



Artisan Technology Group is your source for quality new and certified-used/pre-owned equipment

- FAST SHIPPING AND DELIVERY
- TENS OF THOUSANDS OF IN-STOCK ITEMS
- EQUIPMENT DEMOS
- HUNDREDS OF MANUFACTURERS SUPPORTED
- LEASING/MONTHLY RENTALS
- ITAR CERTIFIED SECURE ASSET SOLUTIONS

SERVICE CENTER REPAIRS

Experienced engineers and technicians on staff at our full-service, in-house repair center

*InstraView*SM REMOTE INSPECTION

Remotely inspect equipment before purchasing with our interactive website at www.instraview.com ↗

WE BUY USED EQUIPMENT

Sell your excess, underutilized, and idle used equipment. We also offer credit for buy-backs and trade-ins. www.artisanng.com/WeBuyEquipment ↗

LOOKING FOR MORE INFORMATION?

Visit us on the web at www.artisanng.com ↗ for more information on price quotations, drivers, technical specifications, manuals, and documentation

Contact us: (888) 88-SOURCE | sales@artisanng.com | www.artisanng.com

Luster Recognition Sensor

PI-G Series

Features

- Detection unaffected by target color
- Luster differentiation capability
- 1-ms response speed
- Built-in hysteresis adjustment trimmer

Detecting Distance

10 to 25 mm (0.39" to 0.98")



Description

Unique principle of operation

Utilizing our unique optical system, PI-G sensors can provide on-line luster differentiation.

Stable detection unaffected by changes in target color

The PI-G Series detects a change in luster only. Therefore, detection is unaffected by changes in target colors on printed mark, etc.

Visible beam spot simplifies sensor adjustment

Since the PI-G Series employs a visible red LED as the light source, the point of detection can be visually confirmed. This allows the sensor head to be easily aligned with a target.



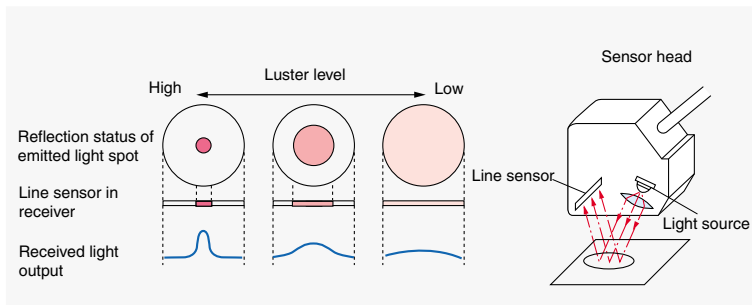
Hysteresis adjusting trimmer

Hysteresis can be adjusted based on target surface conditions (wrinkle, etc.), oscillation or slant.

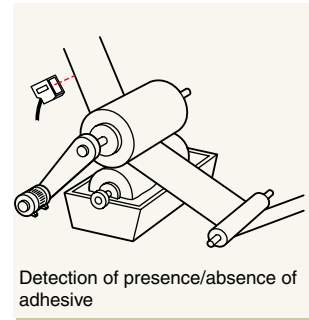
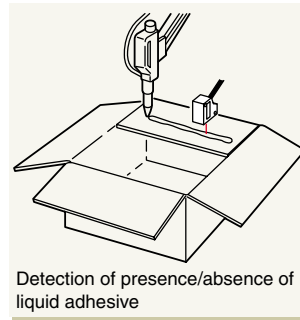
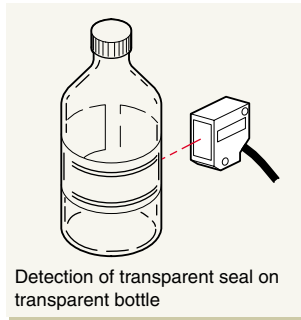
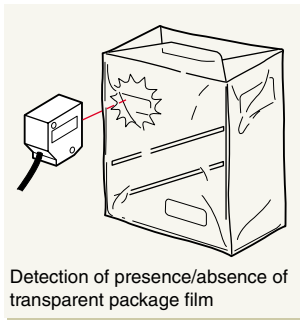
ON-delay/OFF-delay timer function

Operating principle

When light hits a surface, the amount of reflection depends on the shininess of the surface. When the luster level is high (lustrous), the light reflects specularly. When the luster level is low (lusterless), the light reflects diffusely. By detecting this difference with a line sensor in the receiver, luster can be differentiated.



