Shaft Type Ø15mm Incremental Rotary Encoder

Ultra Lightweight

Ultra Compact

▣ Features

• Ultra-Compact (Ø15mm) and Ultra-Lightweight (14g)

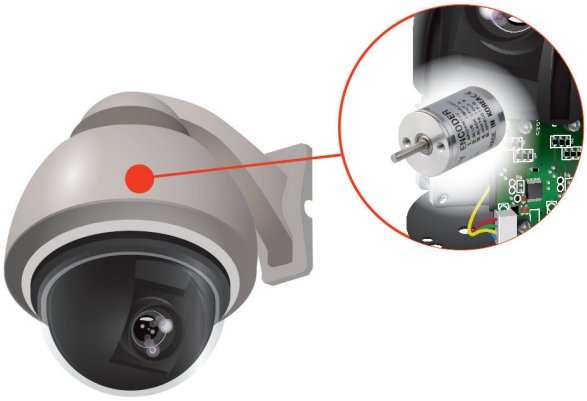
The ultra-compact (Ø15mm), ultra-lightweight (14g) encoders are ideal for installation in small machinery and compact applications.

15 mm Diameter

Weights Only 14 g

▣ Application

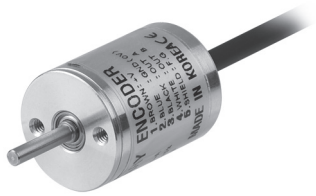
Application PTZ cameras requiring precise directional and zoom movement



Shaft Type Ø15mm Incremental Rotary Encoder

▣ Features

- **Ultra-compact (Ø15mm) and ultra-lightweight (14g)**
- Easy installation in tight or limited spaces
- Low moment of inertia
- Power supply: 5VDC ±5%



Please read "Caution for your safety" in operation manual before using.

▣ Ordering Information

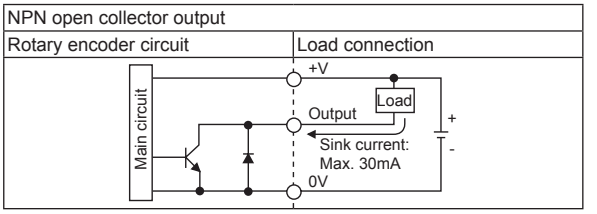
Item		Shaft Type Ø15mm Incremental Rotary Encoder
Model		E15S2-36-2-N-5-R
Resolution (P/R)※1		36
Electrical specification	Output phase	A, B phase
	Phase difference of output	Phase difference between A and B: $\frac{T}{4} \pm \frac{T}{8}$ (T=1 cycle of A phase)
	Control output	NPN open collector output - Load current: Max. 30mA, Residual voltage: Max. 0.4VDC
	Response time (rise/fall)	Max. 1μs (cable length: 1m, I sink=20mA)
	Max. response frequency	10kHz
	Power supply	5VDC ±5% (ripple P-P: Max. 5%)
	Current consumption	Max. 50mA (disconnection of the load)
	Insulation resistance	Over 100MΩ (at 500VDC megger between all terminals and case)
	Dielectric strength	500VAC 50/60Hz for 1 min (between all terminals and case)
	Connection	Axial cable type
Mechanical specification	Starting torque	Max. 10gf·cm (9.8×10^{-4}N·m)
	Moment of inertia	Max. 0.5g·cm² (5×10^{-8}kg·m²)
	Shaft loading	Radial: 200gf, Thrust : 200gf
	Max. allowable revolution※2	3,000rpm
Vibration		1.5mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 2 hours
Shock		Approx. max. 50G
Environment	Ambient temperature	-10 to 70℃, storage: -20 to 80℃
	Ambient humidity	35 to 85%RH, storage: 35 to 90%RH
Protection structure		IP50 (IEC standard)
Cable		Ø3mm, 4-wire, 500mm, Flexible PVC insulation shielded cable (AWG30, core diameter: 0.102mm, number of cores: 7, insulator diameter: Ø0.71mm)
Accessory		Ø2mm coupling
Weight※3		Approx. 37g (approx. 14g)

※1: Not indicated resolutions are customizable.
※2: Make sure that. Max response revolution should be lower than or equal to max. allowable revolution when selecting the resolution.

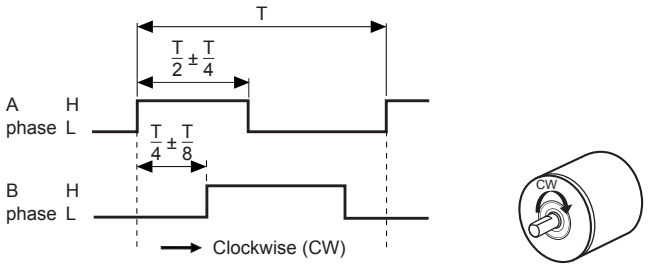
$$[\text{Max. response revolution (rpm)} = \frac{\text{Max. response frequency}}{\text{Resolution}} \times 60 \text{ sec}]$$

※3: The weight includes packaging. The weight in parenthesis is for unit only.
※Environment resistance is rated at no freezing or condensation.

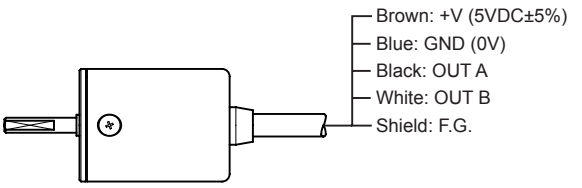
■ Control Output Diagram



■ Output Waveform



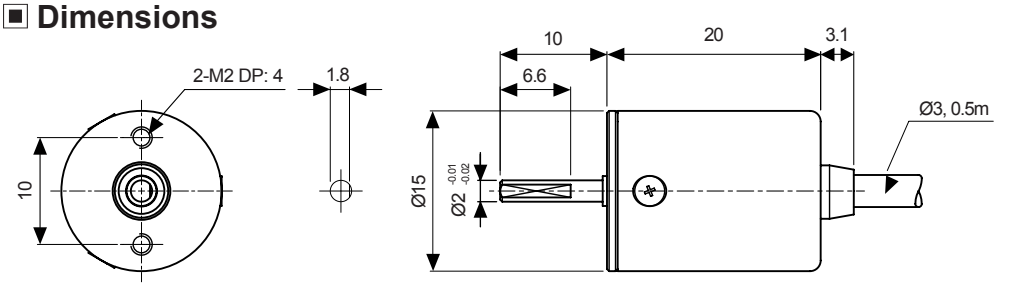
■ Connections



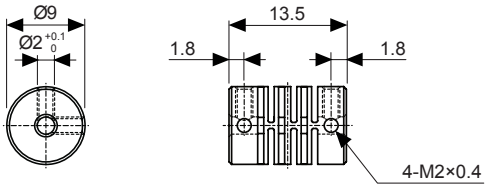
※Unused wires must be insulated.
※The metal case and shield cable should be grounded (F.G.).

■ Dimensions

(unit: mm)



● Coupling (E15S)



- Parallel misalignment: Max. 0.15mm
- Angular misalignment: Max. 2°
- End-play: Max. 0.5mm

※When mounting the coupling to the encoder shaft, if there is combined misalignment (parallel, angular misalignment) between rotating encoder shaft and mate shaft, it may cause encoder and coupling's life cycle to shorten.
※Do not load overweight on the shaft.
※For parallel misalignment, angular misalignment, end-play terms, refer to page F-71.
※For flexible coupling (ERB series) information, refer to page F-64.