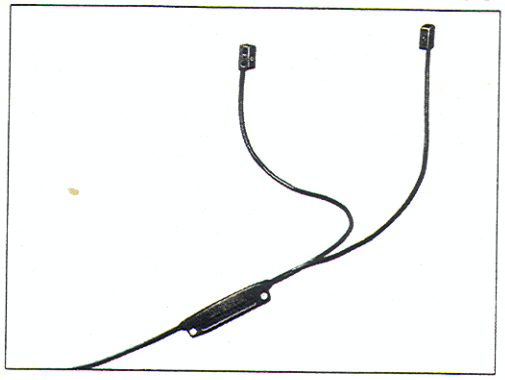
KEYENCE

Amp.-in-cable Photoelectric Sensors

PQ-01
PQ-02 Instruction Manual

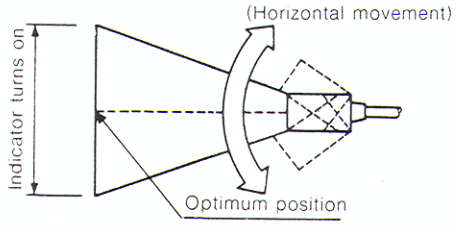


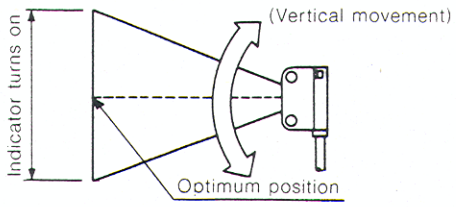
Specifications

Model		PQ-01	PQ-02
Detecting distance		0 to 100mm	0 to 300 mm
Supply voltage		12 to 24 VDC±10%, Ripple (p-p): 10% max.	
Current consumption		30mA max.	
Output mode		Dark-ON	
Control output		100mA (at 40V) max. NPN open-collector (with overcurrent protection circuit)	
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°C to +55°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, 1.5mm double amplitude, in X, Y, and Z directions, respectively for 2 hours	
Shock		Mechanical durability: 500m/s² (approx. 50G) 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	

Adjustment

① 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.
② 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

Connections

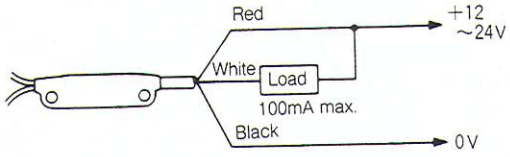
- When using a commercially available switching regulator, ground the frame and the sensor's ground terminals.
- As generated noise may cause the sensor to malfunction, keep the sensor's wiring away from power lines and high-tension lines.
- To extend the sensor cable, use a wire having a conductor cross-section area of 0.3mm². Limit the length of the extension to within 100m.

Mounting

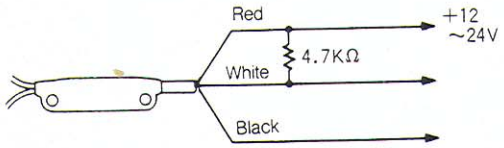
- Mount the housing at a clamping torque of 5kg-cm max. for both sensor and amplifier.
- Do not allow strong light such as sunlight or a spotlight to radiate within the directional angle of the sensor (esp. the receiver).

Connection diagrams

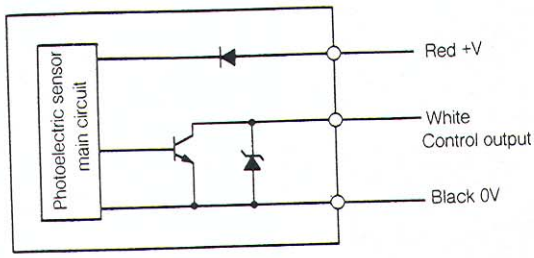
To directly drive load



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



Output circuit



Dimensions