

RT-610 SERIES

Amplifier Built-in Robust U-shaped Photoelectric Sensor



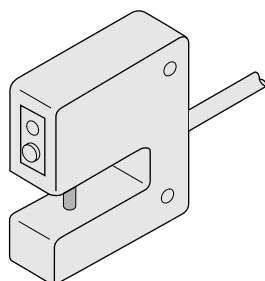
Suitable for Address
Reading and Sensing
Cut-off Marks

CE Marked

Conforming to EMC Directive
(RT-610-50 only)

Beam Axis Alignment not Required

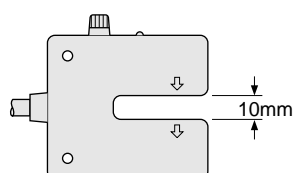
Beam axis alignment is not required as the emitter and the receiver are integrated in a single body.



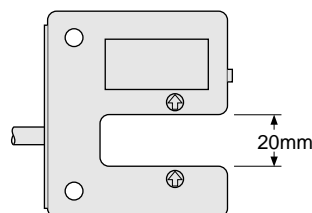
Wide Product Range

There are three models having a sensing range of 10mm, 20mm and 50mm. The models with a sensing range of 10mm and 20mm are also available as red LED type and green LED type for mark sensing.

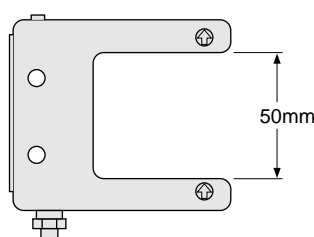
RT-610-10



RT-610-20



RT-610-50

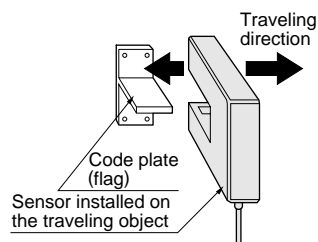


Robust Die-cast Housing

The robust die-cast housing maintains high reliability.

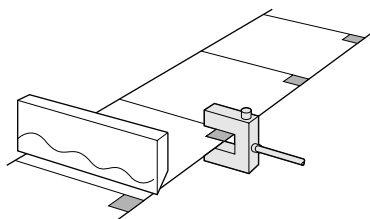
APPLICATIONS

Address reading



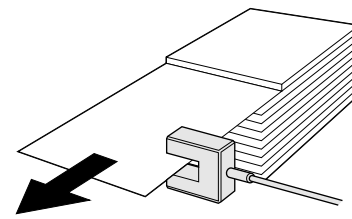
It can also be used to confirm the position of transportation equipment, such as, crane, etc.

Sensing cut-off marks



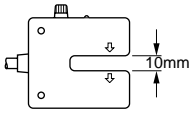

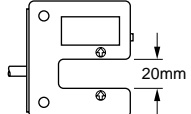

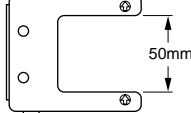

It can sense cut-off marks on a transparent film.

Sensing overlapping paper



Traveling direction
Checking paper feed on various printing machines

ORDER GUIDE

Type	Appearance	Sensing range	Model No.	Emitting element
10mm sensing range For mark sensing		 10mm (fixed)	RT-610-10	Infrared LED
			RT-610-10R	Red LED
			RT-610-10G	Green LED
20mm sensing range For mark sensing		 20mm (fixed)	RT-610-20	Infrared LED
			RT-610-20R	Red LED
			RT-610-20G	Green LED
50mm sensing range		 50mm (fixed)	RT-610-50	Infrared LED

