Slim Photoelectric Sensor for Long Sensing Distance

▣ Features

● Easy to mount by Flat type
● Realization of 3m sensing distance as small size
● Protection structure IP67 (IEC standard)

| ⚠ | **Please read "Safety Considerations" in the instruction manual before using.** |

CE

▣ Specifications

Model	NPN open collector output	**BPS3M-TDT**		**BPS3M-TDTL**	
	PNP open collector output	**BPS3M-TDT-P**		**BPS3M-TDTL-P**	
Sensing type		Through-beam			
Sensing target		Opaque materials of min. Ø5mm			
Operation mode		Dark ON		Light ON	
Sensing distance		3m			
Response time		Max. 1ms			
Power supply		12-24VDC⎓ ±10% (ripple P-P: max. 10%)			
Current consumption		Max. 20mA			
Light source		Infrared LED (850nm)			
Control output		NPN or PNP open collector output ●Load voltage: max. 30VDC⎓ ●Load current: max. 100mA ●Residual voltage - NPN: max. 1VDC⎓, PNP: Max. 2.5VDC			
Protection circuit		Reverse polarity protection circuit, output short overcurrent protection circuit			
Indicator		Emitter - power indicator: red LED, receiver - operation indicator: red LED			
Insulation resistance		Over 20MΩ (at 500VDC 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 (for 1 min) in each X, Y, Z direction for 2 hours			
Shock		500m/s² (approx. 50G) in each X, Y, Z direction for 3 times			
Environ-ment	Ambient illumination	Sunlight: max. 11,000lx, incandescent lamp: max. 3,000lx (receiver illumination)			
	Ambient temperature	-25 to 65℃, storage: -25 to 70℃			
	Ambient humidity	35 to 85%RH, storage: 35 to 90%RH			
Protection structure		IP67 (IEC standard)			
Material		Case: polycarbonate, bolt: steel chromium molybdenum, nut: steel chromium molybdenum			
Cable		Ø3mm, 3-wire, 2m (emitter of through-beam type: Ø3mm, 2-wire, 2m) (AWG24, core diameter: 0.08mm, number of cores: 40, insulator out diameter: Ø1mm)			
Accessory		M3 bolt: 4, M3 nut: 4			
Approval		CE			
Unit weight		Approx. 66g			

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

(A) Photoelectric Sensors

(B) Fiber Optic Sensors

(C) LiDAR

(D) Door/Area Sensors

(E) Vision Sensors

(F) Proximity Sensors

(G) Pressure Sensors
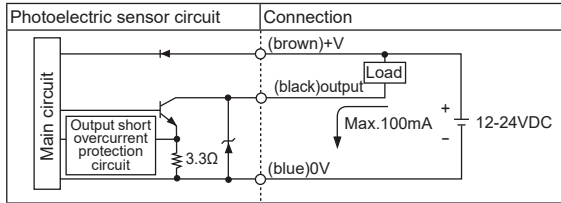
(H) Rotary Encoders

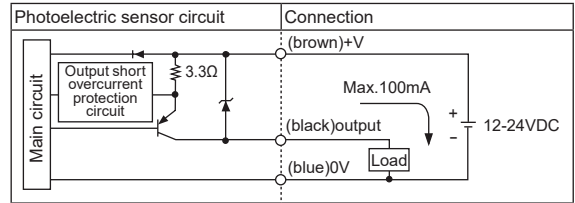(I) Connectors/ Connector Cables/ Sensor Distribution Boxes/ Sockets

▣ Feature Data

Measuring method	Parallel shifting characteristic	Measuring method	Sensor angle characteristic

BPS Series

◪ Control Output Diagram

● NPN open collector output

Photoelectric sensor circuit	Connection
Main circuit / Output short overcurrent protection circuit / 3.3Ω	(brown)+V / Load / (black)output / Max.100mA / 12-24VDC / (blue)0V

● PNP open collector output

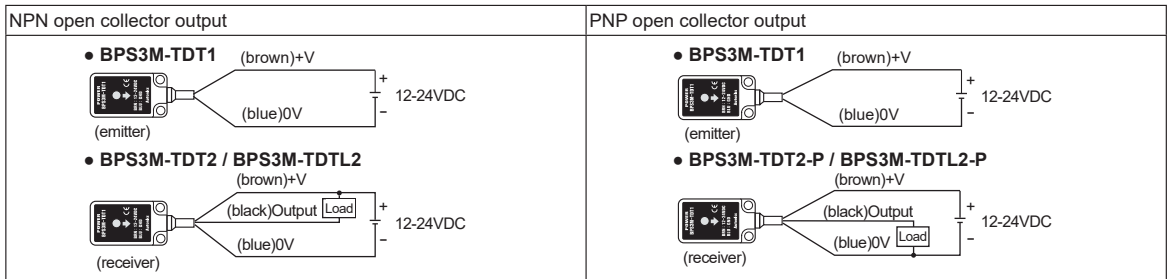| Photoelectric sensor circuit	Connection
Main circuit / Output short overcurrent protection circuit / 3.3Ω	(brown)+V / Max.100mA / (black)output / 12-24VDC / (blue)0V / Load

※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.
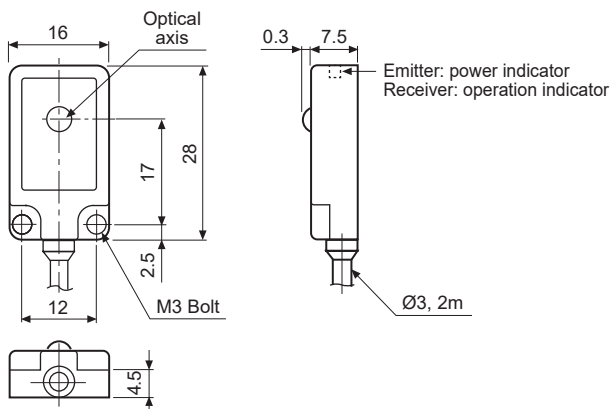
◪ Operation Mode

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

※Dark ON mode is standard and Light ON (Received Light: ON) mode is customizable.

◪ Connections

NPN open collector output	PNP open collector output
● BPS3M-TDT1 (emitter) — (brown)+V / (blue)0V / 12-24VDC	**● BPS3M-TDT1** (emitter) — (brown)+V / (blue)0V / 12-24VDC
● BPS3M-TDT2 / BPS3M-TDTL2 (receiver) — (brown)+V / (black)Output Load / (blue)0V / 12-24VDC	**● BPS3M-TDT2-P / BPS3M-TDTL2-P** (receiver) — (brown)+V / (black)Output / (blue)0V Load / 12-24VDC

◪ Dimensions

16 / Optical axis / 17 / 28 / 2.5 / 12 / M3 Bolt

0.3 / 7.5 / Emitter: power indicator / Receiver: operation indicator / Ø3, 2m

4.5

●Cover (sold separately)

(unit: mm)

11.4 / 9.5 / 5.5

19 / 14.8 / Optical axis / 5.5 / 25.8 / 30 / 57.2 / 12.7 / 2-M4 Bolt