

KEYENCE

Self-contained Threaded Sensors

PZ-G Series



Dual LED

MEGA POWER

Long-range detection twice as far as conventional models

EASY ADJUSTMENT

The front light-receiving indicator allows easy optical axis alignment

EASY INSTALLATION

A one-touch mounting bracket makes screws unnecessary



Dramatically improved performance and ease-of-use

MEGA POWER

High-Power Dual LED-type

High-power thrubeam type PZ-G52

Detecting distance: 40 m 131.2'

4 times*
longer detecting distance
2 times*
faster response speed

* Compared with our conventional models

4-element red LED-type

Thrubeam type PZ-G51

Detecting distance: 20 m 65.6'

2 times*
longer detecting distance
2 times*
faster response speed

The high-intensity 4-element red LED has greatly improved the detecting distance. The bright beam spot makes it easy to align the optical axis.

A 4-element LED is used in upper-level fiber sensors because its wavelength can be easily observed by the human eye and the intensity change over time is small.

* Compared with our conventional models

Reflective type PZ-G41

Detecting distance: 1 m 3.3'

Retro-reflective type PZ-G61

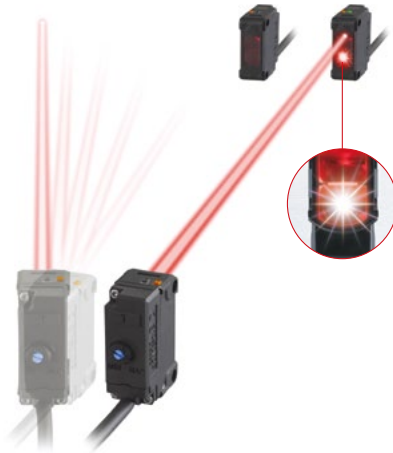
Detecting distance: 4.2 m 13.8'

[Self-contained Threaded Sensors PZ-G Series]

EASY ADJUSTMENT

Alignment indicator takes the guesswork out of long distance sensor setup

Has your receiver been bumped out of alignment? How can you tell? Thrubeam PZ-G models feature a bright red LED indicator that alerts you the instant proper alignment has been obtained. This simple yet crucial feature allows you to troubleshoot setup and run-time issues quickly, before they can snowball into major problems.



Laser Marked tags eliminate possible contamination

All information (model#, lot#, etc.) is laser marked directly onto the sensor housing. There are no labels, inks or paints to peel or chip off into your products.



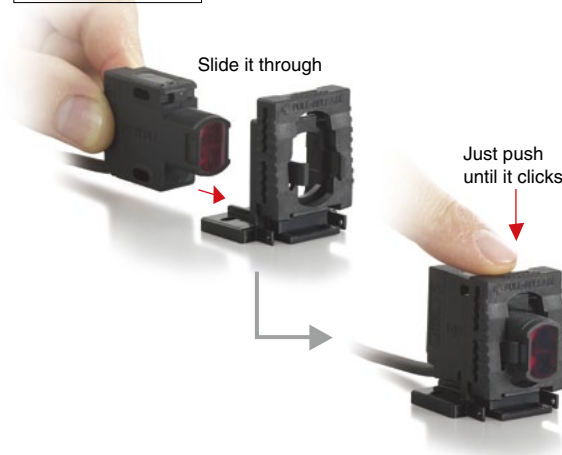
Easy-to-see blue trimmer
Enhances operation efficiency

EASY INSTALLATION

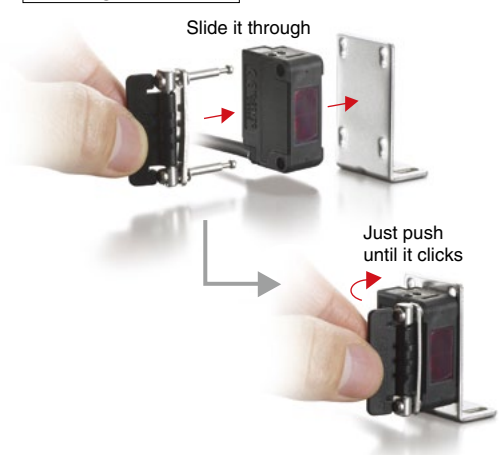
One-Touch mounting brackets cut installation time

Our unique one-touch brackets can save you and your customers considerable man-hours during installation or replacement.

Threaded models

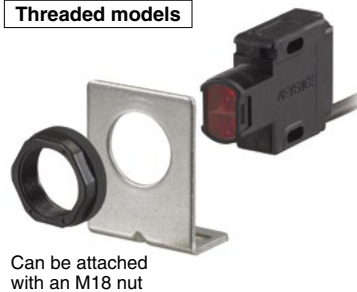


Rectangular models



A variety of mounting styles are available to adapt to your application.

Threaded models



Can be attached with an M18 nut

Rectangular models

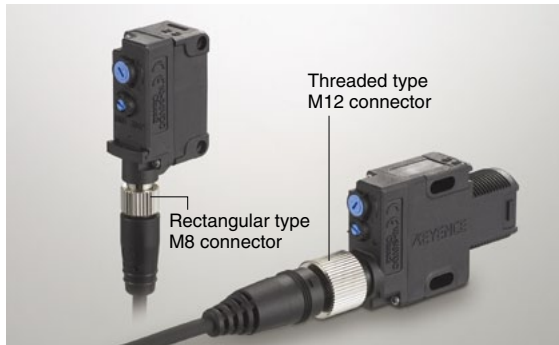


Can be attached with two M3 screws

Enhanced user-friendliness

Standard M8 and M12 quick-disconnects make replacement easier

The PZ-G features a standard pin-out, which allows it to be a drop-in replacement with existing wiring.



Our oil-resistant cable ensures reliable operation in an oily environment

In addition to the standard PVC cable, an oil-resistant PUR cable is available for use in harsh environments.



PUR: Polyurethane

19 types of mounting brackets provide a variety of mounting methods

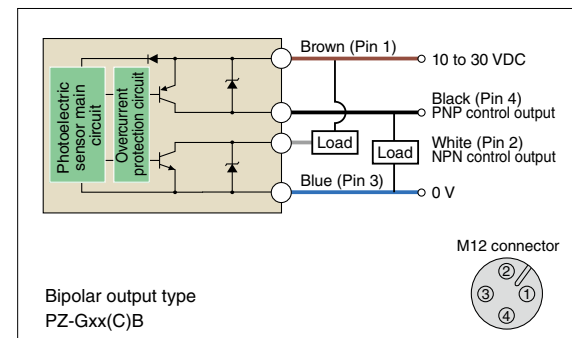
A bracket can be selected according to the installation conditions. 19 types, including a one-touch bracket, are available.



