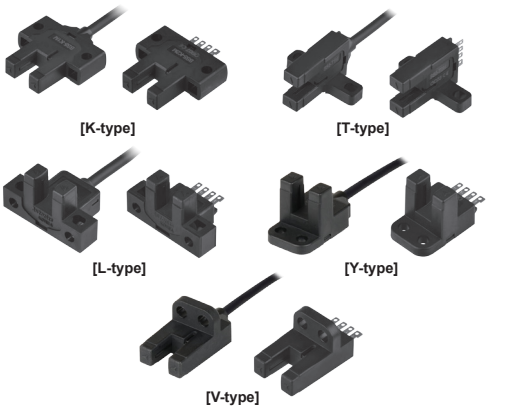
Photomicro Sensor

■ 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
- 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 "Caution for your safety" in operation manual before using.

CE

■ Ordering Information

BS 5 – K 2 M – P

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)		
Item	BS	Photo electronic sensor		

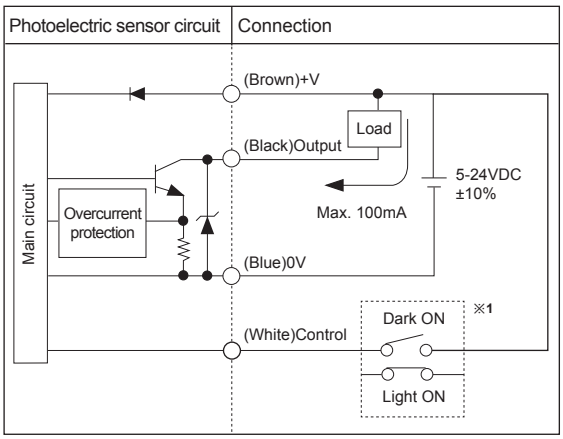
■ Specifications

Model		BS5-K1M	BS5-T1M	BS5-L1M	BS5-Y1M	BS5-V1M	BS5-K2M	BS5-T2M	BS5-L2M	BS5-Y2M	BS5-V2M
	NPN open collector output										
	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 (refer to the measuring range of response frequency)									
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 wire					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. 1.2V									
Protection circuit		Reverse power polarity protection, Overcurrent protection									
Indicator		Operation Indicator: red LED									
Connection		Cable type					Connector type				
Insulation resistance		Min. 20MΩ (at 250VDC megger)									
Noise resistance		±240V the square wave noise (pulse width:1μs) by the noise simulator									
Dielectric strength		1,000VAC 50/60Hz for 1minute									
Vibration		1.5mm amplitude at frequency of 10 to 55Hz in each X, Y, Z direction for 2 hours									
Shock		500m/s² (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℃, storage : -25 to 85℃									
	Ambient humidity	35 to 85%RH, storage : 35 to 85%RH									
Protection structure		IP50 (IEC standard)									
Material		PBT									
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)									

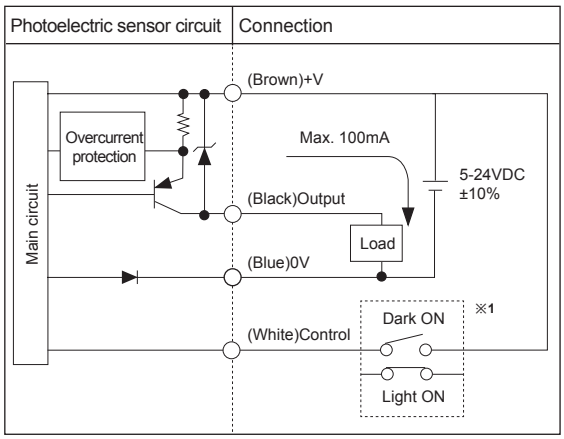
※1: The value from revolving the circle panel which duty ratio is 1:1. ※2: The weight includes packaging. The weight in parentheses in for unit only.
※The temperature or humidity mentioned in Environment indicates a non freezing or condensation environment.

■ Control Output Diagram

● **NPN open collector output**

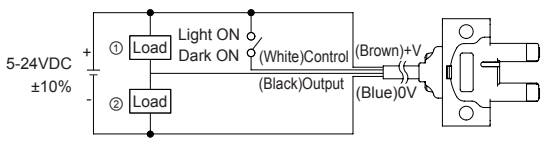
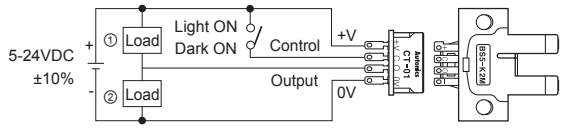


● **PNP open collector output**



※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.

■ Connections

Cable Type	Connector Type
	 ※Connect the unit using socket(CT-01, CT-02). If it is soldered on terminal pin directly without socket, it may cause product damage.