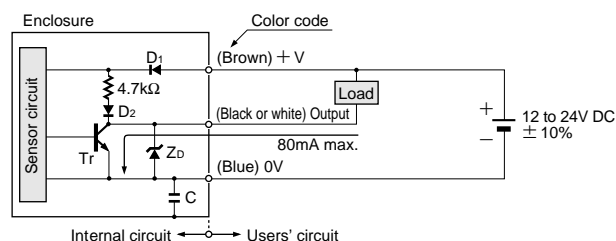
RT-610

SPECIFICATIONS

Type		U-shaped thru-beam						
		For mark sensing						
Item	Model No.	RT-610-10	RT-610-20	RT-610-50	RT-610-10R	RT-610-20R	RT-610-10G	RT-610-20G
Sensing range (fixed)		10mm	20mm	50mm	10mm	20mm	10mm	20mm
Sensing object		φ4mm or more opaque object			φ4mm or more opaque or translucent object			
Supply voltage		12 to 24V DC ± 10% Ripple P-P 10% or less						
Current consumption		40mA or less						
Output		NPN transistor universal • Maximum sink current: 80mA • Residual voltage: 1V or less (at 80mA sink current)						
	Utilization category			DC-12 or DC-13				
	Output operation	Incorporated with two outputs, Light-ON/Dark-ON						
Response time		1ms or less		0.1ms or less	1ms or less			
Operation indicator		Red LED (lights up under light received condition)						
Sensitivity adjuster		Continuously variable adjuster			Continuously variable adjuster			
Environmental resistance	Pollution degree			3 (Industrial environment)				
	Protection	IP62 (IEC)	IP66 (IEC)		IP62 (IEC)	IP66 (IEC)	IP62 (IEC)	IP66 (IEC)
	Ambient temperature	－ 10 to + 60°C (No dew condensation or icing allowed), Storage: － 10 to + 60°C						
	Ambient humidity	35 to 85% RH, Storage: 35 to 85% RH						
	Ambient illuminance	Sunlight: 11,000ℓx at the light-receiving face Incandescent light: 3,500ℓx at the light-receiving face			Sunlight: 3,000ℓx at the light-receiving face Incandescent light: 1,000ℓx at the light-receiving face			
	EMC			Emission: EN50081-2 Immunity: EN50082-2				
	Vibration resistance	10 to 55Hz frequency, 1.5mm amplitude in X, Y and Z directions for two hours each						
	Shock resistance	500m/s ² acceleration (50G approx.) in X, Y and Z directions for three times each						
Emitting element		Infrared LED (modulated)			Red LED (modulated)		Green LED (modulated)	
Enclosure earthing		Floating	Capacitor earth	Floating	Floating	Capacitor earth	Floating	Capacitor earth
Material		Enclosure: Die-cast aluminum						
Cable		0.3mm ² 4-core cabtyre cable, 1m long (RT-610-20, RT-610-20R and RT-610-20G: 2m long)						
Cable extension		Extension up to total 100m is possible with 0.3mm ² , or more, cable.						
Weight		150g approx.	240g approx.	180g approx.	150g approx.	240g approx.	150g approx.	240g approx.
Accessories		Adjusting screwdriver: 1 No. (Accessory for RT-610-20□), Insulation fitting: 1 set (Accessory for RT-610-20□)						

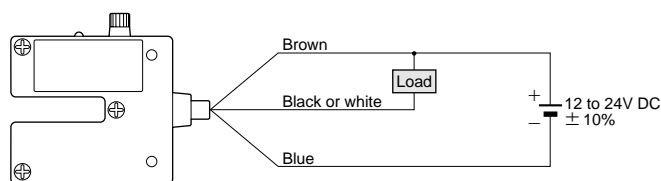
I/O CIRCUIT AND WIRING DIAGRAMS

I/O circuit diagram



Symbols ... D1: Reverse supply polarity protection diode
D2: Reverse current prevention diode
Zb: Surge absorption zener diode
Tr: NPN output transistor
C: Capacitor (Not incorporated in RT-610-10□ and RT-610-50)

Wiring diagram

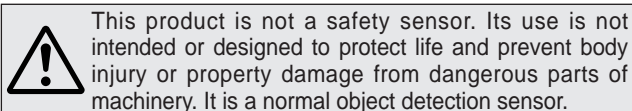


Output operation

Color code	Output operation
Black	Light-ON
White	Dark-ON

PRECAUTIONS FOR PROPER USE

Refer to P.820~for general precautions.



Enclosure earthing

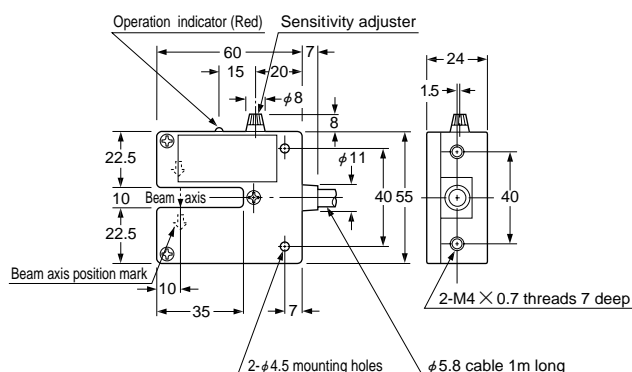
- RT-610-20□ is capacitor earthed to increase noise immunity. Use the attached insulation fitting in case of the following.
(RT-610-10□ and RT-610-50 do not require the insulation fitting because of floating earth.)
 - ★ If there is equipment, such as an ultrasonic welder, spot welder, etc., generating high frequency noise near the sensor and the sensor is mounted on an electric conductor such as metal.
- Further, do not supply power from a power supply incorporating an auto-transformer (single winding transformer), since this is dangerous.

Others

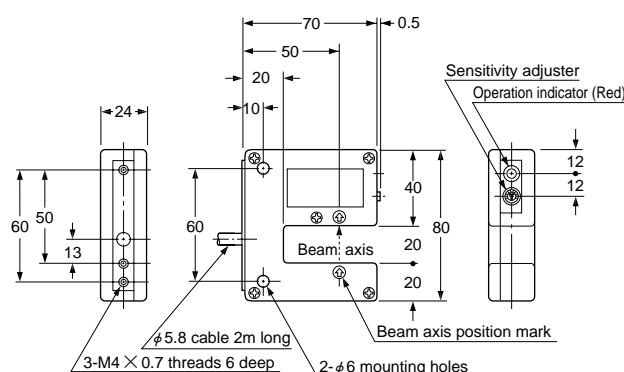
- The output is not incorporated with a short-circuit protection circuit. Do not connect it directly to a power supply or a capacitive load.
- Do not use during the initial transient time (50ms) after the power supply is switched on.

DIMENSIONS (Unit: mm)

RT-610-10□ 10mm sensing range type



RT-610-20□ 20mm sensing range type



RT-610-50 50mm sensing range type

