

# Diffuse Reflective Long-distance Photoelectric Sensors



## BA 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

- Realization of long sensing distance (2 m) by special optical design
- IP64 protection rating (IEC standard)
- Built-in stability indicator
- Sensitivity adjustment function
- 2 color display

### Ordering Information

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

**BA 2M - D D T ① - ②**

#### ① Operation mode

No mark: Light ON

D: Dark ON

#### ② Control output

No mark: NPN open collector output

P: PNP open collector output

### Product Components

- Product
- Instruction manual
- Adjustment screwdriver

### Specifications

Model	BA2M-DDT□-□
Sensing type	Diffuse reflective
Sensing distance	2 m <sup>01)</sup>
Sensing target	Opaque materials, translucent materials
Hysteresis	≤ 20 % of sensing distance
Response time	≤ 1 ms
Light source	Infrared
Peak emission wavelength	850 nm
Sensitivity adjustment	YES (Adjuster)
Operation mode	Light ON mode / Dark ON mode model
Indicator	Operation indicator (red), stability indicator (Light ON: orange, Dark ON: green)
Approval	CE ENEC
Unit weight	≈ 50 g

01) Non-glossy white paper 200 × 200 mm

Power supply	12-24 VDC ± 10 % (ripple P-P: ≤ 10%)
Current consumption	≤ 15 mA (output ON: ≤ 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 ±
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	100 m/s <sup>2</sup> (≈ 10 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: -25 to 70 °C (no freezing or condensation)
Ambient humidity	35 to 85 %RH, storage: 35 to 85 %RH (no freezing or condensation)
Protection rating	IP64 (IEC standard)
Connection	Cable type
Cable spec.	Ø 3 mm, 3-wire, 2 m
Wire spec.	AWG24 (0.08 mm, 40-core), insulator outer diameter: Ø 1 mm
Material	Case: ABS, CAP: PC, sensing part: PC, adjuster: IXEF

### Dimensions

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

