Rectangular Photoelectric Sensor

BJ Series (Connector type)

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 size: W 10.6 × H 32 × L 20 mm
- IP67 protection rating (IEC standard)
- Adjuster for selecting Light ON/Dark ON mode
- Built-in sensitivity adjustment adjuster
- Reverse power protection circuit, output short overcurrent protection circuit
- Mutual interference prevention function
- Excellent noise immunity and minimal influence from ambient light
- High performance lens with long sensing distance
- Long sensing distance : Through-beam type 15 m, diffuse reflective type 1 m, polarized retroreflective type 3 m (MS-2A)
- M.S.R. (Mirror Surface Rejection) function (Polarized retroreflective type)

Ordering Information

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

BJ	❶	-	❷	D	T	-	C	-	❸

❶ Sensing distance
Number: Sensing distance (unit: mm)
Number+M: Sensing distance (unit: m)

❷ Sensing type
T: Through-beam
P: Polarized retroreflective
D: Diffuse reflective

❸ Control output
No mark: NPN open collector output
P: PNP open collector output

Product Components

Sensing type	Through-beam	Polarized retroreflective	Diffuse reflective
Product components	Product, instruction manual		
Reflector	-	MS-2A	-
Adjustment screwdriver	× 1	× 1	× 1
Bracket B	× 2	× 1	× 1
M3 bolt / nut	× 4	× 2	× 2

Specifications

Model	BJ□-TDT-C-□		BJ3M-PDT-C-□	BJ□-DDT-C-□		
Sensing type	Through-beam		Polarized retroreflective	Diffuse reflective		
Sensing distance	10 m	15 m	3 m [01]	100 mm [02]	300 mm [03]	1 m [03]
Sensing target	Opaque materials		Opaque materials	Opaque materials, translucent materials		
Min. sensing target	≥ Ø 12 mm		≥ Ø 75 mm	-		
Hysteresis	-		-	≤ 20% of sensing distance		
Response time	≤ 1 ms		≤ 1 ms	≤ 1 ms		
Light source	Red	Infrared	Red	Infrared	Red	Infrared
Peak emission wavelength	660 nm	850 nm	660 nm	850 nm	660 nm	850 nm
Sensitivity adjustment	YES (Adjuster)		YES (Adjuster)	YES (Adjuster)		
Mutual interference prevention	-		YES	YES		
Operation mode	Light ON mode - Dark ON mode selectable (Adjuster)					
Indicator	Operation indicator (red), stability indicator (green), power indicator (green) [04]					
Approval	CE EAC		CE EAC	CE EAC		
Unit weight (packaged)	≈ 20 g (≈ 45 g)		≈ 30 g (≈ 55 g)	≈ 10 g (≈ 35 g)		

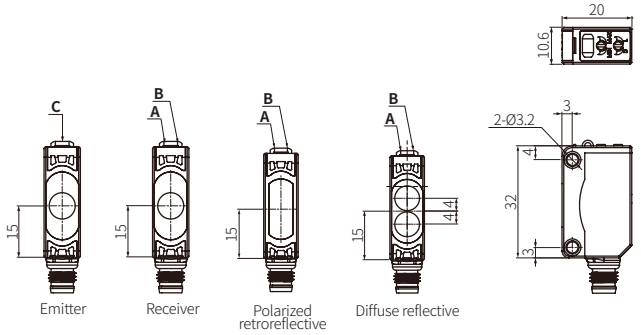
01) Reflector (MS-2A)
02) Non-glossy white paper 100 × 100 mm
03) Non-glossy white paper 300 × 300 mm
04) Only for the emitter

Power supply	12-24 VDC⎓ ±10 % (ripple P-P: ≤ 10%)
Current consumption	It depends on the sensing type
Through-beam	Emitter: ≤ 20 mA, receiver: ≤ 20 mA
Reflective	≤ 30 mA
Control output	NPN open collector output / PNP open collector output Model
Load voltage	≤ 26.4 VDC⎓
Load current	≤ 100 mA
Residual voltage	NPN: ≤ 1 VDC⎓, PNP: ≤ 2.5 VDC⎓
Protection circuit	Reverse power protection circuit, output short overcurrent protection circuit
Insulation resistance	≥ 20 MΩ (500 VDC⎓ megger)
Noise immunity	±240 VDC⎓ the square wave noise (pulse width: 1 μs) by the noise simulator
Dielectric strength	1,000 VAC~ 50/60 Hz for 1 min
Vibration	1.5 mm double amplitude at frequency of 10 to 55 Hz (for 1 min) in each X, Y, Z direction for 2 hours
Shock	500 m/s² (≈ 50 G) in each X, Y, Z direction for 3 times
Ambient illuminance (receiver)	Sunlight: ≤ 11,000 lx, incandescent lamp: ≤ 3,000 lx
Ambient temperature	-25 to 55 °C, storage: -40 to 70 °C (no freezing or condensation)
Ambient humidity	35 to 85 %RH, storage: 35 to 85 %RH (no freezing or condensation)
Protection rating	IP67 (IEC standard)
Connection	Connector type
Connector	M8 4-pin plug type
Material	Case: PC+ABS, CAP: PC, sensing part: PMMA, bracket: SUS304, bolt: SCM, nut: SCM, sleeve: Brass, Ni -plate

CE EAC

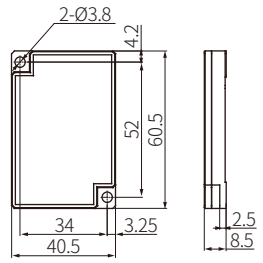
Dimensions

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

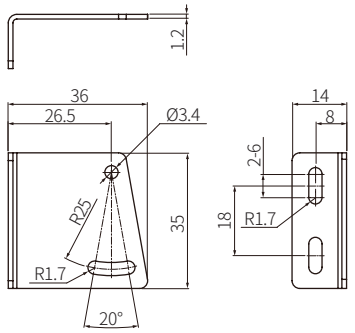


A	Operation indicator (red)	C	Power indicator (green)
B	Stability indicator (green)		

■ Reflector (MS-2A)

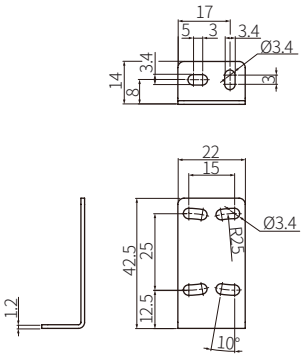


■ Bracket B (BJ BRACKET B)



Sold Separately

- Reflector: MS Series
- Retroreflective tape: MST Series
- Bracket A
- Connector cable, connector connection cable

Sold Separately: Bracket A

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