The mounting brackets shown above are only part of the lineup. See page 7 for further details.

Bipolar output (NPN+PNP) compatible with any input device

Threaded models feature bipolar outputs (NPN and PNP), eliminating the need to stock sensors for both outputs.



The interference suppression function prevents interference from nearby units

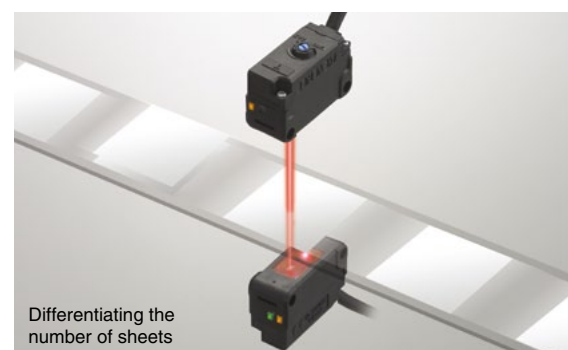
With thru-beam models, up to two sensors can be mounted in close proximity. Four sensors can be used by alternating the transmitter/receiver position.



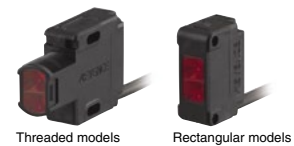
The different frequency function automatically shifts the emission cycle if ambient light is received by the receiver.

High-speed targets can be detected at a response speed of up to 500 μs

A high-speed response of up to 500 μs, twice as fast as our conventional models, ensures detection on a high-speed line. The high power ensures stable detection.

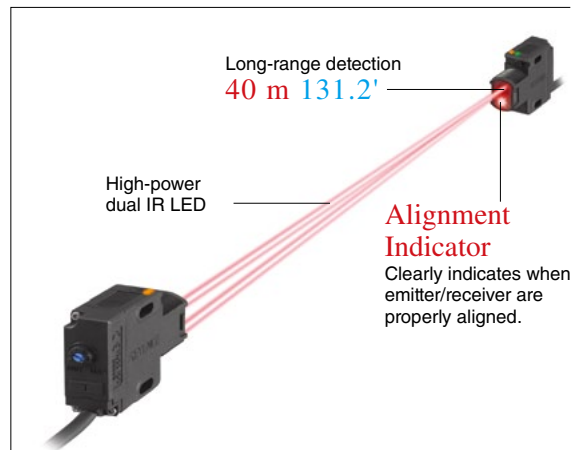


Model features

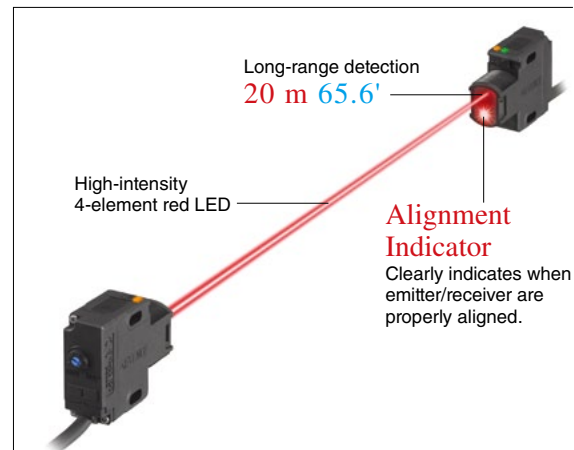


Thrubeam — The long-range high-power beam makes it easy to align the optical axis

High-power PZ-G52

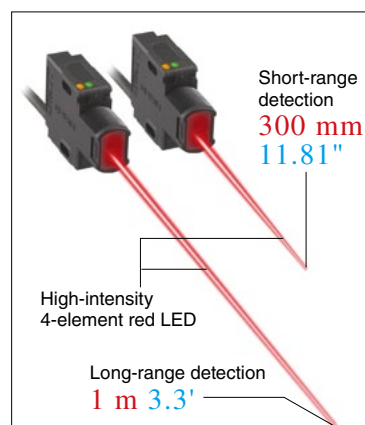


Standard PZ-G51

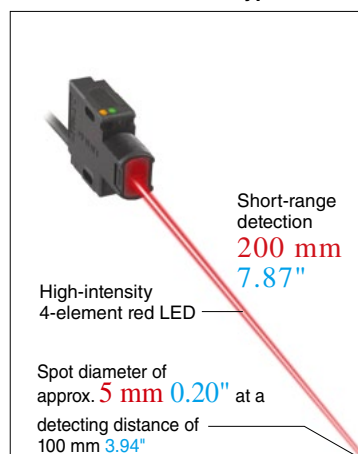


Reflective — The visible spot makes it easy to align the optical axis

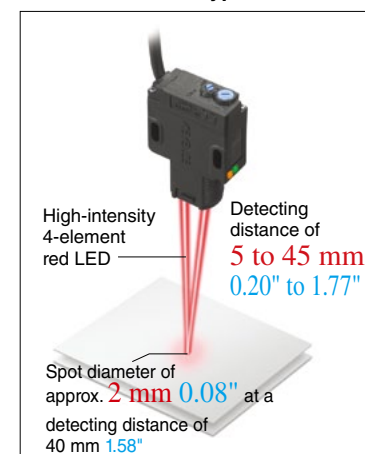
Diffuse reflective PZ-G41 (long-range) PZ-G42 (short-range)



Narrow-view reflective type PZ-G101

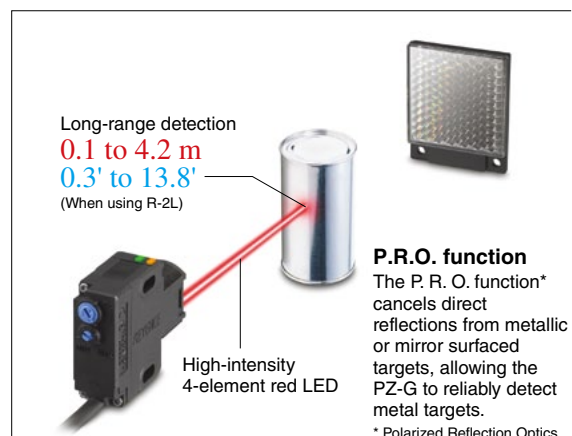


Definite reflective type PZ-G102

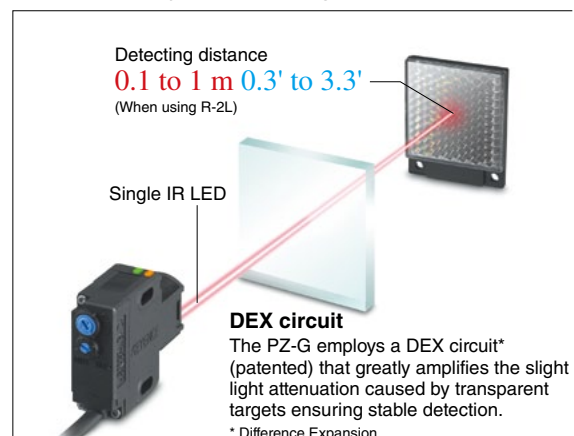


Retro-reflective — High-power long-range detection

Standard PZ-G61 (with P. R. O. function)



