

# 58 mm Diameter Absolute Single-Turn Rotary Encoders (Optical)



## EP58 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 single-turn absolute rotary encoders
- Shaft, blind hollow shaft models available
- Various output codes available: BCD, binary, Gray code
- Various resolutions: up to 10-bit (1024 divisions)
- 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.

EP58 ① ② - ③ - ④ ⑤ - ⑥ - ⑦

#### ① Shaft type

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

#### ② Shaft outer diameter / Shaft inner diameter

6: Ø 6 mm  
8: Ø 8 mm  
10: Ø 10 mm

#### ③ Resolution

Number: Refer to resolution in 'Output Phase / Output Angle'

#### ④ Output code

1: BCD code  
2: Binary code  
3: Gray code

#### ⑤ Rotating direction

F: Increase output when the rotating direction is clockwise base on facing the shaft  
R: Increase output when the rotating direction is counter-clockwise base on facing the shaft

#### ⑥ Control output

N: NPN open collector output  
P: PNP open collector output

#### ⑦ Power supply

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

### Product Components

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

### Specifications

Model	EP58□-□-□□-□-□	EP58□-□-□□-□-□
Resolution <sup>01)</sup>	≤ 1024 division	
Output code	BCD / Binary / Gray code model	
Control output	NPN open collector output	PNP open collector output
Inflow current	≤ 32 mA	-
Residual voltage	≤ 1 VDC $\pm$	-
Outflow current	-	≤ 32 mA
Output voltage	-	≥ (power supply - 1.5) VDC $\pm$
Response speed <sup>02)</sup>	T <sub>ON</sub> ≤ 800 nsec, T <sub>OFF</sub> ≤ 800 nsec	
Max. response freq.	35 kHz	
Max. allowable revolution <sup>03)</sup>	3,000 rpm	
Approval	CE EAC	

01) Refer to resolution in 'Output Phase / Output Angle'

02) Based on cable length: 2 m, I sink = 32 mA

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

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

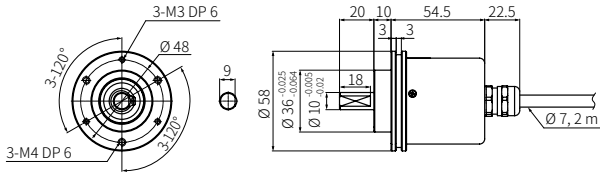
Shaft type	Shaft clamping type	Shaft synchro type	Hollow Built-in type
Starting torque	≤ 0.004 N m		≤ 0.009 N m
Inertia moment	≤ 15 g · cm <sup>2</sup> (1.5 × 10 <sup>-6</sup> kg · m <sup>2</sup> )		≤ 20 g · cm <sup>2</sup> (2 × 10 <sup>-6</sup> kg · m <sup>2</sup> )
Allowable shaft load	Radial: ≤ 10 kgf, Thrust: ≤ 2.5 kgf		Radial: ≤ 2 kgf, Thrust: ≤ 1 kgf
Unit weight (packaged)	≈ 435 g (≈ 545 g)	≈ 415 g (≈ 525 g)	≈ 410 g (≈ 520 g)

Power supply	5 VDC $\pm$ 5% (ripple P-P: ≤ 5%) / 12 - 24 VDC $\pm$ 5% (ripple P-P: ≤ 5%) model
Current consumption	≤ 100 mA (no load)
Insulation resistance	Between all terminals and case: ≥ 100 MΩ (500 VDC $\pm$ 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	≤ 50 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	Axial cable type (cable gland)
Cable spec.	Ø 7 mm, 15-wire, 2 m, shield cable

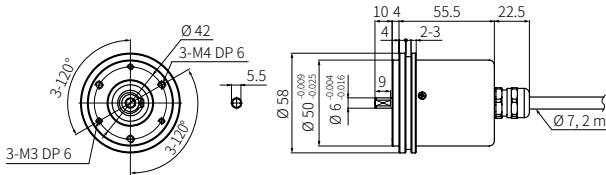
## Dimensions

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

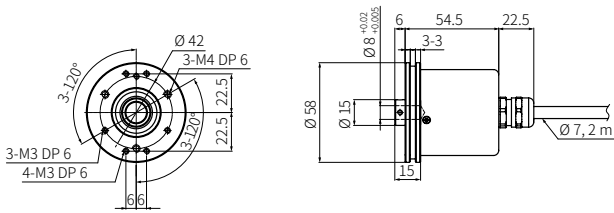
### ■ Shaft clamping type



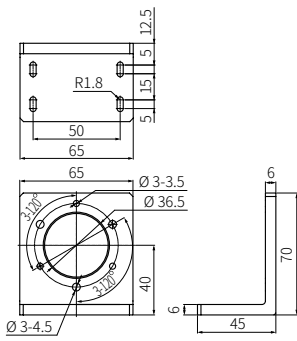
### ■ Shaft synchro type



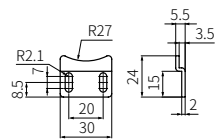
### ■ Hollow Built-in type



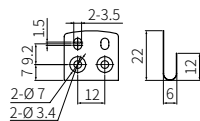
### ■ Bracket(EP58SC)



### ■ Bracket(EP58SS)

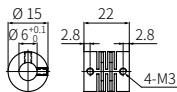


### ■ Bracket(EP58HB)

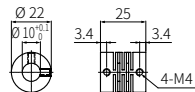


### ■ Coupling

• EP58SS6



• EP58SC10



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