

30 mm Diameter Incremental Rotary Encoders



E30 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

- Compact Ø 30 mm housing, Ø 4 mm solid shaft
- Easy installation in tight or limited spaces
- Low shaft moment of inertia
- Various resolutions: up to 3000 pulses per revolution
- Various control output options
- Power supply: 5 VDC \pm 5%, 12 - 24 VDC \pm 5%

Ordering Information

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

E30 S 4 - ① - ② - ③ - ④ - ⑤

① Resolution

Number: Refer to resolution in 'Specifications'

② Output phase

3: A, B, Z
6: A, \bar{A} , B, \bar{B} , Z, \bar{Z}

③ Control output

T: Totem pole output
N: NPN open collector output
V: Voltage output
L: Line driver output

④ Power supply

5: 5 VDC \pm 5%
24: 12 - 24 VDC \pm 5%

⑤ Connection

No mark: Axial cable type
C: Axial cable connector type

Product Components

- Product
- Bolt \times 4
- Instruction manual
- Coupling \times 1

Specifications

Model	E30S4-□-3-T-□-□	E30S4-□-3-N-□-□	E30S4-□-3-V-□-□	E30S4-□-6-L-5-□
Resolution	100 / 200 / 360 / 500 / 1,000 / 1,024 / 3,000 PPR model			
Control output	Totem pole output	NPN open collector output	Voltage output	Line driver output
Output phase	A, B, Z	A, B, Z	A, B, Z	A, \bar{A} , B, \bar{B} , Z, \bar{Z}
Inflow current	\leq 30 mA	\leq 30 mA	-	\leq 20 mA
Residual voltage	\leq 0.4 VDC \pm	\leq 0.4 VDC \pm	\leq 0.4 VDC \pm	\leq 0.5 VDC \pm
Outflow current	\leq 10 mA	-	\leq 10 mA	\leq -20 mA
Output voltage (5 VDC\pm)	\geq (power supply -2.0) VDC \pm	-	-	\geq 2.5 VDC \pm
Output voltage (12 - 24 VDC\pm)	\geq (power supply -3.0) VDC \pm	-	-	-
Response speed ⁰¹⁾	\leq 1 μ s	-	\leq 1 μ s ⁰²⁾ \leq 2 μ s ⁰³⁾	\leq 0.5 μ s
Max. response freq.	300 kHz			
Max. allowable revolution ⁰⁴⁾	5,000 rpm			
Starting torque	\leq 0.002 N m			
Inertia moment	\leq 20 g \cdot cm ² (2×10^{-6} kg \cdot m ²)			
Allowable shaft load	Radial: \leq 2 kgf, Thrust: \leq 1 kgf			
Unit weight	\approx 80 g			
Approval	CE EAC	CE EAC	CE EAC	EAC

01) Based on cable length: 2 m, I sink: 20 mA

02) Based on power supply: 5 VDC \pm , output resistance: 820 Ω

03) Based on power supply: 12 - 24 VDC \pm , output resistance: 4.7 k Ω

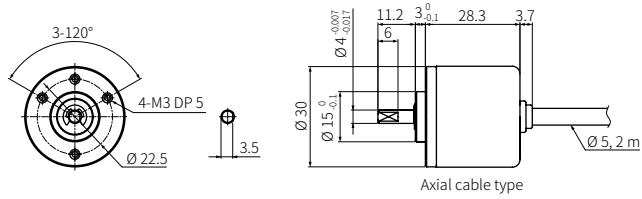
04) Select resolution to satisfy Max. allowable revolution \geq Max. response revolution

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

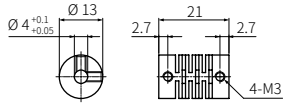
Model	E30S4-□-3-T-□-□	E30S4-□-3-N-□-□	E30S4-□-3-V-□-□	E30S4-□-6-L-5-□
Power supply	5 VDC \pm 5% (ripple P-P: \leq 5%) / 12-24 VDC \pm 5% (ripple P-P: \leq 5%) model			5 VDC \pm 5% (ripple P-P: \leq 5%)
Current consumption	\leq 80 mA (no load)			\leq 50 mA (no load)
Insulation resistance	Between all terminals and case: \geq 100 M Ω (500 VDC \pm megger)			
Dielectric strength	Between all terminals and case: 750 VAC \sim 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	\leq 50 G			
Ambient temp.	-10 to 70 $^{\circ}$ C, storage: -25 to 85 $^{\circ}$ C (no freezing or condensation)			
Ambient humi.	35 to 85%RH, storage: 35 to 90%RH (no freezing or condensation)			
Protection rating	IP50 (IEC standard)			
Connection	Axial cable type / cable connector type model			
Cable spec.	\varnothing 5 mm, 5-wire (Line driver output: 8-wire), shield cable cable type: 2 m, cable connector type: 250 mm			
Wire spec.	AWG24 (0.08 mm, 40-core), insulator diameter: \varnothing 1 mm			
Connector spec.	M17 6-pin socket type			M17 9-pin socket type

Dimensions

- Unit: mm, For the detailed drawings, follow the Autonics website.
- Following items are based on cable type.
Refer to 'Specifications' for detailed specifications of cable, wire and connector.



■ Coupling



- Parallel misalignment: $\leq 0,25 \text{ mm}$
- Angular misalignment: $\leq 5^\circ$
- End-play: $\leq 0,5 \text{ mm}$

Sold Separately

- Connector cable: CID6S-□, CID9S-□