

## FEATURES

- Compact size for 13.5(W)\*25.5(H)\*32.0(L)
- A wealth of models ideal for limit control, counting control, and other applications.
- Sensing distance of 5~60cm for Diffuse reflective models, 1M~2M for Retro reflective models and 1M~5M for Through beam models.



## APPLICATIONS

Counting Control

Limit Control

Safety Control

## ORDERING INFORMATION

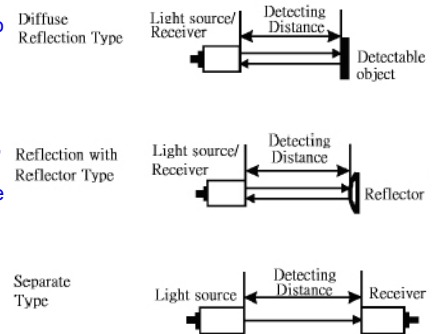
PE3-		Material	-	Sensing Method	-	Sensing Distance	-	Output Mode	Operation Mode	-	Connection Method
CODE	MATERIAL	CODE	Sensing Method	CODE	SENSING DIST.	CODE	O/P & OPERATION MODE	CODE	CONNECTION METHOD		
P	ABS	DR	Diffuse reflective (5~60cm)	010	10cm	OC	Open Collect	20	2 M(Pre-wired)		
		RR	Retro reflective (1~2M)	040	40cm	NO	Normal Open(Light ON)	XX	X M(Pre-wired)		
		TB	Through beam (1~5M)	060	60cm	N	Normal Close(Dark ON)				
				200	200cm(2M)	VP	Voltage Pulse				
				500	500cm(5M)						

## TECHNICAL SPECIFICATION

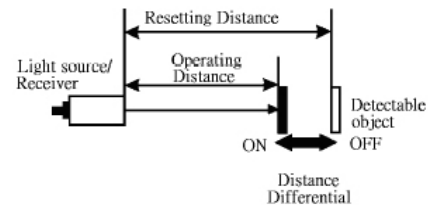
	Diffuse reflective	Retro reflective	Through beam
<b>Light source</b>	Infrared LED		
<b>Sensing distance</b>	10cm/40cm/60cm	1M/2M	5M
<b>Differential travel</b>	10% max. of setting distance		
<b>Standard sensing object</b>	Non-glossy white paper: 10*10cm	Opaque: 56mm diameter min.	
<b>Sensitivity adjust.</b>	One-turn potentiometer(VR)		
<b>Directional angle</b>	--	10 ~ 20°	10 ~ 20°
<b>Connection</b>	DC 3 wire		
<b>Indication</b>	Operation indicator: red LED; Stability indicator: green LED		
<b>Control output</b>	Light ON or Dark ON		
<b>Operation mode</b>	Open collect: NPN / PNP; Normal open; Voltage Pulse		
<b>Power supply</b>	DC10~30V, ripple (p-p): 10% max.		
<b>Current consumption</b>	<30mA		
<b>Load current</b>	DC 30V, 100mA max.		
<b>Protection circuits</b>	Reverse polarity, short-circuit & Surge suppressor protection		
<b>Response time</b>	Operating or reset: 1ms max.		
<b>Ambient temp.</b>	Operating: -25°C~70°C; Storage: -30°C~80°C(Non-condensing)		
<b>Ambient humidity</b>	Operating: 35 to 95 % RH; Storage: 35 to 95 % RH		
<b>Temp. influence</b>	10% max. of sensing distance at 23C in the temp. range of 25 to 70C		
<b>Ambient illumination</b>	Incandescent lamp: 5,000 lx max. Sunlight: 10,000 lx max.		
<b>Voltage influence</b>	1% max. of sensing distance at rated voltage in rated voltage 15% range		
<b>Insulation resistance</b>	20 MΩ min. (at 500 VDC) between current-carrying parts and case		
<b>Dielectric strength</b>	1,000 VAC for 1 min between current-carrying parts and case		
<b>Vibration</b>	10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z		
<b>Shock resistance</b>	500 m/s <sup>2</sup> (about 50g) 3 times each in X, Y, and Z directions		
<b>Protection</b>	IEC 60529 IP67 [JEM IP67g (water-resistant, oil-resistant)]		
<b>Connection method</b>	Pre-wired 3C / 4.8 Ø * 2M PVC oil-resistant;		
<b>Materials</b>	<b>Case</b>	ABS	
	<b>Sensing surface</b>	Acrylic resin	
	<b>Screw</b>	Cooper	
	<b>Bracket</b>	Iron with Nickel-plating(sold separately)	
<b>Weight</b>	85g	102g	160g

## DESCRIPTION OF TECHNICAL

- **Sensing distance**  
The term of sensing distance generally refers to the distance range within which the photoelectric sensor can detect the detectable objects.  
▶ In Diffuse reflective type, it denotes the maximum distance within which the sensor can stable operate with the standard sensing object.  
▶ In Retro reflective and Through beam type, it denotes the maximum distance within which the sensor can be set stable.



