%	✓
P8-38	Arbitrary arrival current 2	0.0%~300.0%(Rated current of the motor)	100.0%	✓
P8-39	Any reach current 2 width	0.0%~300.0%(Rated current of the motor)	0.0%	✓
P8-40	Time function selection	0: Invalid 1: Valid	0	✓
P8-41	Timed running time selection	0: P8-44 setting 1: AI1 2: AI2 analog input range corresponds to P8-44	0	✓

P8-42	Time running time	0.0MIN ~ 6500.0MIN	0.0MIN	✓
P8-43	AI1 Input Voltage Protection Lower Limit	0.00V ~ P8-46	3.10V	✓
P8-44	AI1 Input Voltage Protection Upper Limit	P8-45 ~ 10.00V	6.80V	✓
P8-45	Module temperature arrives	0℃ ~ 100℃	75℃	✓
P8-46	Heat dissipation fan control	0: The fan operates during operation 1: The fan is always running	0	✓
P8-47	Wake up frequency	Dormant frequency (P8-51) ~ Maximum frequency (P0-10)	0.00Hz	✓
P8-48	Wake up delay time	0.0S ~ 6500.0S	0.0S	✓
P8-49	The dormancy frequency	0.00Hz ~ Wake-up frequency (P8-49)	0.00Hz	✓
P8-50	Sleep delay time	0.0S ~ 6500.0S	0.0S	✓
P8-51	Set the arrival time of this run	0.0MIN ~ 6500.0MIN	0.0MIN	✓
P9 Fault and protection				
FC	Name	Set the scope	Factory default value	Change
P9-00	Motor overload protection selection	0: Prohibit; 1: Allow	1	✓
P9-01	Motor overload protection gain	0.20 ~ 10.00	1.00	✓
P9-02	Motor overload warning factor	50% ~ 100%	80%	✓
P9-03	Overpressure stall gain	0 ~ 100	20	✓
P9-04	Over-voltage stall protection voltage	120% ~ 150%	130%	✓
P9-05	Overloss speed gain	0 ~ 100	0	✓
P9-06	Over-drain speed protection current	100% ~ 200%	150%	✓
P9-07	Power up to the ground nuisance road protection choice	0: Invalid 1: Valid	1	✓
P9-08	Brake unit action start voltage	650 ~ 800	760V	★
P9-09	Number of automatic reset	0 ~ 20	0	✓
P9-10	Fault DO action selection during fault automatic reset	0: Do not move 1: Action	0	✓
P9-11	Automatic fault reset interval time	0.1S ~ 100.0S	1.0S	✓
P9-12	Tank welding / contact with suction	Ones place: Input phase loss protection Tens place: Contactor engagement protection 0: Prohibit 1: Allow	00	✓
P9-13	Output the missing phase protection selection	0: Prohibit; 1: Allow	1	✓

P9-14	First failure type	0: No fault 1: Retain 2: Accelerated overcurrent 3: Decelerated overcurrent 4: Constant-speed over-current 5: Accelerated overvoltage 6: Deceleration overvoltage 7: Constant speed overvoltage 8: Buffered resistance to overload 9: Underpressure 10: Frequency converter overload 11: Motor overload 12: Enter the missing phase 13: Output-phase deficiency 14: The module is overheated 15: Department 16: Communication is abnormal 18: The current check quality calculation is constant 19: Abnormal motor spectrum regulation 20: Encoder / PG card is abnormal 21: Abnormal parameter reading and writing 22: The frequency converter hardware is abnormal 23: Motor is short circuit to the ground 24: Retain 25: Retain 26: Run time arrives 27: User-defined fault 1 28: User-defined fault 2 29: Power-up on the time to arrive 30: Loading 31: The PID feedback is lost during the runtime 40: Fast flow limit is available then 41: Switch the motor during operation 42: Excessive speed deviation 43: Motor overspeed 45: Motor over-temperature 51: Initial position error	-	★
P9-15	Second failure type		-	★
P9-16	Third (most recent) Failure type		-	★
P9-17	Frequency of the third (latest) old card	-	-	★
P9-18	Current at the third (latest) failure	-	-	★
P9-19	Third (most time) time domain voltage	-	-	★
P9-20	Fruit three times (new) in the feeling	-	-	★

