


# Photoelectric Sensor PS-M Series

- Cylindrical design meets the need for installation in irregular shaped spaces
- Sensing the light-absorption for positioning, counting and object existence; applicable in all industries

- ▶ Standard size for mounting (M18)
- ▶ Setting via button
- ▶ IP67
- ▶ CE certification
- ▶ Electrical circuit protection



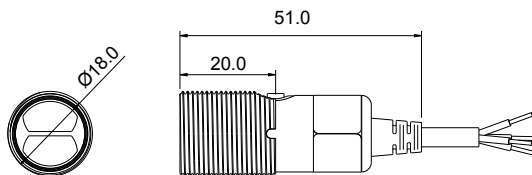
Appearance	Sensing Method	Sensing Distance	NPN	Push-pull	Connection
 Cylindrical Type (TEACH)	Diffuse Reflective	5 ~ 100 mm (Fixed)	PS-MR1-NSB2	PS-MR1-USB2	2 m cable (4 wires)*
			PS-MR1-NSBD	PS-MR1-USBD	M12 connector
		5 ~ 300 mm	PS-MR3-NS22	PS-MR3-US22	2 m cable (4 wires)*
			PS-MR3-NS2D	PS-MR3-US2D	M12 connector
		5 ~ 1,000mm	PS-MR9-NS22	PS-MR9-US22	2 m cable (4 wires)*
			PS-MR9-NS2D	PS-MR9-US2D	M12 connector
	Retro-reflective	4.2m	PS-ML4-NS22	PS-ML4-US22	2 m cable (4 wires)*
			PS-ML4-NS2D	PS-ML4-US2D	M12 connector
	Through-beam	5m (Fixed)	PS-MT5-NSB2	PS-MT5-USB2	2 m cable (4 wires)*
			PS-MT5-NSBD	PS-MT5-USBD	M12 connector

\* 4 wires: Light-on, dark-on are switched by white wire.  
 \* Retro-reflective: reflector included

