

PE Series

Power built-in type photo sensor

- Economical price
- Wide range of power supply voltage
- Relay output
- Attached the LED that indicates the operation state
- Less influence from dust and etc due to the flat lens type



Specification

Model		PE-T5D	PE-M3D	PE-R05D
Sensing method		Through beam type	Retro reflection type	Diffuse reflection type
Sensing distance		5 m	0.1 – 3 m	500 mm
Sensing object		min Ø 20 mm (Opaque body)	min Ø 60 mm (Opaque body)	200 X 200 mm (White non-glossy paper)
Power supply voltage		24 V DC, 100 – 240 V AC/DC ±10 % 50/60 Hz		
Power consumption	Emitter	max 0.7 W	max 1.6 W	max 2 W
	Receiver	max 1.2 W		
Control output		Relay output 1c, 250 V AC, 2 A (Resistive load)		
Output action		Dark ON		Light ON
Response time		max 25 ms		
Hysteresis		—		Less than 20 % of the sensing distance
Light source(wave length)		Infrared lightening LED (850 nm)		
LED		Control output indicator : Red LED (Red LED of through beam type emitter is the power indicator)		
Sensitivity adjustment		—	By the sensitivity adjusting volume	
Protective circuit		Built in the reversed power supply connection protective circuit and output short protective circuit.		
Ambient illumination		Sunlight : max 11,000 Lux, Incandescent lamp : max 3,500 Lux		
Ambient temperature		-10 ~ 55 °C (Surrounding storage temperature : -40 ~ 70 °C)		
Ambient humidity		35 ~ 85 % RH (With no condensation)		
Protective structure		IP 54 (IEC)		
Insulation resistance		min 100 MΩ (500 V DC mega standard)		
Dielectric strength		1,500 V AC, for 1 min		
Vibration resistance		10 – 55 Hz Double amplitude 1.5 mm, for 2 hours each in X, Y and Z directions		
Shock resistance		500 % (Approx. 50G), 3 times each in X, Y and Z directions		
Connection method		Cable extended type (Number of wire : 5P, Diameter Ø 6 mm, Length : 2 mm) * Emitter of through beam type is 2P		
Material		Case and lens : PC		
Weight		Emitter and receiver each Approx. 120g	Approx. 120 g	

(Note 1) The sensing distance can be varied depending on the size, surface condition, glossy, non-glossy of the sensing object

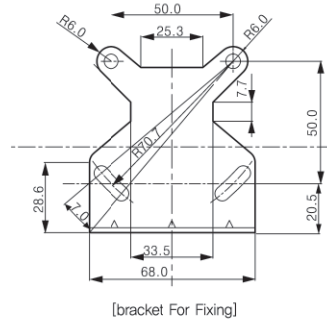
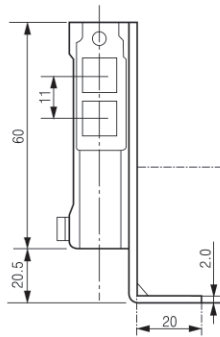
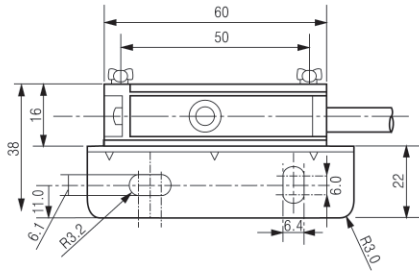
(Note 2) PE-TL5D is emitter and PE-TR5D is receiver with the through beam type

(Note 3) Sensing range of PE-M3D is the distance when HY-M5 (Mirror) is used

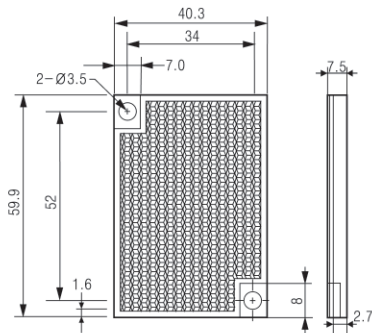


Dimension (Unit : mm)

Model PE-RO5D/PE-T5D



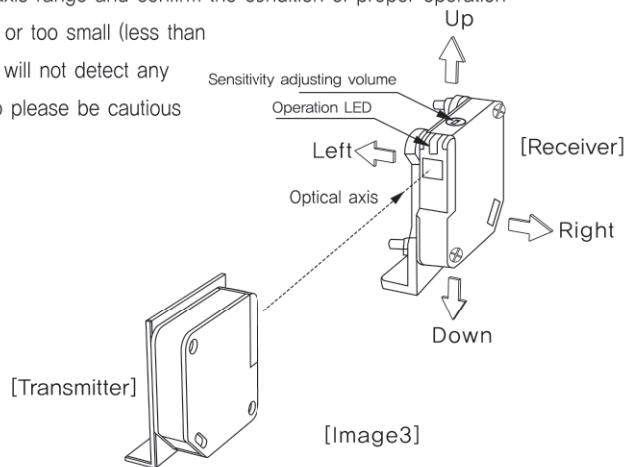
Model (HY-M5)



