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MV820E Accessory Cards/Options Installation and Terminal Description

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 1.5 Fig. 1-1 of MV820E complete user manual) 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.

1 Installation of Accessory Cards/Options

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.

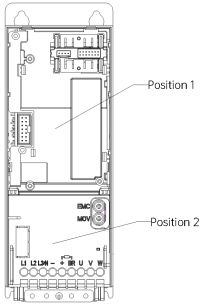

Fig. 1

1.2 Installation interfaces

The electrical interfaces of accessory cards/options connected to the drive are shown below.

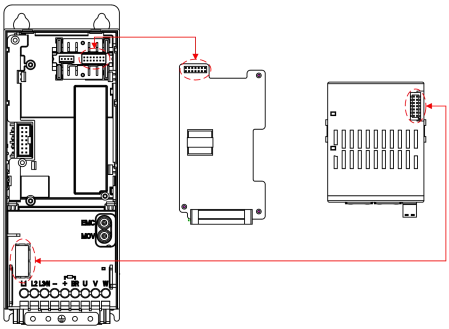

Fig. 2 Electrical interfaces

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. 3-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. 3-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. 3-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. 3-e and f.

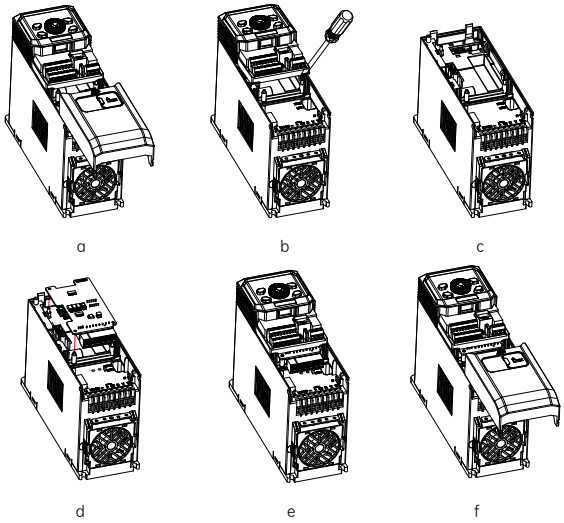

Fig. 3 Position 1 - PG card installation steps

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. 4-a.

(2) Use a straight screwdriver to pry open the dustproof cap, as shown in Fig. 4-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. 4-c and d.

(4) The IO card is successfully installed, as shown in Fig. 4-e.

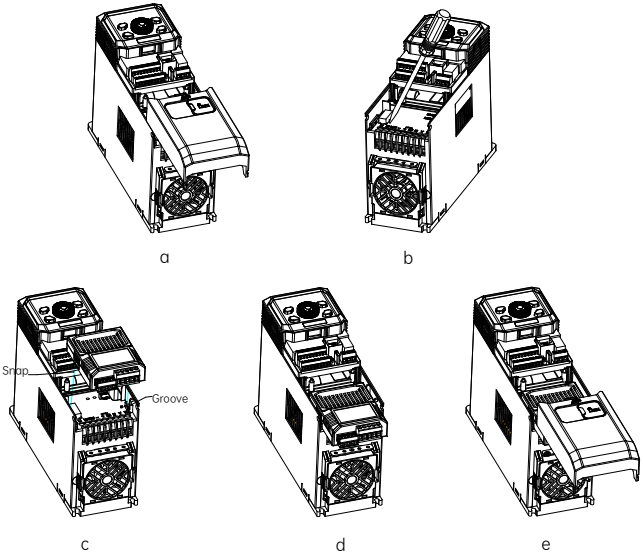

Fig. 4 Position 2 - IO option installation steps

2 MV810-IO01: Simple IO option

2.1 Product appearance

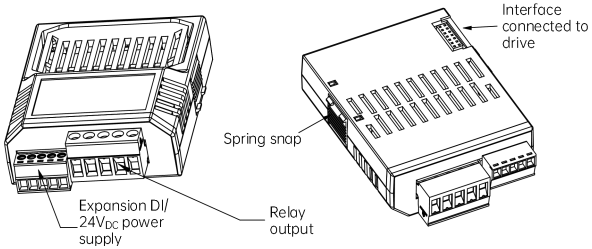

Fig. 5 Components and terminals

2.2 Technical specifications

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/1 A; RO2 contains one TA2/TC2 (normally open), contact capacity: 250 VAC/2 A, 30 VDC/1 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

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.

