EPC-PG1& EPC-PG8

Instruction Manual

When using open collector output type encoder or a push-pull output type encoder (12V) as the speed feedback, please choose GTAKE PG feedback card EPC-PG1, while using the differential output type encoder (5V power supply) as the speed feedback, please choose GTAKE PG feedback card EPC-PG8. Both EPC-PG1 and EPC-PG8 support O/A, O/B, O/Z frequency dividing output, the output mode is open collect type.

1. Picture of the Board

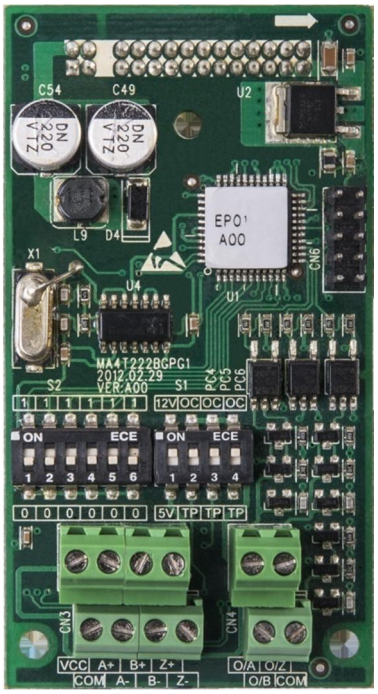


Fig. 1 Picture of EPC-PG1&PG8 Card

2. Wiring terminals and slide switches specification

2.1 Wiring Terminals Specification

Terminal	Function Description
CN3	Encoder signal interface terminals
CN4	Open collect frequency dividing output terminals

2.2 Slide Switches Specification

Switch	Function Description	Factory Default
S1	Encoder type and power supply selection	EPC-PG1：12V/OC EPC-PG8：5V/TP
S2	Multiple setting of frequency dividing output	000000

Note: When switch S2 is slid to "ON", it means "1" and the opposite position stands for "0".

3. Encoder wiring specification

3.1 Open collect output type

Select the first position (from the left) of slide switch S1 according to the encoder power supply. Slide up for 12V power supply, and slide down for 5V. The 2nd, 3rd, and 4th positions (from the left) are for selection of signal type. Slide up for open collector output, as shown in Fig. 2.



a）12V power supply　　b）5V power supply

Fig. 2 Slide switch S1 operation when using encoder of open collector output type

Fig. 3 shows the wiring of encoder of open collector output type. Positive pole of encoder power supply should be connected to VCC, negative pole to COM. Phase A signal should be connected to drive A-, phase B to drive B-, and Z to drive Z-. Drive terminals A+, B+ and Z+ are internally pulled up to VCC, not connected externally.

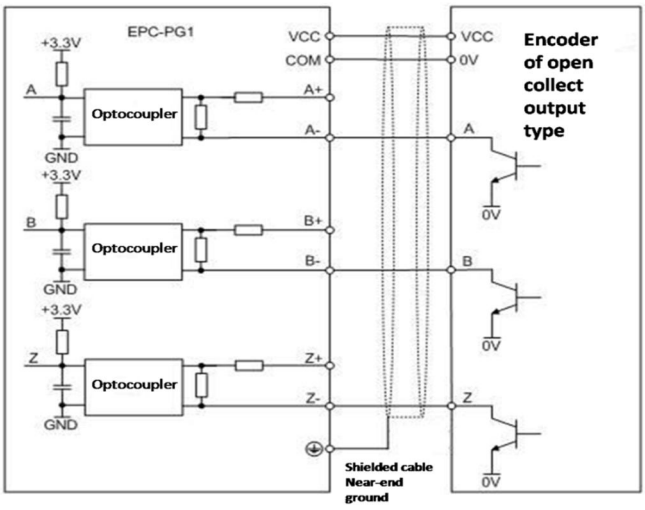
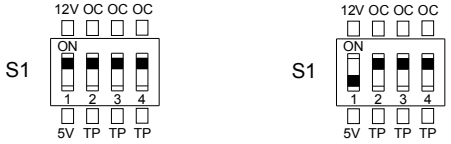


Fig. 3 Wiring of encoder of open collector output type

3.2 Push-pull output type

Select the first position (from the left) of slide switch S1 according to the encoder power supply. Slide up for 12V power supply, and slide down for 5V. The 2nd, 3rd, and 4th positions from the left are for selection of signal type. Slide up for push-pull output, as shown in Fig. 4.



a) 12V power supply　　b) 5V power supply

Fig. 4 Slide switch S1 operation when using encoder of push-pull output type

Fig. 5 shows the wiring of encoder of push-pull output type. Positive pole of encoder power supply should be connected to VCC, while negative pole to COM. Phase A signal should be connected to drive A-, B signal to drive B-, and Z to drive Z-. Drive terminals A+, B+ and Z+ are internally pulled up to VCC, not connected externally.

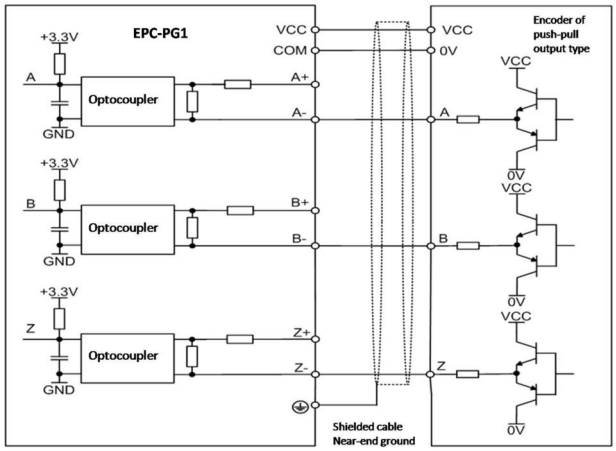
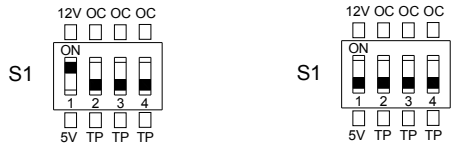


