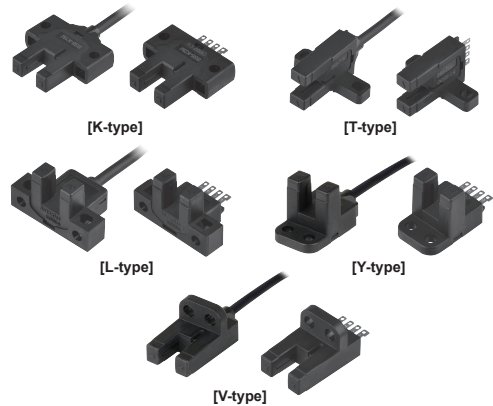


Photomicro Sensor

■ Features

- Ultra compact, Built-in amplifier, NPN/PNP open collector output
- Various selection by installation position (appearance: K, T, L, Y, V type)
- Light ON / Dark ON selectable by control terminal/cable
- High speed response frequency: 2kHz
- Wide range of power source: 5-24VDC (easy to connect with various IC, relay, programmable controller etc)
- Dust resistance structure : Protecting by window of emitter/receiver
- Red LED status indication



⚠ Please read "Safety Considerations" in the instruction manual before using.



■ Ordering Information

BS 5 - K 2 M - P

Item	Sensing distance	5	Unit: mm (fixed)		
		BS	Photo electronic sensor		
	Appearance	K	K-Type	Y	Y-Type
		T	T-Type	V	V-Type
	Connection type	L	L-Type		
		1	Cable type		
		2	Connector type		
	Size	M	Middle		
		P	PNP open collector output		
	Control output	No mark	NPN open collector output		

■ Specifications

Model	NPN open collector output PNP open collector output	BS5-K1M BS5-K1M-P	BS5-T1M BS5-T1M-P	BS5-L1M BS5-L1M-P	BS5-Y1M BS5-Y1M-P	BS5-V1M BS5-V1M-P	BS5-K2M BS5-K2M-P	BS5-T2M BS5-T2M-P	BS5-L2M BS5-L2M-P	BS5-Y2M BS5-Y2M-P	BS5-V2M BS5-V2M-P
Sensing type	Through-beam (not modulated)										
Sensing distance	5mm fixed										
Sensing target	Ø0.8×2mm opaque materials										
Hysteresis	0.05mm										
Response time	Light ON: max. 20µs, dark ON: max. 100µs										
Response frequency ^{※1}	2kHz										
Power supply	5-24VDC \pm 10% (ripple P-P: max. 10%)										
Current consumption	Max. 30mA (at 26.4VDC)										
Light source	Infrared LED (940nm)										
Operation mode	Light ON / Dark ON selectable by control cable					Light ON / Dark ON selectable by control terminal					
Control output	NPN or PNP open collector output ●Load voltage: max. 30VDC \pm ●Load current: max. 100mA ●Residual voltage: max. 1.2VDC \pm										
Protection circuit	Reverse polarity protection circuit, output short overcurrent protection circuit										
Indicator	Operation Indicator: red LED										
Connection	Cable type					Connector type					
Insulation resistance	Over 20MΩ (at 250VDC megger)										
Noise immunity	±240V the square wave noise (pulse width:1µs) by the noise simulator										
Dielectric strength	1,000VAC 50/60Hz for 1 minute										
Vibration	1.5mm amplitude at frequency of 10 to 55Hz in each X, Y, Z direction for 2 hours										
Shock	500m/s ² (approx. 50G) in each X, Y, Z direction for 3 times										
Environment	Ambient illumination	Fluorescent lamp: max. 1000lx (receiver illumination)									
	Ambient temperature	-20 to 55°C, storage: -25 to 85°C									
	Ambient humidity	35 to 85%RH, storage: 35 to 85%RH									
Protection structure	IP50 (IEC standard)										
Material	Polybutylene terephthalate										
Cable	Ø3mm, 4-wire, 1m (AWG28, core diameter: 0.08mm, number of cores: 19, insulator out diameter: Ø0.88mm)					—					
Approval	CE										
Weight ^{※2}	Approx. 50g (approx. 30g)										

※1: The value from revolving the circle panel which duty ratio is 1:1. ※2: The weight includes packaging. The weight in parenthesis is for unit only.
 ※The temperature or humidity mentioned in Environment indicates a non freezing or condensation environment.

