

# RT-610 SERIES

**Related Information**

- General terms and conditions..... F-3
- Selection guide ..... P.231~
- Glossary of terms..... P.1549~
- General precautions ..... P.1552~

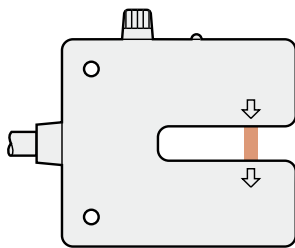


[panasonic.net/id/pidsx/global](http://panasonic.net/id/pidsx/global)

## Suitable for address reading and sensing cut-off marks

### Beam axis alignment not required

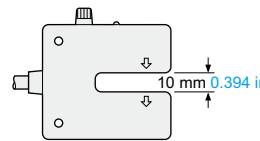
Beam axis alignment is not required as the emitter and the receiver are integrated in a single body.



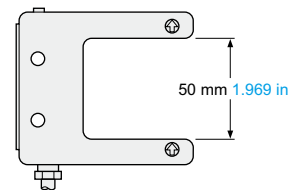
### 2 types • 4 models are available.

There are two models having a sensing range of 10 mm **0.394 in** and 50 mm **1.969 in**. The models with sensing ranges of 10 mm **0.394 in** are also available in red LED type and green LED type for mark sensing.

**RT-610-10□**



**RT-610-50**



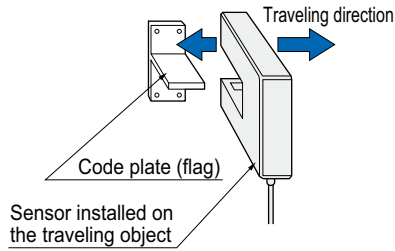
### Robust die-cast enclosure

The robust die-cast enclosure maintains high reliability.

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- MICRO PHOTOELECTRIC SENSORS
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- PRESSURE / FLOW SENSORS
- INDUCTIVE PROXIMITY SENSORS
- PARTICULAR USE SENSORS
- SENSOR OPTIONS
- SIMPLE WIRE-SAVING UNITS
- WIRE-SAVING SYSTEMS
- MEASUREMENT SENSORS
- STATIC CONTROL DEVICES
- LASER MARKERS
- PLC
- HUMAN MACHINE INTERFACES
- ENERGY MANAGEMENT SOLUTIONS
- FA COMPONENTS
- MACHINE VISION SYSTEMS
- UV CURING SYSTEMS
- Selection Guide
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- Power Supply Built-in
- Amplifier-separated
- EX-Z
- CX-400
- CY-100
- EX-10
- EX-20
- EX-30
- EX-40
- CX-440
- EQ-30
- EQ-500
- MQ-W
- RX-LS200
- RX
- RT-610**

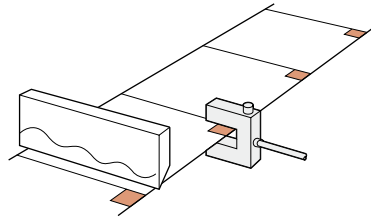
**APPLICATIONS**

**Address reading**



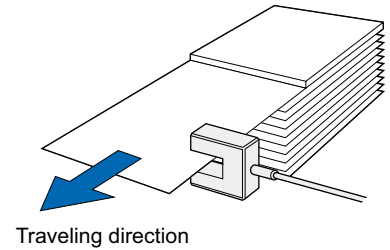
It can also be used to confirm the position of transportation equipment such as crane, etc.

**Sensing cut-off marks**



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

**Sensing overlapping paper**



Checking paper feed on various printing machines.

**ORDER GUIDE**

Type	Appearance	Sensing range	Model No.	Output	Emitting element
10 mm 0.394 in sensing range For mark sensing		10 mm 0.349 in (fixed)	<b>RT-610-10</b>	NPN transistor universal	Infrared LED
			<b>RT-610-10R</b>		Red LED
			<b>RT-610-10G</b>		Green LED
50 mm 1.969 in sensing range		50 mm 1.969 in (fixed)	<b>RT-610-50</b>		Infrared LED

**5 m 16.404 ft cable length type**

5 m 16.404 ft cable length type (standard: 1 m 3.281 ft) is also available. When ordering this type, suffix “-C5” to the model No. (e.g.) 5 m 16.404 ft cable length type of RT-610-10 is “RT-610-10-C5”.