Fig. 5 Wiring of encoder of push-pull output type

3.3 Differential output type

Select the first position (from the left) of slide switch S1 according to the power supply of the encoder. Slide up for 12V, and down for 5V. The 2nd, 3rd, and 4th positions from the left are for selection of signal type. Slide down for differential output, as shown in Fig. 6.



a) 12V power supply b) 5V power supply

Fig. 5 Slide switch S1 operation when using encoder of differential output type

Fig. 7 shows the wiring of encoder of differential output type. Positive pole of encoder power supply should be connected to VCC, while negative pole to COM. Encoder A+, A-, B+, B-, Z+, Z- should be correspondingly connected to drive A+, A-, B+, B-, Z+, Z- respectively.

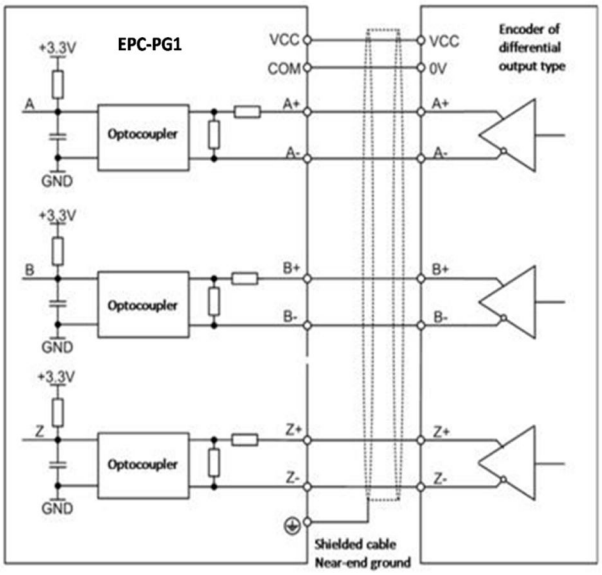
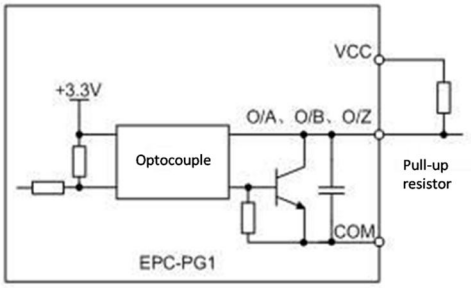


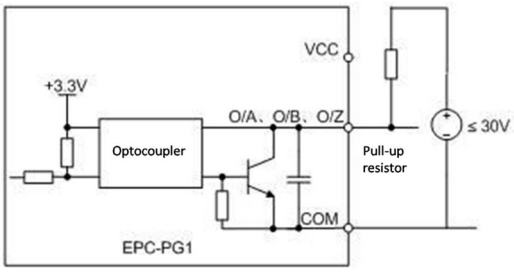
Fig. 7 Wiring of encoder of differential output type

4. Frequency dividing output

4.1 Frequency dividing output O/A, O/B, O/Z wiring specification



a） Pull-up interior power supply wiring



b）Pull-up external power supply wiring

Fig. 7 Frequency dividing output O/A, O/B, O/Z

🕮 ATTENTION

Resistance of pull-up resistor is decided by pull-up power supply. Make sure OC output current is no more than 50mA, and resistor derating meets the requirement.

4.2 Frequency dividing output terminal specification

Terminal	Function	Response speed	Output type	Output current	Frequency dividing range
O/A	frequency dividing output	0~100kHz	OC	50mA	even number (amid 1~126) times frequency dividing
O/B	frequency dividing output	0~100kHz	OC	50mA	even number (amid 1~126) times frequency dividing
O/Z	frequency dividing output	0~100kHz	OC	50mA	even number (amid 1~126) times frequency dividing

4.3 Slide switch S2 operation at frequency dividing output

Select the slide switch S2 positions according to the multiple of frequency dividing needed, the encoding is a 6 bits binary number, ON means “1”, and the opposite position stands for “0”. The actual O/B, O/A, O/Z frequency dividing multiple can be obtained after transforming the 6 bits binary number into a decimal number.

The position in Fig.9 is binary 000000, corresponding to the decimal number 0, which means multiple of frequency dividing output is 1, frequency dividing output of O/A, O/B, O/Z is therefore 1.

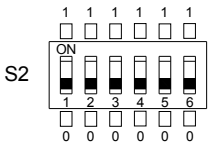


Fig. 9

In Fig.10, it is binary 000001, corresponding to decimal 1, and frequency dividing output multiple is 2, O/A, O/B, O/Z frequency dividing output is therefore 1/2.

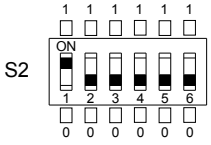


Fig. 10

In Fig.11, it is a binary number 000011, corresponding to decimal number 3, and hence frequency dividing is 6, therefore O/A, O/B, O/Z frequency dividing output is 1/6.

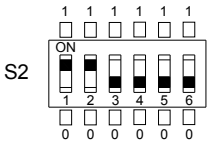


Fig. 11

In Fig. 12, it is a binary number 111111, which means 63 in decimal, therefore the frequency dividing is 126, thus frequency dividing output O/A, O/B, O/Z is 1/126.

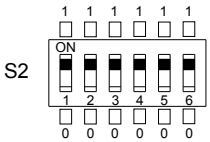


Fig. 12