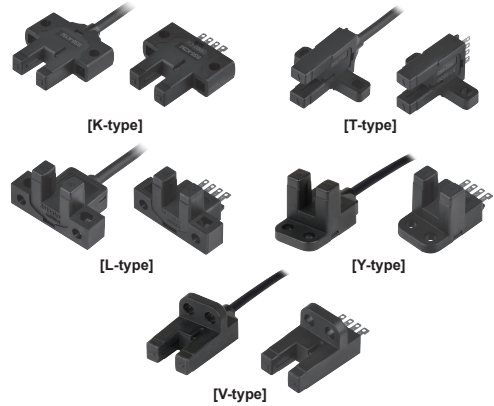


## Photomicro Sensor

### ■ 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. **CE**

### ■ Ordering Information

<b>BS</b>	<b>5</b>	<b>-</b>	<b>K</b>	<b>2</b>	<b>M</b>	<b>-</b>	<b>P</b>	
Item	Sensing distance	Appearance	Connection type	Size	Control output			
					No mark	NPN open collector output		
					P	PNP open collector output		
					M	Middle		
					1	Cable type		
					2	Connector type		
					K	K-Type	Y	Y-Type
					T	T-Type	V	V-Type
					L	L-Type		
					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 <sup>*1</sup>	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 <sup>2</sup> (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	<b>CE</b>										
Weight <sup>*2</sup>	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 in for unit only.  
 ※The temperature or humidity mentioned in Environment indicates a non freezing or condensation environment.

