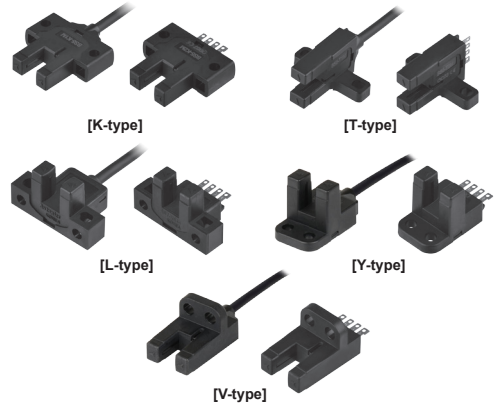


# BS5 Series

## 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 "Caution for your safety" in operation manual before using.**



### ■ 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		

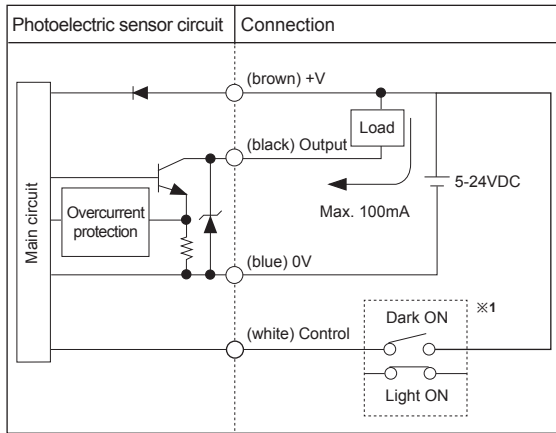
### ■ Specifications

Model	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 ±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. 1.2V										
Protection circuit	Reverse polarity protection circuit, output overcurrent (short-circuit) 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 1minute										
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)										

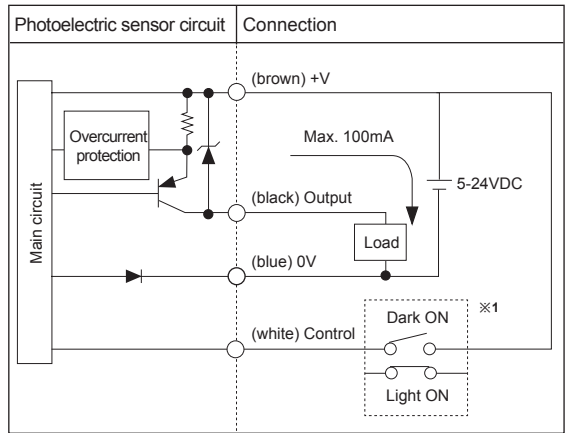
※1: The value from revolving the circle panel which duty ratio is 1:1.    ※2: The weight includes packaging. The weight in parenthesis in for unit only.  
 ※The temperature or humidity mentioned in Environment indicates a non freezing or condensation environment.