- **Differential travel**  
The term of differential travel refers to the difference between operating and resetting distance.

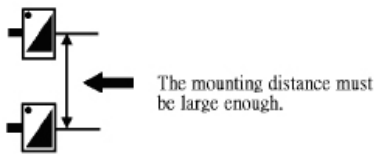


- **Response time**  
Response time refers to the frequency of outputs from the sensor per second in response to the movement of each target when brought closer to the sensor.
- **Current consumption**  
Current consumption refers to the maximum current consumed when the sensor is in no output.

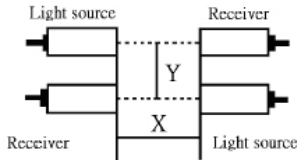
## ■ INSTALLATION PRECAUTIONS

### ● Mutual Interference

In the case of mounting two or more Diffuse reflective sensor side by side, incorrect operation may occur due to mutual interference of mounting in close proximity. To move the mounting distance may be reduce the mutual interference.

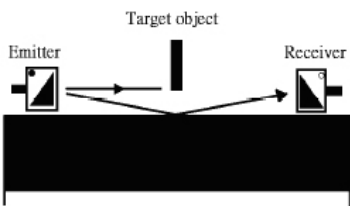
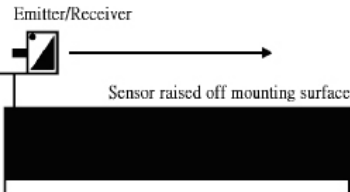
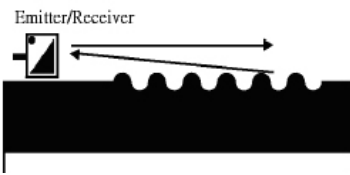


In the case of mounting two or more Through beam sensor side by side, alternate the sender and receive to reduce the mutual interference.



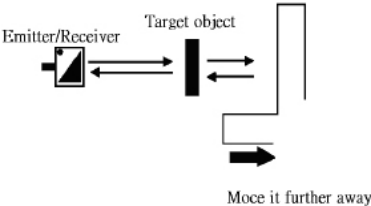
### ● Influence of the mounting surface

In the case of mounting sensor, it is maybe detecting unstable due to reflection from a rough surface. To raise or lower the sensor or alter the operating angle to ensure stable operation



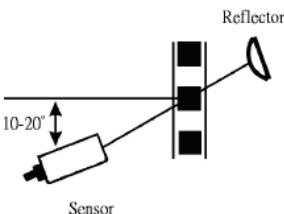
### ● Influence of the background

The background behind target objects may influence the stability of operation that is depending on its luminance and reflectivity. Generally, a black background is a way to reduce the unstable operation.



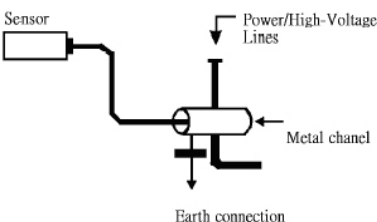
### ● Sensing object with high reflection

If the target to be detected is glossy and thus the surface reflection is great, install the sensor tilted 10° to 20°, as shown in the figure to avoid false reflections from the target.

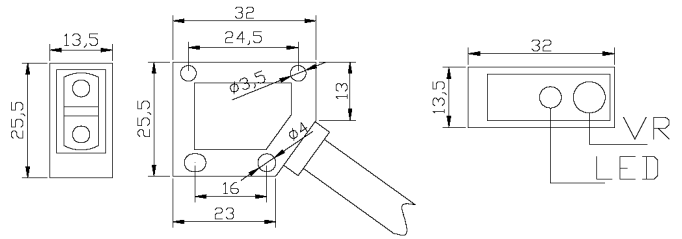


### ● Electric noise

In the case of interference induced by the power lines, separate the wiring of the sensor from the power and high-voltage lines or place the sensor wires in an earth metal pipe. Otherwise the sensor may malfunction due to electric noise.

