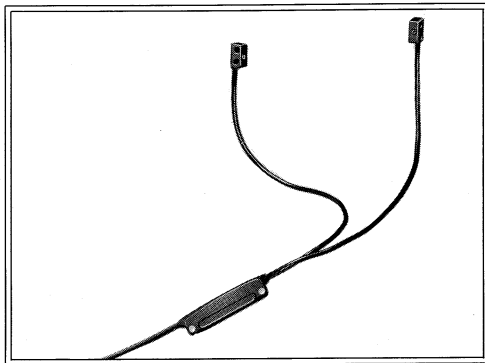


## Amp-in-Photoelectric Sensors

### PQ-01 PQ-02 Instruction Manual



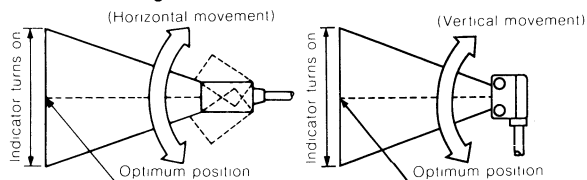
## Specifications

Model	PQ-01	PQ-02
Detecting distance	0 to 100mm	0 to 300mm
Supply voltage	DC12 to 24V $\pm$ 10%. Ripple (p-p) 10% max.	
Current consumption	30mA max.	
Output mode	Dark-ON*	
Control Output	100mA (at 40V) max NPN open-collector	
Protective circuit	Reversed polarity, overcurrent protection, surge absorber	
Response time	1ms max	
Detectable object	Opaque materials (1.0mm dia min.)	Opaque materials (2.0mm dia min.)
Ambient operating illumination	Incandescent lamp	3,000 lx max
	Sunlight	10,000 lx max
Ambient operating temperature	$-20^{\circ}\text{C}$ to $+55^{\circ}\text{C}$ (without freezing)	
Ambient operating humidity	35 to 85% RH	
Degree of protection	IP-64	
Light source	Infrared LED	
Detection indicator	Red LED	
Vibration	10 to 55Hz, 15mm double amplitude in X, Y and Z directions, respectively for 2 hours	
Shock	Mechanical durability: 500m/s <sup>2</sup> in X, Y and Z directions, 3 times respectively	
Materials	Amplifier: Polysulfone, Sensor: Polyallylate	
Cable length	2m (Between sensor head and amplifier: 500mm each)	
Weight (including cable)	Approx 48g	

\* Contact us for Light-ON models.

## Adjustment

- Place the light emitter and the light receiver facing each other so that the optical axes of both devices coincide. Then firmly fix the light-receiver.
- Move the light emitter both horizontally and vertically to find the range of angle at which the detection indicator turns off. Firmly fix the light emitter at the center of this range.



## Hints on correct use



Do not use this product for the purpose of protecting the human body.

### Connections

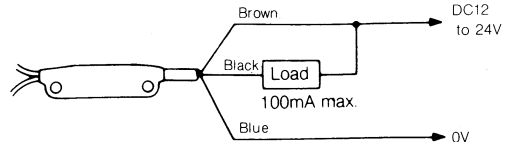
- When using a commercially available switching regulator, ground its frame ground terminal.
- As generated noise may cause the sensor to malfunction, keep the sensor's wiring away from power lines and high-tension lines.
- To extend the sensor cable, use a wire having a conductor cross-section area of 0.3mm<sup>2</sup>. Limit the length of the extension to within 100m.

### Mounting

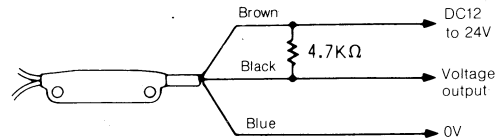
- Mount the housing at a clamping torque of 0.5Nm max. for both sensor head and amplifier.
- Do not allow strong light such as sunlight or a spotlight to radiate within the directional angle of the sensor (esp. the receiver).

## Connection diagrams

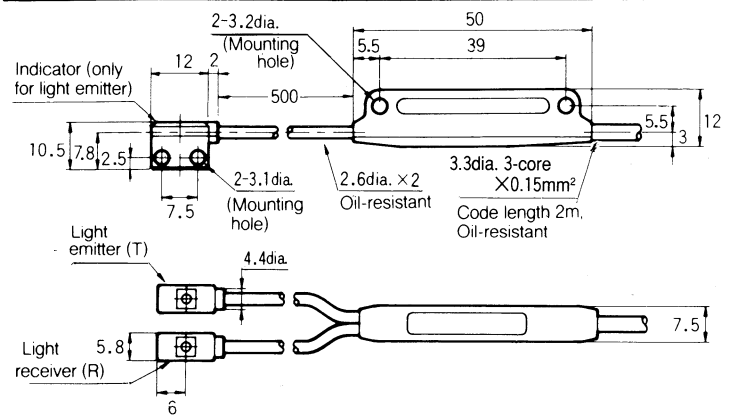
To directly drive load



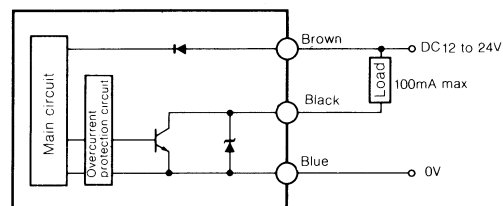
To connect voltage-input device (LOW level when control output is ON).



## Output circuit



## Dimensions



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