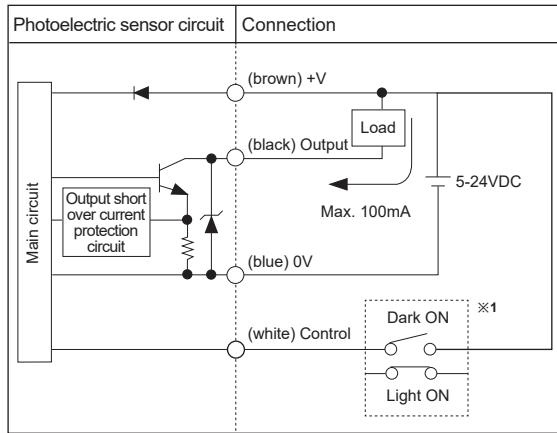
SENSORS
CONTROLLERS
MOTION DEVICES
SOFTWARE

(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

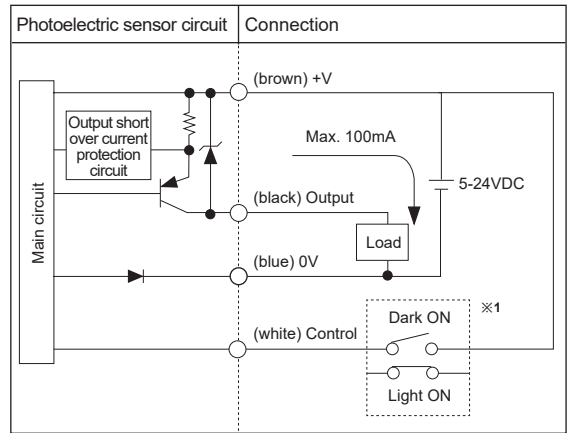
# BS5 Series

## Control Output Diagram

### • NPN open collector output



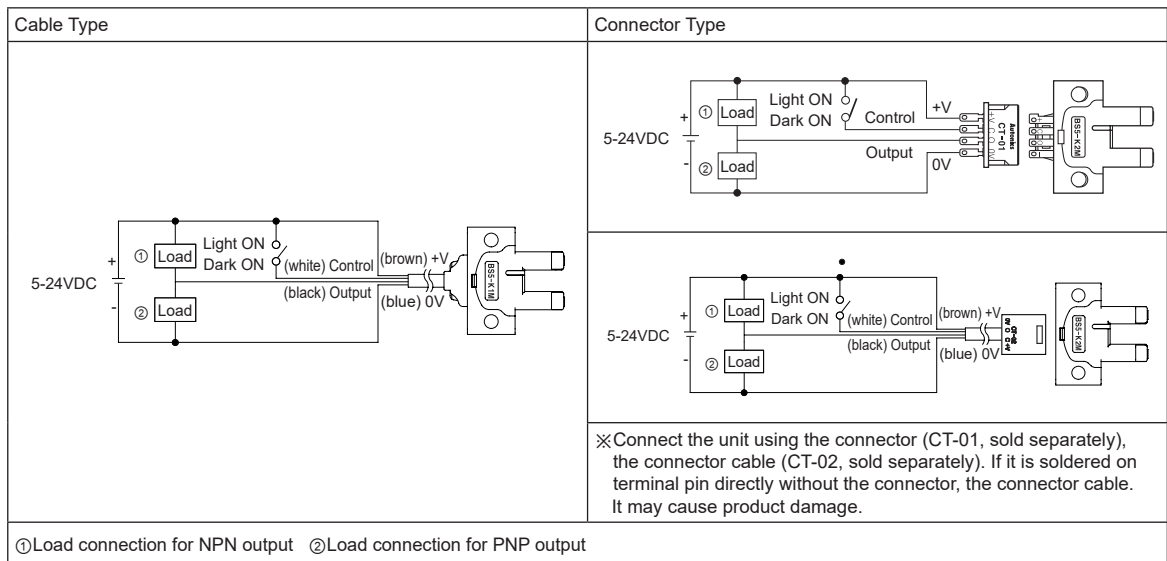
### • PNP open collector output



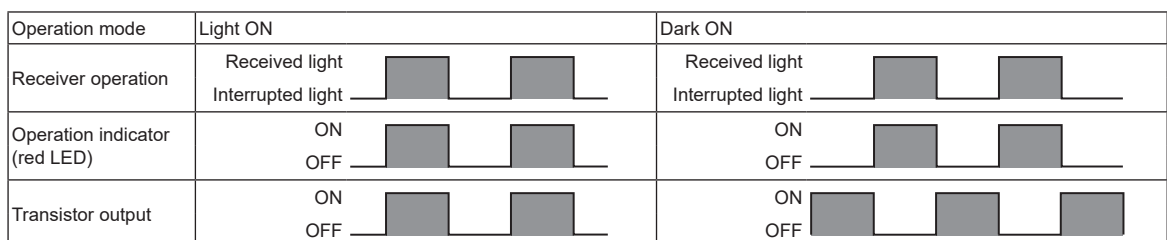
※1: Operation mode selection: Connect (white) Control (terminal) into terminal (brown) +V to operate Light ON mode. Dark ON mode is available with disconnection status.

※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



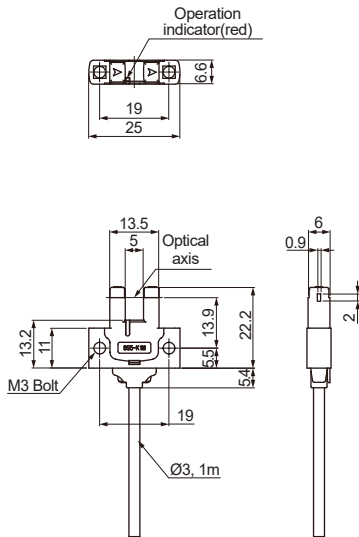
## Operation Mode



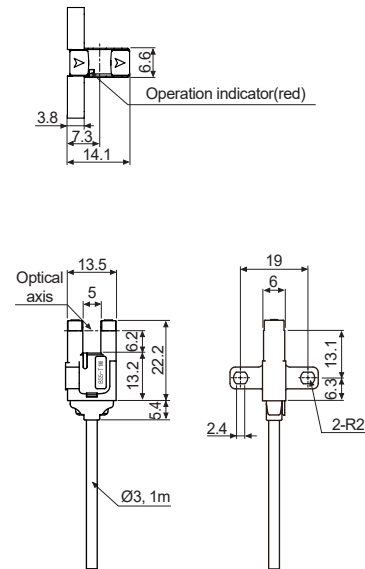
## ■ Dimensions

(unit: mm)

