18 mm Diameter Incremental Rotary Encoders

E18 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 (12 g) design
- Easy installation in tight or limited spaces
- Low shaft moment of inertia
- Various resolutions: 100, 200, 300, 400 pulses per revolution
- Power supply: 5 VDC⎓ ± 5%

Ordering Information

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

E18	S	❶	-	❷	-	1	-	❸	-	5	-	❹

❶ Shaft outer diameter
2: Ø 2 mm
2.5: Ø 2.5 mm

❷ Resolution
Number: Refer to resolution in 'Specifications'

❸ Control output
N: NPN open collector output
V: Voltage output

❹ Connection
R: Axial cable type
S: Radial cable type

Product Components

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

Specifications

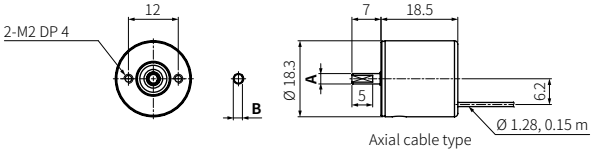
Model	E18S□-□-1-N-5-□	E18S□-□-1-V-5-□
Resolution	100 / 200 / 300 / 400 PPR model	
Control output	NPN open collector output	Voltage output
Output phase	A	
Inflow current	≤ 30 mA	-
Residual voltage	≤ 0.4 VDC⎓	≤ 0.4 VDC⎓
Outflow current	-	≤ 10 mA
Response speed 01)	≤ 1 μs	
Max. response freq.	25 kHz	
Max. allowable revolution 02)	6,000 rpm	
Starting torque	≤ 9.8 × 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: ≈ 12 g (≈ 35.4 g) Shaft outer diameter Ø 2.5 mm model: ≈ 12 g (≈ 34.2 g)	
Approval	CE c UL us EAC	CE c UL us EAC

01) Based on cable length: 1 m, I sink: 20 mA
02) Select resolution to satisfy Max. allowable revolution ≥ Max. response revolution
[max. response revolution (rpm) = $\frac{\text{max. response frequency}}{\text{resolution}}$ × 60 sec]

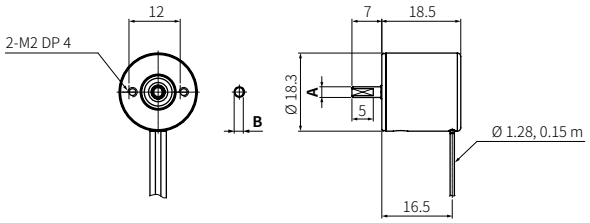
Power supply	5 VDC⎓ ± 5% (ripple P-P: ≤ 5%)
Current consumption	≤ 50 mA (no load)
Insulation resistance	Between all terminals and case: ≥ 100 MΩ (500 VDC⎓ megger)
Dielectric strength	Between all terminals and case: 500 VAC~ 50 / 60 Hz for 1 minute
Vibration	1 mm double amplitude at frequency 10 to 55 Hz (for 1 minute) in each X, Y, Z direction for 2 hours
Shock	≲ 50 G
Ambient temperature	-10 to 70 °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 1.28 mm, 3-wire, 150 mm, flat ribbon cable
Wire spec.	AWG26 (0.16 mm, 7-core), insulator diameter: Ø 1.28 mm

Dimensions

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



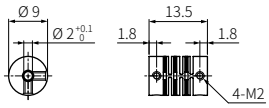
Axial cable type



Radial cable type

	A	B
E18S2	Ø 2.0 $^{-0.004}_{-0.02}$	1.7
E18S2.5	Ø 2.5 $^{-0.004}_{-0.02}$	2.2

■ 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)