

Side Mount Type Incremental Rotary Encoders



ENA 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

- Die-cast external housing provides excellent immunity to impact
- Designed to mount directly onto frames
- Various resolutions: 1 to 5000 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.

ENA - ① - ② - ③ - ④

① Resolution

Number: Refer to resolution in 'Specifications'

② Output phase

2: A, B
3: A, B, Z

③ Control output

T: Totem pole output
N: NPN open collector output
V: Voltage output

④ Power supply

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

Product Components

- Product (+ connector cable)
- Instruction manual
- Bolt \times 4
- Coupling \times 1

Specifications

Model	ENA-□-□-□-□-□	ENA-□-□-□-□-□	ENA-□-□-□-□-□
Resolution	1 / 2 / 5 PPR ⁰¹⁾ 10 to 5,000 PPR model		
Control output	Totem pole output	NPN open collector output	Voltage output
Output phase	A, B / A, B, Z output model	A, B / A, B, Z output model	A, B / A, B, Z output model
Inflow current	\leq 30 mA	\leq 30 mA	-
Residual voltage	\leq 0.4 VDC \pm	\leq 0.4 VDC \pm	\leq 0.4 VDC \pm
Outflow current	\leq 10 mA	-	\leq 10 mA
Output voltage (5 VDC \pm)	\geq (power supply -2.0) VDC \pm	-	-
Output voltage (12 - 24 VDC \pm)	\geq (power supply -3.0) VDC \pm	-	-
Response speed ⁰²⁾	\leq 1 μ s		
Max. response freq.	300 kHz		
Max. allowable revolution ⁰³⁾	5,000 rpm		
Starting torque	\leq 0.007 N m		
Inertia moment	\leq 80 g \cdot cm ² (8×10^{-5} kg \cdot m ²)		
Allowable shaft load	Radial: \leq 10 kgf, Thrust: \leq 2.5 kgf		
Unit weight	\approx 345 g		
Approval	CE ENEC		

01) Depending on the control output, only A, B are output.

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

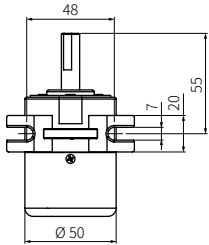
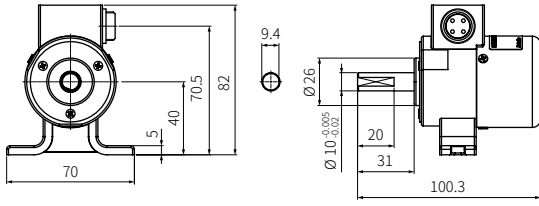
03) Select resolution to satisfy Max. allowable revolution \geq Max. response revolution

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

Power supply	5 VDC \pm 5% (ripple P-P: \leq 5%) / 12 - 24 VDC \pm 5% (ripple P-P: \leq 5%) model
Current consumption	\leq 80 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 75 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	Radial connector type
Cable spec.	\varnothing 5 mm, 2 m, shield cable A, B phase output model: 4-wire / A, B, Z phase output model: 5-wire
Wire spec.	AWG24 (0.08 mm, 40-core), insulator diameter: \varnothing 1 mm
Connector spec.	A, B phase output model: SCN-16-4P socket type A, B, Z phase output model: SCN-16-5P socket type

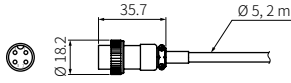
Dimensions

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

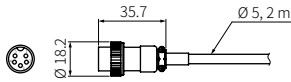


■ Connector cable

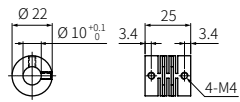
- 4-pin connector cable



- 5-pin connector cable



■ Coupling



- Parallel misalignment: $\leq 0.25 \text{ mm}$
- Angular misalignment: $\leq 5^\circ$
- End-play: $\leq 0.5 \text{ mm}$