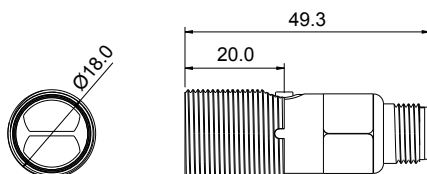
## Dimensions

Unit : mm

### Cable Type



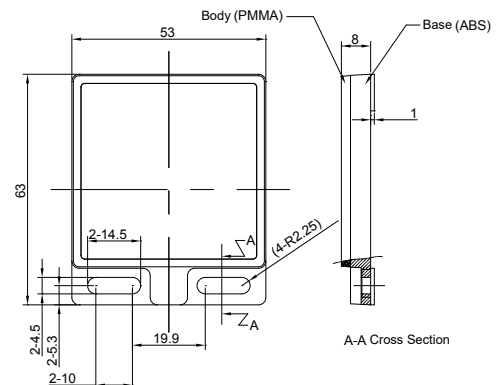
### Connector Type



## Accessories

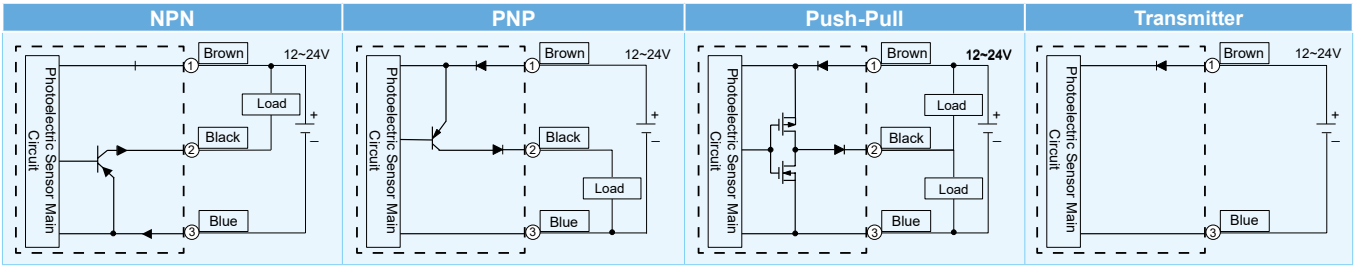
### Reflector

Model RM-01

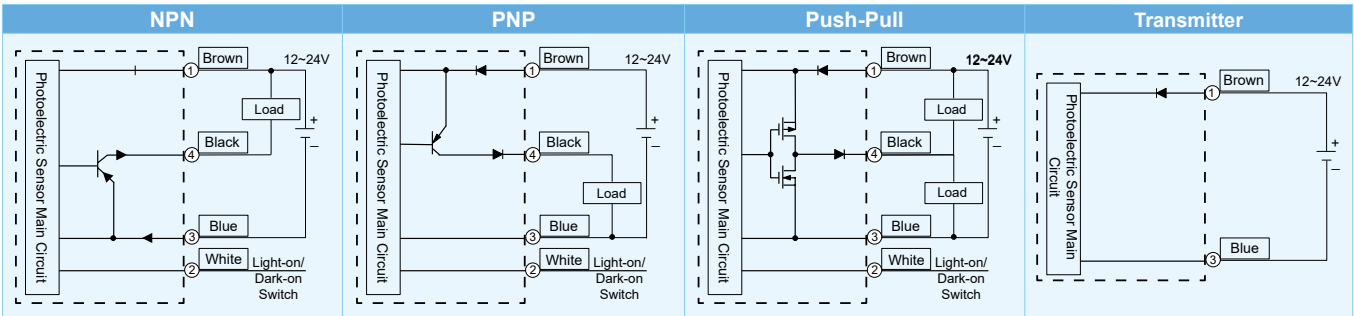


# Input / Output Circuits

- 3 Wires



- 4 Wires



# General Specifications


Photoelectric Sensor	
Voltage Range	12 ~ 24 V <sub>DC</sub> ± 10%
Response Time	ON → OFF: 0.5ms; OFF → ON: 0.5ms
Indicator	Output indicator (orange), stable operation indicator (green)
Protection Circuit	Protection against reverse power connection, output overcurrent, power supply surge, output surge
Operating Temperature	-25 °C ~ 55°C
Storage Temperature	-25 °C ~ 75°C
Ambient Humidity	30 ~ 85%
Enclosure Rating	IP67
Ambient Light Resistance	5,000 lx or less
Vibration Resistance	10~55 Hz, 1.5mm, 3 axes for 2 hours
Shock Resistance	Max. 1,000 m/s <sup>2</sup> , 3 axes, 6 directions and 3 times in each.
Insulating Resistance	20 MΩ or more (500V <sub>DC</sub> )
Withstand Voltage	1,000 VAC 50 / 60 Hz 1min
Certifications	CE

# Photoelectric Sensor Specifications

## • Rectangular Type PS-R

Sensing Method			Diffuse Reflective			Retro-reflective	Through-beam	
Type	Connection	Output	Small Spot	Standard	Long Distance	Standard	Standard	
 Rectangular Type (Trimmer)	Cable	NPN	PS-RS1-NS12	PS-RR3-NS12	PS-RR9-NS12	PS-RL4-NS12	PS-RT9-NS12	
		PNP	PS-RS1-PS12	PS-RR3-PS12	PS-RR9-PS12	PS-RL4-PS12	PS-RT9-PS12	
 Rectangular Type (TEACH)	Cable	NPN	PS-RS1-NS22	PS-RR3-NS22	PS-RR9-NS22	PS-RL4-NS22	PS-RT9-NSB2	
		Push-pull	PS-RS1-US22	PS-RR3-US22	PS-RR9-US22	PS-RL4-US22	PS-RT9-USB2	
	M8 connector	NPN	PS-RS1-NS2B	PS-RR3-NS2B	PS-RR9-NS2B	PS-RL4-NS2B	PS-RT9-NSBB	
		Push-pull	PS-RS1-US2B	PS-RR3-US2B	PS-RR9-US2B	PS-RL4-US2B	PS-RT9-USBB	
Sensing Distance			5 ~ 100mm	5 ~ 300mm	5 ~ 1,000mm	4.2m	10m	
Output			Light-on / Dark-on					
Lighting Source			Red LED / Infrared					
Power Consumption			20mA Max				Transmitter: Max. 6 mA Receiver: Max. 14 mA	
Material			Lens: PC ; Case: PBT					
Cable			PS-R Trimmer: 3 wires 2m PVC Cable (Through-beam: transmitter - 2 wires 2m PVC Cable) PS-R TEACH: 4 wires 2m PVC Cable (Through-beam: transmitter - 2 wires 2m PVC Cable), M8 water-proof connector					
Dimensions			Trimmer: 11.2x21 x33 mm TEACH (Cable Type): 11 x 17x41.5 mm TEACH (M8 Connector Type): 11 x 17 x44.2 mm					
Weight			55g					

## • Cylindrical Type PS-M

Sensing Method			Diffuse Reflective			Retro-reflective	Through-beam	
Type	Connection	Output	Standard		Standard	Long Distance	Standard	
 Cylindrical Type (TEACH)	Cable	NPN	PS-MR1-NSB2	PS-MR3-NS22	PS-MR9-NS22	PS-ML4-NS22	PS-MT5-NSB2	
		Push-pull	PS-MR1USB2	PS-MR3-US22	PS-MR9-US22	PS-ML4-US22	PS-MT5-USB2	
	M12 Connector	NPN	PS-MR1-NSBD	PS-MR3-NS2D	PS-MR9-NS2D	PS-ML4-NS2D	PS-MT5-NSBD	
		Push-pull	PS-MR1-USBD	PS-MR3-US2D	PS-MR9-US2D	PS-ML4-US2D	PS-MT5-USBD	
Sensing Distance			5 ~ 100mm	5 ~ 300mm	5 ~ 1,000mm	4.2m	5m	
Output			Light-on / Dark-on					
Lighting Source			Red LED (630nm)		Infrared (850nm)	Red LED (630nm)		
Power Consumption			Max. 20 mA				Transmitter: Max. 6 mA Receiver: Max. 14 mA	
Material			Lens: PC ; Case: PBT					
Cable			4 wires 2m PVC Cable (Through-beam: transmitter - 2 wires 2m PVC Cable), M12 water-proof connector					
Dimensions			Cable: M18x51.0 mm M12 Connector: M18x49.3 mm					
Weight			Cable Connection: 67 g; M8 Connector: 19 g					