Applications



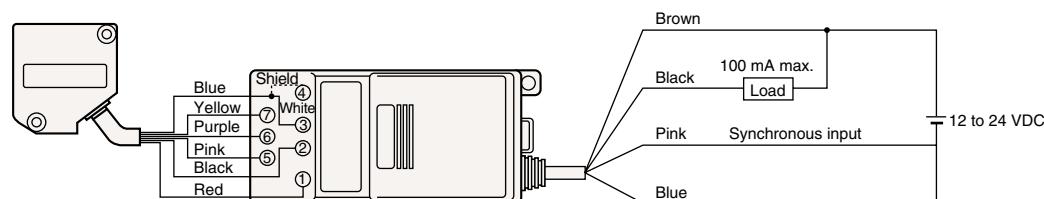
Specifications

Model	Sensor head		PI-G01
	Amplifier	NPN	PI-G70
Detecting distance (standard target)	10 to 25 mm 0.39" x 0.98" (30 x 30 mm 1.18" x 1.18" glass plate, t = 1 mm 0.04")		
Light source	Red LED		
Detectable object	Transparent or opaque, glossy object		
Smallest detectable object	3 mm 0.12" dia. colorless, transparent glass plate		
Minimum spot diameter	4 mm 0.16" dia. ¹		
Hysteresis adjustment	1-turn trimmer (240°)		
Sensitivity adjustment	3-turn trimmer		
Response time	1 ms max.		
Operation mode	LIGHT-ON/DARK-ON (switch-selectable)		
Indicators	Output: Red LED, Synchronous input: Yellow LED		
Timer	ON-delay/OFF-delay/Timer-OFF selectable (10 ms to 1 s) adjustable by trimmer		
Synchronous input	Non-voltage input (solid-state)		
Control output ²	NPN: 100 mA max. (40 V max.), Residual voltage: 1V max.		
Protection circuit	Reversed polarity, short-circuit protection, surge absorber		
Power supply	12 to 24 VDC +10%		
Current consumption	75 mA max.		
Ambient light	Fluorescent lamp: 10000 lux max., Sunlight or incandescent lamp: 500 lux max.		
Ambient temperature	-10 to + 50°C		
Housing	Sensor head: Glass-reinforced resin, Amplifier: polycarbonate		
Weight (including 2-m 6.6' cable)	Sensor head: Approx. 97 g, Amplifier: Approx. 155 g		

1. Visible spot diameter is 20 mm 0.79" or less at a distance of 20 mm 0.79".

2. NPN output can easily be converted to PNP output by connecting the optional OP-5148 PNP Output Converter.

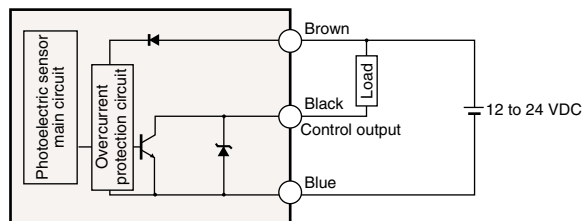
Connections



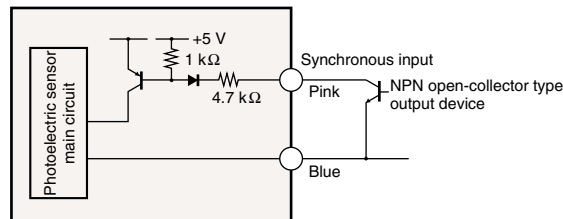
PI-G Luster Recognition Sensor

Input/Output Circuits

Output circuit



Synchronous input circuit diagram

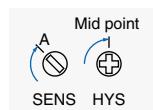


- Use an input signal of 0.3 ms or more.
- Use an input signal from an NPN open-collector device. Residual voltage should not exceed 1 V.