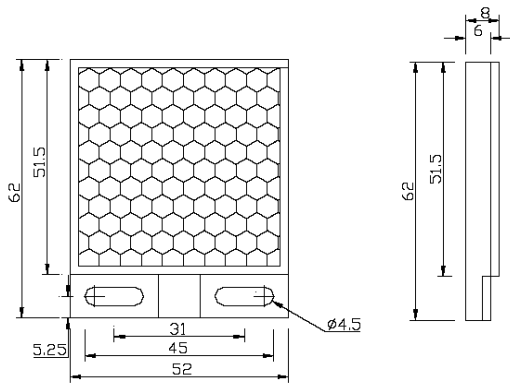


## ■ DIMENSIONS

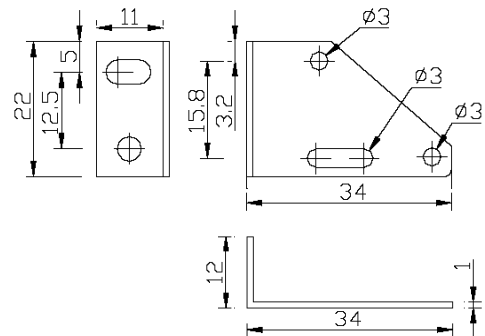


### Accessories

#### Reflector



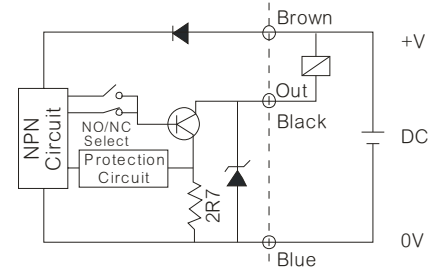
#### Bracket



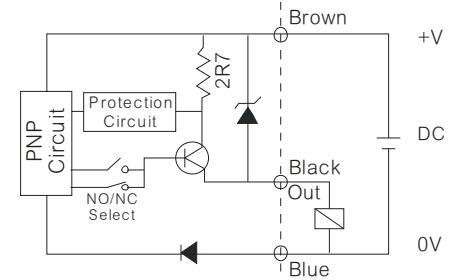
## ■ CONNECTION

### ● DC 3 wire – Diffuse reflective / Retro reflective

#### NPN NO/NC



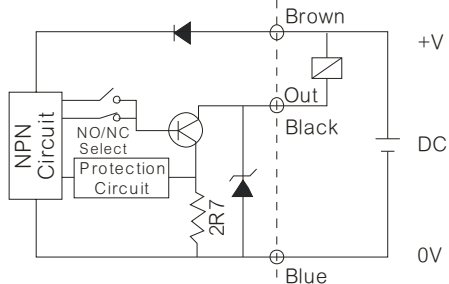
#### PNP NO/NC



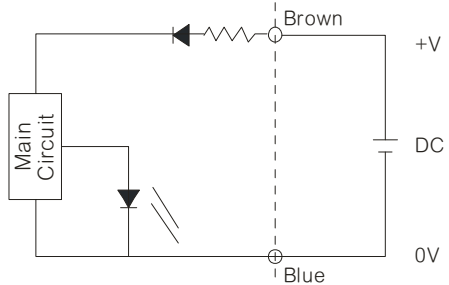
● DC 3 wire – Through beam

■ SENSITIVITY ADJUSTMENT

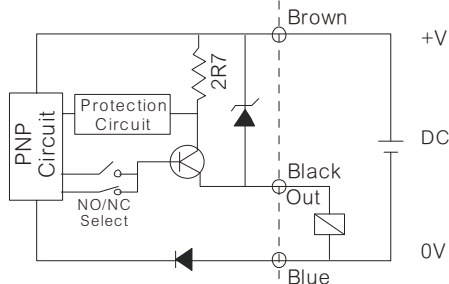
NPN NO/NC Receiver



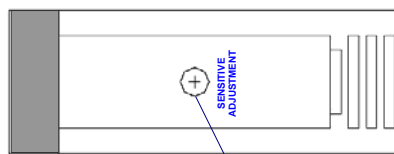
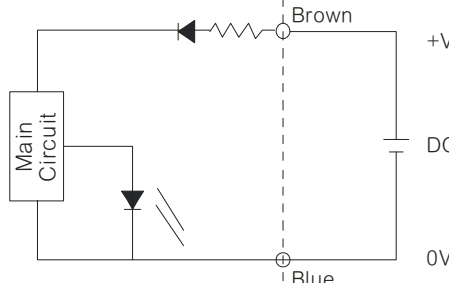
NPN NO/NC Emitter



PNP NO/NC Receiver



PNP NO/NC Emitter



Sensitive adjustment (Clockwise to increase sensing distance)- Ø4

■ OPERATION MODE