P9-21	Three times (one question) to the society sense	-	-	★
P9-22	The third (the most tongue) fault occurs	-	-	★
P9-23	Power up time for the third (worst) barrier	-	-	★
P9-24	Run time for the third (latest) failure	-	-	★
P9-27	Frequency at the second failure	-	-	★
P9-28	Current at the second fault	-	-	★
P9-29	Bus voltage during the second failure	-	-	★
P9-30	Enter the terminal status for the second fault	-	-	★
P9-31	Output terminal status at the second failure	-	-	★
P9-32	Frequter status during the second failure	-	-	★
P9-33	Power-on time during the second failure	-	-	★
P9-34	Run time for the second failure time	-	-	★
P9-37	Frequency at the first failure	-	-	★
P9-38	Current at the first fault	-	-	★
P9-39	Bus voltage at the first failure	-	-	★
P9-40	Enter the terminal status at the first failure	-	-	★
P9-41	Output terminal status at the first failure	-	-	★
P9-42	Frequency converter status at the first failure	-	-	★
P9-43	Power time during the first failure	-	-	★
P9-44	Run time during the first failure	-	-	★
P9-47	Fault protection action selection 1	Individual place: Motor overload (ERR11) 0: Free stop 1: Stop according to stop mode 2: Continue operation Tens place: Input phase missing (ERR12) (0~2) Same as individual place Hundreds place: Output phase missing (ERR13) (0~2) Same as individual place Thousands place: External fault (ERR15) (0~2) Same as individual place Ten thousands place: Communication exception (ERR16) (0~2) Same as individual place	0000	✓
P9-54	Continue running frequency selection when failure	0: Run at the current operating frequency 1: Run at the set frequency 2: Run at the maximum frequency 3: Run at the minimum frequency 4: Run at the emergency backup frequency	0	✓
P9-55	Abnormal backup frequency	0.0% ~ 100.0% (100.0% corresponds to the maximum frequency of P0–10)	100.0%	✓

P9-56	Motor temperature sensor type	0: No temperature sensor 1: PT100 2: PT1000	0	✓
P9-57	Motor overheat protection threshold	0 ~ 200 ℃	110℃	✓
P9-58	Motor overheating forecast alarm threshold	0 ~ 200℃	90℃	✓
P9-59	Inststant stop function selection	0 ~ 2	0	●
P9-60	Instant action pause judgment voltage	80.0% ~ 100.0%	85.0%	●
P9-61	Time of instantaneous power outage voltage recovery	0.00s ~ 100.00S	0.50S	●
P9-62	The instantaneous power outage action determines the voltage	60.0%~100.0% (standard bus bar voltage)	80.0%	✓
P9-63	Loading protection options	0: Invalid 1: Valid	0	✓
P9-64	Desload detection level	0.0 ~ 100.0%	10.0%	✓
P9-65	Deload detection time	0.0 ~ 60.0S	1.0S	✓
P9-67	Overspeed detection value	0.0%~50.0% (Maximum frequency)	20.0%	✓
P9-68	Overspeed detection time	0.0S ~ 60.0S	1.0S	✓
P9-69	Excessive velocity deviation and the detection value	0.0%~50.0% (Maximum frequency)	20.0%	✓
P9-70	Speed deviation is too large for the detection time	0.0S ~ 60.0S	5.0S	✓

PA PID function

FC	Name	Set the scope	Factory default value	Change
PA-00	PID for a given source	0: PA-01 setting 1: AI1 2: AI2 3: Keyboard Adjustable Potentiometer 4: PULSE Pulse setting (X5) 5: Communication setpoint 6: Multi-segment instruction setpoint	0	✓
PA-01	The PID values are given	0.0% ~ 100.0%	50.0%	✓
PA-02	PID feedback source	0: AI1 1: AI2 2: Keyboard Adjustable Potentiometer 3: AI1-AI2 4: PULSE Pulse setting (X6) 5: Communication setpoint 6: AI1+AI2 7: MAX (|AI1|, |AI2|) 8: MIN (|AI1|, |AI2|)	0	✓
PA-03	PID application direction	0: Positive action 1: Negative action	0	✓
PA-04	PID given the feedback range	0 ~ 65535	1000	✓
PA-05	Proportional gain of KP 1	0.0 ~ 100.0	20.0	✓