SENSORS

CONTROLLERS

MOTION DEVICES

SOFTWARE

(A) Photoelectric Sensors

(B) Fiber Optic Sensors

(C) LIDAR

(D) Door/Area Sensors

(E) Vision Sensors

(F) Proximity Sensors

(G) Pressure Sensors

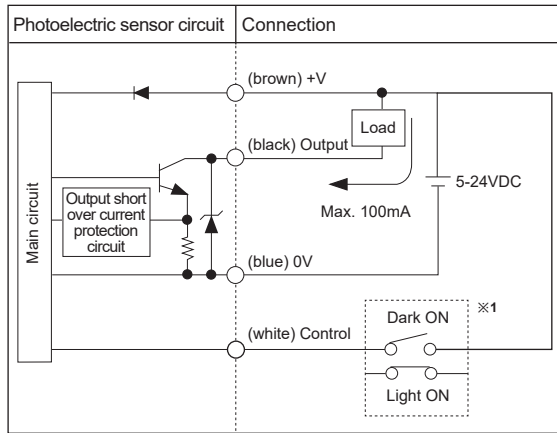
(H) Rotary Encoders

(I) Connectors/ Connector Cables/ Sensor Distribution Boxes/ Sockets

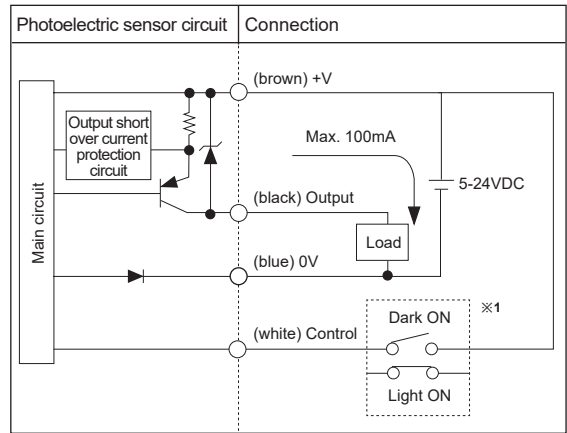
BS5 Series

Control Output Diagram

• NPN open collector output



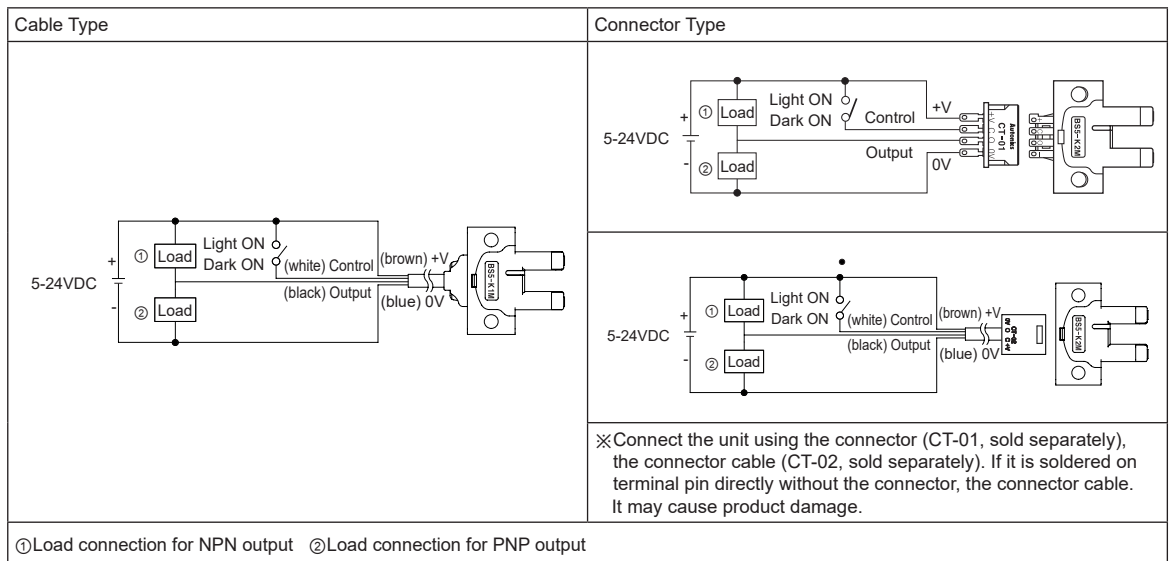
• PNP open collector output



※1: Operation mode selection: Connect (white) Control (terminal) into terminal (brown) +V to operate Light ON mode. Dark ON mode is available with disconnection status.