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.

3.2 Product appearance

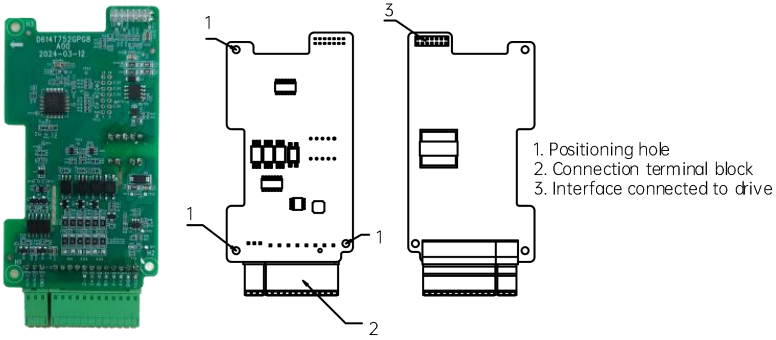

Fig. 6 Components and terminals

3.3 Terminal description

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

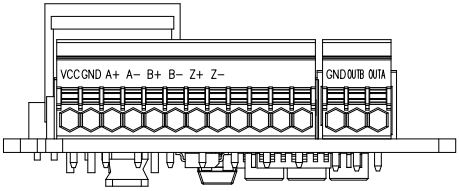

Fig. 7 Terminal mark

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 ⩽ 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	/

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.

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.

4.2 Product appearance

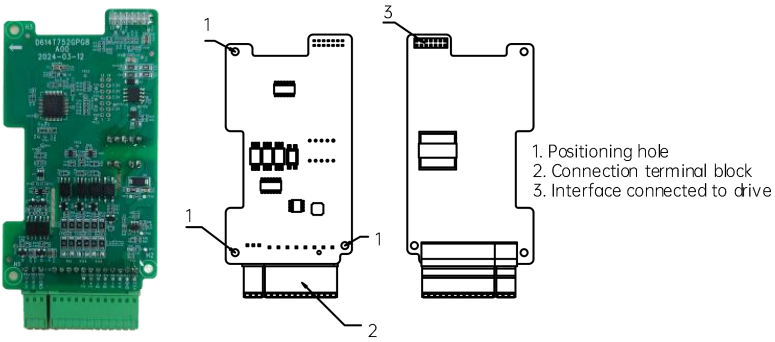

Fig. 8 Components and terminals

4.3 Terminal description

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

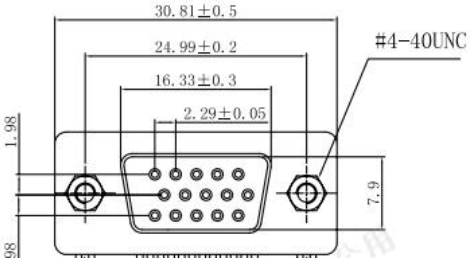

Fig. 9 DB15 of MV820E-PG-S

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	/

No.	Name	Function	Note
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 signal GND	/

WARNING

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

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.

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.

5.2 Product appearance

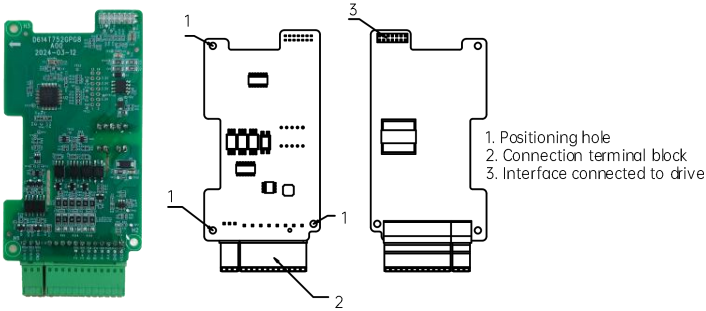

Fig. 10 Components and terminals

5.3 Terminal description

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

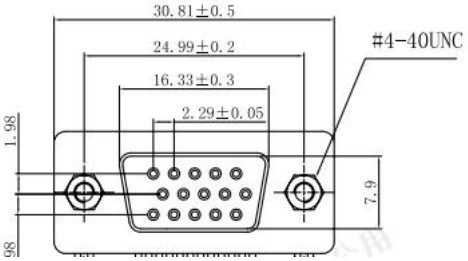

Fig. 11 DB15 of MV820E-PG-F

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	/
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	/

WARNING

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