

# General Photoelectric Sensors



## BM 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

- Easy to mount at a narrow space with small size and light weight
- Built-in external sensitivity adjuster (Diffuse reflective type only)
- Easy to mount by screw type in mounting hole
- Built-in reverse power protection circuit and output short overcurrent protection circuit

### Ordering Information

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

**BM ① - ② D T**

#### ① Sensing distance

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

#### ② Sensing type

T: Through-beam  
M: Retroreflective  
D: Diffuse reflective

### Product Components

Sensing type	Through-beam	Retroreflective	Diffuse reflective
<b>Product components</b>	Product, instruction manual		
Reflector	-	MS-2	-
Adjustment screwdriver	-	-	× 1
Bracket	× 2	× 1	× 1
M4 bolt / nut	× 4	× 2	× 2

### Specifications

Model	BM3M-TDT	BM1M-MDT	BM200-DDT
<b>Sensing type</b>	Through-beam	Retroreflective	Diffuse reflective
<b>Sensing distance</b>	3 m	1 m <sup>(01)</sup>	200 mm <sup>(02)</sup>
<b>Sensing target</b>	Opaque materials	Opaque materials	Opaque materials, translucent materials
<b>Min. sensing target</b>	≥ Ø 8 mm	≥ Ø 60 mm	-
<b>Hysteresis</b>	-	-	≤ 10 % of sensing distance
<b>Response time</b>	≤ 3 ms		
<b>Light source</b>	Infrared		
<b>Peak emission wavelength</b>	940 nm		
<b>Sensitivity adjustment</b>	-	-	YES (Adjuster)
<b>Operation mode</b>	Dark ON mode	Dark ON mode	Light ON mode (option: Dark ON mode)
<b>Indicator</b>	Operation indicator (red)		
<b>Approval</b>	CE EAC	CE EAC	CE EAC
<b>Unit weight (packaged)</b>	≈ 170 g (≈ 240 g)	≈ 105 g (≈ 188 g)	≈ 88 g (≈ 156 g)

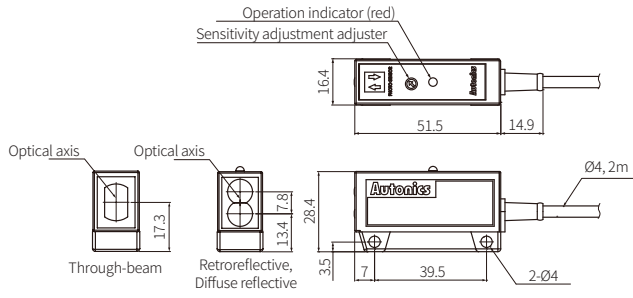
01) Reflector (MS-2)

02) Non-glossy white paper 200 × 200 mm

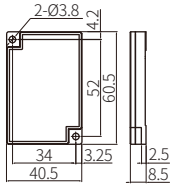
<b>Power supply</b>	12-24 VDC= ± 10 % (ripple P-P: ≤ 10 %)
<b>Current consumption</b>	It depends on the sensing type
Through-beam	Emitter: ≤ 45 mA, receiver: ≤ 45 mA
Reflective	≤ 40 mA
<b>Control output</b>	NPN open collector output
Load voltage	≤ 30 VDC=
Load current	≤ 100 mA
Residual voltage	≤ 1.5 VDC=
<b>Protection circuit</b>	Reverse power protection circuit, output short overcurrent protection circuit
<b>Insulation resistance</b>	≥ 20 MΩ (500 VDC= megger)
<b>Noise immunity</b>	± 240 VDC= the square wave noise (pulse width: 1 μs) by the noise simulator
<b>Dielectric strength</b>	1,000 VAC~ 50/60 Hz for 1 min
<b>Vibration</b>	1.5 mm double amplitude at frequency of 10 to 55 Hz (for 1 min) in each X, Y, Z direction for 2 hours
<b>Shock</b>	500 m/s <sup>2</sup> (≈ 50 G) in each X, Y, Z direction for 3 times
<b>Ambient illuminance (receiver)</b>	Sunlight: ≤ 11,000 lx, incandescent lamp: ≤ 3,000 lx
<b>Ambient temperature</b>	-10 to 60 °C, storage: -25 to 70 °C (no freezing or condensation)
<b>Ambient humidity</b>	35 to 85 %RH, storage: 35 to 85 %RH (no freezing or condensation)
<b>Protection rating</b>	-
<b>Connection</b>	Cable type
<b>Cable spec.</b>	Ø 4 mm, 3-wire, 2 m (Emitter: Ø 3 mm, 2-wire, 2 m)
<b>Wire spec.</b>	AWG22 (0.08 mm, 60-core), insulator outer diameter: Ø 1.25 mm
<b>Material</b>	Case: ABS, sensing part: PC (through-beam type) or Acrylic (retroreflective, diffuse reflective type), bracket: SPCC, bolt: SCM, nut: SCM

## Dimensions

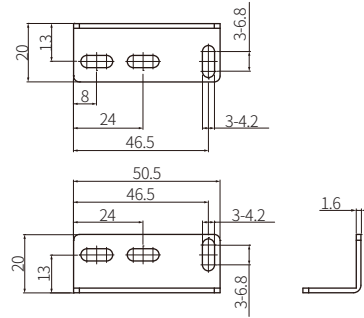
- Unit: mm, For the detailed drawings, follow the Autonics website.



### ■ Reflector (MS-2)



### ■ Bracket



## Sold Separately

- Reflector: MS Series
- Retroreflective tape: MST Series