

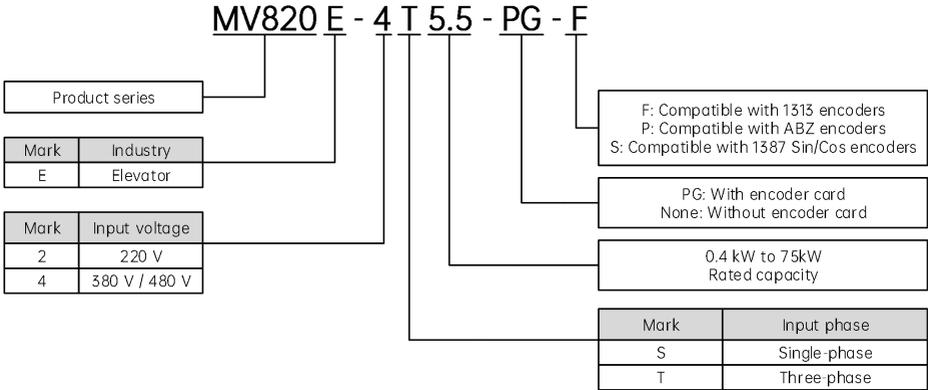
MV820E Series Elevator AC Drive

Simple Commissioning Manual

This manual briefly introduces MV820E series AC drive, including models, accessory cards & options, operating panel, terminal wiring, main circuit and control circuit terminals, quick operation, frequently-used function parameters, common faults and solutions, etc. For detailed instructions, refer to the complete version of user manual.

1 Product Introduction

1.1 Naming rule



1.2 Product components

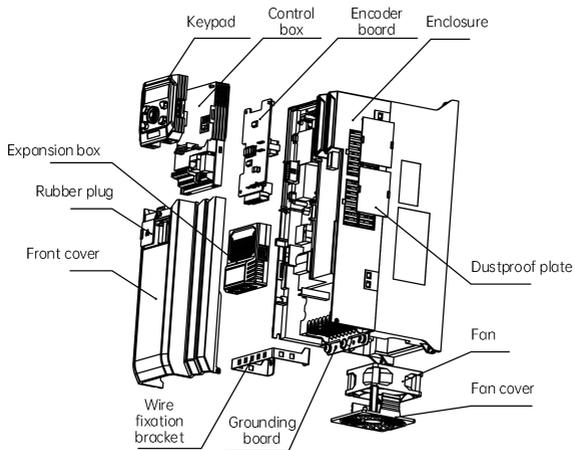


Fig. 1

2 Accessory cards/options

The options and accessories introduced in this manual include accessory cards, bus options, IO options and others. You can purchase them individually or purchase the AC drive with attached options and accessories by consulting the local distributor. During installation and use, follow the corresponding steps to avoid damage to the drive.

To clarify, the options in this manual refer to IO, CAN and the like with an expansion box (refer to Fig. 1) while the accessory cards refer to independent PCBA boards without an expansion box, such as encoder cards.

The entire MV820E series supports a wide range of expansions, such as CANopen, Modbus, I/O and encoder expansions, capable for scenarios requiring excellent control performance and multi-unit network.

MV820E provides three kinds of PG cards, as shown in the following table.

Table 1 Encoder card description

Encoder card	Function
MV820E-PG-P ABZ encoder card with frequency-division output	Supports differential ABZ input and open-collector input; Supports pulse frequency-division output; Applicable for FVC of asynchronous motors.
MV820E-PG-S Sin/Cos encoder card with frequency-division output	Supports Sin/Cos encoder signal input; Supports pulse frequency-division output; Applicable for FVC of synchronous motors.
MV820E-PG-F Serial communication encoder card with frequency-division output	Supports serial communication signal input; Supports pulse frequency-division output; Applicable for FVC of synchronous motors.

2.1 Installation of accessory cards/options

2.1.1 Installation position

MV820E provides two positions for accessory cards and options: position 1 and position 2 (taking enclosure B as an example, similar for other enclosures), where position 1 is for the installation of various PG cards and position 2 is for the installation of various bus options, I/O options, and so on.

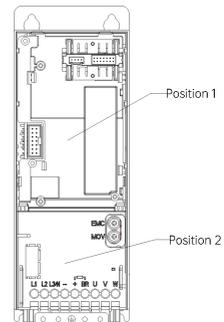


Fig. 2

2.1.2 Installation interfaces

The electrical interfaces of accessory cards/options connected to the drive are shown in Fig. 3.

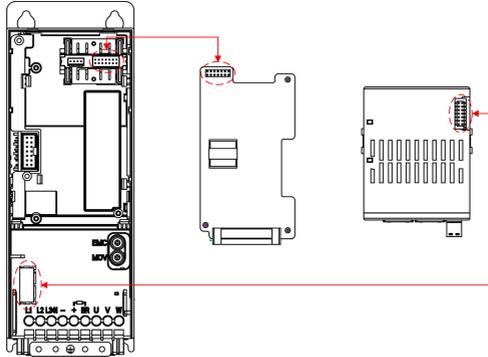


Fig. 3

2.1.3 Installation steps for accessory cards at position 1

Installation method: reverse side mounting for the accessory card (PG card)

- (1) When the drive is powered off, press the granulated part on the middle-upper of the lower cover, slide it down firmly to take down the cover, as shown in Fig. 4-a.
- (2) Use a straight screwdriver to pry open the two snap-fit joints between the control box and the drive, and then remove the control box upwards, as shown in Fig. 4-b and c.
- (3) Install the PG card: hold the PG card with its terminal block downwards, then align the three round holes on the PG card with the location column, and press down to buckle the PG card firmly into the four snap-fit joints, as shown in Fig. 4-d.
- (4) After the PG card is installed, align the control box with the snap-fit joints, and press down the control box to make its lower part firmly buckled, then slide the lower cover to lock it on the drive, as shown in Fig. 4-e and f.

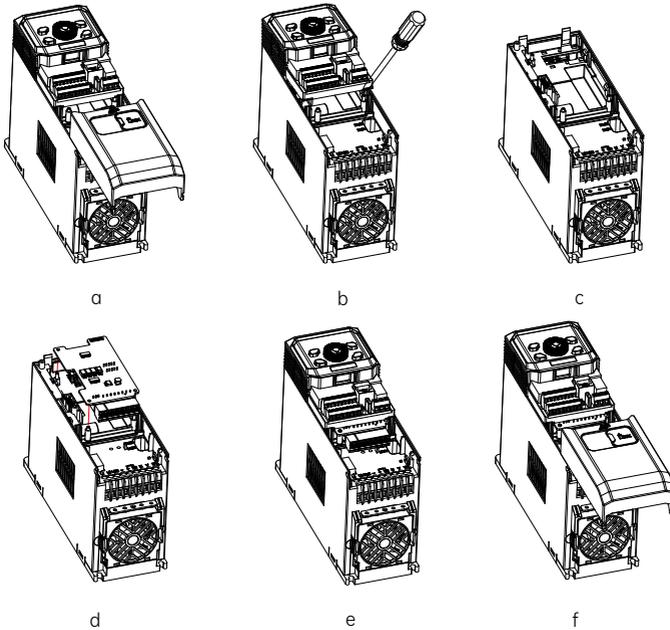


Fig. 4 Position 1 - PG card installation steps

2.1.4 Installation steps for options at position 2

Installation method: front side mounting for the option (IO options)

- (1) When the drive is powered off, press the granulated part on the middle-upper of the lower cover, slide it down firmly to take down the cover, as shown in Fig. 5-a.
- (2) Use a straight screwdriver to pry open the dustproof cap, as shown in Fig. 5-b.
- (3) Install the IO option: hold the expansion box (with the IO card inside) upwards (terminals upwards), then align the expansion box with the electrical interface of position 2, and press down horizontally to buckle the spring snap of the expansion box into the groove at the lower part of the drive, as shown in Fig. 5-c and d.
- (4) The IO card is successfully installed, as shown in Fig. 5-e.

