EPC-PG2 Instruction Manual

EPC-PG2 as an optional board of GK800 supports open collector output, push-pull and differential output types of encoders, and it also supports O/A、O/B、O/Z frequency diving output, the output is differential type.

1. Picture of the Board



Fig. 1 Picture of EPC-PG2

2. Wiring terminals and slide switches specification

2.1 Wiring terminals specification

Terminal	Function
CN3	Encoder signal interface terminals
CN4	Differential frequency diving output terminals

2.2 Slide Switches Specification

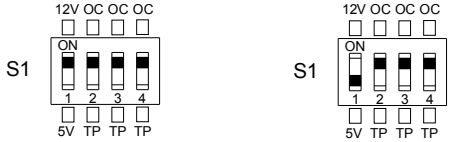
Switch	Function	Default
S1	Encoder type and power supply selection	5V/TP
S2	Multiple of frequency dividing output setting	000000

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 collector 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 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.

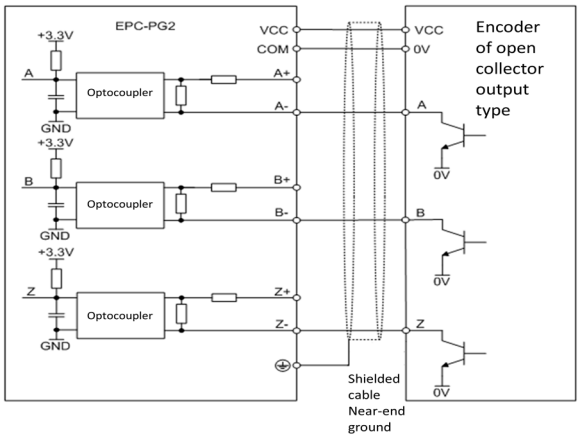
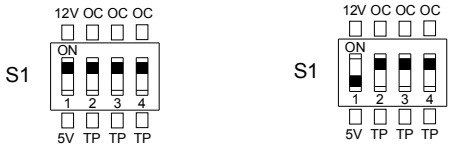


Fig.3 Wiring of encoder of open collector output type

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, 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.

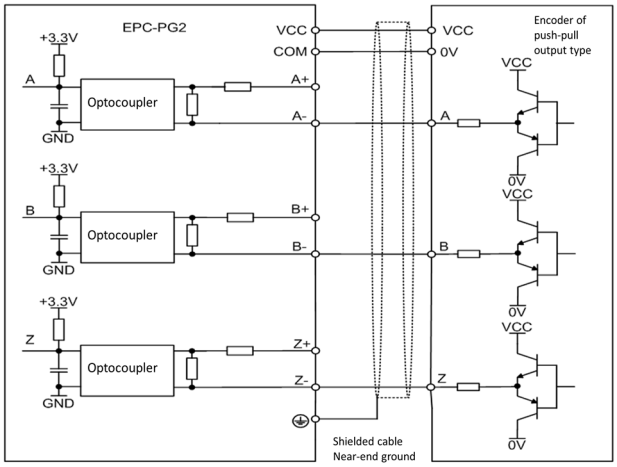


Fig. 5 Wiring of encoder of push-pull output type

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. 6 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, negative pole to COM. Encoder A+, A-, B+, B-, Z+, Z- should be correspondingly connected to drive A+, A-, B+, B-, Z+, Z- respectively.

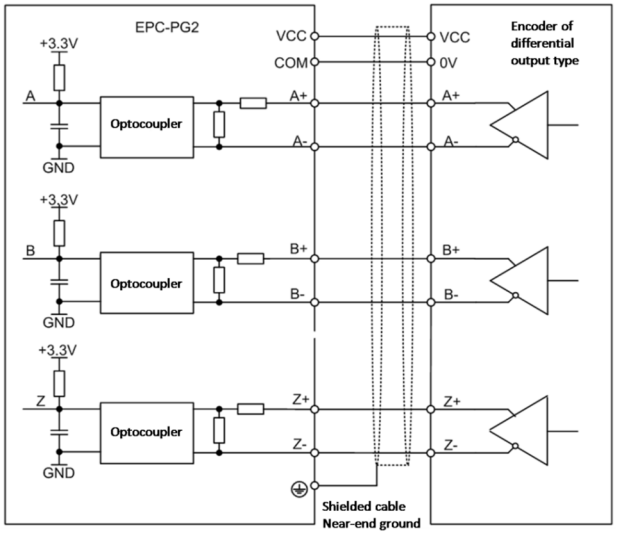


Fig. 7 Wiring of encoder of differential output type

4. Frequency dividing output

4.1 Terminals of frequency dividing output

Terminal	Function	Response speed	Output type	Output current	Frequency dividing range
O/A+ O/A-	Freq dividing output	0~200 kHz	differential	20mA	even number (amid 1~126) times frequency dividing
O/B+ O/B-	Freq dividing output	0~200 kHz	differential	20mA	even number (amid 1~126) times frequency dividing
O/Z+ O/Z-	Freq dividing output	0~200 kHz	differential	20mA	even number (amid 1~126) times frequency dividing

4.2 O/A+, O/A-, O/B+, O/B-, O/Z+, O/Z- frequency dividing output wiring

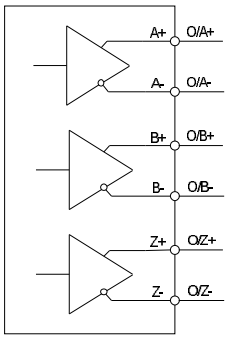


Fig. 8 O/A+, O/A-,O/B+, O/B-, O/Z+, O/Z- frequency dividing output wiring

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 Figure 8 is binary 000000, corresponding to decimal 0, which means multiple of frequency dividing output is 1, frequency dividing output of O/A+, O/A-, O/B+, O/B-, O/Z+, O/Z- is therefore 1.

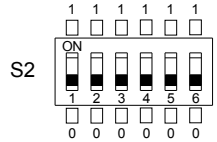


Fig. 9

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

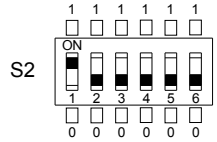


Fig. 10

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

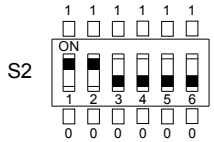


Fig. 11

In Fig. 12, it is a binary number 111111, which means 63 decimally. The frequency dividing is 126 therefore, and hence output frequency of O/A+, O/A-, O/B+, O/B-, O/Z+, O/Z- is 1/126 of encoder frequency.

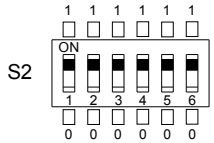


Fig. 12