

60 mm Diameter Incremental Rotary Encoders

E60 Series



Features

- Ø 60 mm housing, Ø 20 mm hollow shaft
- Accurate measurement of angle, position, revolution, speed, acceleration, and distance
- Various resolutions:
up to 8192 pulses per revolution
- Various control output options
- Power supply:
5 VDC \pm 5%, 12 - 24 VDC \pm 5%

Specifications

Model	E60H20-□-3-T-□-□	E60H20-□-3-N-□-□	E60H20-□-3-V-□-□	E60H20-□-6-L-□-□
Resolution	100 / 1,024 / 5,000 / 8,192 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	≤ 30 mA	≤ 30 mA	-	≤ 20 mA
Residual voltage	≤ 0.4 VDC \approx	≤ 0.4 VDC \approx	≤ 0.4 VDC \approx	≤ 0.5 VDC \approx
Outflow current	≤ 10 mA	-	≤ 10 mA	≤ 20 mA
Output voltage (5 VDC \approx)	\geq (power supply -2.0) VDC \approx	-	-	≥ 2.5 VDC \approx
Output voltage (12 - 24 VDC \approx)	\geq (power supply -3.0) VDC \approx	-	-	\geq (power supply -3.0) VDC \approx
Response speed ⁰¹⁾	≤ 1 μ s			≤ 0.5 μ s
Max. response frequency	300 kHz			
Max. allowable revolution ⁰²⁾	6,000 rpm			
Starting torque	≤ 0.0147 N m			
Inertia moment	≤ 110 g \cdot cm ² (11×10^{-6} kg \cdot m ²)			
Allowable shaft load	Radial: ≤ 5 kgf, Thrust: ≤ 2.5 kgf			
Unit weight (packaged)	≈ 300 g (≈ 397 g)			
Approval	CE EAC	CE EAC	CE EAC	EAC

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

02) Select resolution to satisfy Max. allowable revolution \geq Max. response revolution

$$[\text{max. response revolution (rpm)}] = \frac{\text{max. response frequency}}{\text{resolution}} \times 60 \text{ sec}$$

Power supply	5 VDC \pm 5% (ripple P-P: $\leq 5\%$) / 12 - 24 VDC \pm 5% (ripple P-P: $\leq 5\%$) model
Current consumption	Totem pole, NPN open collector, Voltage output: ≤ 80 mA (no load) Line driver output: ≤ 50 mA (no load)
Insulation resistance	Between all terminals and case: ≥ 100 M Ω (500 VDC \approx megger)
Dielectric strength	Between all terminals and case: 750 VAC \sim 50 / 60 Hz for 1 minute
Vibration	1 mm double amplitude at frequency 10 to 55 Hz (for 1 minute) in each X, Y, Z direction for 2 hours
Shock	≤ 100 G
Ambient temp.	-10 to 70 °C, storage: -25 to 85 °C (no freezing or condensation)
Ambient humi.	35 to 85%RH, storage: 35 to 90%RH (no freezing or condensation)
Protection rating	IP50 (IEC standard)
Connection	Radial cable type / Cable connector type model
Cable spec.	Ø 5 mm, 5-wire (line driver output: 8-wire), shield cable cable type: 2 m, cable connector type: 250 mm
Wire spec.	AWG24 (0.08 mm, 40-core), insulator diameter: Ø 1 mm
Connector spec.	Totem pole, NPN open collector, Voltage output: M17 6-pin socket type Line driver output: M17 9-pin socket type



View product detail