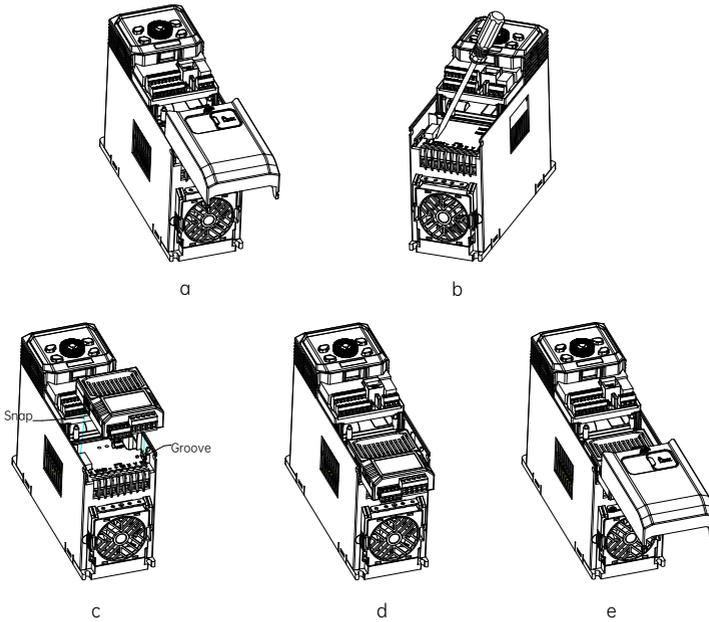


Fig. 5 Position 2 - IO option installation steps

2.2 MV810-IO01: Simple IO option

2.2.1 Product appearance

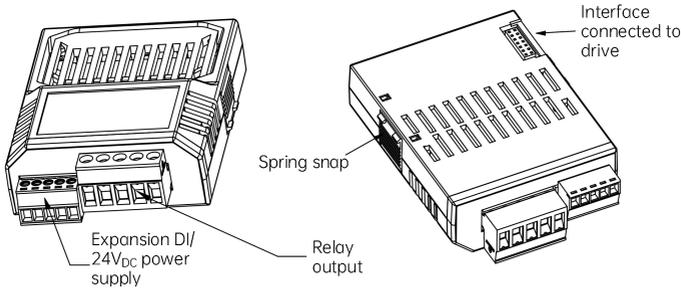


Fig. 6 Components and terminals

2.2.2 Terminal description

Table 2 MV810-IO01 terminal functions

Name	Terminal Mark	Specifications
Simple IO option	DI1 to DI3	Multi-function input terminals, set by P41.00–P41.02; Support NPN/PNP input, set by P41.03, active level: 9 V to 30 V; Power supplied by the option's terminal (24V _{DC}) or external 24 VDC (for wiring details, see 4.2.2.4 of MV820E complete user manual); Support filter and switch-on/off delay.
	RO1, RO2	Multi-function output terminals, set by P41.13–P41.14; RO1 contains one TA1/TB1 (normally closed), one TA1/TC1 (normally open), contact capacity: 250 VAC / 3 A, 30 VDC / 3 A; RO2 contains one TA2/TC2 (normally open), contact capacity: 250 VAC / 3 A, 30 VDC / 3 A; Support output polarity and switch-on/off delay. For wiring details, see 4.2.2.6 of MV820E complete user manual.
	24 V, GND	Power output: +24 V _{DC} , ±5%, < 200 mA

2.3 MV820E-PG-P: Incremental ABZ encoder card with frequency-division output

MV820E supports the incremental PG card with frequency-division output. Pay close attention to the drive model you ordered.

For wiring details of the incremental PG card, see 4.2.2.7 of MV820E complete user manual.

2.3.1 Function description

MV820E-PG-P is an accessory card of MV820E series, which provides encoder interfaces, supports differential ABZ input and open-collector input, and serves as the speed or position feedback.

2.3.2 Product appearance

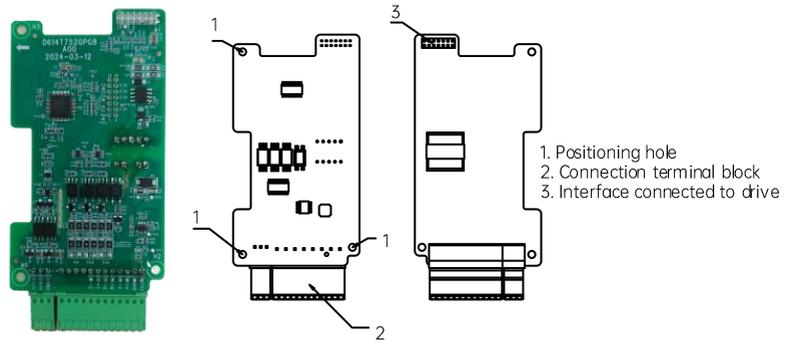


Fig. 7 Components and terminals

2.3.3 Terminal description

The following figure shows the terminal marks on MV820E-PG-P.

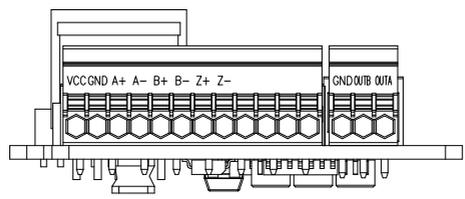


Fig. 8 Terminal mark

The following table lists the terminal functions of MV820E-PG-P.

Table 3 PG-P terminal functions

Type	Mark	Name	Function	Specifications
Encoder card	A+, A-	Encoder phase A signal	Encoder phase A differential input signal	Maximum input frequency \leq 250 kHz
	B+, B-	Encoder phase B signal	Encoder phase B differential input signal	
	Z+, Z-	Encoder phase Z signal	Encoder phase Z differential input signal	
	VCC, GND	Encoder power supply	Provides power supply for external encoders (reference ground GND) 5 V or 12 V set by P04.04	Output voltage: +5 V/12 V Maximum output current: 200 mA/150 mA

Table 4 Frequency-division output terminal functions

Type	Mark	Function	Specifications
Encoder card	OUTA	Frequency-division output A signal	NPN-type OC output
	OUTB	Frequency-division output B signal	
	GND	Frequency-division output signal GND	/

2.4 MV820E-PG-S: Sin/Cos encoder card with frequency-division output

MV820E supports the Sin/Cos encoder card with frequency-division output. Pay close attention to the drive model you ordered. For wiring details of the Sin/Cos encoder card with frequency-division output, see 4.2.2.7 of MV820E complete user manual.

2.4.1 Function description

MV820E-PG-S is an accessory card of MV820E series, which provides encoder interfaces, supports Sin/Cos encoder signal input, and serves as the speed or position feedback.

