

# Rectangular Photoelectric Sensors



## BJX 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

- Long sensing distance with high quality lens  
: Through-beam type 30 m, diffuse reflective type 1 m, polarized retroreflective type 3 m (MS-2A)
- M.S.R. (Mirror Surface Rejection) function (Polarized retroreflective type)
- Compact size : W 11 × H 32 × L 20 mm
- Switch 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 (except through-beam type)
- Excellent noise immunity and minimal influence from ambient light
- IP65 protection rating (IEC standard)

### Ordering Information

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

**BJX** ① - ② **D T** - ③ - ④

#### ① Sensing distance

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

#### ② Sensing type

T: Through-beam  
P: Polarized retroreflective  
D: Diffuse reflective

#### ③ Connection

No mark: Cable type  
C: Connector type

#### ④ 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 A or B <sup>01)</sup>	× 2	× 1	× 1
M3 bolt	× 4	× 2	× 2

01) Cable type, cable connector type: Bracket A, connector type: Bracket B

### Specifications

Model	BJX□-TDT-□-□	BJX3M-PDT-□-□	BJX□-DDT-□-□
Sensing type	Through-beam	Polarized retroreflective	Diffuse reflective
Sensing distance	10 m   15 m   30 m	3 m <sup>01)</sup>	100 mm <sup>02)</sup>   300 mm <sup>02)</sup>   1 m <sup>03)</sup>
Sensing target	Opaque materials	Opaque materials	Opaque materials, translucent materials
Min. sensing target	≥ Ø 15 mm	≥ Ø 75 mm	-
Hysteresis	-	-	≤ 20% of sensing distance
Response time	≤ 1 ms		
Light source	Red LED   Infrared   Red LED	Red LED	Infrared   Red LED   Red LED
Peak emission wavelength	660 nm   850 nm   660 nm	660 nm	850 nm   660 nm   660 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 (yellow), stability indicator (green), power indicator (red) <sup>04)</sup>		
Approval	CE, RoHS, ENEC	CE, RoHS, ENEC	CE, RoHS, ENEC

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

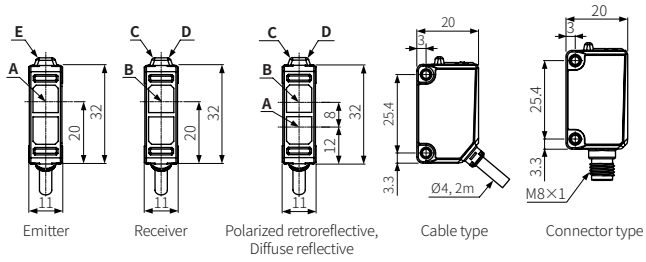
Unit weight (packaged)	Through-beam	Polarized retroreflective	Diffuse reflective
Cable type	≈ 95 g (≈ 145 g)	≈ 50 g (≈ 115 g)	≈ 50 g (≈ 100 g)
Connector type	≈ 12 g (≈ 65 g)	≈ 6 g (≈ 75 g)	≈ 6 g (≈ 60 g)

Power supply	10-30 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	≤ 30 VDC±
Load current	≤ 100 mA
Residual voltage	NPN: ≤ 1 VDC±, PNP: ≤ 2 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/s <sup>2</sup> (≈ 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 60 °C, storage: -40 to 70 °C (no freezing or condensation) <sup>01)</sup>
Ambient humidity	35 to 85 %RH, storage: 35 to 85 %RH (no freezing or condensation)
Protection rating	IP65 (IEC standard)
Connection	Cable type / Connector type model
Cable spec.	Ø 4 mm, 3-wire (Emitter: 2-wire), 2 m
Wire spec.	AWG26 (0.52 mm, 20-core), insulator outer diameter: Ø 1 mm
Connector	M8 4-pin plug type
Material	Case: PC, CAP: PC, sensing part: PMMA

01) UL approved ambient temperature: 40 °C

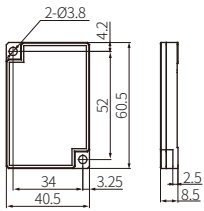
## Dimensions

- Unit: mm, For the detailed drawings, follow the Autonics website.
  - This dimensions shows the cable type and connector type.
- Refer to the 'Specifications' for the core, wiring, and connector spec.

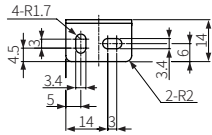


<b>A</b>	Optical axis of emitter	<b>D</b>	Stability indicator (green)
<b>B</b>	Optical axis of receiver	<b>E</b>	Power indicator (red)
<b>C</b>	Operation indicator (yellow)		

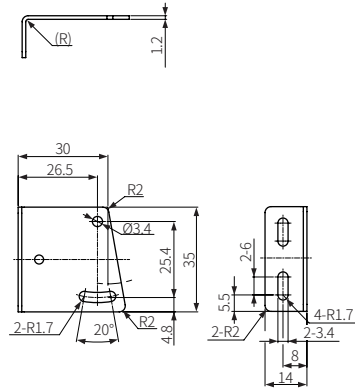
### ■ Reflector (MS-2A)



### ■ Bracket A



### ■ Bracket B (BJP SERIES BRACKET B)



## Sold Separately

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