

Oil-resistant Photoelectric Sensors



BJR 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 lens of high performance
 - : Through-beam type 15 m, diffuse reflective type 1 m, polarized retroreflective type 3 m (MS-2S)
- M.S.R. (Mirror Surface Rejection) function (Polarized retroreflective type)
- Compact size : W 11 × H 32 × L 20 mm
- Light ON/Dark ON operation mode switch
- Built-in sensitivity adjustment adjuster
- Reverse power protection circuit and output short overcurrent protection circuit
- Mutual interference prevention function (except through-beam type)
- Excellent noise immunity and minimal influence from ambient light
- Stronger in the environment with full of cutting fluid or lubricating oil (optimized for automobile and machine tool industry)
- IP67 protection rating (IEC standard), IP67G oil resistance protection rating (JEM 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.

BJR 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
W: Cable 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-2S	-
Adjustment screwdriver	× 1	× 1	× 1
Bracket A	× 2	× 1	× 1
M3 bolt	× 4	× 2	× 2

Specifications

Model	BJR15M-TDT-□-□	BJR3M-PDT-□-□	BJR□-DDT-□-□	
Sensing type	Through-beam	Polarized retroreflective	Diffuse reflective	
Sensing distance	15 m	3 m ⁽⁰¹⁾	100 mm ⁽⁰²⁾	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	-	-	
Light source	Infrared	Red	Infrared	Red
Peak emission wavelength	850 nm	660 nm	850 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) ⁽⁰⁴⁾			
Approval	CE	CE	CE	

01) Reflector (MS-2S)

02) Non-glossy white paper 100 × 100 mm

03) Non-glossy white paper 300 × 300 mm

04) Only for the emitter

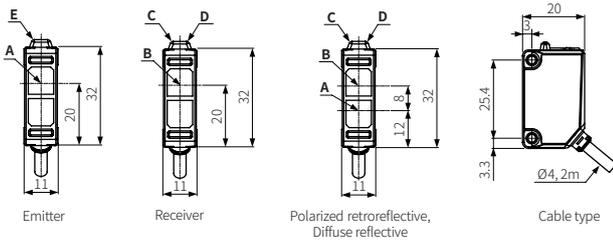
Unit weight (packaged)	Through-beam	Polarized retroreflective	Diffuse reflective
Cable type	≈ 95 g (≈ 145 g)	≈ 50 g (≈ 115 g)	≈ 50 g (≈ 100 g)
Cable connector type	≈ 55 g (≈ 105 g)	≈ 30 g (≈ 95 g)	≈ 30 g (≈ 80 g)

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 ² (≈ 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)
Ambient humidity	35 to 85 %RH, storage: 35 to 85 %RH (no freezing or condensation)
Protection rating	IP67 (IEC standard), IP67G (JEM standard)
Connection	Cable type / Cable connector type model
Cable spec.	Ø 4 mm, 3-wire (emitter: 2-wire), cable type: 2 m, cable connector type: 300 mm
Wire spec.	AWG26 (0.52 mm, 20-core), insulator outer diameter: Ø 1 mm
Connector	M12 4-pin plug type
Material	Case: ABS, CAP: PA12, sensing part: PMMA

Dimensions

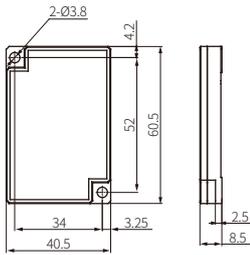
- Unit: mm, For the detailed drawings, follow the Autonics website.
- This dimensions shows the cable type.

Refer to the 'Specifications' for the core, wiring, and connector spec.

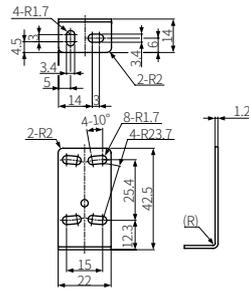


A	Optical axis of emitter	D	Stability indicator (green)
B	Optical axis of receiver	E	Power indicator (red)
C	Operation indicator (yellow)		

■ Reflector (MS-2S)



■ Bracket A



Sold Separately

- Reflector: MS Series
- Bracket B (BJP SERIES BRACKET B)
- Retroreflective tape: MST Series
- Connector cable, connector connection cable

Sold Separately: Bracket B (BJP SERIES BRACKET B)

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