2.4.2 Product appearance

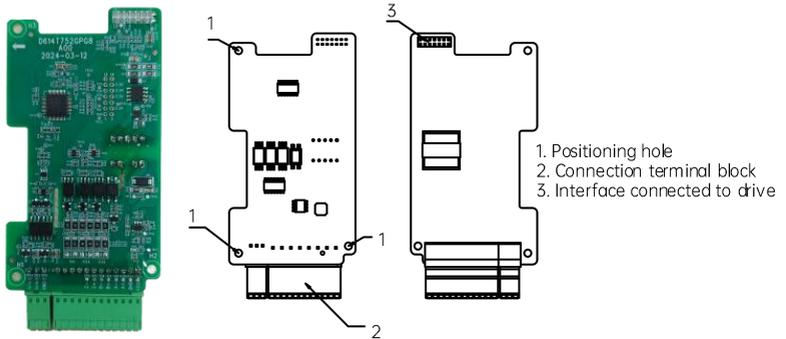


Fig. 9 Components and terminals

2.4.3 Terminal description

The following figure shows DB15 terminals of MV820E-PG-S.

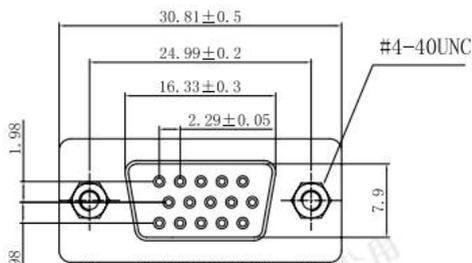


Fig. 10 DB15 of MV820E-PG-S

The following table lists DB15 terminal functions of MV820E-PG-S.

Table 5 PG-S terminal functions

No.	Name	Function	Note
9	VCC	Encoder power supply	/
7	GND		
5	A+	Encoder A+ input signal	/
6	A-	Encoder A- input signal	/
8	B+	Encoder B+ input signal	/
1	B-	Encoder B- input signal	/
10	C+	Encoder C+ input signal	/
11	C-	Encoder C- input signal	/
12	D+	Encoder D+ input signal	/
13	D-	Encoder D- input signal	/
3	R+	Encoder R+ input signal	/
4	R-	Encoder R- input signal	/

Table 6 Frequency-division output terminal functions

Type	Mark	Function	Specifications
Encoder card	OUTA	Frequency-division output A signal	NPN-type OC output
	OUTB	Frequency-division output B signal	
	GND	Frequency-division output GND signal	/



For the AC drive equipped with MV820E-PG-S, PG terminals (DB15 and frequency-division output terminals) are extended out through cables for wiring.

2.5 MV820E-PG-F: Serial communication encoder card with frequency-division output

MV820E supports the serial communication encoder card with frequency-division output. Pay close attention to the drive model you ordered. For wiring details of the serial communication encoder card with frequency-division output, see 4.2.2.7 of MV820E complete user manual.

2.5.1 Function description

MV820E-PG-F is an accessory card of MV820E series, which provides encoder interfaces, supports serial communication encoder signal input, and serves as the speed or position feedback.

2.5.2 Product appearance

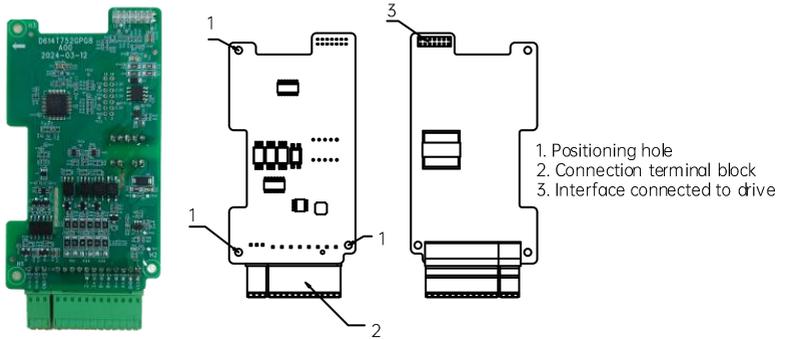


Fig. 11 Components and terminals

2.5.3 Terminal description

The following figure shows DB15 terminals of MV820E-PG-F.

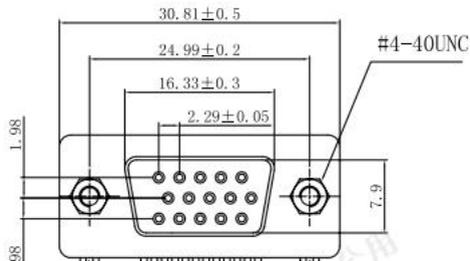


Fig. 12 DB15 of MV820E-PG-F

The following table lists DB15 terminal functions of MV820E-PG-F.

Table 7 PG-F terminal functions

No.	Name	Function	Note
9	VCC	Encoder power supply	/
7	GND		
5	A+	Encoder A+ input signal	/
6	A-	Encoder A- input signal	/
8	B+	Encoder B+ input signal	/
1	B-	Encoder B- input signal	/
10	CLK+	Encoder C+ input signal	/
11	CLK-	Encoder C- input signal	/
12	DATA+	Encoder D+ input signal	/

No.	Name	Function	Note
13	DATA-	Encoder D- input signal	/

Table 8 Frequency-division output terminal functions

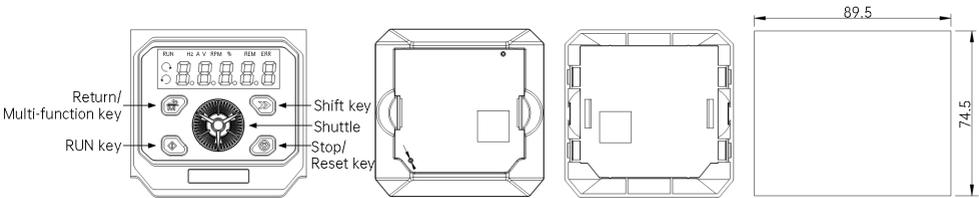
Type	Mark	Function	Specifications
Encoder card	OUTA	Frequency-division output A signal	NPN-type OC output
	OUTB	Frequency-division output B signal	
	GND	Frequency-division output signal GND	/



For the AC drive equipped with MV820E-PG-F, PG terminals (DB15 and frequency-division output terminals) are extended out through cables for wiring.

