

15 mm Diameter Sine Wave Incremental Rotary Encoders



E18-A Series CATALOG

For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.

The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.

Features

- Ultra-compact (Ø 18 mm) housing and ultra-lightweight (10 g) design
- Easy installation in tight or limited spaces
- Low shaft moment of inertia
- Power supply: 5 VDC \pm 5%
- No Amp. output

Ordering Information

This is only for reference, the actual product does not support all combinations. For selecting the specified model, follow the Autonics website.

E18 S ① - ② - 1 - A - 5 - ③

① Shaft outer diameter

2: Ø 2 mm
2.5: Ø 2.5 mm

③ Connection

R: Axial cable type
S: Radial cable type

② Resolution

Number: Refer to resolution in 'Specifications'

Product Components

Shaft Outer Diameter	Ø 2 mm	Ø 2.5 mm
Product Components	Product, Instruction manual	
Bolt	× 4	-
Coupling	× 1	-

Specifications

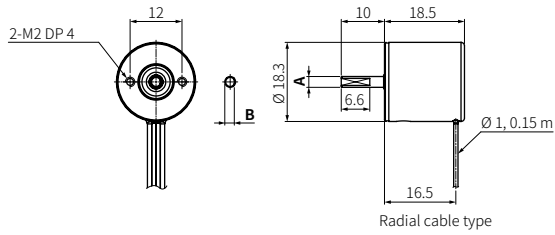
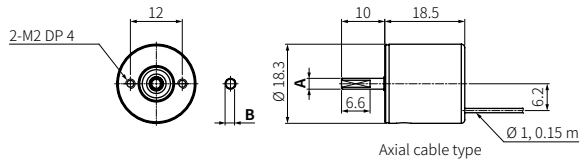
Model	E18S□-□-1-A-5-□
Resolution	200 / 300 PPR model
Control output	Quasi-sinusoidal (No Amp. output)
Output phase	A
Output waveform	Quasi-sinusoidal
Output signal amplitude	≥ 150 mV _{r-p}
Output signal amplitude variation	≤ 40%
Max. response freq.	10 kHz
Max. allowable revolution ⁰¹⁾	3,000 rpm
LED optical elements	Current I _f : ≤ 50 mA Reverse voltage V _r : ≤ 5 VDC \equiv Power consumption P _D : ≤ 95 mW
Photo transistor optical elements	C-E voltage V _{CE} : ≤ 30 VDC \equiv E-C voltage V _{EC} : ≤ 5 VDC \equiv C current I _c : ≤ 20 mA C power consumption P _C : ≤ 75 mW
Starting torque	≤ 10 × 10 ⁻⁴ N m
Inertia moment	≤ 0.5 g · cm ² (5 × 10 ⁻⁸ kg · m ²)
Allowable shaft load	Radial: ≤ 200 gf, Thrust: ≤ 200 gf
Unit weight (packaged)	Shaft outer diameter Ø 2 mm model: ≈ 10.1 g (≈ 33.5 g) Shaft outer diameter Ø 2.5 mm model: ≈ 10.1 g (≈ 32.3 g)
Approval	CE c ENEC

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

Power supply	5 VDC \pm 5% (ripple P-P: ≤ 5%)
Insulation resistance	Between all terminals and case: ≥ 100 MΩ (500 VDC \equiv megger)
Dielectric strength	Between all terminals and case: 500 VAC ~ 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	≤ 50 G
Ambient temperature	-10 to 50 °C, storage: -20 to 80 °C (no freezing or condensation)
Ambient humidity	35 to 85%RH, storage: 35 to 90%RH (no freezing or condensation)
Protection rating	IP50 (IEC standard)
Connection	Axial / Radial cable type model
Cable spec.	Ø 1 mm, 4-wire, 150 mm, flat ribbon cable
Wire spec.	AWG26 (0.16 mm, 7-core), insulator diameter: Ø 0.98 mm

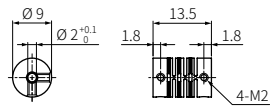
Dimensions

- Unit: mm, For the detailed drawings, follow the Autonics website.



	A	B
E18S2	Ø 2.0 ^{-0.01} _{-0.02}	1.8 ⁰ _{-0.1}
E18S2.5	Ø 2.5 ^{-0.01} _{-0.02}	2.3 ⁰ _{-0.1}

■ Coupling



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

Sold Separately

- Coupling: ERB Series (shaft outer diameter: Ø 2.5 mm model)