

## DIGITAL OPTICAL ROTARY ENCODER



### Technical Details:

|                  |                      |  |
|------------------|----------------------|--|
| Item             |                      | Diameter 38mm shaft 6mm type Incremental rotary encoder                                    |
| Resolution (P/R) |                      | 100, 360, 400, 600, 1000 PPR   |
| Input Phase      |                      | AB Phase   |
| Output Phase     |                      | NPN Open Collector   |
|                  | Supply Voltage       | 5-24 VDC   |
| Electrical       | Current Consumption  | Max , 40mA   |
|                  | Response Frequency   | Max , 100 KHz  |
|                  | Allowable Revolution | Max , 3000 rev /min  |
| Mechanical       | Starting torque      | Max , 20 gf.cm ( 0.002N.m )  |
|                  | Rotor Inertia        | Max , 15 g.cm <sup>2</sup> ( 1,5* 10 <sup>-6</sup> kg.m <sup>2</sup> )                     |
|                  | Shaft Loading        | Radial : Max 2kgf, Axial : Max .1kgf   |
|                  | Mechanical Speed     | Max .5000 rev / min (*1)   |
| Environmental    | Ambient Temperature  | -10~ 70 ( at non- freezing status ) , Stronger :- 25 ~ 85                                  |
|                  | Ambient Humidity     | 35 ~85% RH , Stronger : 35~ 90 % RH  |
|                  | Protection           | Ip52 (IEG Standard )   |
|                  | Vibration            | 1.5 mm amplitude at frequency of 10-55 Hz in each Of X,Y,Z direction for 2 hour.           |
|                  | Shock                | Max. 40G   |
| Unit Weight      |                      | Approx :180g   |
| Cable            |                      | 2.0m (the cable length can be customized )   |
| Approval         |                      | CE ROHS  |
| (*1)             |                      | Mechanical speed > Allowable revolution , Please take allowable speed as standard when use |

| Wire Colour | OC VP OP<br>2-CHANNEL | OC VP OP<br>3-CHANNEL | TTL / HTL<br>6-CHANNEL | PIN<br>9-POLE | EXPLANATION    |
|-------------|-----------------------|-----------------------|------------------------|---------------|----------------|
| Red         | VCC                   | VCC                   | VCC                    | 1             | Supply Voltage |
| Black       | 0 V                   | 0 V                   | 0 V                    | 4             | Common (GND)   |
| Green       | A                     | A                     | A                      | 5             | Signal Wire    |
| White       | B                     | B                     | B                      | 3             | Signal Wire    |
| Yellow      | --                    | Z                     | Z                      | 8             | Signal Wire    |
| Brown       | --                    | --                    | -A                     | 6             | Signal Wire    |
| Gray        | --                    | --                    | -B                     | 7             | Signal Wire    |
| Orange      | --                    | --                    | -Z                     | 2             | Signal Wire    |
| Shield      | Shield                | Shield                | Shield                 | 9             |                |

### Output

A and B are two-phase quadrature output with a rectangular pulse. The circuit employs NPN open collector output. Pull-up resistors (10K-Ohm, 0.25 watts) are required. These can be either individual components or internal pull-up resistors as found in most micro-controllers.