Transparent object detection type PZ-G62



Sensor head lineup / Model variations

Sensor head lineup



| Type | | Design | Detecting distance | Model variations | | | Light source (LED) | Cable*1 |
|------|-------------------------------------|-------------|--------------------|------------------|-----------|-------------------|--------------------|------------------------------|
| | | | | NPN | PNP | Bipolar (NPN+PNP) | | |
| | Standard | Rectangular | | PZ-G51N | PZ-G51P | — | Red | Cable (2 m 6.6') |
| | | | | PZ-G51CN | PZ-G51CP | — | | M8 connector |
| | | | | PZ-G51EN | PZ-G51EP | — | | M12 pigtail quick disconnect |
| | High-power | Rectangular | | — | — | PZ-G51B | Infrared × 2 | Cable (2 m 6.6') |
| | | | | — | — | PZ-G51CB | | M12 connector |
| | | | | PZ-G52N | PZ-G52P | — | | Cable (2 m 6.6') |
| | Diffuse reflective long-range | Rectangular | | PZ-G41N | PZ-G41P | — | Red | Cable (2 m 6.6') |
| | | | | PZ-G41CN | PZ-G41CP | — | | M8 connector |
| | | | | PZ-G41EN | PZ-G41EP | — | | M12 pigtail quick disconnect |
| | Diffuse reflective short-range | Rectangular | | — | — | PZ-G41B | | Cable (2 m 6.6') |
| | | | | — | — | PZ-G41CB | | M12 connector |
| | | | | PZ-G42N | PZ-G42P | — | | Cable (2 m 6.6') |
| | Narrow-view reflective | Rectangular | | PZ-G42CN | PZ-G42CP | — | | M8 connector |
| | | | | PZ-G42EN | PZ-G42EP | — | | M12 pigtail quick disconnect |
| | | | | — | — | PZ-G42B | | Cable (2 m 6.6') |
| | Definite reflective | Rectangular | | — | — | PZ-G42CB | | M12 connector |
| | | | | PZ-G101N | PZ-G101P | — | | Cable (2 m 6.6') |
| | | | | PZ-G101CN | PZ-G101CP | — | | M8 connector |
| | | Rectangular | | PZ-G101EN | PZ-G101EP | — | | M12 pigtail quick disconnect |
| | | | | — | — | PZ-G101B | | Cable (2 m 6.6') |
| | | | | — | — | PZ-G101CB | | M12 connector |
| | | Rectangular | | PZ-G102N | PZ-G102P | — | | Cable (2 m 6.6') |
| | | | | PZ-G102CN | PZ-G102CP | — | | M8 connector |
| | | | | PZ-G102EN | PZ-G102EP | — | | M12 pigtail quick disconnect |
| | Long-range (with P. R. O. function) | Rectangular | | PZ-G61N | PZ-G61P | — | Red | Cable (2 m 6.6') |
| | | | | PZ-G61CN | PZ-G61CP | — | | M8 connector |
| | | | | PZ-G61EN | PZ-G61EP | — | | M12 pigtail quick disconnect |
| | Transparent object detection | Rectangular | | — | — | PZ-G61B | Infrared | Cable (2 m 6.6') |
| | | | | — | — | PZ-G61CB | | M12 connector |
| | | | | PZ-G62N | PZ-G62P | — | | Cable (2 m 6.6') |
| | | Rectangular | | PZ-G62CN | PZ-G62CP | — | | M8 connector |
| | | | | PZ-G62EN | PZ-G62EP | — | | M12 pigtail quick disconnect |
| | | | | — | — | PZ-G62B | | Cable (2 m 6.6') |
| | | Rectangular | | — | — | PZ-G62CB | | M12 connector |
| | | | | — | — | PZ-G62CB | | M12 connector |
| | | | | — | — | PZ-G62CB | | M12 connector |

*1 Cable sold separately for connector models / pigtail quick disconnect models.

*2 Reflector sold separately for retro-reflective models.

Model variations

PZ-Gxx



| Reference No. | Reference No. description | |
|---------------|---------------------------|--|
| | Detection method | Details |
| 51 | Thru-beam type | Standard |
| 52 | | High-power |
| 41 | Reflective type | Diffuse reflective long range |
| 42 | | Diffuse reflective short range |
| 101 | | Narrow-view |
| 102 | | Definite reflective |
| 61 | Retro-reflective type | Long range (with P. R. O. function) |
| 62 | | Transparent object detection (without P. R. O. function) |

| Reference letter | Reference letter description | | |
|------------------|------------------------------|--------------------------------------|-------------------|
| | Details | Cable | Output |
| N | Rectangular models | 2 m 6.6' cable with a loose wire end | NPN |
| P | | | PNP |
| CN | | M8 connector | NPN |
| CP | | | PNP |
| EN | | 300 mm 11.81" cable + M12 connector | NPN |
| EP | | | PNP |
| B | Threaded models | 2 m 6.6' cable with a loose wire end | Bipolar (NPN+PNP) |
| CB | | M12 connector | |

Options

Brackets



Rectangular models

| Model | For use with: ^{*2} | Details ^{*1} | Accessories | Material | Weight |
|----------|--|---|-------------------------------------|---|--------------|
| PZ-B41A | Cable models | L-shaped mounting bracket (standard) | M3 screw, P=0.5 × L12 (2 pieces) | Mounting bracket: SUS304 Screw: Stainless | Approx. 15 g |
| PZ-B01A | | L-shaped mounting bracket (small) | | | Approx. 10 g |
| PZ-B61 | | L-shaped mounting bracket (protective) | | | Approx. 90 g |
| PZ-B21A | | Side-mounting bracket (vertical L) | | | Approx. 15 g |
| PZ-B22A | | Side-mounting bracket (vertical R) | | | Approx. 15 g |
| PZ-B31 | | Side-mounting bracket (landscape L) | | | Approx. 20 g |
| PZ-B32 | | Side-mounting bracket (landscape R) | | | Approx. 20 g |
| PZ-B11 | | Landscape mounting bracket | | | Approx. 20 g |
| PZ-B81 | Connector models (M8 L-shaped cable only) | One-touch mounting bracket | Stopper | Mounting bracket: SUS304 Stopper: SUS303, Polyacetal | Approx. 20 g |
| PZ-B02 | | L-shaped mounting bracket | M3 screw, P=0.5 × L12 (2 pieces) | Mounting bracket: SUS304 Screw: Stainless | Approx. 20 g |
| PZ-B23 | | Side-mounting bracket (vertical L) | | | Approx. 25 g |
| PZ-B24 | | Side-mounting bracket (vertical R) | | | Approx. 25 g |
| PZ-B83 | | One-touch mounting bracket | Stopper | Mounting bracket: SUS304 Stopper: SUS303, Polyacetal | Approx. 30 g |
| OP-84220 | Cable models Connector models | Stopper for one-touch mounting brackets (PZ-B81/B83) (without an L-shaped bracket) | — | SUS303, Polyacetal | Approx. 10 g |