PA-06	Integral of the time, TI1	0.01S ~ 10.00S	2.00S	✓
PA-07	Differential time, TD1	0.000S ~ 10.000S	0.000S	✓
PA-08	PID reversal cutoff frequency	0.00 ~ Maximum frequency	2.00Hz	✓
PA-09	The PID deviation limit	0.0% ~ 100.0%	0.0%	✓
PA-10	PID differential limit amplitude	0.00% ~ 100.00%	0.10%	✓
PA-11	PID given the time of change	0.00 ~ 650.00S	0.00S	✓
PA-12	The PID feedback filtering time	0.00 ~ 60.00S	0.00S	✓
PA-13	The PID output filter time	0.00 ~ 60.00S	0.00S	✓
PA-15	Proportional gain of KP 2	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	The PID parameter switching condition	0: No switching 1: Switch through X terminal 2: Automatic switching based on deviation	0	✓
PA-19	PID parameter switching deviation 1	0.0% ~ PA-20	20.0%	✓
PA-20	PID parameter switching deviation 2	PA-19 ~ 100.0%	80.0%	✓
PA-21	PID starter	0.0% ~ 100.0%	0.0%	✓
PA-22	PID initial value holding time	0.00 ~ 650.00S	0.00s	✓
PA-23	Two consecutive positive output deviations at maximum value	0.00% ~ 100.00%	1.00%	✓
PA-24	Two consecutive negative output deviations at maximum value	0.00% ~ 100.00%	1.00%	✓
PA-25	The PID integration attribute	Individual place: Integral separation 0: Invalid 1: Valid Tens place: Stop integration after output reaches limit 0: Continue integration 1: Stop integration	00	✓
PA-26	PID feedback loss detection value	0.0%: No judgment of feedback loss 0.1% ~ 100.0%	0.0%	✓
PA-27	PID feedback loss detection time	0.0S ~ 20.0S	0.0S	✓
PA-28	The PID shutdown operation	0: No operation during shutdown 1: Operation during shutdown	0	✓
PC Multiparagraph instructions, simple PLC				
FC	Name	Set the scope	Factory default value	Change
PC-00	Multiparagraph instruction 0	-100.0% ~ 100.0%	0.0%	✓
PC-01	Multiparagraph instruction 1	-100.0% ~ 100.0%	0.0%	✓
PC-02	Multiparagraph instruction 2	-100.0% ~ 100.0%	0.0%	✓
PC-03	Multiparagraph instruction 3	-100.0% ~ 100.0%	0.0%	✓
PC-04	Multiparagraph instruction 4	-100.0% ~ 100.0%	0.0%	✓

PC-05	Multiparagraph instruction 5	-100.0% ~ 100.0%	0.0%	✓
PC-06	Multiparagraph instruction 6	-100.0% ~ 100.0%	0.0%	✓
PC-07	Multiparagraph instruction 7	-100.0% ~ 100.0%	0.0%	✓
PC-08	Multiparagraph instruction 8	-100.0% ~ 100.0%	0.0%	✓
PC-09	Multiparagraph instruction 9	-100.0% ~ 100.0%	0.0%	✓
PC-10	Multiparagraph instruction 10	-100.0% ~ 100.0%	0.0%	✓
PC-11	Multiparagraph instruction 11	-100.0% ~ 100.0%	0.0%	✓
PC-12	Multiparagraph instruction 12	-100.0% ~ 100.0%	0.0%	✓
PC-13	Multiparagraph instruction 13	-100.0% ~ 100.0%	0.0%	✓
PC-14	Multiparagraph instruction 14	-100.0% ~ 100.0%	0.0%	✓
PC-15	Multiparagraph instruction 15	-100.0% ~ 100.0%	0.0%	✓
PC-16	Simplified PLC operating mode	0: Stop after single operation completion 1: Hold final value after single operation completion 2: Continuous loop operation	0	✓
PC-17	Simplified PLC power loss memory selection	Individual place: Power loss memory selection 0: No memory on power loss 1: Memory on power loss Tens place: Stop mode memory selection 0: No memory on stop 1: Memory on stop	00	✓
PC-18	Simplified PLC segment 0 runtime	0.0S (H) ~ 6553.5S (H)	0.0S (H)	✓
PC-19	Simplified PLC segment 0 acceleration and deceleration time selection	0 ~ 3	0	✓
PC-20	Simplified PLC segment 1 runtime	0.0S (H) ~ 6553.5S (H)	0.0S (H)	✓
PC-21	Simplified PLC segment 1 acceleration and deceleration time selection	0 ~ 3	0	✓
PC-22	Simplified PLC segment 2 runtime	0.0S (H) ~ 6553.5S (H)	0.0S (H)	✓
PC-23	Simplified PLC segment 2 acceleration and deceleration time selection	0 ~ 3	0	✓
PC-24	Simplified PLC segment 3 runtime	0.0S (H) ~ 6553.5S (H)	0.0S (H)	✓
PC-25	Simplified PLC segment 3 acceleration and deceleration time selection	0 ~ 3	0	✓
PC-26	Simplified PLC segment 4 runtime	0.0S (H) ~ 6553.5S (H)	0.0S (H)	✓
PC-27	Simplified PLC segment 4 acceleration and deceleration time selection	0 ~ 3	0	✓
PC-28	Simplified PLC segment 5 runtime	0.0S (H) ~ 6553.5S (H)	0.0S (H)	✓
PC-29	Simplified PLC segment 5 acceleration and deceleration time selection	0 ~ 3	0	✓
PC-30	Simplified PLC segment 6 runtime	0.0S (H) ~ 6553.5S (H)	0.0S (H)	✓
PC-31	Simplified PLC segment 6 acceleration and deceleration time selection	0 ~ 3	0	✓
PC-32	Simplified PLC segment 7 runtime	0.0S (H) ~ 6553.5S (H)	0.0S (H)	✓
PC-33	Simplified PLC segment 7 acceleration and deceleration time selection	0 ~ 3	0	✓
PC-34	Simplified PLC segment 8 runtime	0.0S (H) ~ 6553.5S (H)	0.0S (H)	✓
PC-35	Simplified PLC segment 8 acceleration and deceleration time selection	0 ~ 3	0	✓
PC-36	Simplified PLC segment 9 runtime	0.0S (H) ~ 6553.5S (H)	0.0S (H)	✓