## Control Output Diagram

### • NPN open collector output

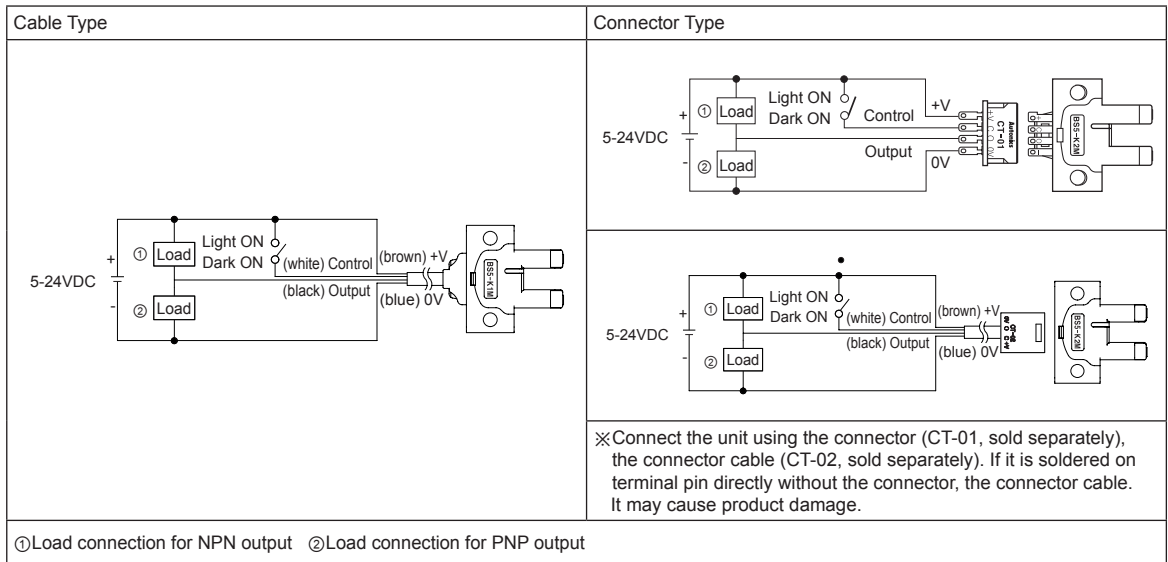


### • PNP open collector output



※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



## 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.

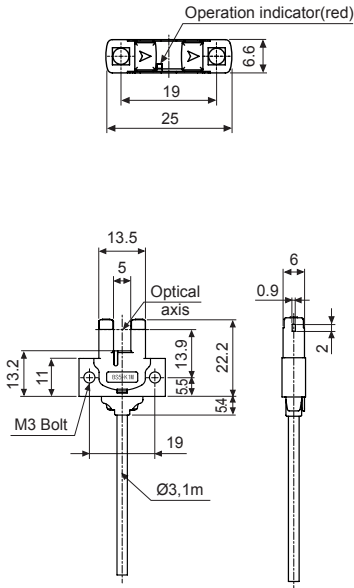
- (A) Photoelectric Sensors
- (B) Fiber Optic Sensors
- (C) Door/Area Sensors
- (D) Proximity Sensors
- (E) Pressure Sensors
- (F) Rotary Encoders
- (G) Connectors/ Connector Cables/ Sensor Distribution Boxes/ Sockets
- (H) Temperature Controllers
- (I) SSRs / Power Controllers
- (J) Counters
- (K) Timers
- (L) Panel Meters
- (M) Tacho / Speed / Pulse Meters
- (N) Display Units
- (O) Sensor Controllers
- (P) Switching Mode Power Supplies
- (Q) Stepper Motors & Drivers & Controllers
- (R) Graphic/ Logic Panels
- (S) Field Network Devices
- (T) Software

# BS5 Series

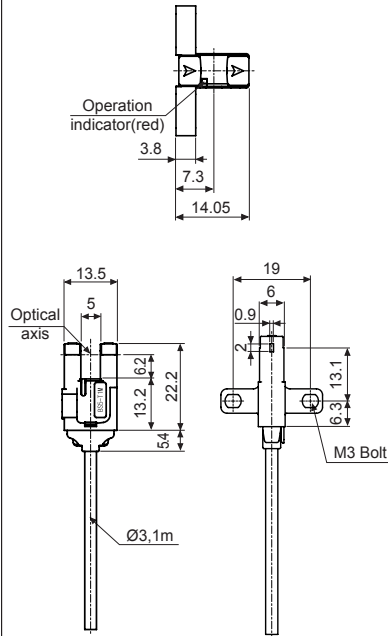
## ■ Dimensions

(unit: mm)