^{*1} One piece is included. ^{*2} Not applicable for threaded models. PZ-V/M mounting brackets other than specified in this table cannot be used for PZ-G Series.

Threaded models

| Model | For use with: | Details ^{*1} | Accessories ^{*2} | Material | Weight |
|----------------------|----------------------------------|--|---------------------------|---|--------------|
| PZ-B03 | Cable models Connector models | L-shaped mounting bracket A (standard) | — | SUS304 | Approx. 25 g |
| PZ-B04 | | L-shaped mounting bracket (angle-adjustable) | | SUS304 | Approx. 35 g |
| PZ-B25 | | Side-mounting bracket (vertical) | | SUS304 | Approx. 30 g |
| PZ-B82 ^{*3} | | One-touch mounting bracket | | Base: Polyacetal Slide: Glass-reinforced polyamide | Approx. 10 g |
| OP-84225 | | M18 nut (2 pieces) | | Glass-reinforced PBT | Approx. 5 g |

^{*1} One piece is included (except OP-84225). ^{*2} One M18 nut is supplied with threaded models. ^{*3} When using PZ-B82, OP-85135 attachment cannot be used.

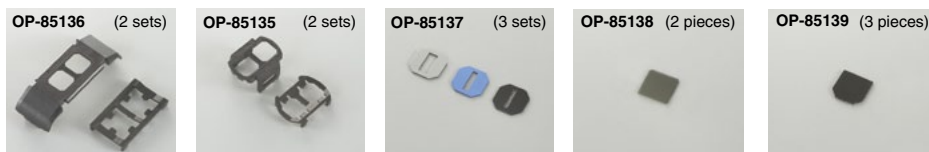
Rectangular/Threaded models

| Model | For use with: | Details [*] | Accessories | Material | Weight |
|---------|----------------------------------|--|---|--|---------------|
| PZ-S10A | Cable models Connector models | Free adjuster tool (L=55 to 100 mm 2.17" to 3.94") Applicable mounting bracket: Side-mounting bracket (PZ-B21A, B22A, B31, B32, B23, B24, B25) | Binding band (2 pieces) Plate washer (1 piece) | Shaft: SUS303 Plastic part: Polyamide | Approx. 105 g |
| PZ-S20A | | Free adjuster tool (L=55 to 200 mm 2.17" to 7.87") Applicable mounting bracket: Side-mounting bracket (PZ-B21A, B22A, B31, B32, B23, B24, B25) | | | Approx. 165 g |

^{*}One piece is included.

Options

Attachments



| Model | For use with: | Description | Number included | Material | Weight |
|------------------------|-----------------------------------|--|------------------------|---|-------------|
| OP-85136 | Thrubeam (Rectangular models) | Attachment A (for attaching a slit or a polarization filter) | 2 sets | Polyacetal (POM) | Approx. 2 g |
| OP-85135 ^{*1} | Thrubeam (threaded models) | Attachment B (for attaching a slit or a polarization filter) | 2 sets | Polyacetal (POM) | Approx. 1 g |
| OP-85137 | Thrubeam (square/threaded models) | Slit (0.5 mm 0.02", 1 mm 0.04", 2 mm 0.08") | 3 sets ^{*2} | Polyvinyl chloride (PVC) | Approx. 1 g |
| OP-85138 | Thrubeam (red LED models) | Polarization filter A (for the red LED type) | 2 pieces | Triacetate (TAC) Polyvinyl alcohol (PVA) | Approx. 1 g |
| OP-85139 | Thrubeam (red IR LED models) | Polarization filter B (for the red IR LED type) | 3 pieces ^{*2} | Acetate plastic | Approx. 1 g |

^{*1} OP-85135 cannot be attached when using PZ-B82 one-touch mounting bracket. ^{*2} For the PZ-G52, OP-85137 includes 3 sets for the 2 transmitting points and 1 receiving point.

Specifications when an attachment is used

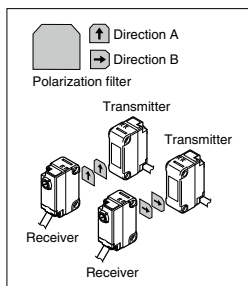
| Sensor model | Slit (mm inch) | Polarization filter | Detecting distance (m ft) |
|--------------|-----------------------|---------------------|---------------------------|
| PZ-G51 | 0.5 × 5 0.02" × 0.20" | — | 1 3.3' |
| | 1 × 5 0.04" × 0.20" | — | 2.5 8.2' |
| | 2 × 5 0.08" × 0.20" | — | 5 16.4' |
| | — | Attached* | 9 29.5' |
| | 0.5 × 5 0.02" × 0.20" | Attached* | 0.5 1.6' |
| | 1 × 5 0.04" × 0.20" | Attached* | 1.5 4.9' |
| PZ-G52 | 2 × 5 0.08" × 0.20" | Attached* | 3 9.8' |
| | 0.5 × 5 0.02" × 0.20" | — | 2.5 8.2' |
| | 1 × 5 0.04" × 0.20" | — | 5.5 18.0' |
| | 2 × 5 0.08" × 0.20" | — | 10 32.8' |
| | — | Attached* | 15 49.2' |
| | 0.5 × 5 0.02" × 0.20" | Attached* | 1 3.3' |
| | 1 × 5 0.04" × 0.20" | Attached* | 2 6.6' |
| | 2 × 5 0.08" × 0.20" | Attached* | 5 16.4' |

* When attaching to make the polarization direction of the transmitter and the receiver same.

[Usage example 1]

Suppressing interference between two thrubeam sensors

Interference between thrubeam sensors can be suppressed with polarization filters. A polarization filter's characteristic depends on the direction and notch in which it is set. If the polarization direction of the filters attached to the transmitter and the receiver is the same, the beam can be received. If the direction of the filter is changed by 90 degrees, however, the beam cannot be received. Using this restriction, interference can be suppressed with polarization filters as shown.



