

Rectangular Photoelectric Sensor



BJ Series (Cable 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
- IP65 protection rating (IEC standard)
- Adjuster for selecting Light ON/Dark ON mode
- Built-in sensitivity adjustment adjuster (except BJG30-DDT)
- Reverse power protection circuit, output short overcurrent protection circuit
- Mutual interference prevention function (except through-beam and BGS reflective type)
- Excellent noise immunity and minimal influence from ambient light

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 ① ② - ③ D T - ④

① Feature

No mark: General type
G: Transparent glass sensing type (Diffuse reflective type)
N: Micro spot type (Narrow beam reflective type)

② Sensing distance

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

③ Sensing type

T: Through-beam
P: Polarized retroreflective
D: Diffuse reflective
B: BGS reflective
N: Narrow beam reflective

④ Control output

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

Product Components

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

Specifications

Model	BJ□-TDT-□			BJ3M-PDT-□	BJ□-BDT-□	BJN□-NDT-□	
Sensing type	Through-beam			Polarized retroreflective	BGS reflective	Narrow beam reflective	
Sensing distance	7 m	10 m	15 m	3 m ⁽⁰¹⁾	10 to 30 mm ⁽⁰²⁾	10 to 50 mm ⁽⁰²⁾	30 to 70 mm ⁽⁰³⁾ 70 to 130 mm ⁽⁰³⁾
Sensing target	Opaque materials			Opaque materials	Opaque materials, translucent materials	Opaque materials, translucent materials	
Min. sensing target	≥ Ø8 mm	≥ Ø12 mm		≥ Ø75 mm	-	≥ Ø0.2 mm (copper wire)	
Hysteresis	-			-	≤ 10% of sensing distance	≤ 25% of sensing distance	≤ 20% of sensing distance
Black/white difference	-			-	≤ 10% of sensing distance	-	
Response time	≤ 1 ms			≤ 1 ms	≤ 1.5 ms	≤ 1 ms	
Light source	Red	Red	Infrared	Red	Red	Red	
Peak emission wavelength	650 nm	660 nm	850 nm	660 nm	660 nm	650 nm	
Min. spot size	-			-	≈ Ø5.0 mm	≈ Ø4.5 mm	≈ Ø2.0 mm ≈ Ø2.5 mm
Sensitivity adjustment	YES (Adjuster)			YES (Adjuster)	YES (Adjuster) ⁽⁰⁴⁾	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) ⁽⁰⁵⁾						
Approval	CE ENEC			CE ENEC	CE ENEC	CE ENEC	
Unit weight (packaged)	≈ 90 g (≈ 115 g)			≈ 60 g (≈ 85 g)	≈ 50 g	≈ 45 g	

01) Reflector (MS-2A)

02) Non-glossy white paper 50 × 50 mm

03) Non-glossy white paper 100 × 100 mm

04) -10% of max. sensing distance, Non-glossy white paper

05) Only for the emitter

Model	BJ□-DDT-□			BJG30-DDT
Sensing type	Diffuse reflective			Diffuse reflective
Sensing distance	100 mm ⁽⁰¹⁾	300 mm ⁽⁰¹⁾	1 m ⁽⁰²⁾	15 mm ⁽⁰³⁾ or 30 mm ⁽⁰³⁾
Sensing target	Opaque materials, translucent materials			Transparent glass or opaque materials, translucent materials
Hysteresis	≤ 20% of sensing distance			≤ 20% of sensing distance
Response time	≤ 1 ms			≤ 1 ms
Light source	Infrared	Red	Infrared	Infrared
Peak emission wavelength	850 nm	660 nm	850 nm	850 nm
Sensitivity adjustment	YES (Adjuster)			-
Mutual interference prevention	YES			YES
Operation mode	Light ON mode - Dark ON mode selectable (Adjuster)			Light ON
Indicator	Operation indicator (red), stability indicator (green)			Operation indicator (red), stability indicator (green)
Approval	CE ENEC			CE ENEC
Unit weight (packaged)	≈ 45 g (≈ 70 g)			≈ 45 g

01) Non-glossy white paper 100 × 100 mm

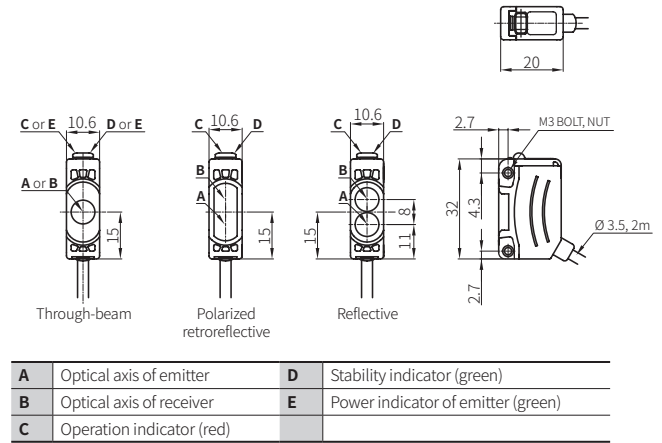
02) Non-glossy white paper 300 × 300 mm

03) Transparent Glass 50 × 50 mm, t = 3.0 mm

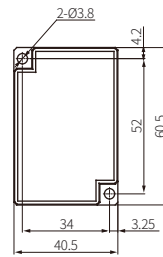
Power supply	12-24 VDC ± 10% (ripple P-P: ≤ 10%)
Current consumption	It depends on the sensing type
Through-beam	Emitter: ≤ 20 mA, receiver: ≤ 20 mA
Reflective	≤ 30 mA
Control output	NPN open collector output / PNP open collector output model
Load voltage	≤ 26.4 VDC ±
Load current	≤ 100 mA
Residual voltage	NPN: ≤ 1 VDC ±, PNP: ≤ 2.5 VDC ± (BGS reflective type: ≤ 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 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	IP65 (IEC standard)
Connection	Cable type
Cable spec.	Ø 3.5 mm, 3-wire (emitter: 2-wire), 2 m
Wire spec.	AWG24 (0.08 mm, 40-core), insulator outer diameter: Ø 1 mm
Material	Case: PC+ABS, CAP: PC, sensing part: PMMA, bracket: SUS304, bolt: SCM, nut: SCM, sleeve: Brass, Ni-plate

Dimensions

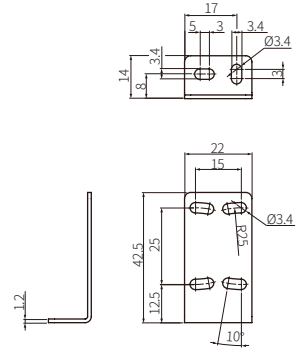
• Unit: mm, For the detailed drawings, follow the Autonics website.



■ Reflector (MS-2A)



■ Bracket A



Sold Separately

- Reflector: MS Series
- Retroreflective tape: MST Series
- Bracket B: BJ BRACKET B

Sold Separately: Bracket B (BJ BRACKET B)

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

