

# 40 mm Diameter Incremental Rotary Encoders

## E40 Series



### Features

- Ø 40 mm housing incremental rotary encoders
- Shaft, hollow shaft, blind hollow shaft models available
- Easy installation in tight or limited spaces
- Low shaft moment of inertia
- Various resolutions:  
1 to 5000 pulses per revolution
- Various control output options
- Power supply:  
5 VDC $\pm$  5%, 12 - 24 VDC $\pm$  5%

### Specifications

| Model                                    | E40□□-□-□-□-□-□<br>□-T-□-□                                                           | E40□□-□-□-□-□-□<br>□-N-□-□ | E40□□-□-□-□-□-□<br>□-V-□-□ | E40□□-□-□-□-□-□<br>□-L-□-□                 |
|------------------------------------------|--------------------------------------------------------------------------------------|----------------------------|----------------------------|--------------------------------------------|
| Resolution                               | 1 / 2 / 5 / 12 PPR <sup>01)</sup><br>10 to 5,000 PPR model                           |                            |                            |                                            |
| Control output                           | Totem pole output                                                                    | NPN open collector output  | Voltage output             | Line driver output                         |
| Output phase                             | A, B, Z                                                                              | A, B, Z                    | A, B, Z                    | A, $\bar{A}$ , B, $\bar{B}$ , Z, $\bar{Z}$ |
| Inflow current                           | $\leq 30$ mA                                                                         | $\leq 30$ mA               | -                          | $\leq 20$ mA                               |
| Residual voltage                         | $\leq 0.4$ VDC $\equiv$                                                              | $\leq 0.4$ VDC $\equiv$    | $\leq 0.4$ VDC $\equiv$    | $\leq 0.5$ VDC $\equiv$                    |
| Outflow current                          | $\leq 10$ mA                                                                         | -                          | $\leq 10$ mA               | $\leq -20$ mA                              |
| Output voltage (5 VDC $\equiv$ )         | $\geq$ (power supply -2.0) VDC $\equiv$                                              | -                          | -                          | $\geq 2.5$ VDC $\equiv$                    |
| Output voltage (12 - 24 VDC $\equiv$ )   | $\geq$ (power supply -3.0) VDC $\equiv$                                              | -                          | -                          | $\geq$ (power supply -3.0) VDC $\equiv$    |
| Response speed <sup>02)</sup>            | $\leq 1$ $\mu$ s                                                                     |                            |                            | $\leq 0.5$ $\mu$ s                         |
| Max. response freq.                      | 300 kHz                                                                              |                            |                            |                                            |
| Max. allowable revolution <sup>03)</sup> | 5,000 rpm                                                                            |                            |                            |                                            |
| Starting torque                          | E40S: $\leq 0.004$ N m<br>E40H, E40HB: $\leq 0.005$ N m                              |                            |                            |                                            |
| Inertia moment                           | $\leq 40$ g $\cdot$ cm <sup>2</sup> ( $4 \times 10^{-6}$ kg $\cdot$ m <sup>2</sup> ) |                            |                            |                                            |
| Allowable shaft load                     | Radial: $\leq 2$ kgf, Thrust: $\leq 1$ kgf                                           |                            |                            |                                            |
| Unit weight                              | $\approx 120$ g                                                                      |                            |                            |                                            |
| Approval                                 | CE EAC                                                                               | CE EAC                     | CE EAC                     | EAC                                        |

01) Depending on the control output, only A, B or A,  $\bar{A}$ , B,  $\bar{B}$  are output.

02) Based on cable length: 2 m, I sink: 20 mA

03) Select resolution to satisfy Max. allowable revolution  $\geq$  Max. response revolution  
[max. response revolution (rpm) =  $\frac{\text{max. response frequency}}{\text{resolution}} \times 60$  sec]

View product detail



Shaft Type



Hollow Shaft Type



Blind Hollow  
Shaft Type