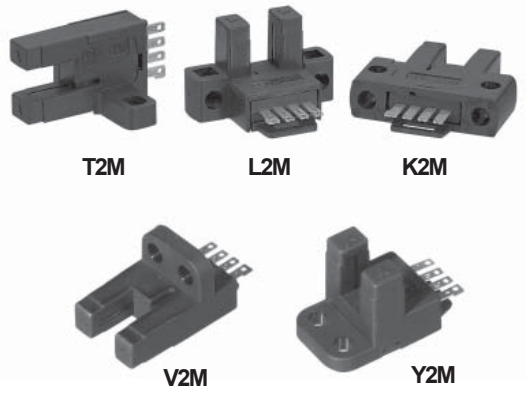
Micro photo sensor

■ 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
- 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

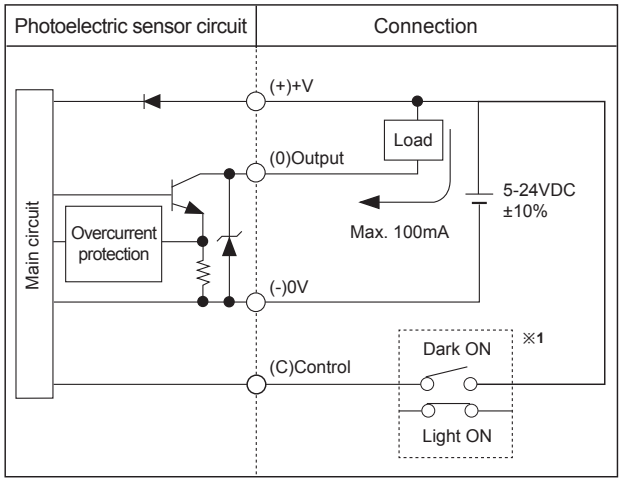
■ Specifications

Model	NPN open collector output	BS5-K2M	BS5-T2M	BS5-L2M	BS5-Y2M	BS5-V2M
	PNP open collector output	BS5-K2M-P	BS5-T2M-P	BS5-L2M-P	BS5-Y2M-P	BS5-V2M-P
Sensing distance		5mm fixed				
Sensing type		Through-beam(Not modulated)				
Sensing target		ø0.8×1mm Opaque materials				
Hysteresis		0.05mm				
Power supply		5-24VDC ±10%(Ripple P-P : Max. 10%)				
Current consumption		Max. 30mA(at 26.4VDC)				
Control output		NPN or PNP open collector output ●Load voltage : Max. 30VDC ●Load current : Max. 100mA ●Residual voltage : Max. 1.2V				
Operation mode		Light ON / Dark ON selectable by control terminal				
Operation indicator		Red LED				
Response time		Light ON : Max. 20μs, Dark ON : Max. 100μs				
Response frequency		2kHz(refer to the measuring range of frequency response)				
Connection		Connector type				
Light source		Infrared LED(950nm)				
Vibration		1.5mm or 300m/s^2 amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 2 hours				
Shock		500m/s^2(50G) in each of X, Y, Z directions for 3 times				
Noise resistance		±240V the square wave noise(pulse width:1μs) by the noise simulator				
Dielectric strength		1,000VAC 50/60Hz for 1minute				
Insulation resistance		Min. 20MΩ(at 250VDC megger)				
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		IP50(IEC standard)				
Material		PBT				
Approval		CE				
Unit weight		Approx. 30g				

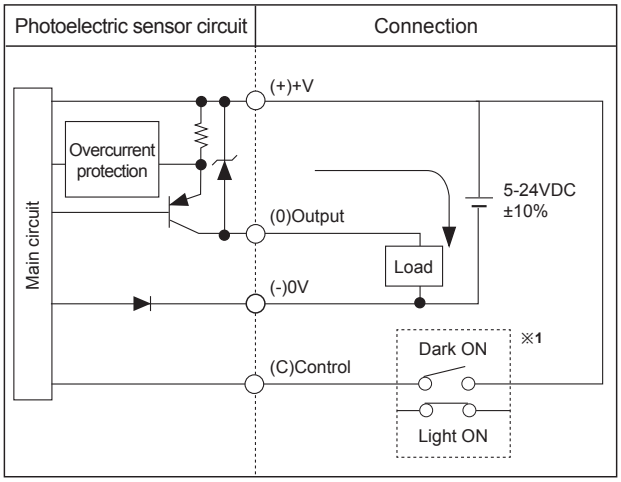
※ The temperature or humidity mentioned in Environment indicates a non freezing or condensation environment.

▣ Control output diagram

● **NPN open collector output**



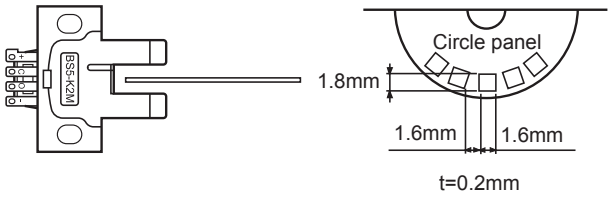
● **PNP open collector output**



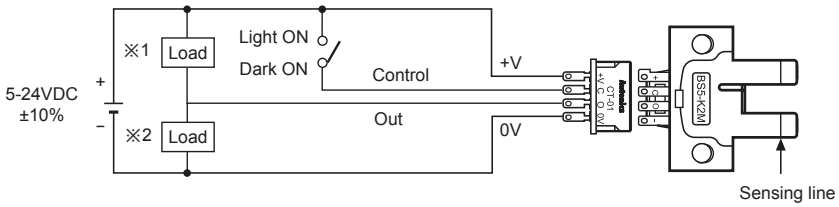
※1: Operation mode selection : Connect Control(C) terminal into terminal +V(+) to operate Light ON mode.
Dark ON mode is available with disconnection status.

