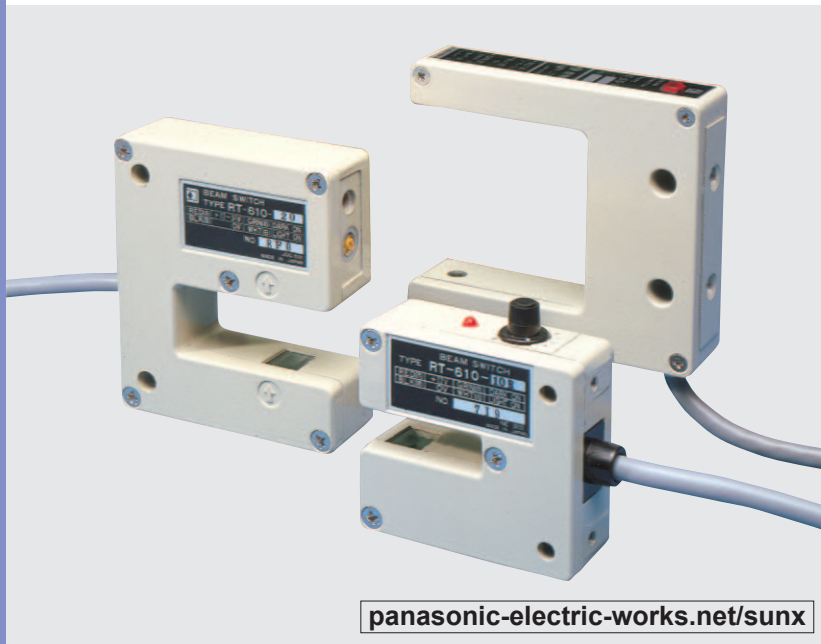


RT-610 SERIES

Related Information

- General terms and conditions..... F-17
- Sensor selection guide..... P.283~
- Glossary of terms..... P.1359~
- General precautions P.1405

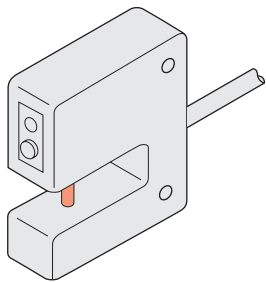


panasonic-electric-works.net/sunx

Suitable for address reading and sensing cut-off marks

Beam axis alignment not required

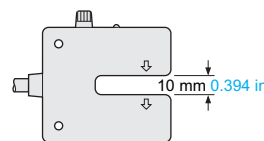
Beam axis alignment is not required as the emitter and the receiver are integrated in a single body.



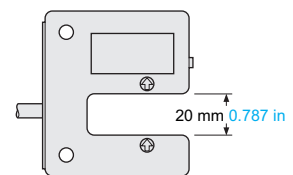
Wide product range

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.

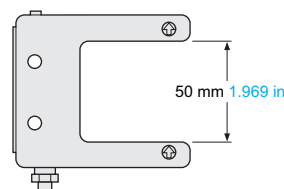
RT-610-10□



RT-610-20□



RT-610-50



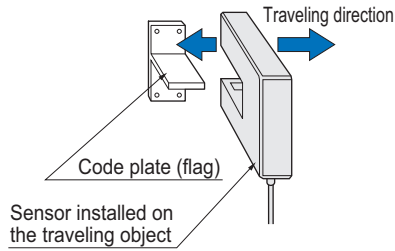
Robust die-cast enclosure

The robust die-cast enclosure maintains high reliability.

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

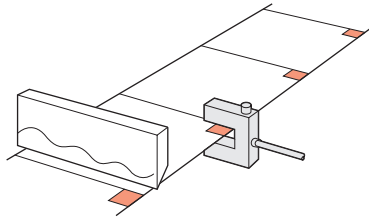
APPLICATIONS

Address reading



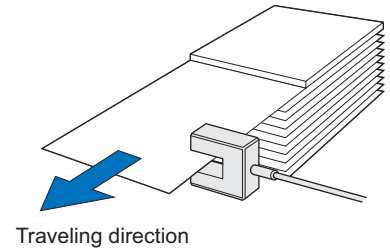
It can also be used to confirm the position of transportation equipment such as crane, etc.

