

Front/Side Mount Photoelectric Sensors



BH 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 front (M18 nut) and side (M3 bolt/nut) installation
- NPN open collector / PNP open collector simultaneous output
- Sensing distance: Through-beam type 20 m / Polarized retroreflective type 4 m / Diffuse reflective type 1 m, 300 mm
- Small size: W 14 × H 34.5 × L 28 mm
- M.S.R. (Mirror Surface Rejection) function prevents malfunction from reflective objects such as metals or mirrors (polarized retroreflective type)
- Built-in sensitivity adjuster
- Light ON/Dark ON selectable by switch
- Operation indicator (red), stability indicator (green)
- Reverse power protection circuit, output short overcurrent protection circuit
- Mutual interference prevention function (except through-beam type)
- IP67 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.

BH ① - ② **D T**

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

Product Components

Sensing type	Through-beam	Polarized retroreflective	Diffuse reflective
Product components	Product, instruction manual		
Reflector	-	MS-2A	-
Adjustment screwdriver	× 1	× 1	× 1
M18 fixing nut / Fixing cap	× 2	× 1	× 1
Bracket	× 2	× 1	× 1
M3 bolt / nut	× 4	× 2	× 2

Specifications

Model	BH20M-TDT	BH4M-PDT	BH□-DDT	
Sensing type	Through-beam	Polarized retroreflective	Diffuse reflective	
Sensing distance	20 m	4 m ⁽⁰¹⁾	300 mm ⁽⁰²⁾	1 m ⁽⁰³⁾
Sensing target	Opaque materials	Opaque materials	-	-
Min. sensing target	≥ Ø 20 mm	≥ Ø 75 mm	-	-
Hysteresis	-	-	≤ 20% of sensing distance	
Response time	≤ 1 ms			
Light source	Red	Red	Red	Infrared
Peak emission wavelength	660 nm	660 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 ENEC	CE ENEC	CE ENEC	
Unit weight (packaged)	≈ 120 g (≈ 190 g)	≈ 60 g (≈ 140 g)	≈ 60 g (≈ 130 g)	

01) Reflector (MS-2A)

02) Non-glossy white paper 100 × 100 mm

03) Non-glossy white paper 300 × 300 mm

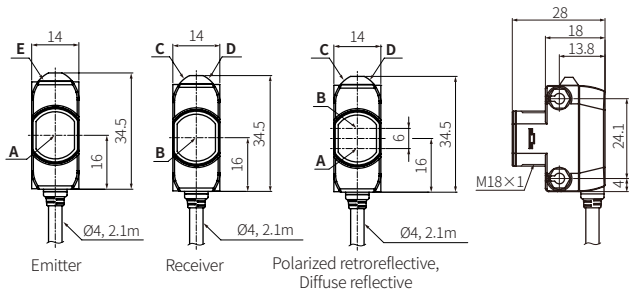
04) Only for the emitter

Power supply	12-24 VDC \pm 10% (ripple P-P: ≤ 10%)
Current consumption	It depends on the sensing type
Through-beam	Emitter: ≤ 20 mA, receiver: ≤ 20 mA
Polarized retroreflective	≤ 30 mA
Diffuse reflective (300 mm)	≤ 30 mA
Diffuse reflective (1 m)	≤ 35 mA
Control output	NPN open collector - PNP open collector simultaneous output
Load voltage	≤ 26.4 VDC \pm
Load current	≤ 100 mA
Residual voltage	NPN: ≤ 1 VDC \pm , PNP: ≤ 2.5 VDC \pm
Protection circuit	Reverse power protection circuit, output short overcurrent protection circuit
Insulation resistance	≥ 20 MΩ (500 VDC \pm megger)
Dielectric strength	1,000 VAC \sim 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 ⁽⁰¹⁾ (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	Cable type
Cable spec.	Ø 4 mm, 4-wire (Emitter: 2-wire), 2.1 m
Wire spec.	AWG24 (0.08 mm, 40-core), insulator outer diameter: Ø 1.03 mm
Material	Case: PC, CAP: PC, sensing part: PMMA

01) UL approved ambient temperature 40°C

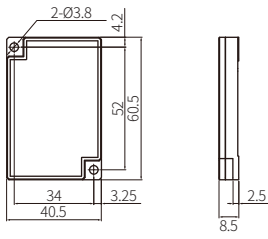
Dimensions

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

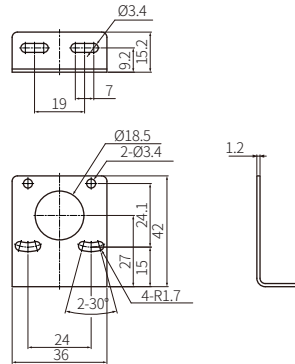


A	Optical axis of emitter	D	Stability indicator (green)
B	Optical axis of receiver	E	Power indicator (green)
C	Operation indicator (red)		

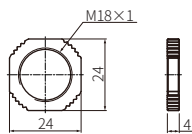
■ Reflector (MS-2A)



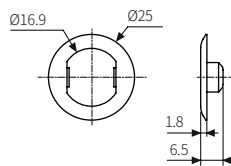
■ Bracket



■ M18 fixing nut



■ Fixing cap



Sold Separately

- Reflector: MS Series
- Retroreflective tape: MST Series