3 Operating Panel

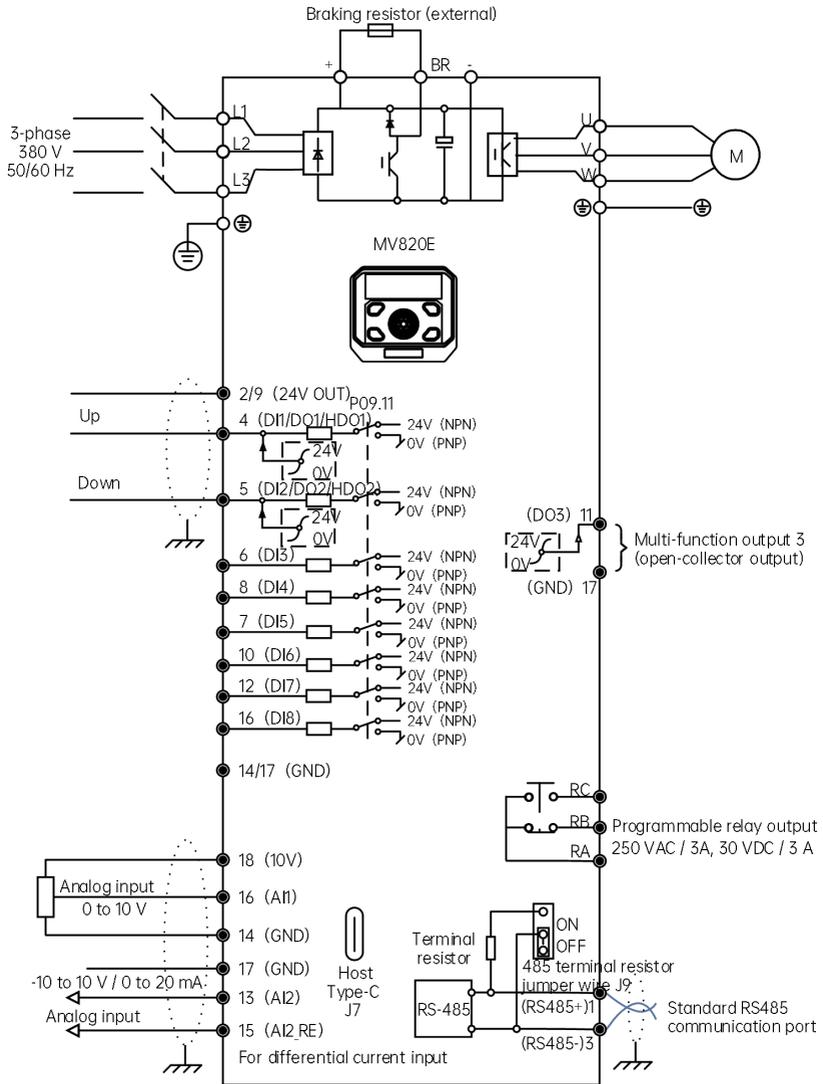
MV820E has two kinds of operating panels/keypads. One is the small operating panel/keypad, MV820-DP01, as the standard configuration for drives of 55 kW and below; the other is the large operating panel/keypad, MV820-DP02, as the standard configuration for drives of 75 kW. This part takes the small operating panel/keypad as the example. For the large operating panel/keypad, see the complete version of user manual.



Indicator/Key		Name	Description
Unit LED	Hz	Frequency LED	Flashing: The current parameter is the running frequency On: The current parameter is the frequency reference
	A	Current LED	On: The current parameter is the current
	V	Voltage LED	On: The current parameter is the voltage
	RPM	RPM LED	On: The current parameter is the revolutions per minute
	%	Percent LED	On: The current parameter is the percent
Status LED		Forward running LED	On: During stop, there is a forward running command for the drive During running, the drive is running forward Flashing: The drive is switching from FWD to REV
		Reverse running LED	On: During stop, there is a reverse running command for the drive During running, the drive is running reversely

Indicator/Key		Name	Description
			Flashing: The drive is switching from REV to FWD
	ERR	Alarm LED	On: The drive enters the alarm status
	RUN	Running LED	On: Running Flashing: Stopping Off: Stopped
	REM	Operation command channel LED	Off: Local Flashing: Communication On: Terminal
Key		Return/Multi-function key	To exit the programming state. The multi-function description is shown in Table 5-3 of MV820E complete user manual
		Shift key	To select the data bit for change in the editing state, or switch the display of status parameters
		RUN key	Press this key in the operating panel mode, the drive will start to run
		Stop/Reset key	Stop or fault reset
Shuttle			Rotate it clockwise, then the data or function code increases
			Rotate it counterclockwise, then the data or function code decreases
			Press the shuttle button to enter the menu or confirm the data

4.2 Analog control terminal wiring



The GND terminal of AC drive shall be connected to the 0 V of an external device.

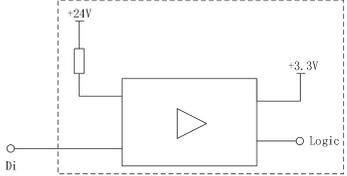
5 Control Circuit Terminal Wiring

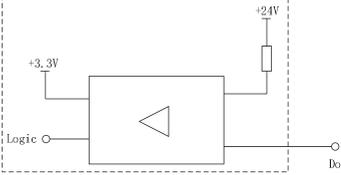
1	3	5	7	9	11	13	15	17
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2	4	6	8	10	12	14	16	18
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RA	RB	RC
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Type	Mark	Name	Function	Specifications
Communication	1	RS485	485 differential signal positive (reference ground: GND)	Standard RS485 communication port Use twisted pair cables or shielded cables
	3		485 differential signal negative (reference ground: GND)	
Power supply	2/9	+24 V power supply	+24 V reference power output	Permissible maximum output current 200 mA (the total current with all digital outputs included)
	18	+10 V power supply	+10 V reference power output	Permissible maximum output current 10 mA
	14/17	+24 V, +10 V power ground	Reference GND of +24 V and +10 V	Reference 0 V for digital input/output, analog input/output and communication signals
Analog input	16	Analog single-ended input AI1	Receives analog voltage or current single-ended input. You can choose voltage or current analog input through the function code P09.01 (reference ground: GND).	Input voltage: 0 V to 10 V (input impedance: 100 k Ω), resolution: 1/4000 Input current: 0 mA to 20 mA (input impedance: 165 Ω), resolution: 1/4000
	13	Analog single-ended input AI2 or analog current differential input AI2	Receives analog voltage or current single-ended input, or current differential input. You can choose voltage or current analog input through the function code P09.02 (reference ground: GND).	Input voltage: -10 V to 10 V (input impedance: 100 k Ω), resolution: 1/4000 Input current: 0 mA to 20 mA (input impedance: 10 Ω), resolution: 1/4000, supporting differential input
	15	Differential input current return terminal AI2_RE	Used as the current return terminal during analog current differential input. If the analog current input is single-ended, you need to connect this terminal to GND.	Input current: 0 mA to 20 mA (input impedance: 10 Ω), resolution: 1/4000, supporting differential input

Type	Mark	Name	Function	Specifications												
Analog output	11	Analog output AO1	Provides analog voltage/current output, with 28 kinds available. You can choose voltage or current analog output through the function code P09.02 (reference ground: GND).	Output voltage: 0 to 10 V, ±5% Output current: 0 to 20 mA												
Multi-function input terminals	4	Multi-function DI1	You can set the multi-function DI, HDI and thermosensitive signal input through the function codes P09.00 and P09.01. For more explanations, refer to P09.03–P09.10 for input functions and P09.14 for two/three-wire control functions (reference point: GND).	<p>For multiple input circuit function selection, refer to the multi-function input/output terminal wiring below:</p>  <p>Example:</p> <table border="1" data-bbox="694 734 1047 949"> <thead> <tr> <th>P09.00</th> <th>Terminal 5</th> <th>Terminal 4</th> </tr> </thead> <tbody> <tr> <td>0x00</td> <td>DI2</td> <td>DI1</td> </tr> <tr> <td>0x21</td> <td>HDO2</td> <td>DO1</td> </tr> <tr> <td>...</td> <td>...</td> <td>...</td> </tr> </tbody> </table>	P09.00	Terminal 5	Terminal 4	0x00	DI2	DI1	0x21	HDO2	DO1
	P09.00	Terminal 5			Terminal 4											
	0x00	DI2			DI1											
	0x21	HDO2			DO1											
											
	5	Multi-function DI2														
	6	Multi-function DI3			The terminals can only be used as digital inputs DI3 and DI4, and cannot be defined for other signal functions through function codes.											
	8	Multi-function DI4			The terminal can be used as digital input DI5 through the function code P09.01, and be defined as the thermosensitive element input with PT1000 supported.											
7	Multi-function DI5 or for thermal sensitivity	The terminal can be used as digital input DI6 or digital pulse HDI input through the function code P09.01 with pulse 0 to 50 kHz.														
10	Multi-function DI6 or HDI	The terminal can only be used as digital input DI7, and cannot be defined for other signal functions through function codes.														
12	Multi-function DI7	The terminal can be used as digital input DI8 or analog input AI1 through the														
16	Multi-function AI1															