※If short-circuit the control output terminal or supply current over the rated specification, normal control signal is not output due to the output short over current protection circuit.

Connections



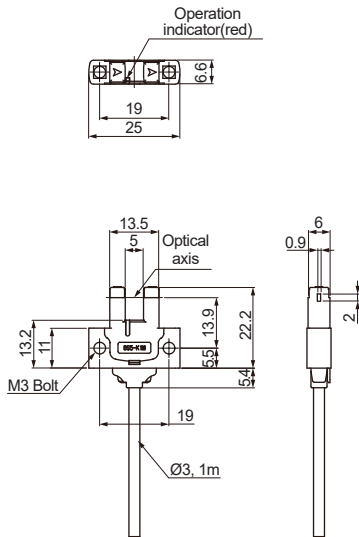
Operation Mode

Operation mode	Light ON	Dark ON
Receiver operation	Received light Interrupted light	Received light Interrupted light
Operation indicator (red LED)	ON OFF	ON OFF
Transistor output	ON OFF	ON OFF

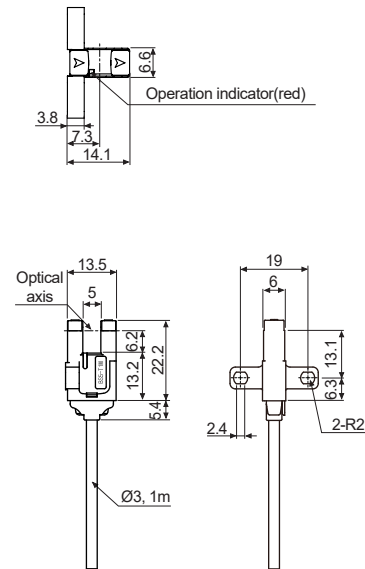
■ Dimensions

(unit: mm)