PC-37	Simplified PLC segment 9 acceleration and deceleration time selection	0 ~ 3	0	✓
PC-38	Simplified PLC segment 10 runtime	0.0S (H) ~ 6553.5S (H)	0.0S (H)	✓
PC-39	Simplified PLC segment 10 acceleration and deceleration time selection	0 ~ 3	0	✓
PC-40	Simplified PLC segment 11 runtime	0.0S (H) ~ 6553.5S (H)	0.0S (H)	✓
PC-41	Simplified PLC segment 11 acceleration and deceleration time selection	0 ~ 3	0	✓
PC-42	Simplified PLC segment 12 runtime	0.0S (H) ~ 6553.5S (H)	0.0S (H)	✓
PC-43	Simplified PLC segment 12 acceleration and deceleration time selection	0 ~ 3	0	✓
PC-44	Simplified PLC segment 13 runtime	0.0S (H) ~ 6553.5S (H)	0.0S (H)	✓
PC-45	Simplified PLC segment 13 acceleration and deceleration time selection	0 ~ 3	0	✓
PC-46	Simplified PLC segment 14 runtime	0.0S (H) ~ 6553.5S (H)	0.0S (H)	✓
PC-47	Simplified PLC segment 14 acceleration and deceleration time selection	0 ~ 3	0	✓
PC-48	Simplified PLC segment 15 runtime	0.0S (H) ~ 6553.5S (H)	0.0S (H)	✓
PC-49	Simplified PLC segment 15 acceleration and deceleration time selection	0 ~ 3	0	✓
PC-50	Simplified PLC runtime unit	0: S (sec) 1: H (hours)	0	✓
PC-51	Multi-segment command 0 input method	0: Function code PC-00 given 1: AI1 2: AI2 3: Keyboard potentiometer 4: PULSE pulse 5: PID 6: Pre-set frequency (P0-08) given, modifiable with UP/DOWN	0	✓
Pd Communication parameters				
FC	Name	Set the scope	Factory default value	Change
Pd-00	Baud rate	Individual place: MODBUS 0 : 300BPS 1 : 600BPS 2 : 1200BPS 3 : 2400BPS 4 : 4800BPS 5 : 9600BPS 6 : 19200BPS 7 : 38400BPS 8 : 57600BPS 9 : 115200BPS	6005	✓
Pd-01	Data format	0: No parity (8-N-2) 1: Even parity (8-E-1) 2: Odd parity (8-O-1) 3: No parity (8-N-1)	0	✓
Pd-02	This machine address	1~247, 0 is the broadcast address	1	✓
Pd-03	Answering delay	0MS ~ 20MS	2	✓

