

Adjustable Range Reflective Photoelectric Sensor  
**RX-LS200(-P)**

Thank you very much for purchasing Panasonic products. Please read this Instruction Manual carefully and thoroughly for the correct and optimum use of this product. Kindly keep this manual in a convenient place for quick reference.



- 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.

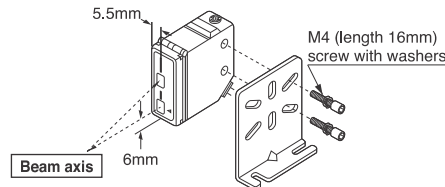
**1 SPECIFICATIONS**

Type	NPN output	PNP output
Model No. (Note)	RX-LS200	RX-LS200-P
Sensing range	50 to 200mm with white non-glossy paper (50 × 50mm)	
Supply voltage	12 to 24V DC ± 10% Ripple P-P 10% or less	
Current consumption	40mA or less	
Output	<b>&lt;NPN output type&gt;</b> NPN open-collector transistor • Maximum sink current: 100mA • Applied voltage: 30V DC or less (between output and 0V) • Residual voltage: 1.5V or less (at 100mA sink current) 0.4V or less (at 16mA sink current)	
	<b>&lt;PNP output type&gt;</b> PNP open-collector transistor • Maximum source current: 100mA • Applied voltage: 30V DC or less (between output and +V) • Residual voltage: 1V or less (at 100mA source current) 0.4V or less (at 16mA source current)	
Output operation	Switchable either Light-ON or Dark-ON	
Short-circuit protection	Incorporated	—
Response time	1ms or less	
Operation indicator	Red LED (lights up when the output is ON)	
Stability indicator	Green LED (lights up under stable light received condition or stable dark condition)	
Distance adjuster	2-turn mechanical adjuster	
Protection	IP67 (IEC)	
Ambient temperature	-25 to +60°C (No dew condensation or icing allowed), Storage: -30 to +70°C	
Ambient humidity	35 to 85% RH, Storage: 35 to 85% RH	
Emitting element	Infrared LED (modulated)	
Material	Enclosure: Die-cast zinc alloy Indicator cover: Polyethersulphone Lens: Polycarbonate	
Cable	0.15mm <sup>2</sup> 3-core oil, heat and cold resistant cable, 3m long	
Weight	85g approx.	
Accessories	MS-RX-1 (Sensor mounting bracket): 1 set Adjusting screwdriver: 1 pc.	

Note: The model No. with suffix **-C5** stands for the 5m cable length type. (NPN output type sensor only)  
Model No.: **RX-LS200-C5**

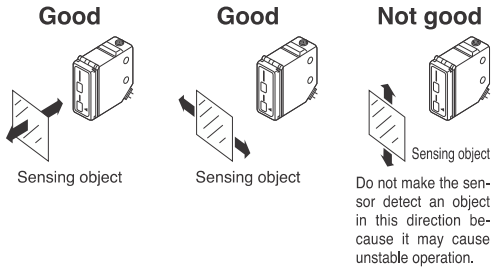
**2 MOUNTING**

- The tightening torque should be 1.17N·m or less.

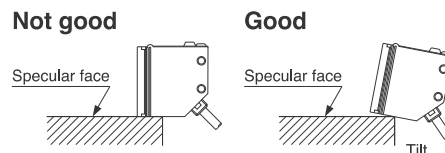


The sensing axis is positioned at the intersection of the '◁' mark on the lens face and the 'I' line.

- Care must be taken regarding the sensor mounting direction with respect to the object's direction of movement.



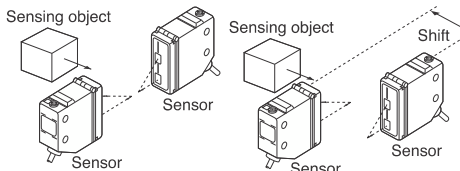
- When detecting a specular object (aluminum or copper foil, etc.) or an object having a glossy surface or coating, please take care that there are cases when the object may not be detected due to a small change in angle, wrinkles on the object surface, etc.
- When a specular body is present below the sensor, use the sensor by tilting it slightly upwards to avoid wrong operation.



- If a specular body is present in the background, wrong operation may be caused due to a small change in the angle of the background body. In that case, install the sensor at an inclination and confirm the operation with the actual sensing object.
- Do not install the sensor at a distance of less than 50mm from the object because the sensing is unstable in this range.



- Do not use two units of sensor face to face because they may malfunction by crosstalking. If using, you must increase the distance between sensors or shift the mounting position.