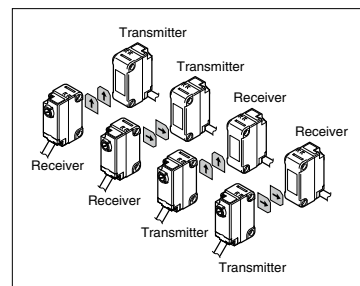
* Remove the protective sheets on both sides of the polarization filter before use.

* Adjust the sensitivity if interference occurs even with polarization filters.

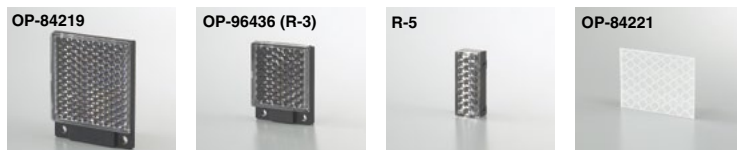
[Usage example 2]

Suppressing interference between four thrubeam-type sensors

With another set of sensors set as in Usage Example 1, interference between four sensors can be suppressed by alternating the positions of the transmitters and the receivers. Be sure to pay attention to the direction of the notches on the filters.



Reflectors



| Model | For use with: | Detecting distance (m ft) | | Description | Number included | Material | Weight |
|----------------|-------------------------|---------------------------|-------------------------------------|------------------|-----------------|---------------------------------------|--------------|
| | | PZ-G61 Long-range | PZ-G62 Transparent object detection | | | | |
| OP-84219 | Retro-reflective models | 0.1 to 4.2 0.3' to 13.8' | 0.1 to 1 0.3' to 3.3' | Reflector (R-2L) | 1 piece | Reflective area: Acrylic, Base: ABS | Approx. 20 g |
| OP-96436 (R-3) | | 0.1 to 2.9 0.3' to 9.5' | 0.1 to 0.4 0.3' to 1.3' | Reflector (R-3) | | Reflective area: Acrylic, Base: ABS | Approx. 10 g |
| R-5 | | 0.1 to 2.5 0.3' to 8.2' | 0.1 to 0.5 0.3' to 1.6' | Reflector (R-5) | | Reflective area: Acrylic, Base: ABS | Approx. 5 g |
| OP-84221 | | 0.2 to 0.7 0.7' to 2.3' | — | Reflective tape | | Surface: Acrylic, Cube: Polycarbonate | Approx. 1 g |

Connector cables

M8 connector

| Model | Cable material | Description | Sensor connection | | Opposite connection | | Cable length (m ft) | Weight |
|----------|----------------|-------------------------|-------------------|----------|---------------------|-------------|---------------------|---------------|
| | | | Connector size | Design | Connector size | Design | | |
| OP-73864 | PVC | Connector – loose wires | M8 | Straight | — | Loose wires | 2 6.6' | Approx. 55 g |
| OP-73865 | | | M8 | Straight | — | Loose wires | 10 32.8' | Approx. 220 g |
| OP-85497 | | | M8 | L-shaped | — | Loose wires | 2 6.6' | Approx. 55 g |
| OP-85498 | | Connector – connector | M8 | Straight | M8 | Straight | 2 6.6' | Approx. 55 g |
| OP-87628 | PUR | Connector – loose wires | M8 | Straight | — | Loose wires | 2 6.6' | Approx. 55 g |
| OP-87629 | | | M8 | Straight | — | Loose wires | 10 32.8' | Approx. 260 g |
| OP-87632 | | | M8 | L-shaped | — | Loose wires | 2 6.6' | Approx. 55 g |
| OP-87633 | | | M8 | L-shaped | — | Loose wires | 10 32.8' | Approx. 260 g |
| OP-88069 | | Connector – connector | M8 | Straight | M8 | Straight | 2 6.6' | Approx. 70 g |
| OP-88070 | | | M8 | L-shaped | M8 | Straight | 2 6.6' | Approx. 70 g |
| OP-88071 | | | M8 | Straight | M12 | Straight | 2 6.6' | Approx. 70 g |
| OP-88072 | | | M8 | Straight | M12 | Straight | 5 16.4' | Approx. 140 g |
| OP-88073 | | | M8 | L-shaped | M12 | Straight | 2 6.6' | Approx. 70 g |
| OP-88074 | | | M8 | L-shaped | M12 | Straight | 5 16.4' | Approx. 140 g |

* One piece is included.

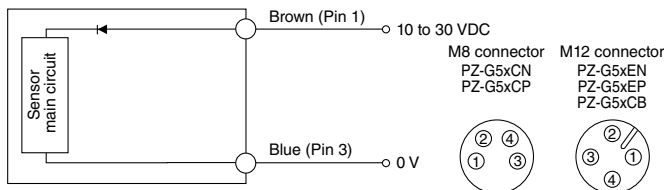
M12 connector

| Model | Cable material | Description | Sensor connection | | Opposite connection | | Cable length (m ft) | Weight |
|----------|----------------|-------------------------|-------------------|----------|---------------------|-------------|---------------------|---------------|
| | | | Connector size | Design | Connector size | Design | | |
| OP-75721 | PVC | Connector – loose wires | M12 | Straight | — | Loose wires | 2 6.6' | Approx. 65 g |
| OP-85502 | | | M12 | Straight | — | Loose wires | 10 32.8' | Approx. 230 g |
| OP-75722 | | | M12 | L-shaped | — | Loose wires | 2 6.6' | Approx. 65 g |
| OP-85503 | | Connector – connector | M12 | Straight | M12 | Straight | 2 6.6' | Approx. 70 g |
| OP-85504 | M12 | | Straight | M12 | Straight | 5 16.4' | Approx. 130 g | |
| OP-87636 | PUR | Connector – loose wires | M12 | Straight | — | Loose wires | 2 6.6' | Approx. 75 g |
| OP-87637 | | | M12 | Straight | — | Loose wires | 10 32.8' | Approx. 330 g |
| OP-88075 | | Connector – connector | M12 | Straight | M12 | Straight | 2 6.6' | Approx. 80 g |
| OP-88076 | | | M12 | Straight | M12 | Straight | 5 16.4' | Approx. 180 g |

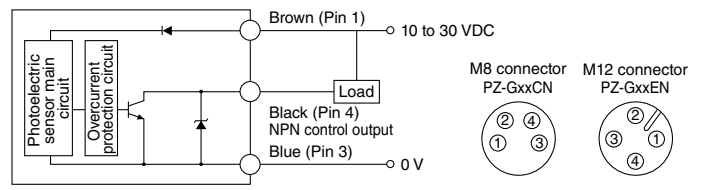
* One piece is included.

