

# RT-610 SERIES

## Related Information

■ General terms and conditions..... F-7  
 ■ Glossary of terms..... P.1455~

■ Sensor selection guide..... P.271~  
 ■ General precautions ..... P.1458~

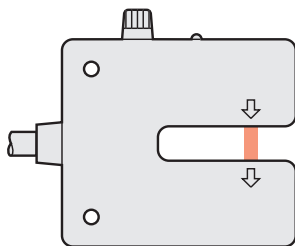


[panasonic.net/id/pidsx/global](http://panasonic.net/id/pidsx/global)

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

### Beam axis alignment not required

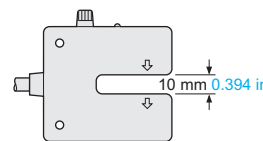
Beam axis alignment is not required as the emitter and the receiver are integrated in a single body.



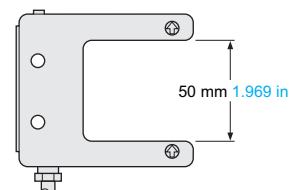
### 2 types • 4 models are available.

There are three models having a sensing range of 10 mm **0.394 in**, 20 mm **0.787 in**, and 50 mm **1.969 in**. The models with sensing ranges of 10 mm **0.394 in** and 20 mm **0.787 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.

Selection Guide

Amplifier Built-in

Power Supply Built-in

Amplifier-separated

CX-400

CY-100

EX-10

EX-20

EX-30

EX-40

CX-440

EQ-30

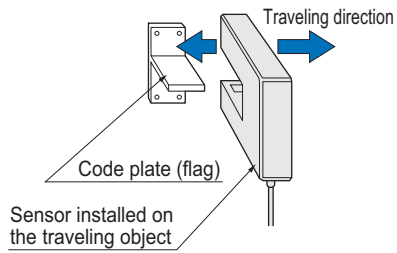
EQ-500

MQ-W

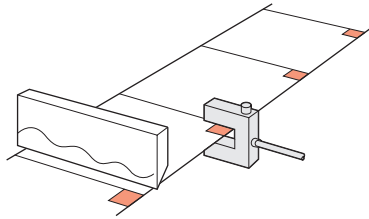
RX-LS200

RX

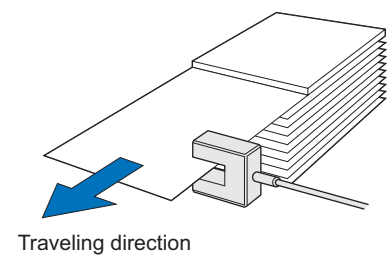
RT-610

**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 0.394 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**".

FIBER  
SENSORSLASER  
SENSORSPHOTO-  
ELECTRIC  
SENSORSMICRO  
PHOTO-  
ELECTRIC  
SENSORSAREA  
SENSORSLIGHT  
CURTAINS /  
SAFETY  
COMPONENTSPRESSURE /  
FLOW  
SENSORSINDUCTIVE  
PROXIMITY  
SENSORSPARTICULAR  
USE  
SENSORSSENSOR  
OPTIONSSIMPLE  
WIRE-  
SAVING  
UNITSWIRE-  
SAVING  
SYSTEMSMEASURE-  
MENT  
SENSORSSTATIC  
ELECTRICITY  
PREVENTION  
DEVICESLASER  
MARKERS

PLC

HUMAN  
MACHINE  
INTERFACESENERGY  
CONSUMPTION  
VISUALIZATION  
COMPONENTSFA  
COMPONENTSMACHINE  
VISION  
SYSTEMSUV  
CURING  
SYSTEMSSelection  
GuideAmplifier  
Built-inPower Supply  
Built-inAmplifier-  
separated**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**

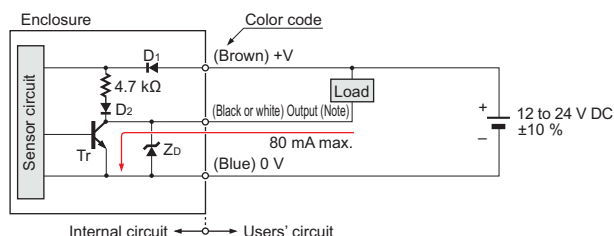
## SPECIFICATIONS

Type		U-shaped thru-beam			
		For mark sensing			
Item	Model No.	RT-610-10	RT-610-50	RT-610-10R	RT-610-10G
Sensing range (fixed)		10 mm 0.394 in	50 mm 1.969 in	10 mm 0.394 in	
Sensing object		ø4 mm ø0.157 in or more opaque object		ø4 mm ø0.157 in 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 +14 to +140 °F (No dew condensation or icing allowed), Storage: -10 to +60 °C +14 to +140 °F			
	Ambient humidity	35 to 85 % RH, Storage: 35 to 85 % RH			
	Ambient illuminance	Incandescent light: 3,500 lx at the light-receiving face			
	EMC	EN 60947-5-2			_____
	Vibration resistance	10 to 55 Hz frequency, 1.5 mm 0.059 in 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 for three times each			
Emitting element		Infrared LED (modulated)		Red LED (modulated)	Green LED (modulated)
Peak emission wavelength		950 nm 0.037 mil		680 nm 0.027 mil	570 nm 0.022 mil
Enclosure earthing		Floating			
Material		Enclosure: Die-cast aluminum			
Cable		0.3 mm <sup>2</sup> 4-core cabtyre cable, 1 m 3.281 ft long			
Cable extension		Extension up to total 100 m 328.084 ft 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

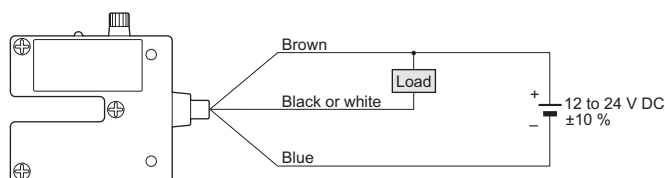
### I/O circuit diagram



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

FIBER  
SENSORSLASER  
SENSORSPHOTO-  
ELECTRIC  
SENSORSMICRO  
PHOTO-  
ELECTRIC  
SENSORSAREA  
SENSORSLIGHT  
CURTAINS/  
SAFETY  
COMPONENTSPRESSURE /  
FLOW  
SENSORSINDUCTIVE  
PROXIMITY  
SENSORSPARTICULAR  
USE  
SENSORSSENSOR  
OPTIONSSIMPLE  
WIRE-SAVING  
UNITSWIRE-SAVING  
SYSTEMSMEASURE-  
MENT  
SENSORSSTATIC  
ELECTRICITY  
PREVENTION  
DEVICESLASER  
MARKERS

PLC

HUMAN  
MACHINE  
INTERFACESENERGY  
CONSUMPTION  
VISUALIZATION  
COMPONENTSFA  
COMPONENTSMACHINE  
VISION  
SYSTEMSUV  
CURING  
SYSTEMSSelection  
GuideAmplifier  
Built-inPower Supply  
Built-inAmplifier-  
separated

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