Type	Mark	Name	Function	Specifications											
				function code P09.01.											
Multi-function output terminals	4	Open-collector output terminal Y1/ DO1 output terminal/ HDO1 pulse output terminal	In addition to being used as ordinary multi-function terminals (same as 4, 5, 6, 8, 7, 10, 12, 16), 4 and 5 can also be programmed as DO/HDO output terminals. Refer to P09.00–P09.02 for specific terminal selection (reference point: GND).	For multiple output circuit function selection, refer to the multi-function input/output terminal wiring below: 											
	5	Open-collector output terminal Y2/ DO2 output terminal/ HDO2 pulse output terminal			Example: <table border="1" data-bbox="694 478 1036 694"> <thead> <tr> <th>P09.00</th> <th>Terminal 5</th> <th>Terminal 4</th> </tr> </thead> <tbody> <tr> <td>Ox21</td> <td>HDO2</td> <td>DO1</td> </tr> <tr> <td>Ox22</td> <td>HDO2</td> <td>HDO1</td> </tr> <tr> <td>...</td> <td>...</td> <td>...</td> </tr> </tbody> </table> Maximum operating voltage: 30 V Maximum output current: 50 mA	P09.00	Terminal 5	Terminal 4	Ox21	HDO2	DO1	Ox22	HDO2	HDO1	...
	P09.00	Terminal 5	Terminal 4												
Ox21	HDO2	DO1													
Ox22	HDO2	HDO1													
...													
11	DO3 output terminal	The terminal can be programmed as multi-function DO or AO. Refer to P09.02 for specific terminal selection (reference point: GND).	The terminal can be used as digital output DO3 through the function code P09.02. Maximum output current: 50 mA The terminal can also be used as analog output AO1 through the function code P09.02. Refer to the AO1 description in the table.												
Relay output terminal RO1	RA	Relay output	The terminal can be programmed as multi-function RO. Refer to P10.03 for specific function selection.	RA-RB: normally closed, RA-RC: normally open Contact capacity: 250 VAC / 3 A 30 VDC / 3 A Refer to P10 for usage instructions. The overvoltage level of the input voltage of the relay output terminal is overvoltage level II.											
	RB														
	RC														



- (1) Most multi-function terminals can be set with multiple IO functions through function codes, such as DI, DO, HDI, HDO, AI, AO and the thermocouple input.
- (2) The internal circuit diagram of the drive is not specifically illustrated in the multi-function DI/DO wiring diagram, only represented by the symbol "▷".

6 Main Circuit Wiring Terminals

Type 1: Enclosure B (applicable power: 2S0.4 to 1.5)

Enclosure B (applicable power: 4T0.75 to 2.2)

Type 2: Enclosure C (applicable power: 4T3.7/5.5)

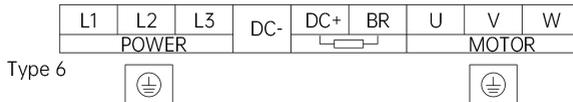
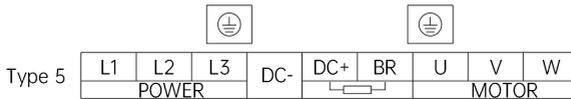
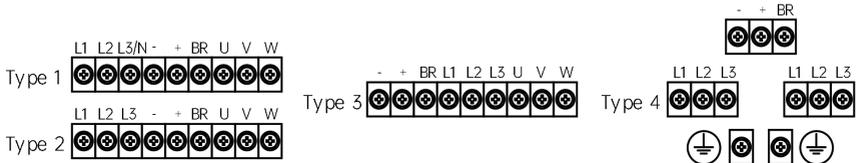
Enclosure D (applicable power: 2T3.7/5.5; 4T7.5/11)

Type 3: Enclosure E (applicable power: 4T15/18.5)

Type 4: Enclosure F (applicable power: 4T22/30)

Type 5: Enclosure G (applicable power: 4T37/45/55)

Type 6: Enclosure H (applicable power: 4T75)



Terminal name	Function description
L1, L2, L3 (L3/N)	Three-phase 380 VAC or three-phase 220 VAC input terminals
L1, L3/N	2S models: single-phase 220 VAC input terminals
+, BR	Connect the external braking resistor
+, - (DC+, DC-)	DC bus terminals
U, V, W	Three-phase AC output terminals
	PE connection terminal

7 Quick Operation Instructions

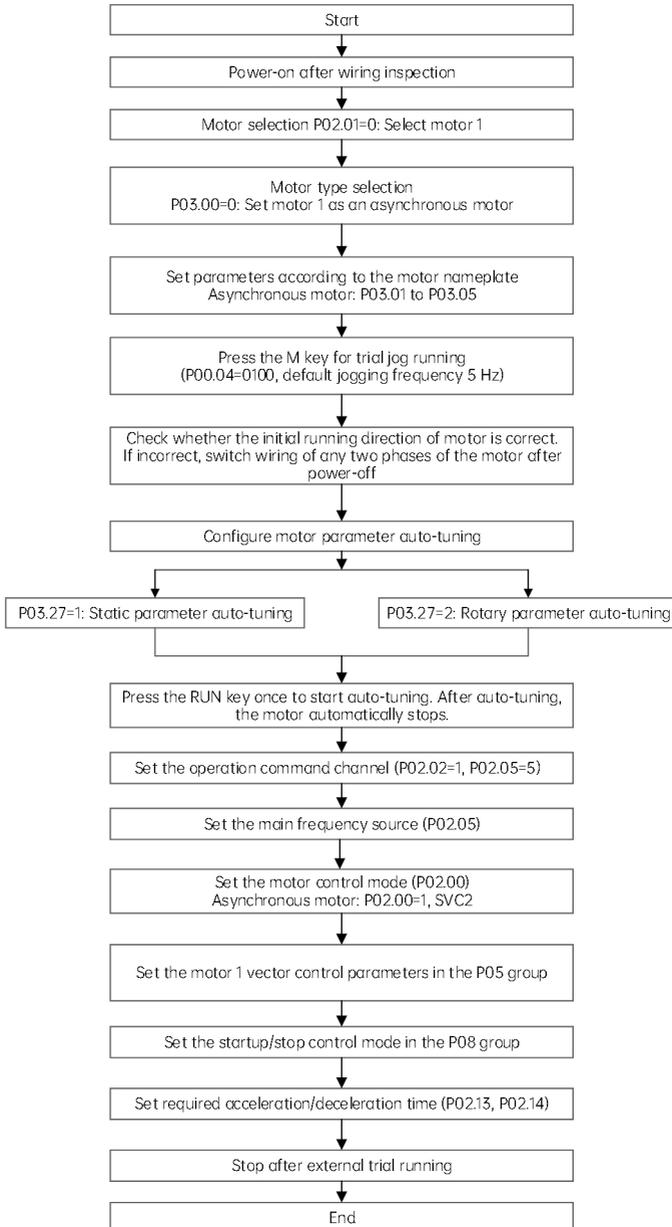


Check that all terminals are reliably connected, and the motor power is matched with the AC drive.

Inspection before power on

When the drive passes the wiring and power supply inspection, turn on the air switch of the AC power supply at the drive input side to supply power for the drive. The operating panel will first display "- - - -", and the contactor will be normally engaged. When the characters displayed in the digital tube change into the set frequency (such as 50.00), the drive initialization is completed.