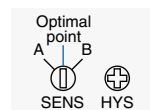
Adjustment

LIGHT-ON mode

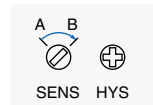
(When DARK-ON mode is specified, refer to words in parentheses.)



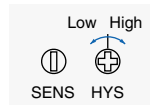
1. Turn the hysteresis adjustment trimmer clockwise and set it to the mid-point. With a shiny object in place, turn the sensitivity adjustment trimmer clockwise until the red LED lights (turns off). – Point A



3. Set the sensitivity adjustment trimmer midway between A and B. Check sensor operation.



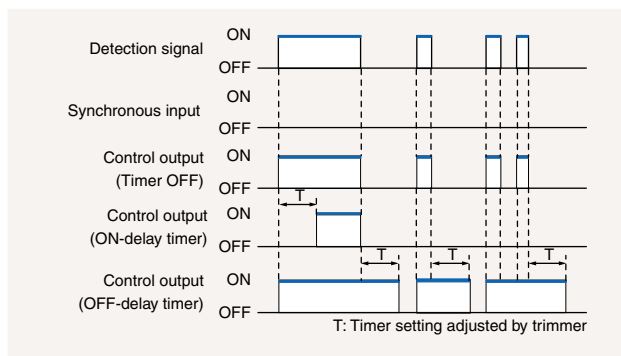
2. With lusterless object in place, turn the sensitivity adjustment trimmer further clockwise until the red LED lights (turns off). – Point B



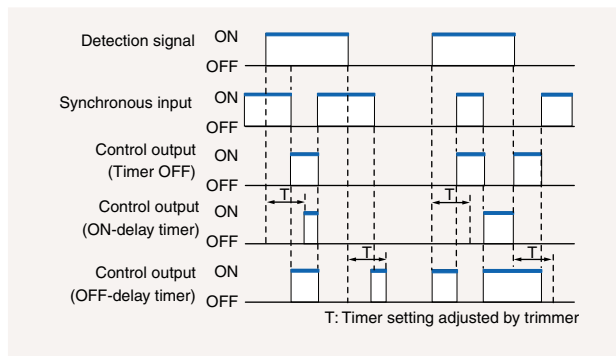
4. To increase hysteresis, turn the trimmer clockwise. To decrease hysteresis, turn the trimmer counterclockwise.

Timing Chart

When no synchronous signal is input:



When synchronous signals are input:

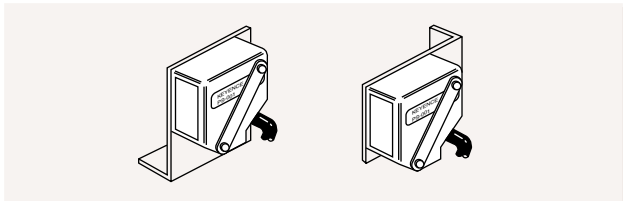


* Priority is given to synchronous input.

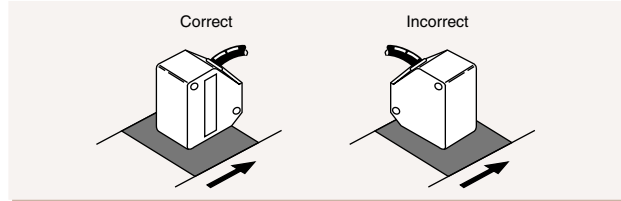
Hints on Correct Use

Mounting sensor head

- Mount the sensor head, with the supplied bracket, to suit the installation site. Mounting 2 or more sensor heads in close proximity will not cause interference.



- When detecting traveling targets, mount the sensor head as shown right. (Pay special attention to the orientation of the sensor head and direction of the target.)



- If ambient light enters directly through the emitter/receiver face, the PI-G may malfunction. Always mount the sensor head with this side down.
- When mounting the sensor head, tighten the screws with a torque of 0.5 N•m or less.