Installation method

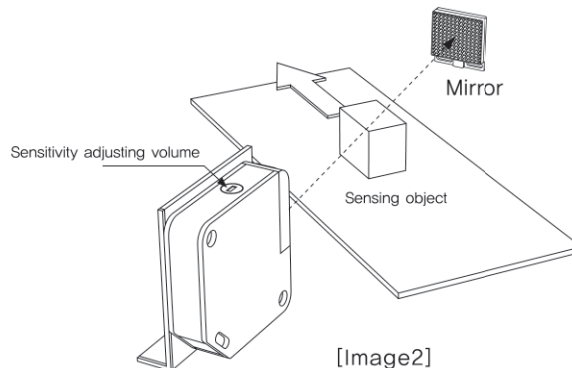
Through beam type (PE-T5D)

- Install the emitter (emitter) and receiver to face each other in the straight line and check for the proper wiring. After finishing confirmation, supply in the power.
- Fix either the emitter or receiver and check for the range where operation indicator of receiver becomes turned ON or turned OFF by controlling in the direction of up, down, left and right. After finishing the confirmation, place it in the middle and fix it.
- Place the sensing object within the optic axis range and confirm the condition of proper operation
- If the sensing objects are semitransparent or too small (less than 10 mm) then there is possibility that sensor will not detect any objects because they just pass through so please be cautious



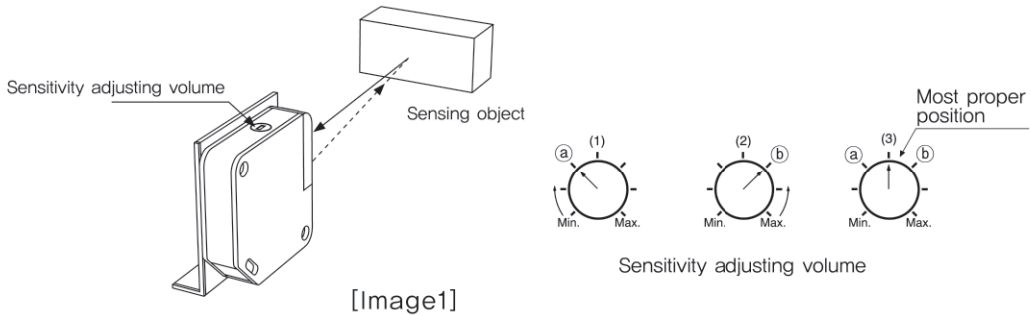
Retro reflection type (PE-M3D)

- Install the sensor and mirror to face each other. After that, adjust the position of mirror to up, down, left and right direction and confirm the range where the operation indicator becomes turn OFF. Install it at the center of position where light became turned OFF.
- Adjust the sensitivity adjustment volume at the most suitable position according to the sensing range, sensing object and etc.
- When installing more than 1 sensor, please keep the distance (Gap) more than 30 Cm due to the possibility of malfunction occurrence.
- When the sensing object is glossy or highly reflective, please install at an angle of 30 ° ~ 45 ° degree according to the moving direction of sensing object [Refer to the image 2 provided below]



■ Diffuse reflection type (PE-R05D)

- Generally it is used with the max sensitivity setting but it may be affected by the front side wall, pole and etc without sensing object so please be cautious when adjusting.
 - Increasing the sensitivity too much may end up with malfunction so please be cautious
- 1) With the sensing object in the position, increase the volume gradually from the min sensitivity to the state when operation LED becomes ON and that position will be referred as point ③.
 - 2) With the sensing object not in the position, decrease the volume gradually from the max to the state when operation LED becomes OFF and that position will be referred as point ②.
 - 3) Set the volume halfway between point ② and ③

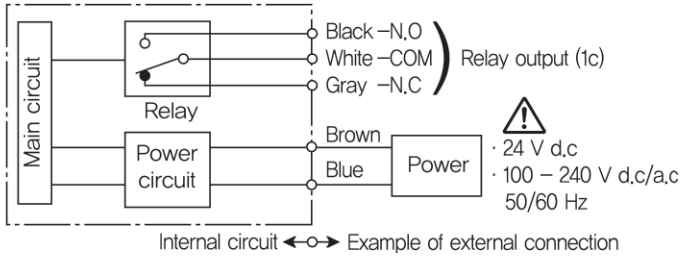


⦿ Operation chart

Model	Sensing status	L-ON	D-ON	ON	OFF
PE-R05D	Relay operation (a contact) and operation LED (red LED)	ON	ON	ON	OFF
PE-M3D PE-T5D	Relay operation (a contact) and operation LED (red LED)	ON	OFF	ON	OFF

●● Output circuit diagram

■ Receiver of diffuse reflection type, Retro reflection type, and through beam type



※ Please insulate the non-using wires

■ Emitter of through-beam type

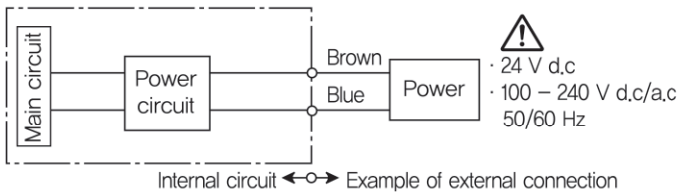


Photo Sensor

●● Graph of sensing range characteristic

