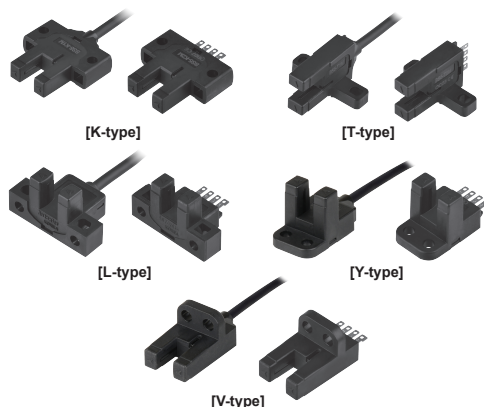


Photomicro Sensor

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

■ Specifications

Model	NPN open collector output	BS5-K1M	BS5-T1M	BS5-L1M	BS5-Y1M	BS5-V1M	BS5-K2M	BS5-T2M	BS5-L2M	BS5-Y2M	BS5-V2M
	PNP open collector output	BS5-K1M-P	BS5-T1M-P	BS5-L1M-P	BS5-Y1M-P	BS5-V1M-P	BS5-K2M-P	BS5-T2M-P	BS5-L2M-P	BS5-Y2M-P	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≒ ±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≒ ●Load current: max. 100mA ●Residual voltage: max. 1.2VDC≒									
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