Pd-04	Communication timeout time	0.0 (Invalid), 0.1S ~ 60.0S	0 . 0	↗
Pd-05	Data transfer format selection	Individual place: MODBUS 0: Non-standard MODBUS protocol 1: Standard MODBUS protocol	30	↗
Pd-06	Communication to read the current resolution	0 : 0.01A 1 : 0.1A	0	↗
PP Function code management				
FC	Name	Set the scope	Factory default value	Change
PP-00	User password	0 ~ 65535	0	↗
PP-01	Parameter initialization	0: No operation 01: Restore factory settings, excluding motor parameters	0	•
PP-02	Functional parameter group display selection	Individual place: U group display selection 0: Do not display; 1: Display Tens place: A group display selection 0: Do not display; 1: Display	11	↗
PP-04	The function code modifies the properties	0: Modifiable 1: Unmodifiable	0	↗
A5 Control optimization parameters				
FC	Name	Set the scope	Factory default value	Change
A5-00	DPWM switching upper limit frequency	0.00HZ ~ 15.00Hz	8.00Hz	↗
A5-01	PWM modulation mode	0: Asynchronous modulation 1: Synchronous modulation	0	↗
A5-02	Selection of dead zone compensation mode	0: No compensation 1: Compensation mode 1 2: Compensation mode 2	1	↗
A5-03	Random PWM depth	0: Random PWM disabled 1~10: PWM carrier frequency with random depth	0	↗
A5-04	Fast flow limiting enabling	0: Not enable 1: Enable	1	↗
A5-05	Current detection compensation	0 ~ 100	5	↗
A5-06	Underpressure point setting	60.0% ~ 140.0%	100.0%	↗
A5-07	SVC-optimized mode selection	0: Unoptimized 1: Optimization mode 1 2: Optimization mode 2	1	↗
A5-08	Time adjustment of dead zone	100% ~ 200%	150%	↗
A5-09	Overpressure point setting	200 ~ 2500V	Model determination	•

FAULT DIAGNOSIS AND COUNTERMEASURES

Fault code	Fault name	Troubleshooting of fault causes	Fault handling strategies
ERR02	Acceleration overcurrent	1. Grounding or short circuit in the inverter output circuit 2. Control mode is vector without parameter identification 3. Too short acceleration time 4. Manual torque boost or inappropriate V/F curve 5. Low voltage 6. Starting on a rotating motor 7. Sudden load increase during acceleration 8. Undersized inverter selection	1. Troubleshoot peripheral issues 2. Perform motor parameter identification 3. Increase acceleration time 4. Adjust manual boost torque or V/F curve 5. Set voltage to the normal range 6. Select speed tracking start or restart after the motor stops 7. Eliminate sudden load addition 8. Choose a larger power rating inverter
ERR03	Deceleration overcurrent	1. The output circuit of the inverter has a ground or short circuit. 2. The control mode is vector without parameter identification. 3. The deceleration time is too short. 4. The voltage is low. 5. A sudden load is added during the deceleration process. 6. No braking unit and braking resistor have been installed.	1. Eliminate peripheral faults. 2, Conduct motor parameter identification. 3. Increase deceleration time. 4. Adjust the voltage to the normal range. 5. Cancel sudden load addition. 6. Install a braking unit and resistor.
ERR04	Constant speed overcurrent	1. Troubleshoot peripheral issues. 2. Perform motor parameter identification. 3. Increase deceleration time. 4. Adjust voltage to the normal range. 5. Cancel sudden load increments. 6. Install braking unit and resistance.	1. Exclude peripheral malfunctions. 2. Conduct motor parameter recognition. 3. Adjust the voltage to the normal range. 4. Eliminate sudden load impositions. 5. Opt for an inverter with a higher power rating.
ERR05	Acceleration overvoltage	1. Input voltage is too high. 2. During acceleration, there is external force driving the motor operation. 3. Acceleration time is too short. 4. No braking unit and braking resistor have been added.	1. Adjust the voltage to the normal range. 2. Eliminate the external force or add a braking resistor. 3. Increase the acceleration time. 4. Install a braking unit and resistor.
ERR06	Deceleration overvoltage	1. Input voltage is too high. 2. During deceleration, there is external force driving the motor operation. 3. Deceleration time is too short. 4. No braking unit and braking resistor have been installed.	1. Adjust the voltage to the normal range. 2. Eliminate the external force or add a braking resistor. 3. Increase the acceleration time. 4. Install a braking unit and a resistor.
ERR07	Constant speed overvoltage	1. The input voltage is too high. 2. An external force is driving the motor during operation.	1. Adjust the voltage to the normal range. 2. Eliminate the external force or install a braking resistor.
ERR08	Control power supply failure	The input voltage is not within the specified range.	Adjust the voltage to the range required by the specifications.
ERR09	Undervoltage fault	1. Instantaneous power outage. 2. The input voltage of the inverter is not within the specified range. 3. The bus voltage is abnormal. 4. The rectifier bridge and buffer resistor are abnormal. 5. The driving board is abnormal. 6. The control board is abnormal.	1. Reset the fault. 2. Adjust the voltage to the normal range. 3. Seek technical support. 4. Seek technical support. 5. Seek technical support. 6. Seek technical support.