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)	RT-610-10	NPN transistor universal	Infrared LED
			RT-610-10R		Red LED
			RT-610-10G		Green LED
20 mm 0.787 in sensing range For mark sensing		20 mm 0.787 in (fixed)	RT-610-20		Infrared LED
			RT-610-20R		Red LED
			RT-610-20G		Green LED
50 mm 1.969 in sensing range		50 mm 1.969 in (fixed)	RT-610-50	Infrared LED	

5 m 16.404 ft cable length type

5 m 16.404 ft cable length type (standard: 1 m 3.281 ft, **RT-610-20**, **RT-610-20R** and **RT-610-20G**: 2 m 6.562 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 SENSORS

LASER SENSORS

PHOTO-ELECTRIC SENSORS

MICRO PHOTO-ELECTRIC SENSORS

AREA SENSORS

LIGHT CURTAINS

PRESSURE / FLOW SENSORS

INDUCTIVE PROXIMITY SENSORS

PARTICULAR USE SENSORS

SENSOR OPTIONS

SIMPLE WIRE-SAVING UNITS

WIRE-SAVING SYSTEMS

MEASUREMENT SENSORS

STATIC CONTROL DEVICES

ENDOSCOPE

LASER MARKERS

PLC / TERMINALS

HUMAN MACHINE INTERFACES

ENERGY CONSUMPTION VISUALIZATION COMPONENTS

FA COMPONENTS

MACHINE VISION SYSTEMS

UV CURING SYSTEMS

Selection Guide

Amplifier Built-in

Power Supply Built-in

Amplifier-separated

CX-400

EX-10

EX-20

EX-30

EX-40

CX-440

EQ-30

EQ-500

MQ-W

RX-LS200

RX

RT-610

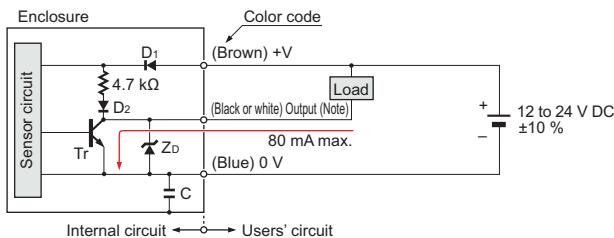
SPECIFICATIONS

Item	Model No.	U-shaped thru-beam						
		RT-610-10	RT-610-20	RT-610-50	RT-610-10R	RT-610-20R	RT-610-10G	RT-610-20G
Sensing range (fixed)		10 mm 0.394 in	20 mm 0.787 in	50 mm 1.969 in	10 mm 0.394 in	20 mm 0.787 in	10 mm 0.394 in	20 mm 0.787 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	————	DC-12 or DC-13	DC-12 or DC-13	————	————	————
Output operation		Incorporated with two outputs, Light-ON / Dark-ON						
Response time		0.1 ms or less	1 ms or less	0.1 ms or less	0.1 ms or less	1 ms or less	0.1 ms or less	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)	————	3 (Industrial environment)	3 (Industrial environment)	————	————	————
	Protection	IP62 (IEC)	IP66 (IEC)		IP62 (IEC)	IP66 (IEC)	IP62 (IEC)	IP66 (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 (RT-610-20R/20G : 1,000 lx) at the light-receiving face						
	EMC	EN 60947-5-2	————	EN 60947-5-2	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 ² 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	940 nm 0.037 mil	950 nm 0.037 mil	680 nm 0.027 mil		570 nm 0.022 mil	
Enclosure earthing		Floating	Capacitor earth	Floating	Floating	Capacitor earth	Floating	Capacitor earth
Material		Enclosure: Die-cast aluminum						
Cable		0.3 mm ² 4-core cabtyre cable, 1 m 3.281 ft long (RT-610-20 , RT-610-20R and RT-610-20G : 2 m 6.562 ft long)						
Cable extension		Extension up to total 100 m 328.084 ft is possible with 0.3 mm ² , or more, cable.						
Net weight		150 g approx.	240 g approx.	180 g approx.	150 g approx.	240 g approx.	150 g approx.	240 g approx.
Accessories		Adjusting screwdriver: 1 pc. (Accessory for RT-610-20□), Insulation fitting: 1 set (Accessory for RT-610-20□)						

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

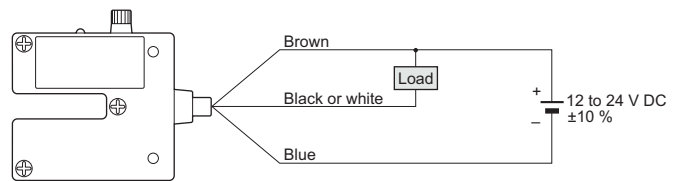
I/O circuit diagram



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 C : Capacitor (Incorporated in RT-610-20□)
-------------	---

