

E18S Series

Diameter Ø18mm Shaft Type Incremental Rotary Encoder

NEW

■ Features

- Diameter ø18mm of miniature and weight 12g of ultra-light rotary encoder
- Easy installation at narrow space
- Small shaft inertia moment
- Power supply: 5VDC ±5%



[Axial cable type]



[Radial cable type]

■ Applications

- Suitable for office machine such as ATMs, bill counters, copy machines

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



■ Ordering Information

E18S	2.5	200	1	N	5	R
Series	Shaft diameter	Pulse/1Revolution	Output phase	Control output	Power supply	Cable
Diameter ø18mm, shaft type	2 : ø2mm 2.5 : ø2.5mm	100, 200, 300, 400	1 : A	N: NPN open collector output V: Voltage output	5 : 5VDC ±5%	R: Axial cable type S: Radial cable type

■ Specifications

Item		Diameter ø18mm shaft type of incremental rotary encoder	
Resolution (P/R) ^{※1}		100, 200, 300, 400	
Electrical specification	Output phase		A phase
	Control output	NPN open collector output	Load current: Max. 30mA, Residual voltage: Max. 0.4VDC
		Voltage output	Load current: Max. 10mA, Residual voltage: Max.0.4VDC
	Response time (rise/fall)	NPN open collector output	Max. 1μs (Cable length: 1m, I sink = 20mA)
		Voltage output	
	Max. response frequency		25kHz
	Power supply		5VDC ±5% (ripple P-P: max. 5%)
	Current consumption		Max. 50mA (disconnection of the load)
	Insulation resistance		Min. 100MΩ (at 500VDC megger between all terminals and case)
	Dielectric strength		500VAC 50/60Hz for 1 min. (between all terminals and case)
	Connection		Cable type (axial cable, radial cable)
Mechanical specification	Starting torque		Max. 10gf·cm (9.8×10 ⁻⁴ N·m)
	Moment of inertia		Max. 0.5g·cm ² (5×10 ⁻⁸ kg·m ²)
	Shaft loading		Radial : 200gf, Thrust : 200gf
	Max. allowable revolution ^{※2}		6000rpm
Vibration		1.5mm amplitude at frequency of 10 to 55Hz (for 1 min.) in each X, Y, Z direction for 2 hours	
Shock		Max. 50G	
Environment	Ambient temperature		-10 to 70°C, storage: -20 to 80°C
	Ambient humidity		35 to 85%RH, storage: 35 to 90%RH
Protection structure		IP50 (IEC standard)	
Cable		ø0.98mm, 4-wire, Length: 150mm, Flat ribbon cable (AWG26, Core diameter: 0.16mm, Number of cores: 7, Insulator out diameter: ø0.98mm)	
Accessory		ø2mm coupling (supplied only for ø2mm shaft diameter model)	
Approval		CE cULus	
Weight ^{※3}		ø2mm Shaft diameter model: Approx. 35.4g(approx. 12g) ø2.5mm Shaft diameter model: Approx. 34.2g(approx. 12g)	

※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.

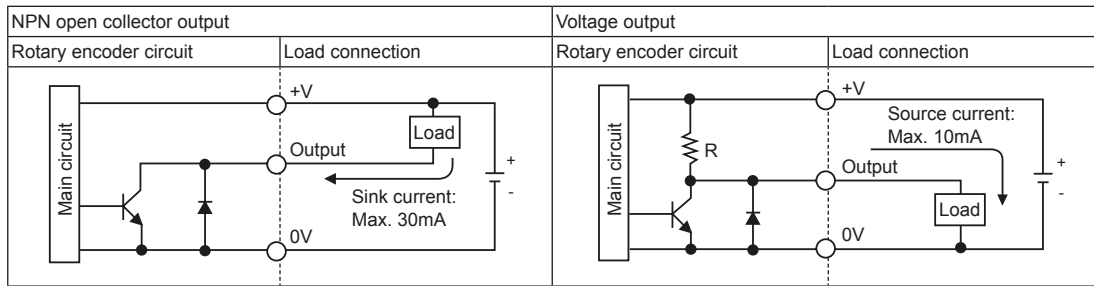
$$[\text{Max. response revolution (rpm)}] = \frac{\text{Max. response frequency}}{\text{Resolution}} \times 60 \text{ sec}$$

※3: The weight includes packaging. The weight in parentheses is for unit only.