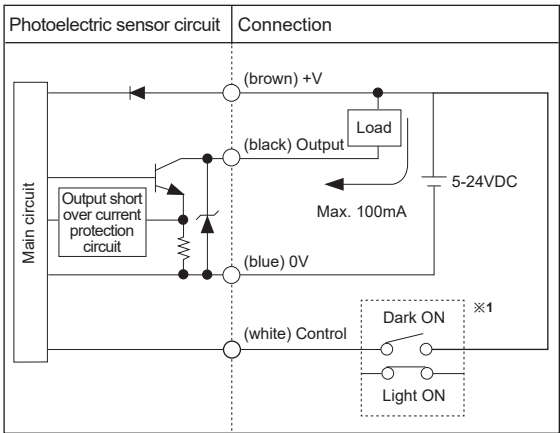
(H) Rotary Encoders

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

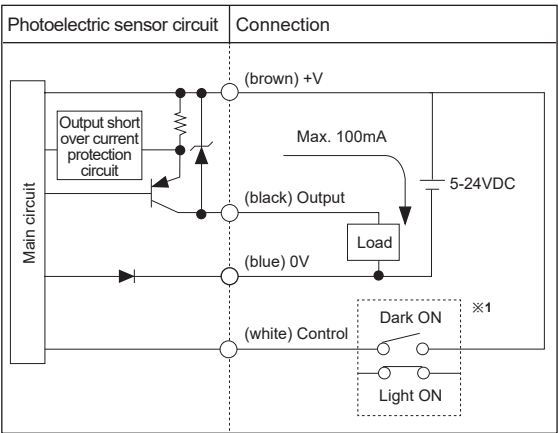
BS5 Series

Control Output Diagram

• NPN open collector output



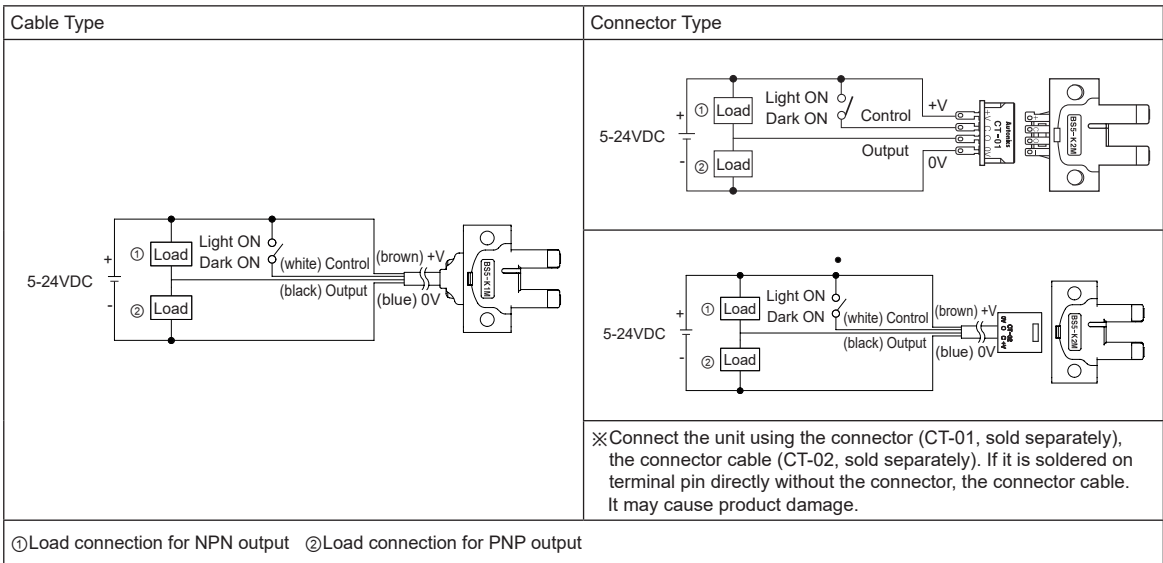
• PNP open collector output



※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



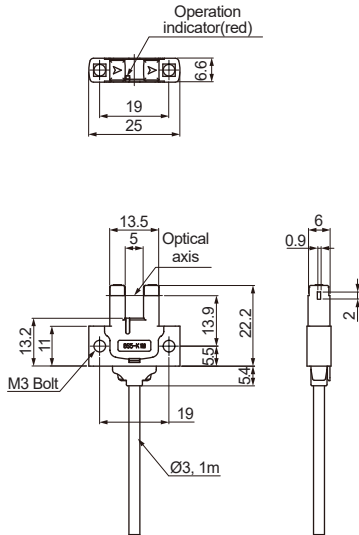
Operation Mode

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

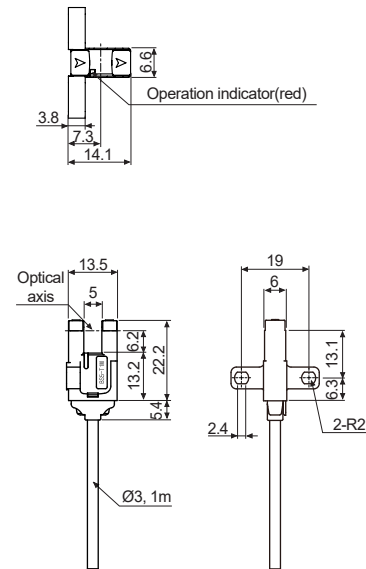
■ Dimensions

(unit: mm)