①Load connection for NPN output ②Load connection for PNP output

■ Operation Mode

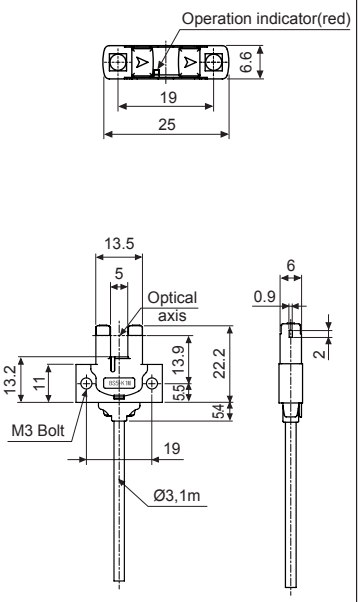
Operation mode	Light ON	Dark ON
Receiver operation	Received light / Interrupted light	Received light / Interrupted light
Operation indicator (red LED)	ON / OFF	ON / OFF
Transistor output	ON / OFF	ON / OFF

※If the control output terminal is short-circuited or overcurrent condition exists, the control output turns OFF due to protection circuit.

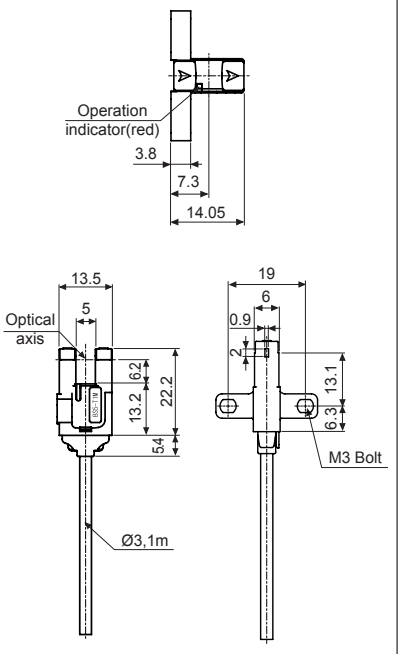
▣ Dimensions

(unit: mm)