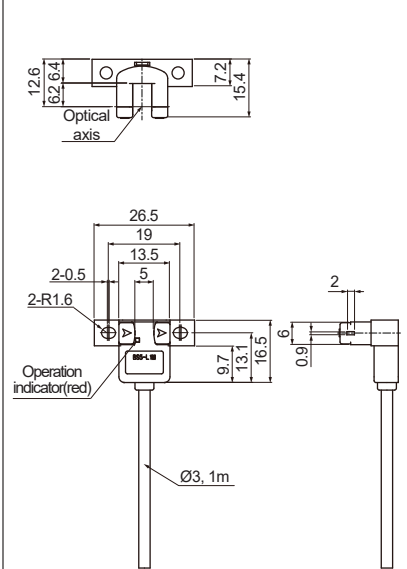
### ● BS5-K1M / BS5-K1M-P



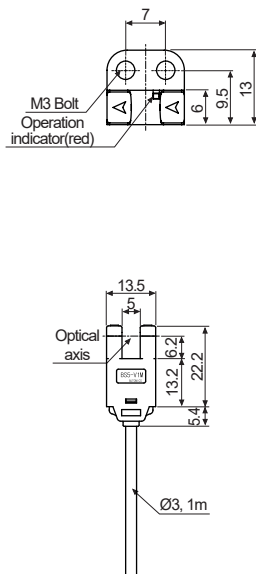
### ● BS5-T1M / BS5-T1M-P



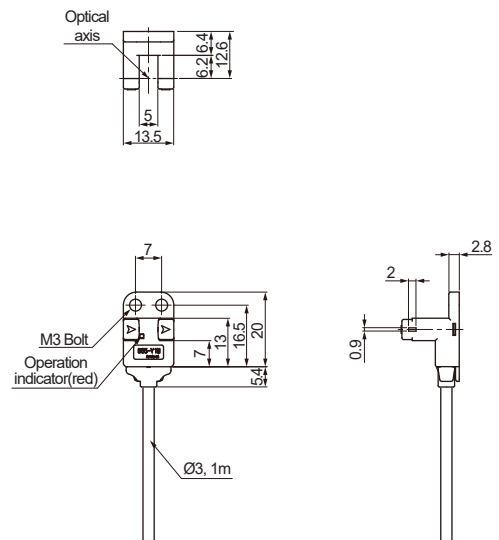
### ● BS5-L1M / BS5-L1M-P



### ● BS5-V1M / BS5-V1M-P



### ● BS5-Y1M / BS5-Y1M-P



SENSORS

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

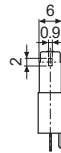
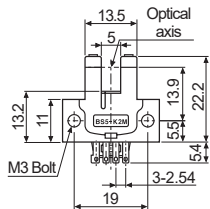
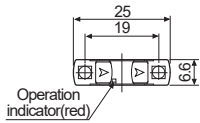
※When using photoelectric sensors closely over two units, it may result in malfunction due to mutual interference.  
※When installing the product, tighten the screw with a tightening torque of 0.49N·m.

# BS5 Series

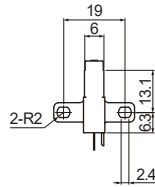
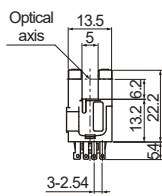
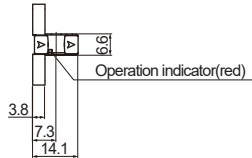
## ■ Dimensions

(unit: mm)

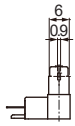
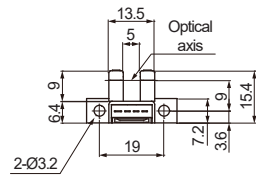
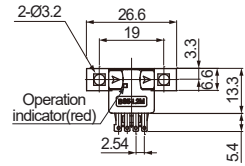
### ● BS5-K2M / BS5-K2M-P



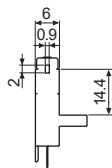
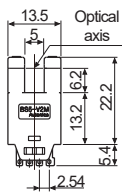
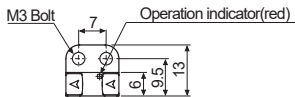
### ● BS5-T2M / BS5-T2M-P



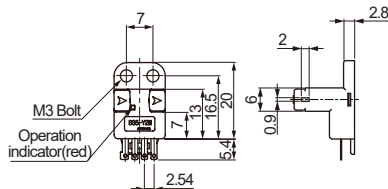
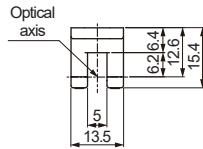
### ● BS5-L2M / BS5-L2M-P



### ● BS5-V2M / BS5-V2M-P

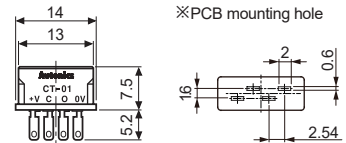
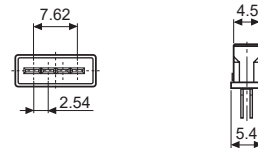


### ● BS5-Y2M / BS5-Y2M-P

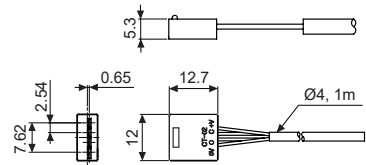


### ● Connector type (sold separately)

#### ● 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.