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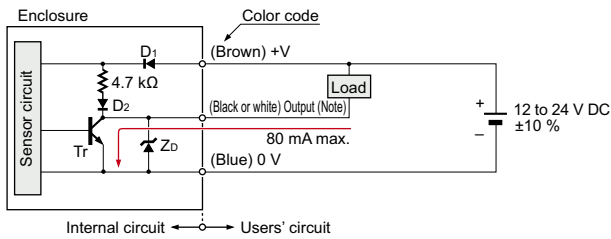
## SPECIFICATIONS

Item	Model No.	U-shaped thru-beam			
		RT-610-10	RT-610-50	RT-610-10R	RT-610-10G
CE marking directive compliance		EMC Directive, RoHS Directive			
Sensing range (fixed)		10 mm <b>0.394 in</b>	50 mm <b>1.969 in</b>	10 mm <b>0.394 in</b>	
Sensing object		ø4 mm <b>ø0.157 in</b> or more opaque object		ø4 mm <b>ø0.157 in</b> or more opaque or translucent object (Note 2)	
Supply voltage		12 to 24 V DC ±10 % Ripple P-P 10 % or less			
Current consumption		40 mA or less			
Output		NPN transistor universal • Maximum sink current: 80 mA • Residual voltage: 1 V or less (at 80 mA sink current)			
Utilization category		DC-12 or DC-13			
Output operation		Incorporated with two outputs, Light-ON / Dark-ON			
Response time		0.1 ms 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)	
	Ambient temperature	-10 to +60 °C <b>+14 to +140 °F</b> (No dew condensation or icing allowed), Storage: -10 to +60 °C <b>+14 to +140 °F</b>			
	Ambient humidity	35 to 85 % RH, Storage: 35 to 85 % RH			
	Ambient illuminance	Incandescent light: 3,500 lx or less at the light-receiving face			
	Vibration resistance	10 to 55 Hz frequency, 1.5 mm <b>0.059 in</b> double amplitude in X, Y and Z directions for two hours each			
	Shock resistance	500 m/s <sup>2</sup> acceleration (50 G approx.) in X, Y and Z directions three times each			
	Emitting element		Infrared LED (modulated)	Red LED (modulated)	Green LED (modulated)
Peak emission wavelength		950 nm <b>0.037 mil</b>	680 nm <b>0.027 mil</b>	570 nm <b>0.022 mil</b>	
Enclosure earthing		Floating			
Material		Enclosure: Die-cast aluminum			
Cable		0.3 mm <sup>2</sup> 4-core cabtyre cable, 1 m <b>3.281 ft</b> long			
Cable extension		Extension up to total 100 m <b>328.084 ft</b> is possible with 0.3 mm <sup>2</sup> , or more, cable.			
Net weight		150 g approx.	180 g approx.	150 g approx.	

Notes: 1) Where measurement conditions have not been specified precisely, the conditions used were an ambient temperature of +23 °C **+73.4 °F**.  
2) Make sure to confirm detection with an actual sensor before use.

## I/O CIRCUIT AND WIRING DIAGRAMS

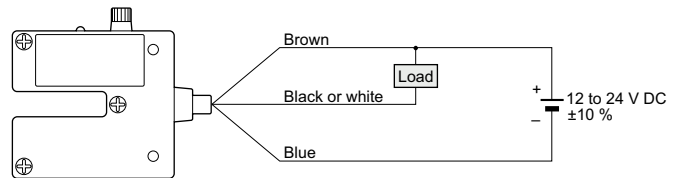
### I/O circuit diagram



Note: The output does not incorporate a short-circuit protection circuit. Do not connect it directly to a power supply or a capacitive load.

Symbols ... D1 : Reverse supply polarity protection diode  
D2 : Reverse current prevention diode  
ZD : Surge absorption zener diode  
Tr : NPN output transistor

### Wiring diagram



### Output operation

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

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**RT-610**

**PRECAUTIONS FOR PROPER USE**

Refer to p.1552~ for general precautions.

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**RX**

**RT-610**



- Never use this product as a sensing device for personnel protection.
- In case of using sensing devices for personnel protection, use products which meet laws and standards, such as OSHA, ANSI or IEC etc., for personnel protection applicable in each region or country.

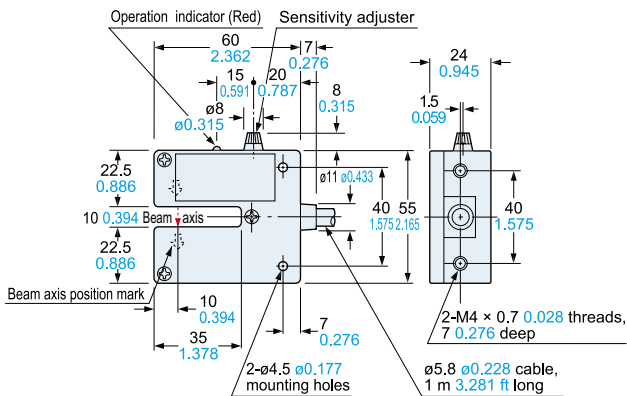
**Others**

- The output does not incorporate 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 (50 ms) after the power supply is switched on.

**DIMENSIONS (Unit: mm in)**

The CAD data can be downloaded from our website.

**RT-610-10□** 10 mm **0.394 in** sensing range type



**RT-610-50** 50 mm **1.969 in** sensing range type