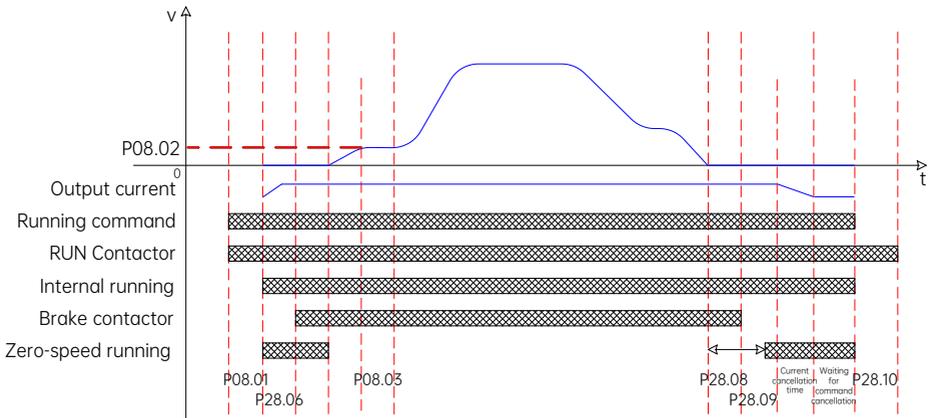
Quick operation steps



General parameter settings

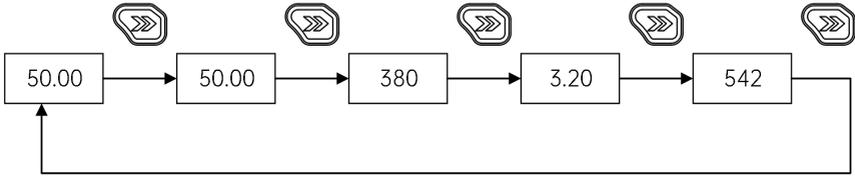
Function	Name	Value	Description
P09.03	DI1 function selection	1	Up
P09.04	DI2 function selection	2	Down
P09.05	DI3 function selection	6	Multi-reference terminal 1
P09.06	DI4 function selection	7	Multi-reference terminal 2
P09.07	DI5 function selection	71	Controller enable
P09.08	DI6 function selection	72	Inspection input (INS)
P10.00	DO1 function selection	18	Controller fault
P10.01	DO2 function selection	1	Controller running
P10.02	DO3 function selection	12	Controller zero-speed running
P13.01	Multi-speed 0	0	0
P13.02	Multi-speed 1	6	Creeping speed
P13.03	Multi-speed 2	100	Rated speed
P13.04	Multi-speed 3	20	Inspection speed
P28.00	Inspection speed selection	3	

Through P28.06 to P28.13, the startup and stop comfort of the elevator can be properly adjusted. The meanings of function codes are shown in the following figure (taking multi-speed running as an example).

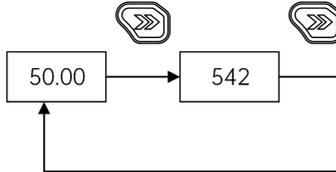


8 Monitoring mode

Through P16.00, P16.01, P16.02 and P16.03, you can choose the parameters to be displayed on the operating panel during running and standby, such as set frequency, output frequency, current, bus voltage, DI, DO, AI and so on (for details, refer to Group P16). Then, you can view the chosen parameters through the "▶▶" key on the operating panel. The following shows the parameter display switchover during running with P16.00=0xF0, P16.01=0x1 and P16.02=4.



The following shows the parameter display switchover during standby with P16.03=0x03 and P16.04=0.



9 Frequently-used Function Codes

○: means the function code can be changed during running;

×: means the function code can be changed during stop;

*: means the function code can be read only and can not be changed.

Function code	Name	Description	Default	Change
P00.00	Menu mode selection	0: Quick menu mode Only quick commissioning related parameters are displayed. 1: Full menu mode All function parameters are displayed. 2: Changed memory menu mode Only parameters that are different from factory settings are displayed.	1	○
P00.04	Selection of key functions	Ones place: Reserved Tens place: Function selection of the STOP key 0: The STOP key is valid only in the panel control channel. 1: The STOP key is valid in all control channels. Hundreds place: Function selection of multi-function M key 0: No function 1: FWD JOG 2: REV JOG 3: FWD and REV switchover 4: Command channel switchover (cyclic) Thousands place: Reserved	0	○
P00.05	Parameter initialization	0: Parameters rewritable 1: Clear fault records 2: Restore to factory settings 3: Restore some parameters to factory settings (motor parameters not restored)	0	×
P02.00	Control mode selection	0: SVC1 1: SVC2 (only for asynchronous motors) 2: V/F control (only for asynchronous motors) 3: FVC	2	×
P02.01	Motor selection	0: Motor 1 1: Motor 2	0	×
P02.02	Operation command channel selection	0: Keypad control 1: Terminal control	0	×

Function code	Name	Description	Default	Change
		2: Communication control		
P02.03	Communication command channel selection	0: Modbus channel 1: Profibus channel / CANopen channel / DeviceNet channel (reserved) 2: Ethernet channel (reserved) 3: EtherCAT channel / PROFINET channel 4 and 5: Reserved Note: A card must be inserted before using 1, 2, 3, 4 and 5.	0	×
P02.04	Running direction	0: Same direction 1: Opposite direction	0	○
P02.05	Main frequency source selection	0: Digital setting P02.09 1: AI1 2: AI2 3: High-speed pulse HDI reference 4: Simple PLC programming reference 5: Multi-speed running reference 6: PID control 7: Modbus 8: Bus card	0	×
P02.09	Frequency digital setting	0.00 Hz to P02.11	50.00 Hz	○
P02.10	Maximum output frequency	P02.11 to 599.00 Hz Note: The maximum frequency is at least 50.00 Hz	50.00 Hz	×
P02.11	Upper limit frequency	P02.12 to P02.10	50.00 Hz	×
P02.12	Lower limit frequency	0.00 Hz to P02.11	0.00 Hz	×
P02.13	Acceleration time 1	0.0 to 6000.0 s Note: After being restored to default values, the system will do auto matching based on the actual model (applicable for acceleration/deceleration time 1, 2, 3 and 4) 5.5 kW and below: 10 s 5.5 to 30 kW (included): 20 s Above 30 kW: 40 s	Model-dependent	○
P02.14	Deceleration time 1	0.0 to 6000.0 s	Model-dependent	○
P02.16	Carrier frequency	2.0 to 12.0 kHz	4.0 kHz	○
P03.00	Motor type selection	0: Asynchronous motor 1: Synchronous motor	0	×

Function code	Name	Description	Default	Change
P03.01	Asynchronous motor rated power	0.1 to 3000.0 kW	Model-dependent	×
P03.02	Asynchronous motor rated voltage	0 to 1200 V	Model-dependent	×
P03.03	Asynchronous motor rated current	0.8 to 6000.0 A	Model-dependent	×
P03.04	Asynchronous motor rated frequency	0.01 Hz to P02.10	50.00 Hz	×
P03.05	Asynchronous motor rated speed	1 to 36000 rpm	Model-dependent	×
P03.27	Motor auto-tuning	0: No operation 1: Part parameter auto-tuning in the static status 2: Full parameter auto-tuning in the rotating status 3: Full parameter auto-tuning in the static status	0	×
P04.00	Encoder PPR	1 to 65535	1024	×
P04.01	Encoder type	0: ABZ incremental encoder	0	×
P04.02	A/B phase sequence of ABZ incremental encoder	0: Forward 1: Reverse Note: Rotation auto-tuning automatically detects the phase sequence	0	×
P04.03	Reserved			
P04.04	PG card voltage class selection	0: 5 V 1: 12 V	0	×
P05.00	Speed loop proportional gain 1	1 to 100	10	○
P05.01	Speed loop integral time 1	0.01 to 10.00 s	0.50 s	○
P05.03	Speed loop proportional gain 2	1 to 100	10	○
P05.04	Speed loop integral time 2	0.01 to 10.00 s	1.00 s	○
P06.00	Torque control enable	0: Disabled 1: Enabled	0	○