Input/output circuits

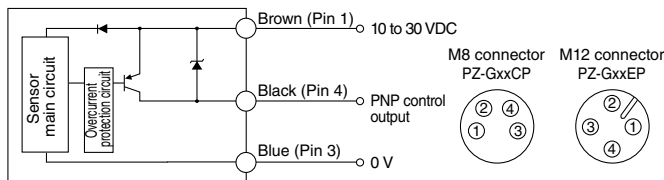
Threbeam transmitter PZ-G5x



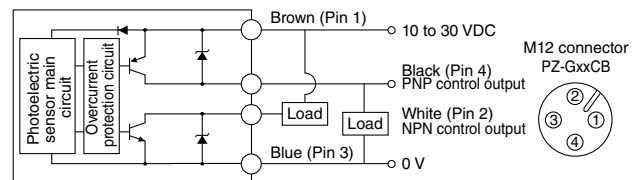
NPN output (threbeam receiver, reflective, retro-reflective) PZ-GxxN



PNP output (threbeam receiver, reflective, retro-reflective) PZ-GxxP

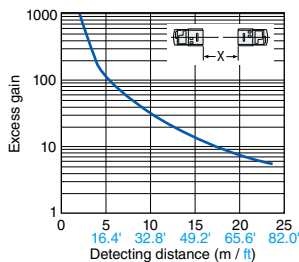


Bipolar output (threbeam receiver, reflective, retro-reflective) PZ-GxxB

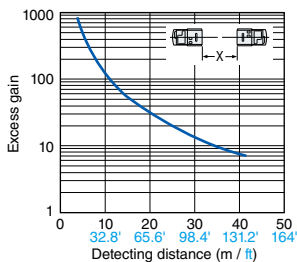


Receiver excess gain vs. detecting distance (Typical)

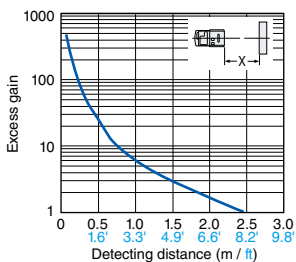
PZ-G51



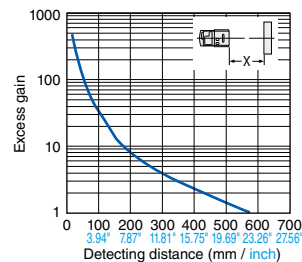
PZ-G52



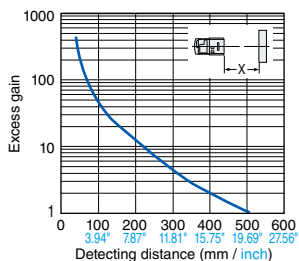
PZ-G41



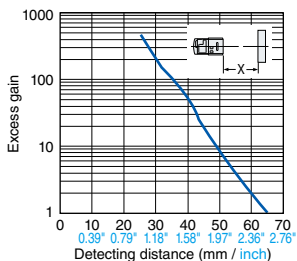
PZ-G42



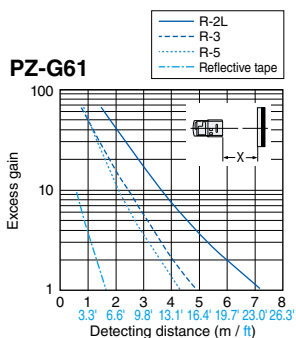
PZ-G101



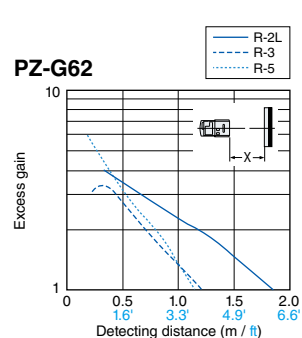
PZ-G102



PZ-G61

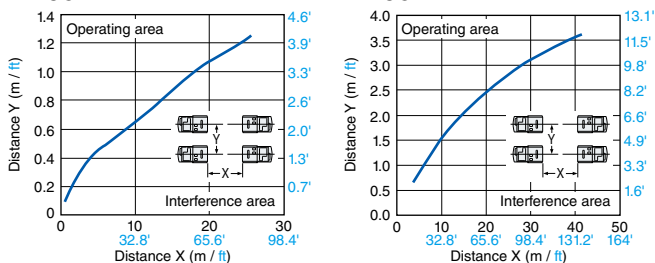


PZ-G62

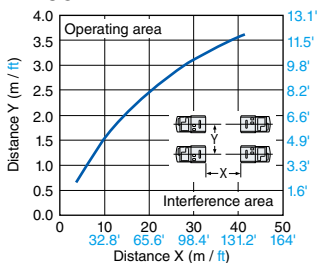


Interference area (Typical)

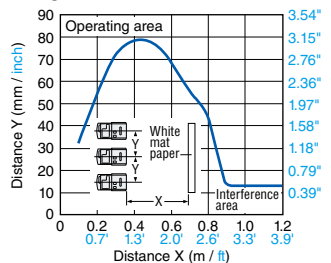
PZ-G51



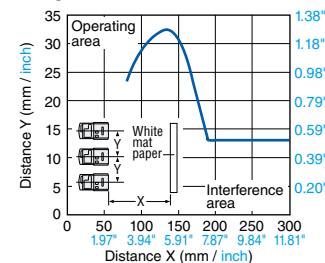
PZ-G52



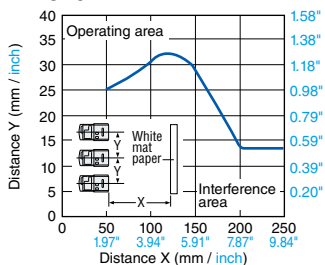
PZ-G41



PZ-G42



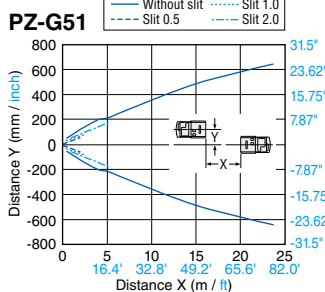
PZ-G101



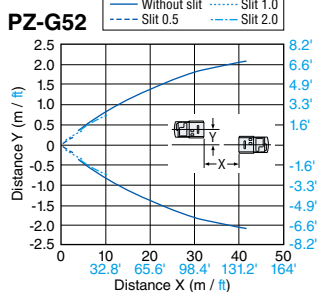
Note: PZ-G102/G61/G62 can be used while 3 units are mounted in close proximity to each other without mutual interference.