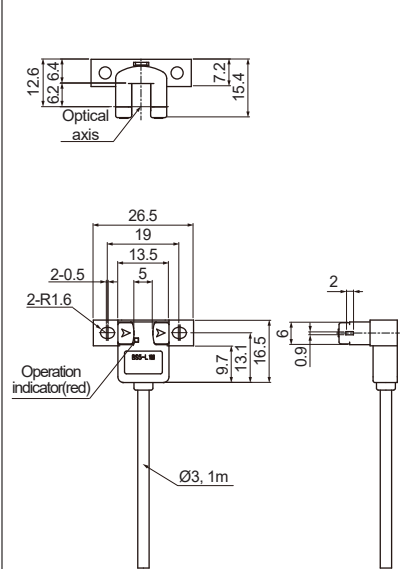
● BS5-K1M / BS5-K1M-P



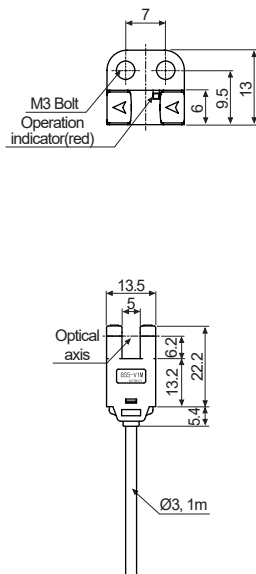
● BS5-T1M / BS5-T1M-P



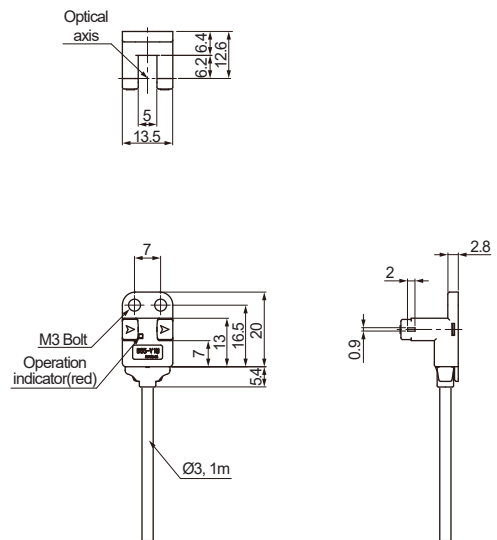
● BS5-L1M / BS5-L1M-P



● BS5-V1M / BS5-V1M-P



● BS5-Y1M / BS5-Y1M-P



※When using photoelectric sensors closely over two units, it may result in malfunction due to mutual interference.
 ※When installing the product, tighten the screw with a tightening torque of 0.49N·m.

SENSORS

CONTROLLERS

MOTION DEVICES

SOFTWARE

(A) Photoelectric Sensors

(B) Fiber Optic Sensors

(C) LiDAR

(D) Door/Area Sensors

(E) Vision Sensors

(F) Proximity Sensors

(G) Pressure Sensors

(H) Rotary Encoders

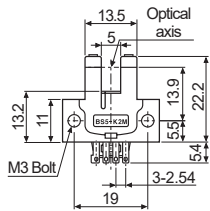
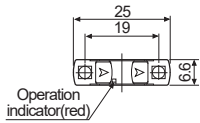
(I) Connectors/
Connector Cables/
Sensor Distribution
Boxes/ Sockets

BS5 Series

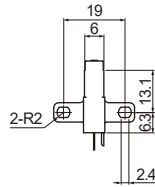
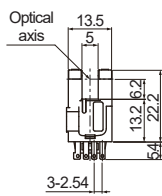
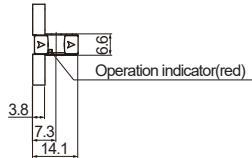
■ Dimensions

(unit: mm)

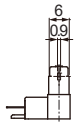
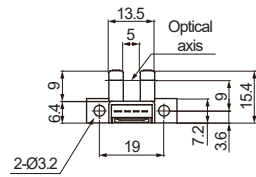
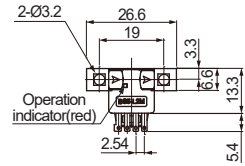
● BS5-K2M / BS5-K2M-P



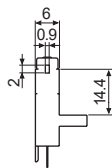
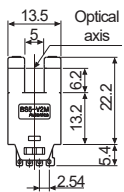
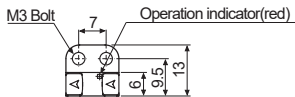
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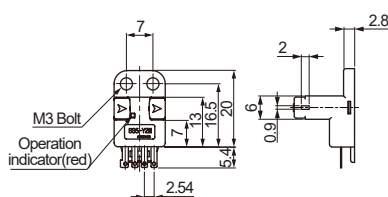
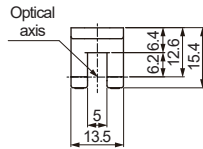
● BS5-L2M / BS5-L2M-P



● BS5-V2M / BS5-V2M-P

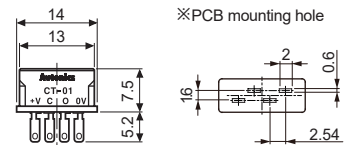
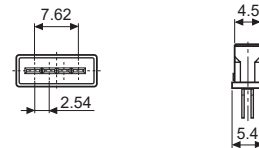


● BS5-Y2M / BS5-Y2M-P

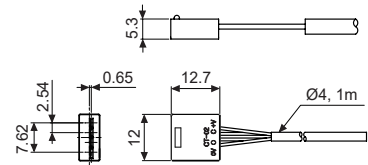


● Connector type (sold separately)

● Connector (CT-01)



● Connector (CT-02)



※ Cable: Ø4mm, 4-wire, 1m
(AWG22, Core wire diameter: 0.08mm,
No. of core wire: 60, Insulator out diameter:
Ø1.2mm)
※ Cable length is available to option.

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