Function code	Name	Description	Default	Change
P07.00	V/F curve	0: Straight-line V/F 1: Multi-point V/F 2: Square V/F 3: Reserved 4: V/F complete separation 5: V/F half separation	0	×
P07.01	Torque boost	0.0 to 50.0	0.1	○
P07.02	Cut-off frequency of torque boost	0.00 Hz to P02.11	10.00 Hz	×
P07.09	Torque compensation coefficient	0 to 300	150	○
P07.10	V/F overexcitation gain	0 to 200	80	×
P07.11	Oscillation suppression gain	0 to 100	10	○
P07.12	Oscillation suppression gain mode	0 to 2	0	×
P08.00	Startup mode	0: Startup from the startup frequency 1: Startup after speed tracking 2: Startup after DC braking	0	×
P08.01	Startup delay time	The device responds to the operation commands after the delay time. During the delay, the device is in standby.	0.0	×
P08.02	Startup frequency	0.00 to 50.00 Hz	0.00	×
P08.03	Startup frequency hold time	0.0 to 50.0 s	0.0	×
P08.06	Stop mode	0: Decelerate to stop 1: Coast to stop 2: Emergency stop	0	○
P09.00	Function selection of terminals 4, 5, 6, 8	Ones: 0: Terminal 4 as DI1 1: Terminal 4 as DO1 2: Terminal 4 as HDO1 Tens: 0: Terminal 5 as DI2 1: Terminal 5 as DO2 2: Terminal 5 as HDO2 Hundreds: Reserved Thousands: Reserved Note: Terminal 6 can only be set as DI3. Terminal 8 can only be set as DI4.	0	○

Function code	Name	Description	Default	Change
P09.01	Function selection of terminals 7, 10, 12, 16	Ones: 0: Terminal 7 as DI5 1: Terminal 7 as thermosensitive signal input Tens: 0: Terminal 10 as DI6 1: Terminal 10 as HDI Hundreds: Reserved Thousands: 0: Terminal 16 as DI8 1: Terminal 16 as AI1 voltage input 2: Terminal 16 as AI1 current input Note: Terminal 12 can only be set as DI7	0	○
P09.02	Function selection of terminals 13, 11	Ones: 0: Terminal 13 as AI2 voltage input 1: Terminal 13 as AI2 current input Tens: 0: Terminal 11 as DO3 1: Terminal 11 as AO1 voltage output 2: Terminal 11 as AO1 current output Hundreds: Reserved Thousands: Reserved	0	○
P09.03	DI1 function selection	0 to 79 0: No function	1	○
P09.04	DI2 function selection	1: Forward RUN 2: Reverse RUN	3	○
P09.05	DI3 function selection	3: Forward jog 4: Reverse jog	22	○
P09.06	DI4 function selection	5: Three-wire control	0	○
P09.07	DI5 function selection	6: Multi-reference terminal 1 7: Multi-reference terminal 2	0	○
P09.08	DI6 function selection	8: Multi-reference terminal 3 9: Multi-reference terminal 4	0	○
P09.09	DI7 function selection	16: External fault NO input 17: External fault NC input	0	○
P09.10	DI8 function selection	73: Emergency running input (UPS) 74: RUN contactor feedback input 75: Brake feedback input 76: Motor overheat input (OH) 77: Up forced slow-down speed input (UPF) 78: Down forced slow-down speed input (DNF) 79: Overspeed governor feedback input	0	○

Function code	Name	Description	Default	Change
		(OSG)		
P09.11	Terminal open-circuit voltage	0: Digital terminal open-circuit voltage 0 V 1: Digital terminal open-circuit voltage 24 V	1	○
P09.12	DI1 to DI4 active mode	Ones: 0: DI1 positive logic active 1: DI1 negative logic active Tens: 0: DI2 positive logic active 1: DI2 negative logic active Hundreds: 0: DI3 positive logic active 1: DI3 negative logic active Thousands: 0: DI4 positive logic active 1: DI4 negative logic active	0	○
P09.13	DI5 to DI8 active mode	Ones: 0: DI5 positive logic active 1: DI5 negative logic active Tens: 0: DI6 positive logic active 1: DI6 negative logic active Hundreds: 0: DI7 positive logic active 1: DI7 negative logic active Thousands: 0: DI8 positive logic active 1: DI8 negative logic active	0	○
P10.00	DO1 function selection	0 to 50 0: Disabled	1	○
P10.01	DO2 function selection	1: AC drive in running 2: Forward running	4	○
P10.02	DO3 function selection	3: Reverse running 4: Frequency reach signal (FAR)	0	○
P10.03	Relay RO1 output selection	5: Frequency-level detection signal (FDT1) 6: Frequency-level detection signal (FDT2) 7: Overload detection signal (OL) 8: Lockout for undervoltage (LU) 9: External fault stop (EXT) 10: Frequency upper limit (FHL) 11: Frequency lower limit (FLL) 12: Zero-speed running 20: Motor overheat 48: RUN contactor output control	18	○

Function code	Name	Description	Default	Change
		49: Brake output control 50: Advance door opening signal output		
P15.00	Communication format	Ones: 0: Modbus protocol 1: Expansion card to 485 protocol Tens: 0: 1-8-2-N format 1: 1-8-1-E format 2: 1-8-1-O format 3: 1-8-1-N format	0x30	○
P15.01	Baud rate	0: 4800 BPS 1: 9600 BPS 2: 19200 BPS 3: 38400 BPS 4: 57600 BPS 5: 115200 BPS 6: 125000 BPS	1	○
P15.02	Local address	0 to 247, 0 is the broadcast address	1	○
P97.32	Current fault type	0: No faults; 1 to 59: Faults	0	*
P97.33	Latest fault type	0: No faults; 1 to 59: Faults	0	*
P97.34	Second latest fault type	0: No faults; 1 to 59: Faults	0	*



(1) The source channels for main frequency and auxiliary frequency are mutually exclusive.

(2) The settings of multi-function input terminals are mutually exclusive (excluding the No.0 function).