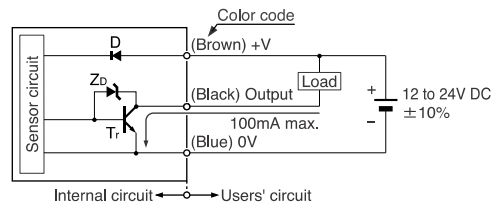


**3 CAUTIONS**

- The CE conformity of the product is declared based on additional EMC countermeasures, which are explained in the manual and shall be realised by the installer. Refer to '3 USE CONDITIONS TO COMPLY WITH CE MARKING' regarding intended products for CE marking.
- This product has been developed / produced for industrial use only.
- Make sure that the power supply is off while wiring.
- Take care that wrong wiring will damage the sensor.
- Verify that the supply voltage variation is within the rating.
- If power is supplied from a commercial switching regulator, ensure that the frame ground (F.G.) terminal of the power supply is connected to an actual ground.
- In case noise generating equipment (switching regulator, inverter motor, etc.) is used in the vicinity of this product, connect the frame ground (F.G.) terminal of the equipment to an actual ground.
- Do not run the wires together with high-voltage lines or power lines or put them in the same raceway. This can cause malfunction due to induction.
- Do not use during the initial transient time (50ms) after the power supply is switched on.
- Take care that the sensor is not directly exposed to fluorescent lamp from a rapid-starter lamp, a high frequency lighting device or sunlight etc., as it may affect the sensing performance.
- Extension up to total 100m, is possible with 0.3mm<sup>2</sup>, or more, cable.
- Make sure that stress by forcible bend or pulling is not applied to the sensor cable joint.
- This sensor is suitable for indoor use only.
- After sensitivity adjustment is made, close the front panel completely and tighten the panel securing screw firmly so that the protective structure could be maintained.
- Avoid dust, dirt, and steam. Do not use it in places having excessive vapor, dust, etc., or where it may come in contact with corrosive gas.
- Take care that the sensor does not come in contact with water, oil, grease, organic solvents, such as, thinner etc., strong acid or alkaline.
- The output of the PNP output type sensor does not incorporate a short-circuit protection circuit.
- Do not connect it directly to a power supply or a capacitive load.

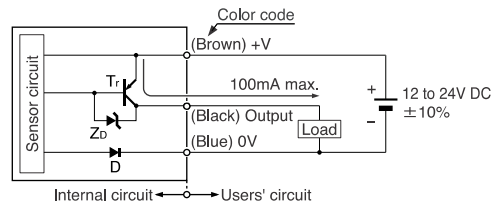
**4 I/O CIRCUIT DIAGRAMS**

● NPN output type / RX-LS200



Symbols...D : Reverse supply polarity protection diode  
Zp : Surge absorption zener diode  
Tr : NPN output transistor

● PNP output type / RX-LS200-P

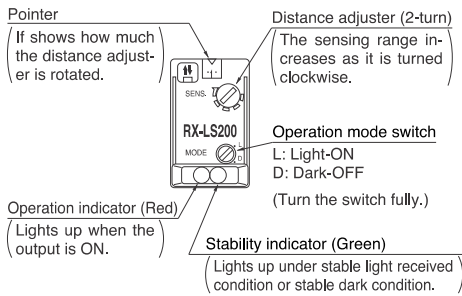


Note: The output does not incorporate a short-circuit protection circuit. Do not connect it directly to a power supply or a capacitive load.

Symbols...D : Reverse supply polarity protection diode  
Zp : Surge absorption zener diode  
Tr : PNP output transistor

## 5 DISTANCE ADJUSTMENT

### ● Top-view



### ● Adjusting procedure

#### 《When a sensing object moves horizontally to the sensor.》

Step	Distance adjuster	Description
①	 Turn fully	Turn the distance adjuster fully counter-clockwise to the minimum sensing range position (50mm approx.). (Do not turn excessively.)
②		Place an object at the required distance from the sensor, turn the distance adjuster gradually clockwise, and find out point ① where the sensor changes to the light received condition.
③		Remove the object, turn the distance adjuster further clockwise, and find out point ② where the sensor changes to the light received condition again with only the background. (When the sensor does not go to the light received condition even if the adjuster is fully turned clockwise, point ② is this extreme point in the range.)
④	 Optimum position	The optimum position to stably detect objects is the center point between ① and ②.

- Notes: 1) Use the accessory adjuster screwdriver to turn the distance adjuster slowly. Turning with excessive force will cause damage the adjuster.  
2) After sensitivity adjustment is made, close the front panel completely and tighten the panel securing screw firmly so that the protective structure could be maintained.

#### 《When a sensing object is approaching / moving away from the sensor.》

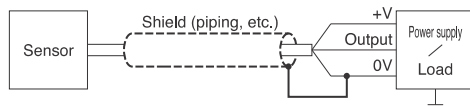
- Follow only steps ① and ②. Since the sensing point may change depending on the sensing object, be sure to check the operation with the actual sensing object.

## 6 USE CONDITIONS TO COMPLY WITH CE MARKING

### ● Intended products for CE marking RX-LS200, RX-LS200-P, RX-LS200-C5

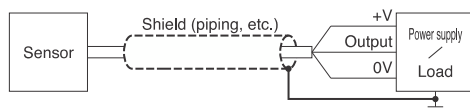
Note: Contact our office regarding other than above models.

- Following work must be done in case of using this product as a CE marking conforming product.
- In case of connecting a sensor to power supply 0V by using a shield (piping, etc.)



Note: The shield (piping, etc.) must be insulated.

- In case of earthing by using a shield (piping, etc.)



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