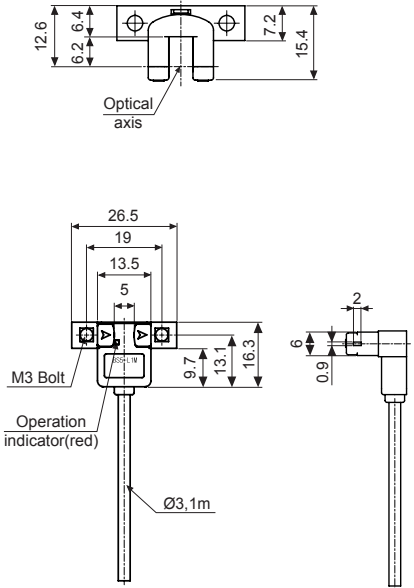
### • BS5-K1M / BS5-K1M-P



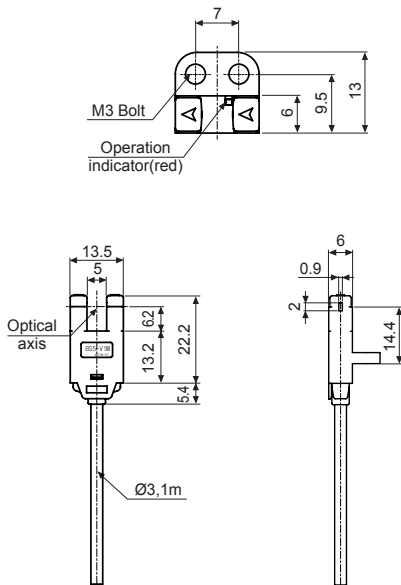
### • BS5-T1M / BS5-T1M-P



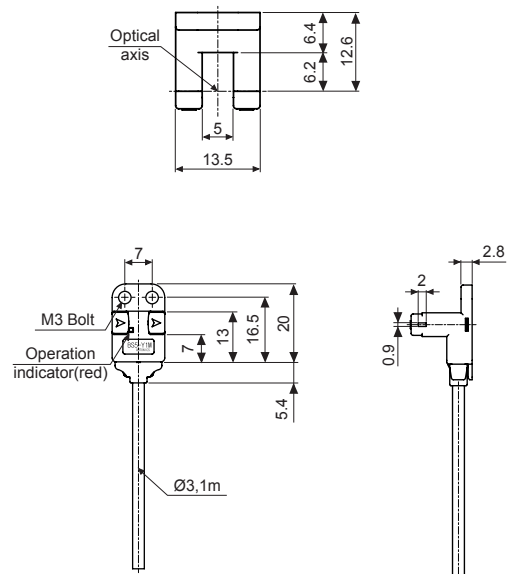
### • BS5-L1M / BS5-L1M-P



### • BS5-V1M / BS5-V1M-P



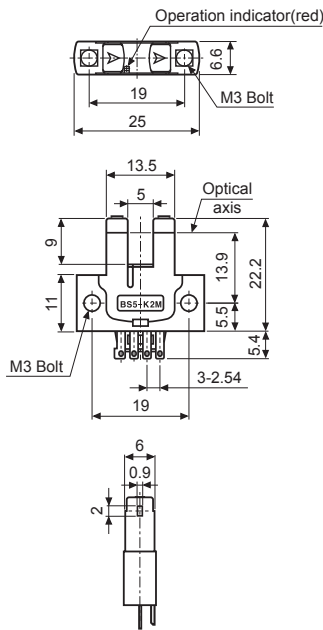
### • BS5-Y1M / BS5-Y1M-P



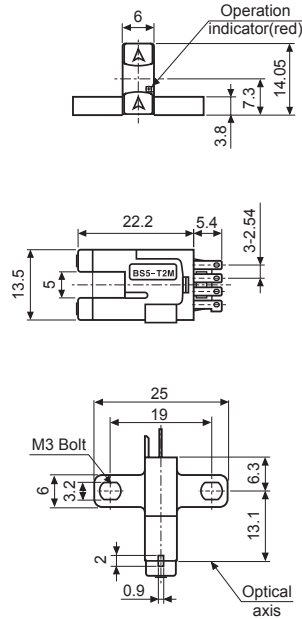
## ■ Dimensions

(unit: mm)

