

58 mm Diameter Incremental Rotary Encoders



E58 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

- Ø 58 mm flange incremental rotary encoders
- Accurate measurement of angle, position, revolution, speed, acceleration, and distance
- Shaft, hollow shaft, blind hollow shaft models available
- Cable type, cable connector type, axial / radial connector types available
- Various resolutions: 1 to 8000 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.

E58 ① ② - ③ - ④ - ⑤ - ⑥ - ⑦

① Shaft type

SC: Shaft clamping type
SS: Shaft synchro type
H: Hollow type
HB: Hollow Built-in type

② Shaft outer diameter / Shaft inner diameter

6: Ø 6 mm
10: Ø 10 mm
12: Ø 12 mm

③ Resolution

Number: Refer to resolution in 'Specifications'

④ Output phase

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

⑤ Control output

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

⑥ Power supply

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

⑦ Connection

Shaft type, Hollow Built-in type

No mark: Axial cable type
C: Axial cable connector type
CR: Axial connector type
CS: Radial connector type

Hollow type

No mark: Radial cable type
C: Radial cable connector type

Product Components

Shaft type	Shaft Clamping type	Shaft Synchro type	Hollow type	Hollow Built-in type
Product Components	Product, Instruction manual		Product (+ bracket), Instruction manual	
Bolt	× 10	× 8	× 4	× 4
Coupling	× 1	× 1	-	-
Bracket	× 1	× 2	-	-

Specifications

Model	E58□□-□-□-□-□-□ □-□-□-□	E58□□-□-□-□-□-□ □-□-□-□	E58□□-□-□-□-□-□ □-□-□-□	E58□□-□-□-□-□-□ □-□-□-□
Resolution	1/2/5/12 PPR ⁽⁰¹⁾ 10 to 8,000 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	≤ 30 mA	≤ 30 mA	-	≤ 20 mA
Residual voltage	≤ 0.4 VDC \equiv	≤ 0.4 VDC \equiv	≤ 0.4 VDC \equiv	≤ 0.5 VDC \equiv
Outflow current	≤ 10 mA	-	≤ 10 mA	≤ -20 mA
Output voltage (5 VDC \equiv)	≥ (power supply -2.0) VDC \equiv	-	-	≥ 2.5 VDC \equiv
Output voltage (12 - 24 VDC \equiv)	≥ (power supply -3.0) VDC \equiv	-	-	≥ (power supply -3.0) VDC \equiv
Response speed ⁽⁰²⁾	≤ 1 μs			
Max. response freq.	300 kHz			
Max. allowable revolution ⁽⁰³⁾	5,000 rpm			
Approval	CE EAC	CE EAC	CE EAC	EAC

01) Depending on the control output, only A, B or A, \bar{A} , B, \bar{B} are output.

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

03) Select resolution to satisfy Max. allowable revolution ≥ Max. response revolution.

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

Shaft type	Shaft clamping type	Shaft synchro type	Hollow type	Hollow Built-in type
Starting torque	≤ 0.004 N m		≤ 0.009 N m	
Inertia moment	≤ 15 g·cm ² (1.5 × 10 ⁻⁶ kg·m ²)		≤ 20 g·cm ² (2 × 10 ⁻⁶ kg·m ²)	
Allowable shaft load	Radial: ≤ 10 kgf, Thrust: ≤ 2.5 kgf		Radial: ≤ 2 kgf, Thrust: ≤ 1 kgf	
Unit weight (packaged)	Varies according to connection type			
Cable type, cable connector type	≈ 310 g (≈ 420 g)	≈ 285 g (≈ 395 g)	≈ 270 g (≈ 380 g)	≈ 270 g (≈ 380 g)
Connector type	≈ 230 g (≈ 340 g)	≈ 205 g (≈ 315 g)	-	≈ 200 g (≈ 310 g)

Power supply	5 VDC \equiv ± 5% (ripple P-P: ≤ 5%) / 12 - 24 VDC \equiv ± 5% (ripple P-P: ≤ 5%) model
Current consumption	Totem pole, NPN open collector, Voltage output: ≤ 80 mA (no load) / Line driver output: ≤ 50 mA (no load)
Insulation resistance	Between all terminals and case: ≥ 100 MΩ (500 VDC \equiv megger)
Dielectric strength	Between all terminals and case: 750 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	≤ 75 G
Ambient temp.	-10 to 70 °C, storage: -25 to 85 °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	Shaft type, Hollow Built-in type : Axial cable type / Axial cable connector type / Axial connector type / Radial connector type model Hollow type: Radial cable type / Radial cable connector type model
Cable spec.	Ø 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: Ø 1 mm
Connector spec.	Totem pole, NPN open collector, Voltage output: M17 6-pin socket type / Line driver output: M17 9-pin socket type

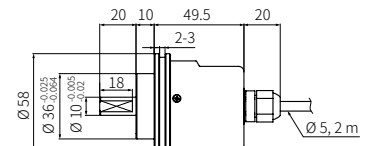
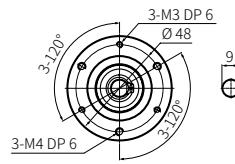
Dimensions

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

• Following items are based on cable type.

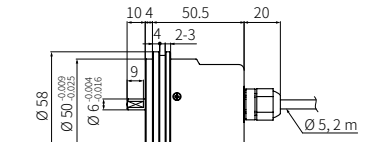
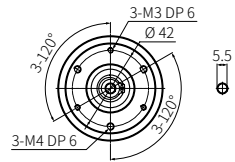
Refer to 'Specifications' for detailed specifications of cable, wire and connector.

Shaft clamping type



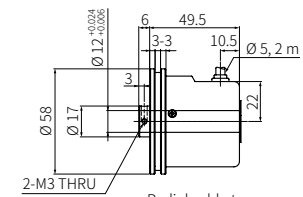
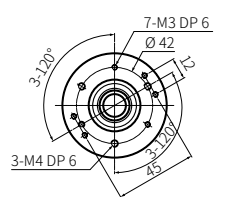
Axial cable type

Shaft synchro type



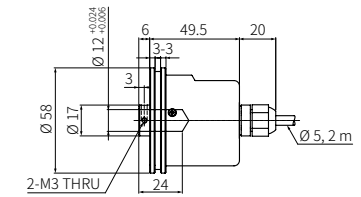
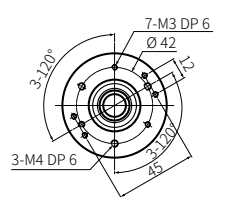
Axial cable type

Hollow type



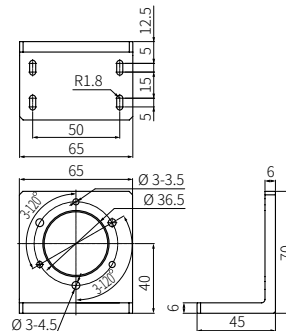
Radial cable type

Hollow Built-in type

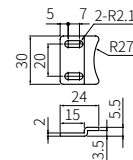


Axial cable type

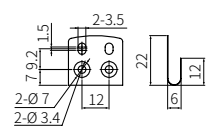
Bracket (E58SC)



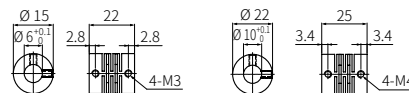
Bracket (E58SS)



Bracket (E58H / HB)



Coupling



- Parallel misalignment: ≤ 0.25 mm
- Angular misalignment: ≤ 5°
- End-play: ≤ 0.5 mm

Sold Separately

- Connector cable: CID6S-□, CID9S-□