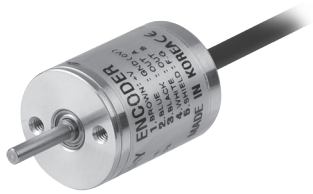
Shaft Type Ø15mm Incremental Rotary Encoder

▣ 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 "Safety Considerations" in the instruction manual before using.

▣ Ordering Information

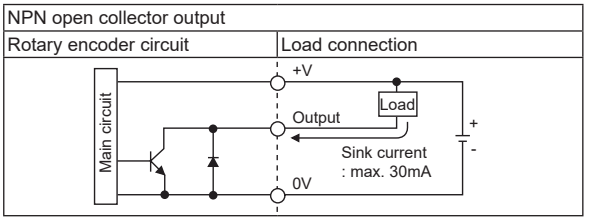
Item			Shaft Type Ø15mm Incremental Rotary Encoder
Model			E15S2-36-2-N-5-R
Resolution (PPR)※1			36
Electrical specification	Output phase		A, B phase
	Phase difference of output		Phase difference between A and B: $\frac{T}{4} \pm \frac{T}{8}$ (T=1 cycle of A phase)
	Control output		NPN open collector 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.

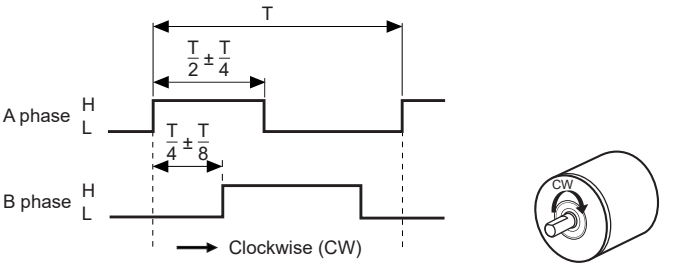
$$[\text{Max. response revolution (rpm)} = \frac{\text{Max. response frequency}}{\text{Resolution}} \times 60\ \text{sec}]$$

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

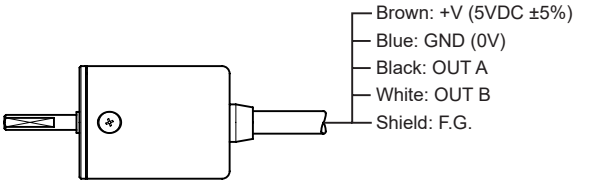
■ Control Output Diagram



■ Output Waveform



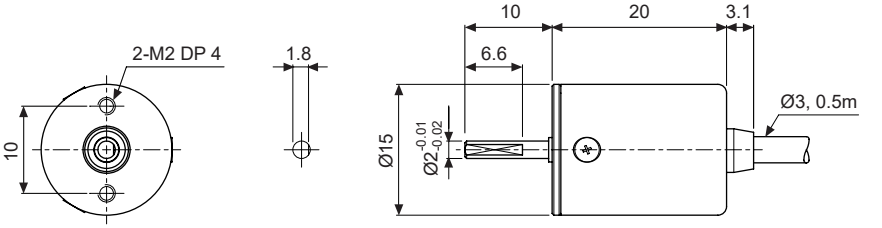
■ Connections



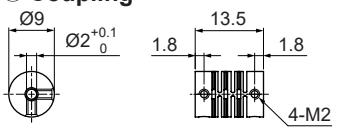
※Unused wires must be insulated.
※The metal case and shield cable should be grounded (F.G.).
※Do not apply tensile strength over 15N to the cable.

■ Dimensions

(unit: mm)



◎ Coupling



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

※Do not load overweight on the shaft.
※Do not put strong impact when insert a coupling into shaft.
Failure to follow this instruction may result in product damage.
※Fix the unit or a coupling by a wrench under 0.15N·m of torque.
※When you insta ll this unit, if eccentricity and deflection angle are larger, it may shorten the life cycle of this unit.
※For parallel misalignment, angular misalignment, end-play terms, refer to the "Glossary" section of Technical Description.
※For flexible coupling (ERB series) information, refer to the ERB series section.