Wiring diagram



Output operation

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

FIBER SENSORS

LASER SENSORS

PHOTO-ELECTRIC SENSORS

MICRO PHOTO-ELECTRIC SENSORS

AREA SENSORS

LIGHT CURTAINS

PRESSURE / FLOW SENSORS

INDUCTIVE PROXIMITY SENSORS

PARTICULAR USE SENSORS

SENSOR OPTIONS

SIMPLE WIRE-SAVING UNITS

WIRE-SAVING SYSTEMS

MEASUREMENT SENSORS

STATIC CONTROL DEVICES

ENDOSCOPE

LASER MARKERS

PLC/ TERMINALS

HUMAN MACHINE INTERFACES

ENERGY CONSUMPTION VISUALIZATION COMPONENTS

FA COMPONENTS

MACHINE VISION SYSTEMS

UV CURING SYSTEMS

Selection Guide

Amplifier Built-in

Power Supply Built-in

Amplifier-separated

CX-400

EX-10

EX-20

EX-30

EX-40

CX-440

EQ-30

EQ-500

MQ-W

RX-LS200

RX

RT-610

PRECAUTIONS FOR PROPER USE

Refer to General precautions.

FIBER SENSORS

LASER SENSORS

PHOTO-ELECTRIC SENSORS

MICRO PHOTO-ELECTRIC SENSORS

AREA SENSORS

LIGHT CURTAINS

PRESSURE / FLOW SENSORS

INDUCTIVE PROXIMITY SENSORS

PARTICULAR USE SENSORS

SENSOR OPTIONS

SIMPLE WIRE-SAVING UNITS

WIRE-SAVING SYSTEMS

MEASUREMENT SENSORS

STATIC CONTROL DEVICES

ENDOSCOPE

LASER MARKERS

PLC / TERMINALS

HUMAN MACHINE INTERFACES

ENERGY CONSUMPTION VISUALIZATION COMPONENTS

FA COMPONENTS

MACHINE VISION SYSTEMS

UV CURING SYSTEMS

Selection Guide

Amplifier Built-in

Power Supply Built-in

Amplifier-separated

CX-400

EX-10

EX-20

EX-30

EX-40

CX-440

EQ-30

EQ-500

MQ-W

RX-LS200

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.

Enclosure earthing

- **RT-610-20** is capacitor earthed to increase noise immunity. Use the attached insulation fitting in case of the following. 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.

(**RT-610-10** and **RT-610-50** do not require the insulation fitting because of floating earth.)

Further, do not supply power from a power supply incorporating an auto-transformer (single winding transformer), since this is dangerous.

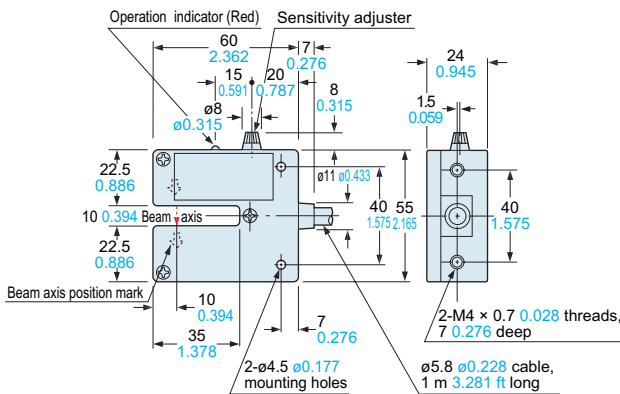
Others

- 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.

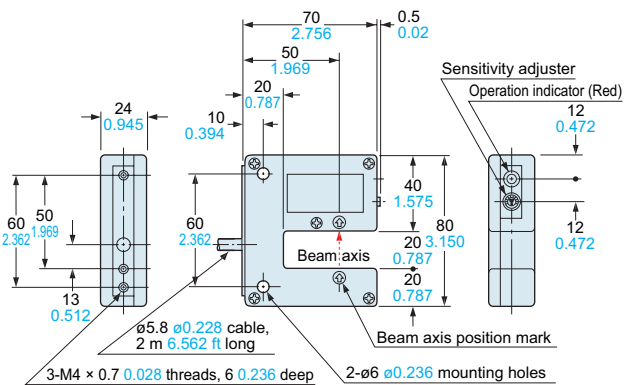
DIMENSIONS (Unit: mm in)

The CAD data in the dimensions can be downloaded from our website.

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



RT-610-20 20 mm 0.787 in sensing range type



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