Parallel displacement of optical (Typical)

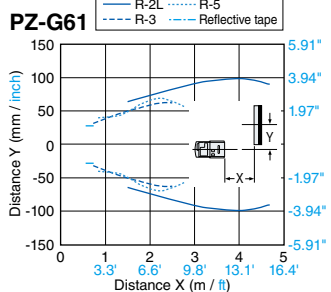
PZ-G51



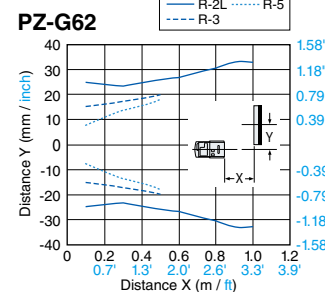
PZ-G52



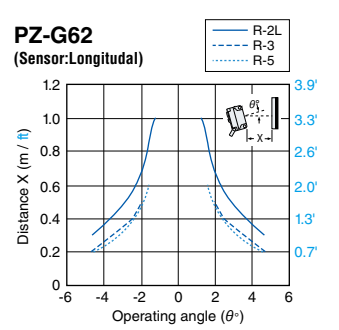
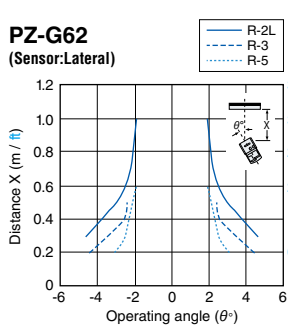
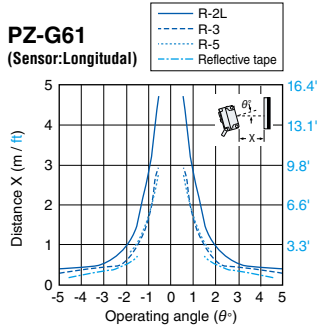
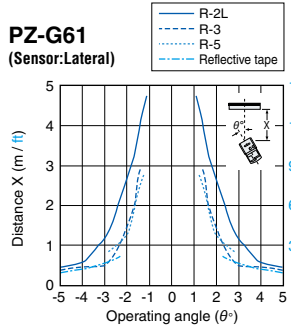
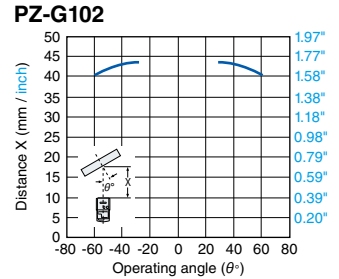
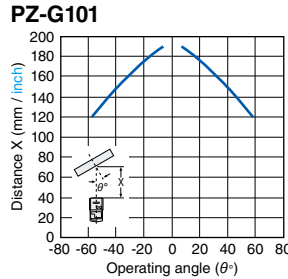
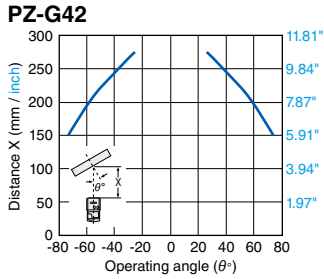
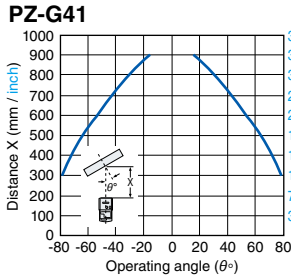
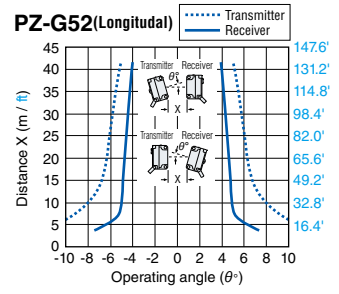
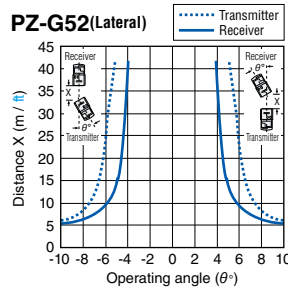
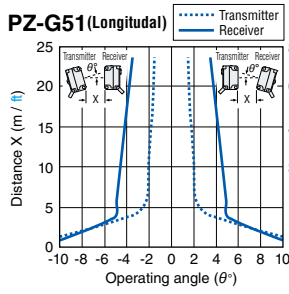
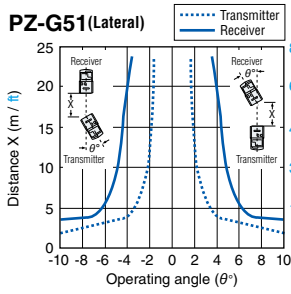
PZ-G61



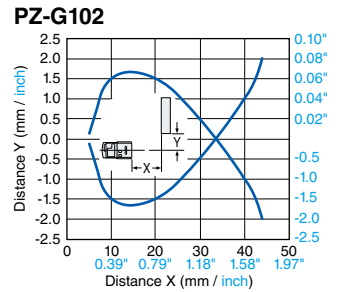
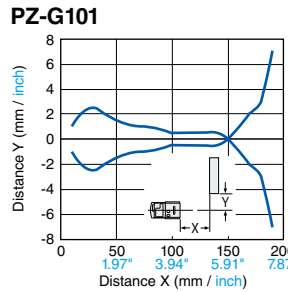
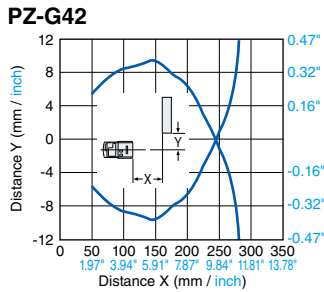
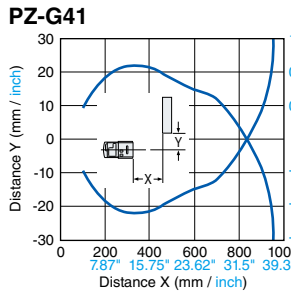
PZ-G62



Optical axis angle (Typical)



Operating distance vs. detecting distance (Typical)