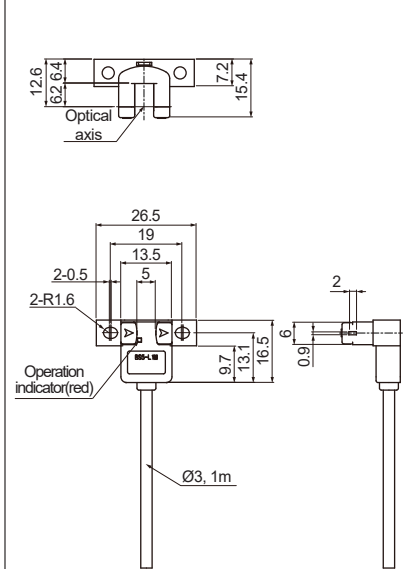
• BS5-K1M / BS5-K1M-P



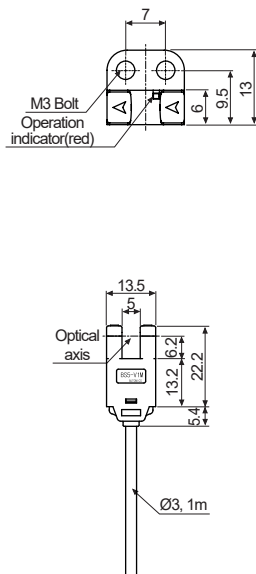
• BS5-T1M / BS5-T1M-P



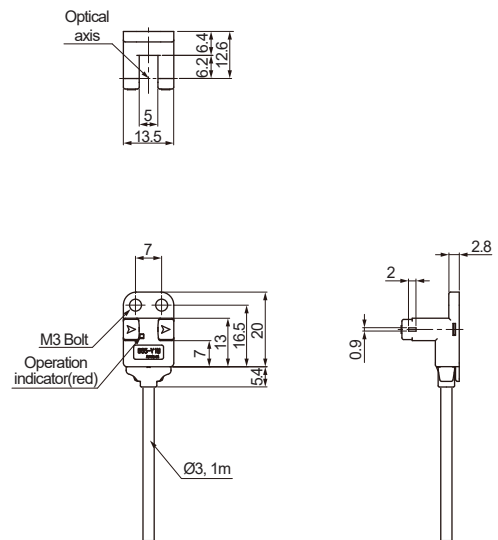
• BS5-L1M / BS5-L1M-P



• BS5-V1M / BS5-V1M-P



• BS5-Y1M / BS5-Y1M-P



SENSORS

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(G) Pressure Sensors

(H) Rotary Encoders

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

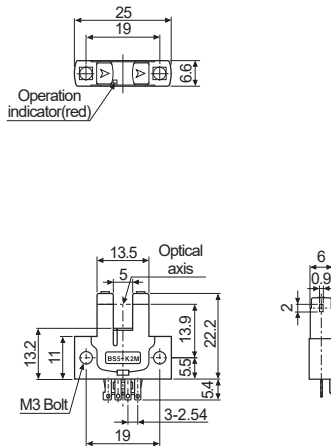
※When using photoelectric sensors closely over two units, it may result in malfunction due to mutual interference.
※When installing the product, tighten the screw with a tightening torque of 0.49N·m.

BS5 Series

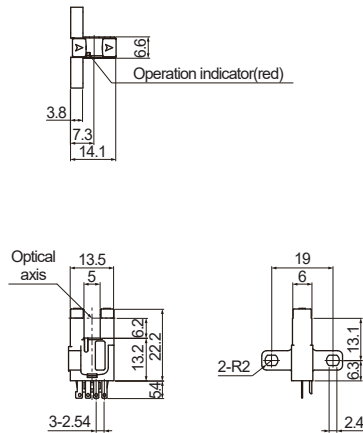
■ Dimensions

(unit: mm)

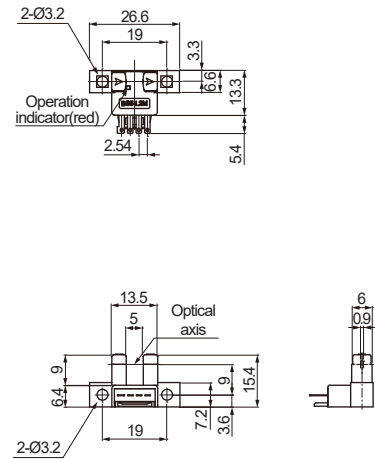
● BS5-K2M / BS5-K2M-P



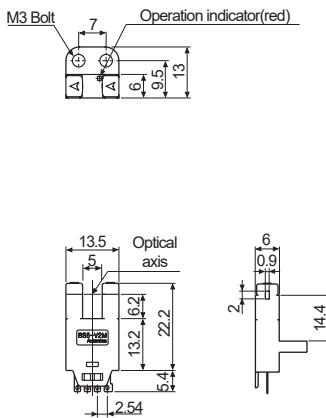
● BS5-T2M / BS5-T2M-P



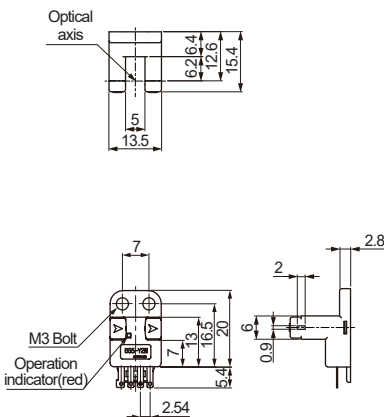
● BS5-L2M / BS5-L2M-P



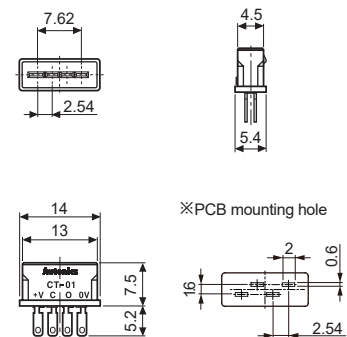
● BS5-V2M / BS5-V2M-P



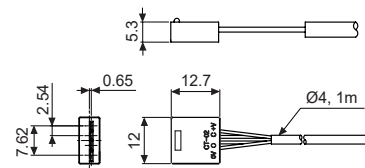
● BS5-Y2M / BS5-Y2M-P



● 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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