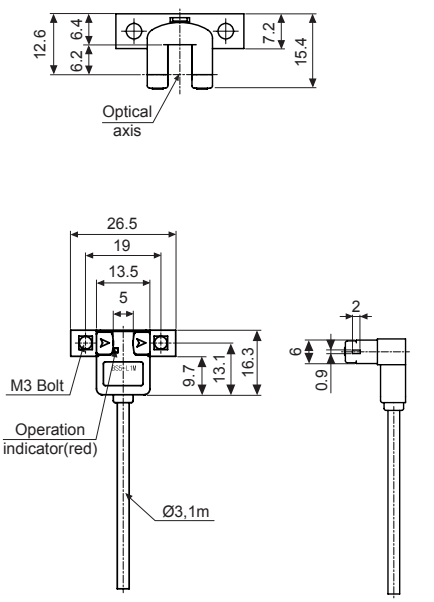
• BS5-K1M / BS5-K1M-P



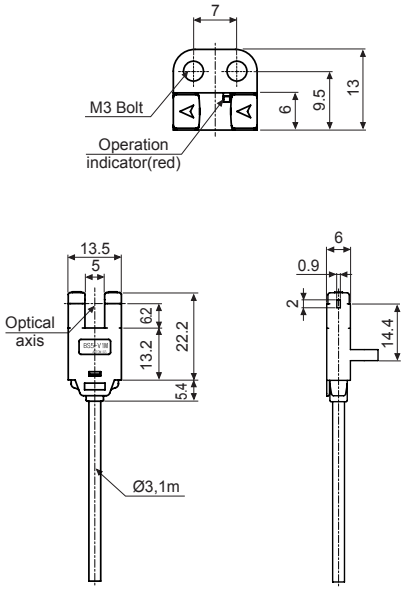
• BS5-T1M / BS5-T1M-P



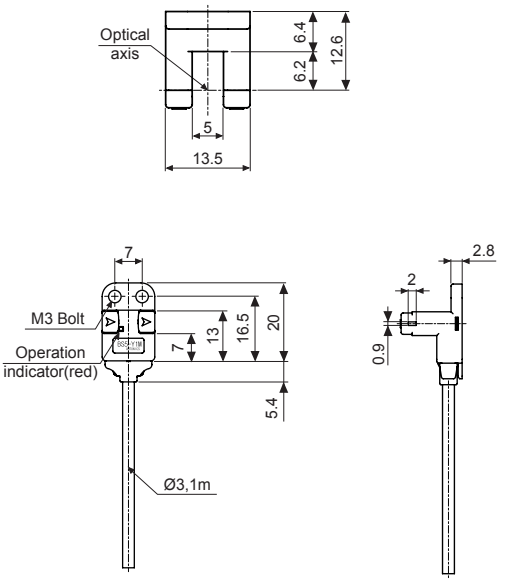
• BS5-L1M / BS5-L1M-P



• BS5-V1M / BS5-V1M-P



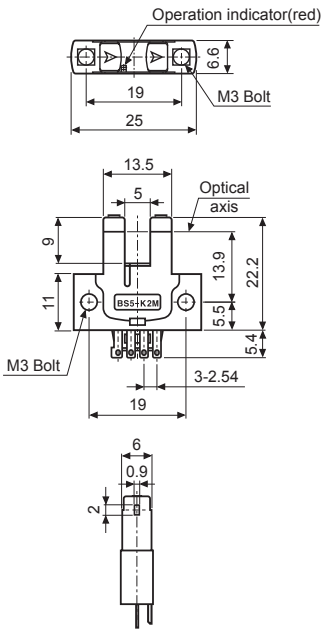
• BS5-Y1M / BS5-Y1M-P



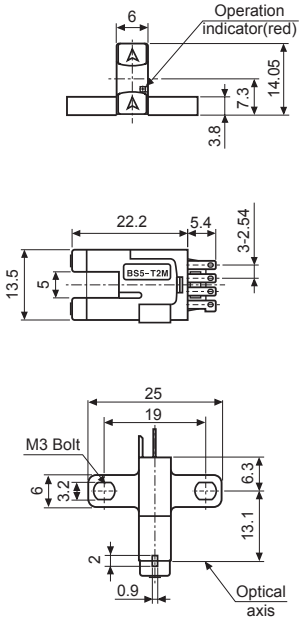
▣ Dimensions

(unit: mm)

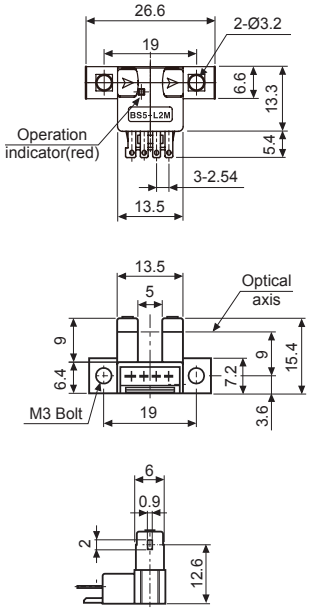
● BS5-K2M / BS5-K2M-P



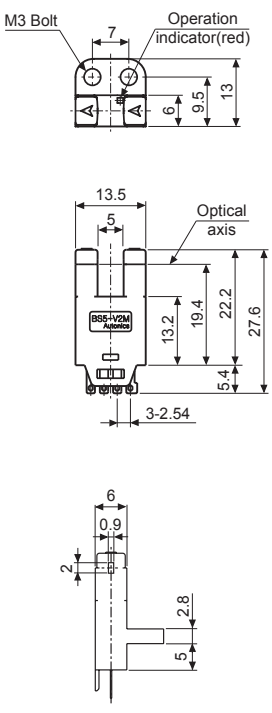
● BS5-T2M / BS5-T2M-P



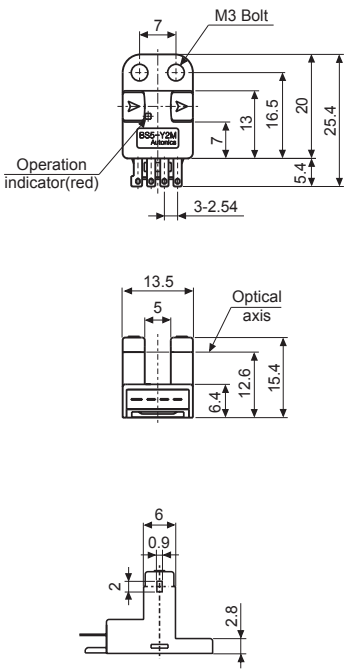
● BS5-L2M / BS5-L2M-P



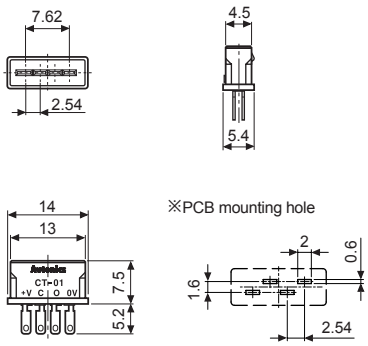
● BS5-V2M / BS5-V2M-P



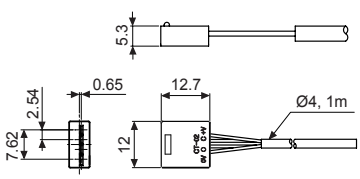
● BS5-Y2M / BS5-Y2M-P



● Socket: CT-01 (sold separately)



● Socket: CT-02 (sold separately)



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