▣ How to measure response frequency

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



▣ Connections



※1: The load connection of NPN open collector output
※2: The load connection of PNP open collector output
※ Connect the unit using socket. If it is soldered on terminal pin directly without socket, it may cause product damage.

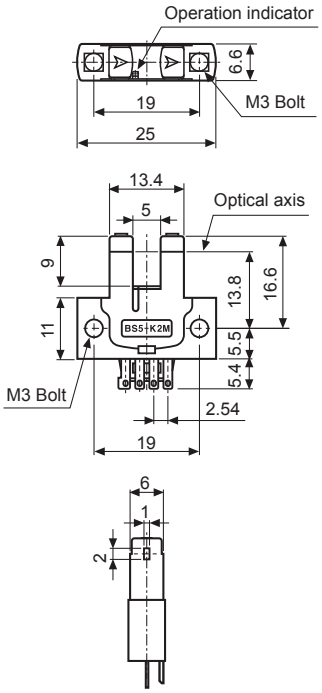
▣ Operation mode

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

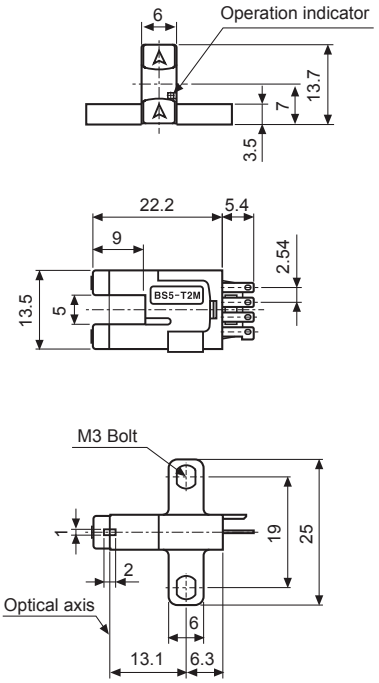
※ If the control output terminal is short-circuited or overcurrent condition exists,
the control output turns OFF due to protection circuit.

▣ Dimensions

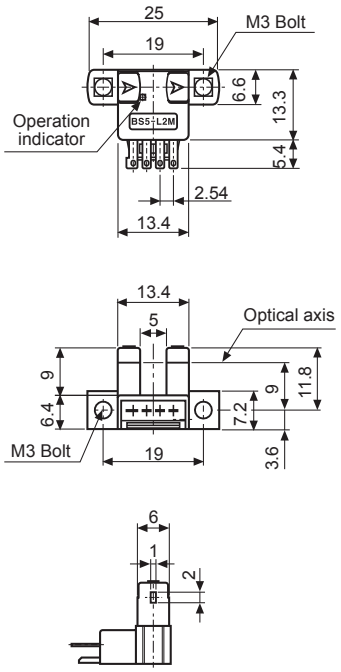
● BS5-K2M / BS5-K2M-P



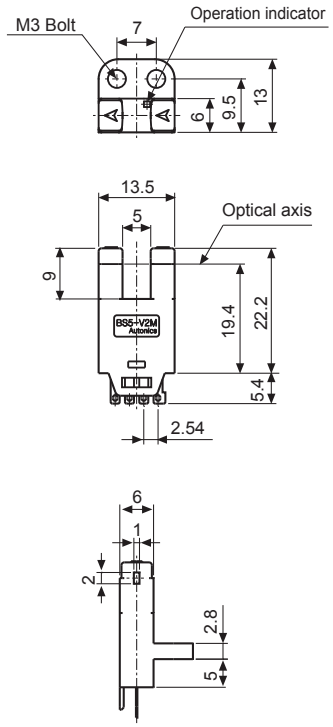
● BS5-T2M / BS5-T2M-P



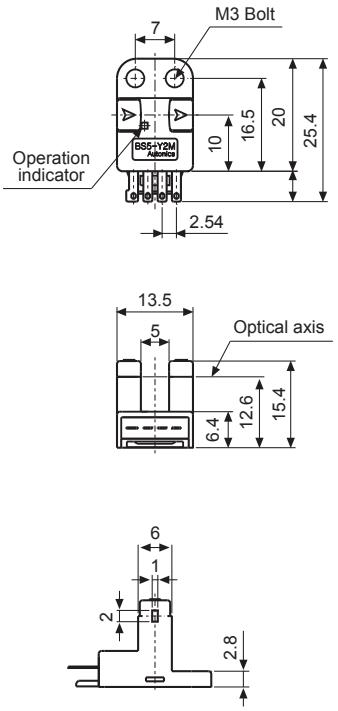
● BS5-L2M / BS5-L2M-P



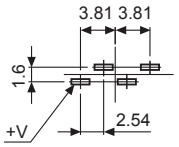
● BS5-V2M / BS5-V2M-P



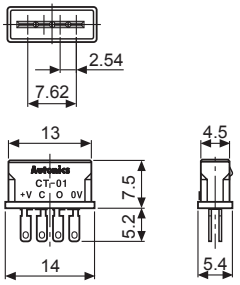
● BS5-Y2M / BS5-Y2M-P



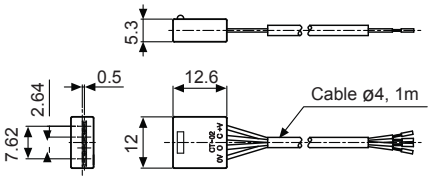
● PCB mounting hole



● Socket: CT-01(sold separately)



● Socket: CT-02(sold separately)



※ Cable: ø4mm, 4-wire, Length: 1m
(AWG 22, Core wire diameter: 0.08mm, No. of core wire: 60, Insulator out diameter: ø1.2mm)
※ Cable length is available to option.