

MV-PE5301/-P

Built-In Amplifier Photoelectric Sensor



CE RoHS

Introduction

MV-PE5301/-P photoelectric sensor adopts specialized chips, offering advantages like simplicity, reliability, and fast response. It contains polarizing filters and supports light-on/dark-on switch.

Key Features

- Provides a clear red spot, and contains polarizing filters.
- Adapts to complex light environment with anti-interference capability.
- Immune to interference from highly reflective objects.

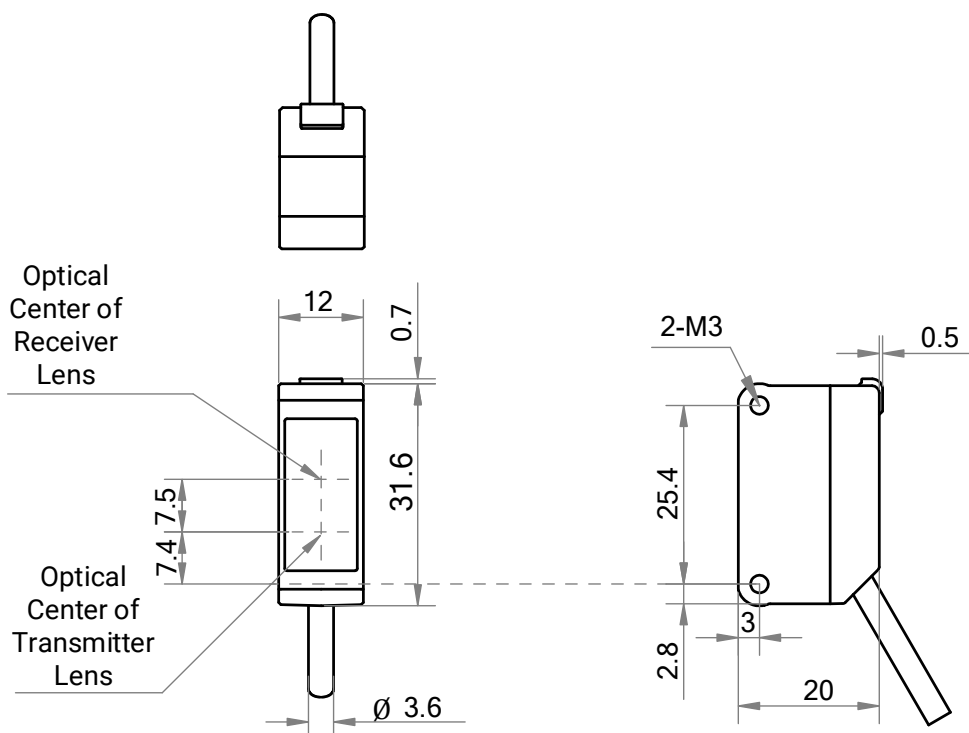
Available Model

- PNP type: MV-PE5301-P
- NPN type: MV-PE5301

Applicable Industry

Robotics, logistics, and industrial manufacturing.