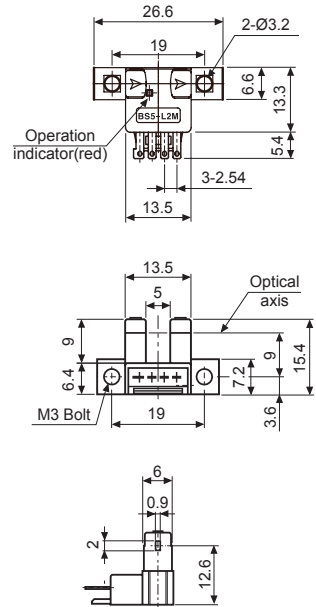
### ● BS5-K2M / BS5-K2M-P



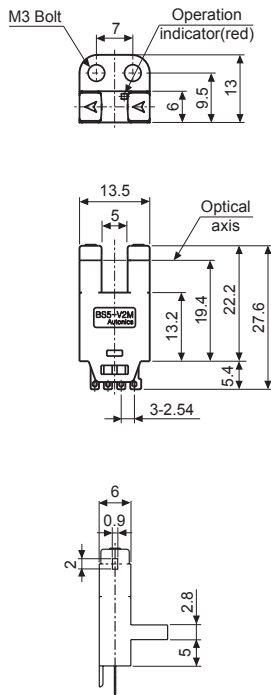
### ● BS5-T2M / BS5-T2M-P



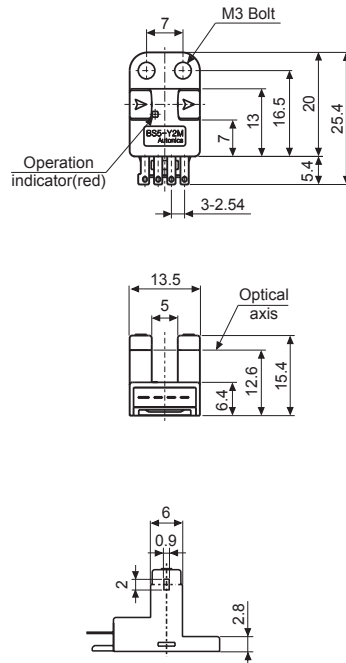
### ● BS5-L2M / BS5-L2M-P



### ● BS5-V2M / BS5-V2M-P

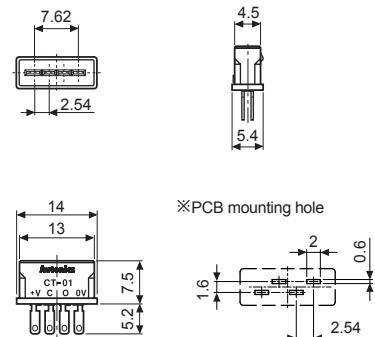


### ● BS5-Y2M / BS5-Y2M-P

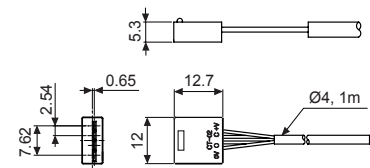


### ● Connector type (sold separately)

#### ● 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.

(A)  
Photoelectric  
Sensors

(B)  
Fiber  
Optic  
Sensors

(C)  
Door/Area  
Sensors

(D)  
Proximity  
Sensors

(E)  
Pressure  
Sensors

(F)  
Rotary  
Encoders

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

(H)  
Temperature  
Controllers

(I)  
SSRs / Power  
Controllers

(J)  
Counters

(K)  
Timers

(L)  
Panel  
Meters

(M)  
Tacho /  
Speed / Pulse  
Meters

(N)  
Display  
Units

(O)  
Sensor  
Controllers

(P)  
Switching  
Mode Power  
Supplies

(Q)  
Stepper Motors  
& Drivers  
& Controllers

(R)  
Graphic/  
Logic  
Panels

(S)  
Field  
Network  
Devices

(T)  
Software