10 Fault Types and Solutions

Fault code	No.	Fault type	Possible cause	Solution
OC1	1	Overcurrent during acceleration	The acceleration time is too short.	Prolong the acceleration time
			The motor parameters are incorrect.	Perform auto-tuning of motor parameters
			When instantaneous stop happens, the rotating motor is restarted.	Set the startup mode P08.00 to startup after speed tracking
			Coded disc fault occurs when PG is running.	Check the coded disc and its wiring
			The drive power is too low.	Use a drive with higher power
			The V/F curve is improper.	Adjust the V/F curve and manual torque boost
OC2	2	Overcurrent during deceleration	The deceleration time is too short.	Prolong the deceleration time
			There is potential energy load or the load inertial torque is large.	Add additional appropriate dynamic braking components
			Encoder fault occurs when PG is running.	Check the encoder and its wiring
			The drive power is too low.	Use a drive with higher power
OC3	3	Overcurrent at a constant speed	The acceleration/deceleration time is too short.	Prolong the acceleration/deceleration time appropriately
			Sudden load change or abnormal load	Check the load
			Low grid voltage	Check the input power supply
			Encoder fault occurs when PG is running.	Check the encoder and its wiring
			The drive power is low.	Use a drive with higher power
OV1	4	Overvoltage during acceleration	Abnormal input voltage	Check the input power supply
			The acceleration time is too short.	Prolong the acceleration time appropriately
			When instantaneous stop happens, the rotating motor is restarted.	Set the startup mode P08.00 to startup after speed tracking
OV2	5	Overvoltage during deceleration	The deceleration time is too short (compared with the regenerative energy).	Prolong the deceleration time

Fault code	No.	Fault type	Possible cause	Solution
			There is potential energy load or the load inertial torque is large.	Select appropriate dynamic braking components
OV3	6	Overvoltage at a constant speed	In vector control, the ASR parameters are not set properly.	Refer to the ASR parameter setting of Group P05
			The acceleration/deceleration time is too short.	Prolong the acceleration/deceleration time appropriately
			Abnormal input voltage	Check the input power supply
			Abnormal fluctuation of input voltage	Install an input reactor
			Large load inertia	Adopt dynamic braking components
Uv	7	Undervoltage	The bus voltage of the drive is too low (lower than 350 VDC).	Check the input power voltage Check the bus voltage of the drive Seek for technical support
SPI	8	Input phase loss	There is phase loss in input R, S, T.	Check the installation wiring Check the input voltage
SPO	9	Output phase loss	There is phase loss in output U, V, W.	Check the output wiring Check the motor and the cables
drv	10	Power module protection	There is interphase short circuit or grounding short circuit in three phases output.	Rewire and check the motor insulation
			Instantaneous overcurrent of the drive	Refer to the overcurrent solutions
			The duct is blocked or the fan is damaged.	Unblock the duct or replace the fan
			The ambient temperature is too high.	Lower the ambient temperature
			Wires or plug-in units of the control board are loose.	Check them and rewire
			Abnormal current waveform caused by output loss or other reasons	Check the wiring
			The auxiliary power supply is	Seek for technical support

Fault code	No.	Fault type	Possible cause	Solution
			damaged, and the drive voltage is insufficient.	
			Inverter module shoot-through	Seek for technical support
			Abnormal control board	Seek for technical support
			Braking pipe damaged	Seek for technical support
OH1	11	Inverter module heatsink overheat	The ambient temperature is too high.	Lower the ambient temperature
			The duct is blocked.	Clean the duct
			The fan is damaged.	Replace the fan
			The inverter module is abnormal.	Seek for technical support
OH2	12	Rectifier heatsink overheat	The ambient temperature is too high.	Lower the temperature
			The duct is blocked.	Clean the duct
			The fan is damaged.	Replace the fan
OL1	13	Drive overload	The motor parameters are incorrect.	Perform auto-tuning of motor parameters
			The load is too large.	Use a drive with higher power
			The DC braking amount is too large.	Reduce the DC braking current and prolong the braking time
			When instantaneous stop happens, the rotating motor is restarted.	Set the startup mode P08.00 to startup after speed tracking
			The acceleration time is too short.	Prolong the acceleration time
			The grid voltage is too low.	Check the grid voltage
			The V/F curve is improper.	Adjust the V/F curve and torque boost
OL2	14	Motor overload	The motor overload protection factor setting is incorrect.	Set the overload protection factor of the motor correctly
			The motor is blocked or the sudden change of load is too large.	Check the load
			The universal motor runs at low speed for a long time with high load	For long-time low-speed running, a specialized motor should be used
			The grid voltage is too low.	Check the grid voltage

Fault code	No.	Fault type	Possible cause	Solution
			The V/F curve is improper.	Set the V/F curve and torque boost correctly
EF	15	Emergency stop or external device fault	Sudden stop using the STOP key	See the function definition of the STOP key in P00.04
			External fault emergency stop terminal is enabled.	After the external fault is revoked, release the external fault terminal
EEP	16	EEPROM read/write fault	The read/write error of the control parameters occurs.	Reset by pressing the STOP/RESET key, and seek for technical support
CE	17	Abnormal remote serial port communication	The baud rate is set improperly.	Set the baud rate properly
			Serial port communication error	Reset by pressing the STOP/RESET key, and seek for technical support
			The fault alarm parameters are set improperly.	Modify the P15.03 setting
			The host device does not work.	Check if the host device is working and if the wiring is correct
ItE	19	Current detection circuit abnormal	Wires or plug-in units of the control board are loose.	Check them and rewire
			The auxiliary power supply is damaged.	Seek for technical support
			The Hall device is damaged.	Seek for technical support
			The amplifying circuit is abnormal.	Seek for technical support
bCE	46	Board level communication error	Incorrect connection of board detection signals	Seek for technical support
Err56	56	Contactor fault	(1) The contactor feedback signal is valid before startup. (2) No feedback signal is received after the contactor is closed.	Check whether the contactor's contacts (feedback contacts included) are normal
				Check whether the drive's input functions are set correctly
				Check whether the control circuit power for the contactor is normal

Fault code	No.	Fault type	Possible cause	Solution
Err57	57	Brake fault	The inconsistency between brake output and feedback signals exceeds 2 seconds.	Check whether the brake coil and feedback contacts are normal
				Check the signal features of feedback contacts (NO, NC)
				Check whether the control circuit power for the brake coil is normal
Err58	58	Motor overheat	The motor overheat signal is valid.	Check whether the motor is used properly, or is damaged
				Improve the heat dissipation
Err59	59	Overspeed governor fault	Check external overspeed governors.	Replace overspeed governors
			Check feedback signals.	Replace wires

11 Warranty and Service

1. Warranty period

The product is warranted for 18 months from the purchase date, however, the warranty date shall not exceed 24 months after the manufacturing date on the nameplate.

2. Warranty scope

During the warranty period, any product abnormalities incurred due to our company can be freely repaired or replaced by our company. In case of the following situations, maintenance fees will also be charged even if the product is still in the warranty period.

- (1) The damages are caused by fire, flood, strong lightning strike, etc.
- (2) The damages are caused by users' unauthorized modifications.
- (3) The product is damaged due to drop or in transmission after the purchase.
- (4) The product is damaged because the standard requirements are not obeyed in actual use.
- (5) The product is damaged because the user does not follow the instructions of the user manual.

3. After-sales service

- (1) If there are specific requirements for drive installation and trial operation, or the working status of the drive is not satisfactory (such as unsatisfactory performance and function), please contact the distributor or Shenzhen Megmeet Electrical Co., Ltd.
- (2) In case of any abnormality, contact the distributor or Shenzhen Megmeet Electrical Co., Ltd. immediately for help.
- (3) During the warranty period, our company will repair any drive abnormality incurred due to the product manufacturing and design free of charge.
- (4) If the product is out of the warranty period, our company can provide paid repairing service according to the customers' needs.
- (5) The service charge is calculated by actual costs. If there is an agreement, the agreement shall prevail.

Shenzhen Megmeet Electrical Co., Ltd.

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Zip code: 518057

Website: <https://www.megmeet.com>

AC Drive Warranty Bill

Customer company:	
Detailed address:	
Contact:	Tel:
Machine model:	
Machine No.:	
Purchase date:	
Service unit:	
Contact:	Tel:
Maintenance data:	

<p>Shenzhen Megmeet Electrical Co., Ltd.</p> <p>Certificate</p>	<p>Checker: _____</p> <p>Manufacturing date: _____</p> <p>The product has been tested in line with design standards and approved for leaving the factory.</p>
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