FIBER SENSORS

LASER SENSORS

MEASUREMENT SENSORS

STATIC ELECTRICITY PREVENTION DEVICES

LASER MARKERS

HUMAN MACHINE INTERFACES

ENERGY CONSUMPTION VISUALIZATION COMPONENTS

FA COMPONENTS

MACHINE VISION SYSTEMS

UV CURING SYSTEMS

PLC

MICRO PHOTOELECTRIC SENSORS AREA SENSORS LIGHT CURTAINS / SAFETY COMPONENTS PRESSURE / FLOW SENSORS INDUCTIVE PROXIMITY **SENSORS** PARTICUI AR USE SENSORS SENSOR OPTIONS SIMPLE WIRE-SAVING UNITS WIRE-SAVING SYSTEMS

U-shaped Photoelectric Sensor Amplifier Built-in

Related Information

■ General terms and conditions...... F-7

■ Glossary of terms......P.1455~

■ Sensor selection guide......P.271~

■ General precautions P.1458~

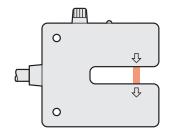




Suitable for address reading and sensing cut-off marks

Beam axis alignment not required

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

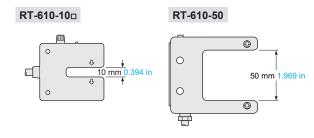


Robust die-cast enclosure

The robust die-cast enclosure maintains high reliability.

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.



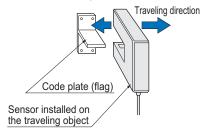
Power Supply Built-in Amplifier-separated

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

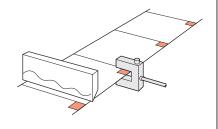
APPLICATIONS

Address reading



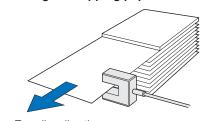
It can also be used to confirm the position of transportation equipment such as crane, etc.

Sensing cut-off marks



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

Sensing overlapping paper



Traveling direction

Checking paper feed on various printing machines.

