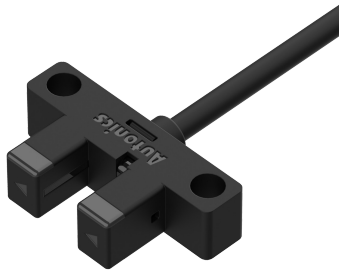


Groove-Depth 6.5 mm Photomicro Sensors



BS3 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

- Ultra compact size
- Select appearance depending on the installation environment (K, F, R, U, L type)
- Minimize malfunction and improve visibility
 - Minimize sensing part, gap and flush of the body to reduce malfunctions caused by a foreign substance
 - Built-in the operation indicator can be checked in many directions
- Selectable models for the operation of indicator
 - Indicator turns ON under the light received condition
 - Indicator turns ON under the light interrupted condition
- Resistant structure for shock and vibration
 - Shock 15,000 m/s² (approx. 1,500 G)
 - Vibration 10 to 2,000 Hz (1.5 mm double amplitude)
- Selectable operation modes (Light ON/Dark ON)
- High-frequency response : 2 kHz

Ordering Information

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

BS 3 - ① 1 ② - ③

① Appearance

F	
K	
L	
R	
U	



② Indicator

M: Turns ON under the light received condition
R: Turns ON under the light interrupted condition

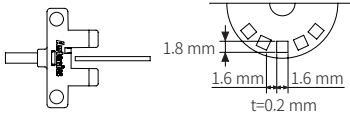
③ Control output

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

Specifications

Series	BS3
Sensing type	Through-beam
Sensing distance	5 mm
Sensing target	Opaque materials
Min. sensing target	≥ 0.8 mm × 1.8 mm
Hysteresis	≤ 0.05 mm
Response time	Received light: ≤ 20 μs, Interrupted light: ≤ 100 μs
Response frequency⁰¹⁾	2 kHz
Light source	Infrared LED
Peak emission wavelength	940 nm
Operation mode	Built-in Light ON / Dark ON
Indicator	Operation indicator (red)
Approval	CE  
Unit weight	≈ 50 g

01) Response frequency is the value getting from revolving the circle panel below.



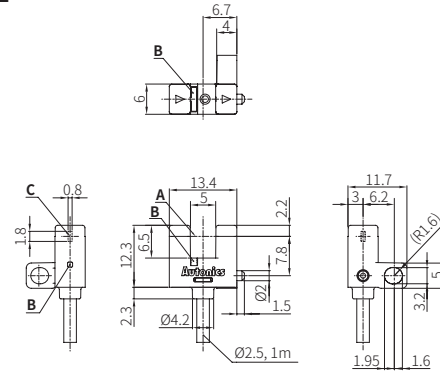
Power supply	5-24 VDC± ±10% (ripple P-P: ≤ 10%)
Current consumption	≤ 15 mA
Control output	NPN open collector output / PNP open collector output model
Load voltage	≤ 24 VDC±
Load current	≤ 50 mA
Residual voltage	NPN: ≤ 1.2 VDC±, PNP: ≤ 1.2 VDC±
Protection circuit	Reverse power polarity protection circuit, output short overcurrent protection circuit
Insulation resistance	≥ 20 MΩ (250 VDC± megger)
Noise immunity	± 240 VDC± 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 (max. acceleration 196 m/s ²) at frequency of 10 to 2,000 Hz in each X, Y, Z direction for 2 hours
Shock	15,000 m/s ² (≈ 1,500 G) in each X, Y, Z direction for 3 times
Ambient illuminance (receiver)	Fluorescent lamp: ≤ 1,000 lx
Ambient temperature	-20 to 55 °C, storage: -25 to 85 °C (no freezing or condensation environment)
Ambient humidity	35 to 85%RH, storage: 35 to 85%RH (no freezing or condensation environment)
Protection rating	IP50 (IEC standard)
Connection method	Cable type
Cable spec.	Ø 2.5 mm, 4-wire, 1 m
Wire spec.	AWG28 (0.08 mm, 19-core), insulator outer diameter: Ø 0.65 mm
Material	Case: PBT, sensing part: PC

Dimensions

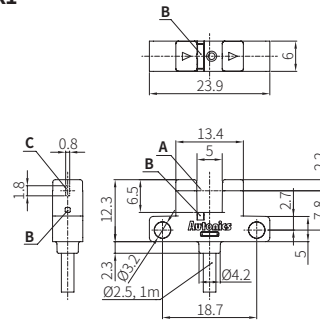
Unit: mm, For the detailed drawings, follow the Autonics website.

A	Optical axis
B	Operation indicator (red)
C	Sensing window

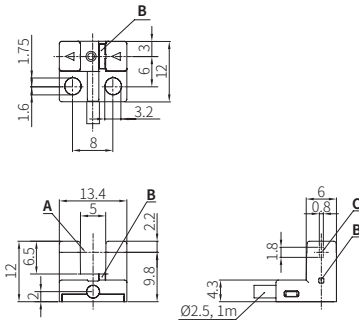
BS3-F1



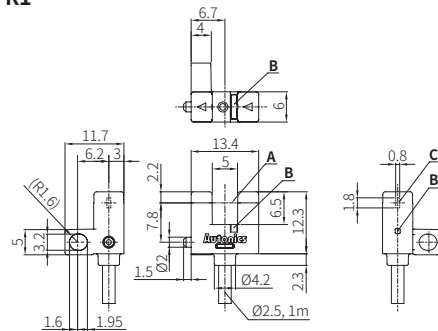
BS3-K1



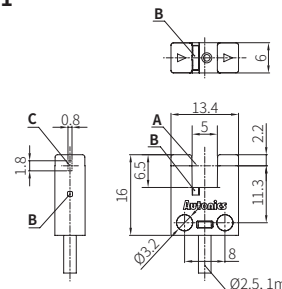
BS3-L1



BS3-R1



BS3-U1



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