ERR10	Frequency converter overload	1. Is the load too high or is the motor locked? 2. The inverter is undersized.	1. Reduce the load and check the mechanical condition of the motor. 2. Select an inverter with a higher power rating.
ERR11	Motor overload	1. Is the motor protection parameter P9-01 set appropriately? 2. Is the load too high or has the motor locked? 3. The inverter is undersized.	1. Properly set this parameter. 2. Reduce the load and inspect the motor and mechanical conditions. 3. Choose an inverter with a higher power rating.
ERR12	Input phase loss	1. The three-phase input power supply is abnormal. 2. The drive board is abnormal. 3. The lightning protection board is abnormal. 4. The main control board is abnormal.	1. Check and troubleshoot the issues with the peripheral circuitry. 2. Seek technical support. 3. Seek technical support. 4. Seek technical support.
ERR13	Output phase loss	1. The wiring from the inverter to the motor is abnormal. 2. The three-phase output of the inverter is unbalanced during motor operation. 3. The drive board is abnormal. 4. The module is abnormal.	1. Troubleshoot peripheral issues. 2. Check if the three-phase windings of the motor are normal and troubleshoot any issues found. 3. Seek technical support. 4. Seek technical support.
ERR14	The module overheating	1. Ambient temperature is too high. 2. The air duct is blocked. 3. The fan is damaged. 4. The thermal resistor of the module is damaged. 5. The inverter module is damaged.	1. Reduce the ambient temperature. 2. Clear the air duct. 3. Replace the fan. 4. Replace the thermal resistor. 5. Replace the inverter module.
ERR15	External equipment failure	1. Input an external fault signal through the multifunctional terminal X. 2. Input an external fault signal through the virtual IO function.	1. Reset and resume operation. 2. Reset and resume operation.
ERR16	Communication failure	1. The upper computer is not functioning properly. 2. The communication line is abnormal. 3. The communication parameters in the PD group are not set correctly.	1. Check the upper computer's wiring. 2. Inspect the communication connection cable. 3. Properly set the communication parameters.
ERR17	Contactor failure	1. The drive board and power supply are abnormal. 2. The contactor is abnormal.	1. Replace the drive board or power supply board. 2. Replace the contactor.
ERR18	Current detection failure	1. Check for abnormalities in the Hall device. 2. The drive board is abnormal.	1. Replace the Hall device. 2. Replace the drive board.
ERR19	Motor tuning fault	1. The motor parameters have not been set according to the nameplate. 2. The parameter identification process has timed out.	1. Correctly set the motor parameters according to the nameplate. 2. Inspect the wiring from the inverter to the motor.
ERR21	EEPROM Read and write fault	1. The EEPROM chip is damaged.	1. Replace the main control board.
ERR23	Short circuit to ground fault	1. The motor is short-circuited to ground.	1. Replace the cable or the motor.
ERR40	Wave-by-wave flow limit failure	1. Is the load too high or is the motor blocked? 2. The inverter is undersized.	1. Reduce the load and check the mechanical condition of the motor. 2. Select an inverter with a higher power rating.
ERR42	Excessive speed deviation and large fault	1. The encoder parameters are not set correctly. 2. Parameter identification has not been performed. 3. The speed deviation is too large; the detection parameters P9-69 and FP9-70 are set unreasonably.	1. Properly set the encoder parameters. 2. Conduct motor parameter identification. 3. Reasonably set the detection parameters based on actual conditions.

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