ORDER GUIDE

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

PHOTO-ELECTRIC SENSORS MICRO PHOTO-

AREA SENSORS

UGHT CURTAINS / SAFETY COMPONENTS PRESSURE / FLOW SENSORS

INDUCTIVE PROXIMITY SENSORS

PARTICULAR USE SENSORS

SENSOR OPTIONS

> SIMPLE MIDE SAVING

UNITS
WIRE-SAVING

MEASURE-MENT SENSORS

SENSORS

STATIC
ELECTRICITY
PREVENTION
DEVICES

LASER MARKERS

PLC

HUMAN MACHINE INTERFACES ENERGY CONSUMPTION VISUALIZATION COMPONENTS

FA COMPONENTS

> MACHINE VISION SYSTEMS

UV CURING SYSTEMS

Selection Guide Amplifier Built-in

Amplifierseparated

CX-400

CY-100 EX-10 EX-20

EX-40 CX-440

EQ-30 EQ-500

MQ-W RX-LS200

RX

RT-610

FIBER SENSORS

LASER SENSORS

AREA SENSORS

LIGHT CURTAINS / SAFETY COMPONENTS PRESSURE / FLOW SENSORS

PARTICULAR USE SENSORS SENSOR OPTIONS

SIMPLE WIRE-SAVING UNITS

MEASURE-MENT SENSORS

LASER MARKERS

PLC HUMAN

FA COMPONENTS

MACHINE VISION SYSTEMS

UV CURING SYSTEMS

SPECIFICATIONS

Туре		Т	U-shaped thru-beam				
		Туре				For mark sensing	
Iten	n \	Model No.	RT-610-10	RT-610-50	RT-610-10R	RT-610-10G	
Sensing range (fixed)		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 mo			opaque or translucent object (Note 2)	
Supply voltage			12 to 24 V DC ±10 % Ripple P-P 10 % or less				
Current consumption		ption	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 of	Utilization category DC-12 or DC-13					
	Output ope	eration					
Response time			0.1 ms or less				
Operation indicator		tor	Red LED (lights up under light received condition)				
Sensitivity adjuster		ter	Continuously variable adjuster		Continuously variable adjuster		
Environmental resistance	Pollution degree		3 (Industrial environment)				
	Protection		IP62 (IEC)	IP66 (IEC)	IP62	(IEC)	
	Ambient te	mperature	-10 to +60 °C +14 to +140 °F (No dew condensation or icing allowed), Storage: -10 to +60 °C +14 to +140 °F				
talre	Ambient hu	umidity	35 to 85 % RH, Storage: 35 to 85 % RH				
men	Ambient illu	uminance	Incandescent light: 3,500 tx at the light-receiving face				
iron	EMC		EN 60947-5-2				
Env	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		stance	500 m/s² acceleration (50 G approx.) in X, Y and Z directions for three times each				
Emitting element		t	Infrared LED (modulated)		Red LED (modulated)	Green LED (modulated)	
Peak emission wavelength		sion wavelength	950 nm 0.037 mil		680 nm 0.027 mil	570 nm 0.022 mil	
Enclosure earthing		ng	Floating				
Material			Enclosure: Die-cast aluminum				
Cable			0.3 mm ² 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 mm², 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.

12 to 24 V DC ±10 %

2) Make sure to confirm detection with an actual sensor before use.

Load

I/O CIRCUIT AND WIRING DIAGRAMS

Color code (Brown) +V

(Black or white) Output (Not

→ Users' circuit

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

(Blue) 0 V

80 mA max.

I/O circuit diagram

Enclosure \$4.7 kΩ ▼ D₂ Sensor circuit Tr**K**

CX-400 CY-100 EX-10 EX-20 EX-30 EX-40

Symbols ... D1: Reverse supply polarity protection diode

CX-440 EQ-30

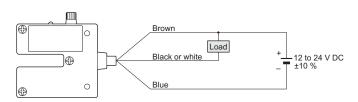
EQ-500 MQ-W RX-LS200

RX RT-610 D2: Reverse current prevention diode ZD: Surge absorption zener diode Tr: NPN output transistor

∡Z⊳

Internal circuit +--

Wiring diagram



Output operation

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

PRECAUTIONS FOR PROPER USE

Refer to p.1458~ for general precautions.

<u>^</u>

• 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.

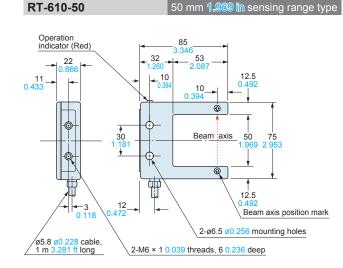
Others

- 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 in the dimensions can be downloaded from our website.

RT-610-10_□ 10 mm 0.394 in sensing range type Operation indicator (Red) Sensitivity adjuster 60 15 22.5 40 55 10 (22.5 0.886 Beam axis position mark __ 10 2-M4 × 0.7 0.028 threads, 35 7 0.276 deep ø5.8 ø0.228 cable, 1 m 3.281 ft long /2-ø4.5 ø0.177 mounting holes



FIBER SENSORS

LASER SENSORS

PHOTO-ELECTRIC SENSORS MICRO PHOTO-ELECTRIC SENSORS

AREA SENSORS

LIGHT CURTAINS / SAFETY COMPONENTS PRESSURE / FLOW SENSORS

INDUCTIVE PROXIMITY SENSORS

PARTICULAR USE SENSORS

SENSOR OPTIONS

SIMPLE WIRE-SAVING UNITS

WIRE-SAVING

MEASURE-MENT SENSORS

ELECTRICITY PREVENTION DEVICES LASER MARKERS

PLC

HUMAN MACHINE INTERFACES ENERGY CONSUMPTION VISUALIZATION COMPONENTS

FA COMPONENTS

> MACHINE VISION SYSTEMS

JV CURING SYSTEMS

Selection Guide Amplifier Built-in

Power Supply Built-in

> mplifiereparated

CX-400 CY-100

EX-10 EX-20

EX-40

CX-440 EQ-30

EQ-500 MQ-W

RX-LS200

RT-610