Wiring

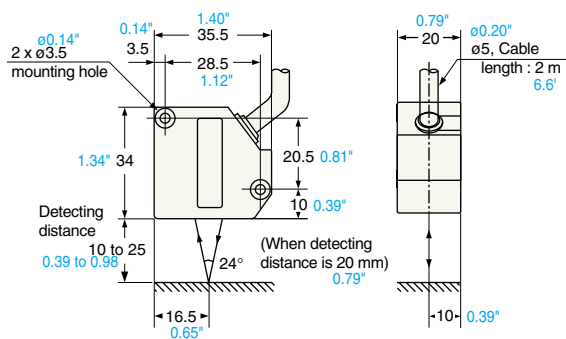
- Do not extend the cable more than 100 m 328.1'.
- The sensor head cable can be extended up to 5 m 16.4'.
- When not using synchronous input, cut the synchronous input wire at the base.
- The PI-G Series requires a startup time of about 300 ms before being ready to begin operation.

Dimensions

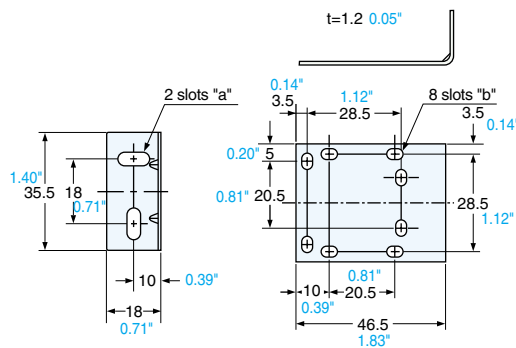


Unit: mm Inch

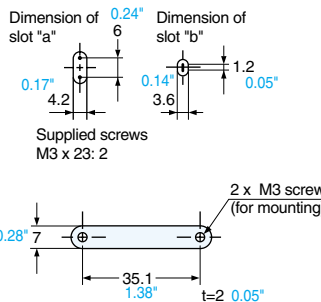
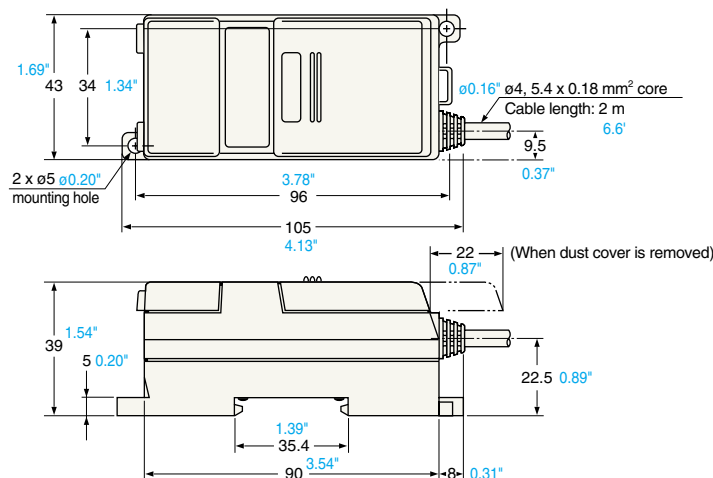
**Sensor head
PI-G01**



**Sensor head mounting bracket
(accessory for PI-G01)**



**Amplifier
PI-G70**





Artisan Technology Group is your source for quality new and certified-used/pre-owned equipment

- FAST SHIPPING AND DELIVERY
- TENS OF THOUSANDS OF IN-STOCK ITEMS
- EQUIPMENT DEMOS
- HUNDREDS OF MANUFACTURERS SUPPORTED
- LEASING/MONTHLY RENTALS
- ITAR CERTIFIED SECURE ASSET SOLUTIONS

SERVICE CENTER REPAIRS

Experienced engineers and technicians on staff at our full-service, in-house repair center

*InstraView*SM REMOTE INSPECTION

Remotely inspect equipment before purchasing with our interactive website at www.instraview.com ↗

WE BUY USED EQUIPMENT

Sell your excess, underutilized, and idle used equipment. We also offer credit for buy-backs and trade-ins. www.artisanng.com/WeBuyEquipment ↗

LOOKING FOR MORE INFORMATION?

Visit us on the web at www.artisanng.com ↗ for more information on price quotations, drivers, technical specifications, manuals, and documentation

Contact us: (888) 88-SOURCE | sales@artisanng.com | www.artisanng.com