Dimension

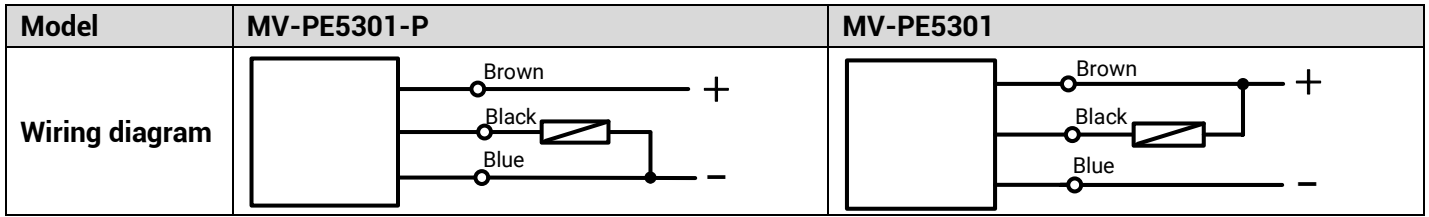


Unit: mm

Specification

Model	MV-PE5301-P	MV-PE5301
Parameter	Built-In Amplifier Photoelectric Sensor	
Performance		
Detecting distance	0.1 m to 4 m	
Sensing target	Opaque object, semi-transparent object, and mirror above $\Phi 50$ mm	
Output	PNP (supports light-on/dark-on switch)	NPN (supports light-on/dark-on switch)
Light source	Red LED 650 nm	
Response time	$\leq 500 \mu\text{s}$	
Repeatability (perpendicular to sensing axis)	≤ 0.5 mm	
Electrical feature		
Supply voltage	12 VDC to 24 VDC $\pm 10\%$, including Ripple (P-P) 10% or less	
Residual voltage	≤ 2 VDC	
Operating current	≤ 20 mA	
Max. sink/source current	≤ 100 mA	
Circuit protection	Reverse polarity protection, overcurrent protection, and overvoltage protection	
Insulation resistance	20 M Ω or more (between the terminal block for power supply and the housing)	
Withstand voltage	1000 VAC, 1 min (between the terminal block for power supply and the housing)	
Mechanical		
Dimension	20 mm \times 12 mm \times 31.6 mm (0.8" \times 0.5" \times 1.2")	
Weight	Approx. 45 g (0.1 lb.) (including cable)	
Temperature	Working temperature: -25 $^{\circ}\text{C}$ to 55 $^{\circ}\text{C}$ (-13 $^{\circ}\text{F}$ to 131 $^{\circ}\text{F}$) Storage temperature: -30 $^{\circ}\text{C}$ to 70 $^{\circ}\text{C}$ (-22 $^{\circ}\text{F}$ to 158 $^{\circ}\text{F}$)	
Humidity	35% RH to 85% RH	
Ambient illumination	Sunlight: < 10000 lux Incandescent lamp: < 3000 lux	
Ingress protection	IP67	
Material	Housing: polycarbonate Lens: acrylic	
Indicator	Operation indicator: orange Stability indicator: green	
Connecting method	Cable lead-out (standard length: 2 m, 78.7")	
Vibration resistance	10 Hz to 500 Hz, double amplitude 1.5 mm (0.1"), 2 hours in each of the X, Y, and Z directions	
Shock resistance	500 m/s ² , 3 times in each of the X, Y, and Z directions	
General		
Certification	CE, RoHS	

Wiring Method



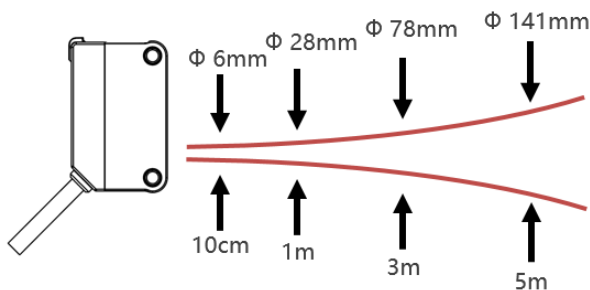
Relationship of Detection Status and Indicators

	Detection Status	Output	Operation Indicator	Stability Indicator
Light-ON/LO	Stable, incident light	ON	ON ¹	ON
	Unstable, incident light			OFF
	Unstable, no incident light	OFF	OFF ²	ON
	Stable, no incident light			ON
Dark-ON/DO	Stable, incident light	OFF	OFF	ON
	Unstable, incident light			OFF
	Unstable, no incident light	ON	ON	OFF
	Stable, no incident light			ON

Note:

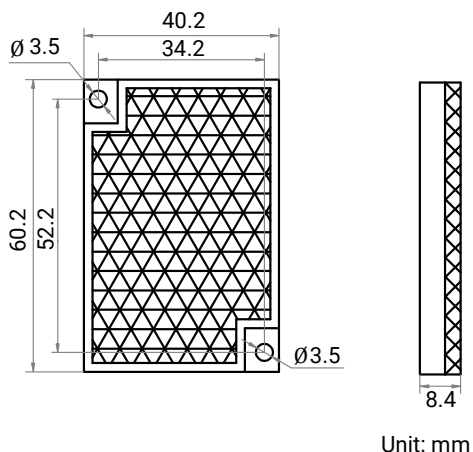
1. The operation indicator is ON: The amount of incident light entering the receiver is above the operating level.
2. The operation indicator is OFF: The amount of incident light entering the receiver is below the operating level.

Spot Diameter



Retroreflector

Model: PA-R001



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