※Environment resistance is rated at no freezing or condensation.

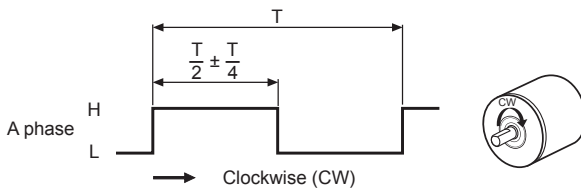
Incremental ø18mm Shaft Type

Control Output Diagram



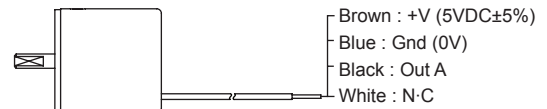
Output Waveform

• NPN open collector output / Voltage output



Connections

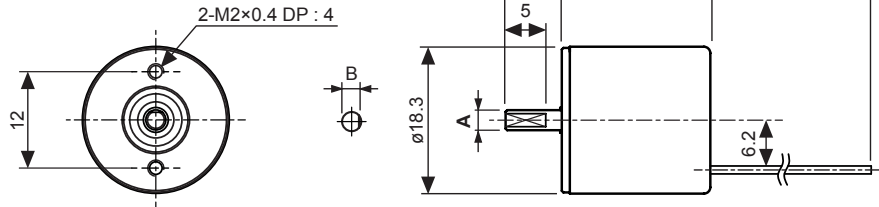
• NPN open collector output / Voltage output



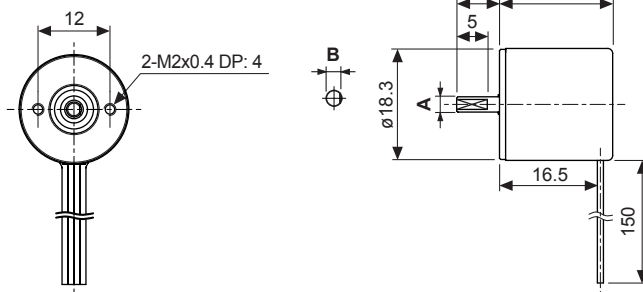
Dimensions

◎ Axial cable type

(unit : mm)

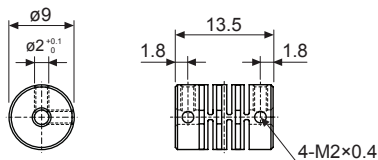


◎ Radial cable type



Model	A	B
E18S-2	Ø2.0 ^{+0.004} _{-0.02}	1.7 ⁰ _{-0.1}
E18S-2.5	Ø2.5 ^{+0.004} _{-0.02}	2.2 ⁰ _{-0.1}

• Coupling (E18S)



- Parallel misalignment: Max. 0.15mm
- Angular misalignment: Max. 2°
- End-play: Max. 0.2mm

※ For terminology of parallel, angular misalignment, and end-play, refer to page F-71.

(A) Photoelectric Sensors

(B) Fiber Optic Sensors

(C) Door/Area Sensors

(D) Proximity Sensors

(E) Pressure Sensors

(F) Rotary Encoders

(G) Connectors/Sockets

(H) Temperature Controllers

(I) SSRs / Power Controllers

(J) Counters

(K) Timers

(L) Panel Meters

(M) Tacho / Speed / Pulse Meters

(N) Display Units

(O) Sensor Controllers

(P) Switching Mode Power Supplies

(Q) Stepper Motors & Drivers & Controllers

(R) Graphic/Logic Panels

(S) Field Network Devices

(T) Software