Specifications



| Models | | | Thrubeam | | Diffuse Reflective | | | | Retro-reflective *2 | |
|--------------------------|---|-------------------|--|--------------------------------|---|--|---|--|--|---|
| | | | Standard | High-power | Long-range | Short-range | Narrow-view reflective | Definite reflective | Long-range (with P.R.O. function) | Transparent object detection |
| Design | Cable type | Output | | | | | | | | |
| Rectangular | Cable (2 m 6.6') | NPN | PZ-G51N | PZ-G52N | PZ-G41N | PZ-G42N | PZ-G101N | PZ-G102N | PZ-G61N | PZ-G62N |
| | | PNP | PZ-G51P | PZ-G52P | PZ-G41P | PZ-G42P | PZ-G101P | PZ-G102P | PZ-G61P | PZ-G62P |
| | M8 connector | NPN | PZ-G51CN | PZ-G52CN | PZ-G41CN | PZ-G42CN | PZ-G101CN | PZ-G102CN | PZ-G61CN | PZ-G62CN |
| | | PNP | PZ-G51CP | PZ-G52CP | PZ-G41CP | PZ-G42CP | PZ-G101CP | PZ-G102CP | PZ-G61CP | PZ-G62CP |
| | M12 pigtail quick disconnect | NPN | PZ-G51EN | PZ-G52EN | PZ-G41EN | PZ-G42EN | PZ-G101EN | PZ-G102EN | PZ-G61EN | PZ-G62EN |
| | | PNP | PZ-G51EP | PZ-G52EP | PZ-G41EP | PZ-G42EP | PZ-G101EP | PZ-G102EP | PZ-G61EP | PZ-G62EP |
| Threaded | Cable (2 m 6.6') | Bipolar (NPN+PNP) | PZ-G51B | PZ-G52B | PZ-G41B | PZ-G42B | PZ-G101B | PZ-G102B | PZ-G61B | PZ-G62B |
| | M12 connector | | PZ-G51CB | PZ-G52CB | PZ-G41CB | PZ-G42CB | PZ-G101CB | PZ-G102CB | PZ-G61CB | PZ-G62CB |
| Detecting distance*1 | | | 20 m 65.6' | 40 m 131.2' | 1 m 3.3' (When detecting 30 × 30 cm 11.81" × 11.81" white paper) | 300 mm 11.81" (When detecting 10 × 10 cm 3.94" × 3.94" white paper) | 200 mm 7.87" | 5 to 45 mm 0.20" to 1.77" | 0.1 to 4.2 m 0.3' to 13.8' (When R-2L reflector is used) | 0.1 to 1 m 0.3' to 3.3' (When R-2L reflector is used) |
| Spot diameter | | | — | — | — | — | Approx. 5 mm 0.20" dia. (At a detecting distance of 100 mm 3.94") | Approx. 2 mm 0.08" dia. (At a detecting distance of 40 mm 1.57") | — | — |
| Light source | | | Red LED | Infrared LED × 2 | Red LED | | | | | Infrared LED |
| Sensitivity adjustment | | | 1-turn trimmer (230°) | | | | | | | |
| Response time | | | 500 μs | | | | | | | |
| Operation mode | | | LIGHT-ON/DARK-ON (switch-selectable) | | | | | | | |
| Indicators (LED) | | | T: Power (orange LED) R: Output (orange LED) Stable operation (green LED) Light receiving (red LED) | | Output: Orange LED, Stable operation: Green LED | | | | | |
| Control output | | | Open collector output, 30 V max., 100 mA max., Residual voltage: 1 V max. | | | | | | | |
| Protection circuit | | | Reversed polarity, overcurrent protection, surge absorber | | | | | | | |
| Rating | Power supply | | 10 to 30 VDC including Ripple ±10% (P-P) | | | | | | | |
| | Current consumption | | T: 20 mA max. R: 28 mA max. | T: 25 mA max. R: 28 mA max. | 34 mA max. | | | | | |
| Environmental resistance | Enclosure rating | | IEC, IP67 / NEMA: 4x, 6, 12 / DIN: IP69K | | | | | | | |
| | Ambient light | | Incandescent lamp: 5,000 lux max., Sunlight: 20,000 lux max. | | | | | | | |
| | Ambient temperature | | -20 to 55°C -4 to 130°F, No freezing | | | | | | | |
| | Relative humidity | | 35 to 85%, No condensation | | | | | | | |
| | Vibration | | 10 to 55 Hz, 1.5 mm double amplitude in the X, Y, and Z directions, 2 hours respectively | | | | | | | |
| | Shock | | 1000 m/s² 6 times in the X, Y, and Z directions | | | | | | | |
| Interference suppression | | | Up to 2 units (When polarization filters are attached) | | Up to 2 units (with the automatic different frequency function) | | | | | |
| Material | Housing, M18 nut (threaded models only) | | Glass-fiber reinforced PBT | | | | | | | |
| | Lens cover | | Polyarylate (PAR) | | | | | | Acrylic (PMMA) | Polyarylate (PAR) |
| | Trimmer | | Glass-fiber reinforced polyamide (PA) | | | | | | | |
| | Case connection | | Screw: Steel, zinc-nickel plated, Packing: Nitrile-butadiene rubber (NBR) | | | | | | | |
| | Cable (cable models / pigtail quick disconnect models only) | | Polyvinyl chloride (PVC) | | | | | | | |
| | Connector (pigtail quick disconnect type only) | | Brass-nickel plated, Polybutyleneterephthalate (PBT), Polyvinyl chloride (PVC) | | | | | | | |
| Tightening torque | | | Rectangular models (Mounting hole part): 0.5 N-m max. Threaded models (front M18 part): 1.0 N-m max., (side slotted hole part): 0.5 N-m max. | | | | | | | |
| Accessories*2 | | | Instruction manual, M18 nut × 2 pieces (nut thrubeam type), M18 nut × 1 piece (other threaded models) | | | | | | | |
| Weight | | | Rectangular cable models: Approx. 60 g (Thrubeam-models transmitter: Approx. 50 g) Rectangular connector models: Approx. 10 g Rectangular M12 pigtail quick disconnect model: Approx. 30 g Threaded cable models: Approx. 65 g (Thrubeam-models transmitter: Approx. 55 g) Threaded connector models: Approx. 15 g | | | | | | | |

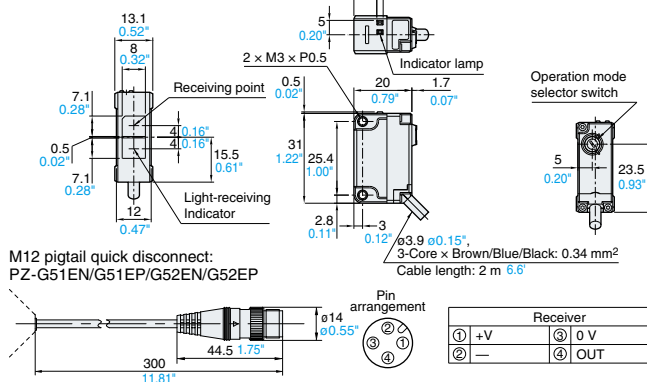
*1 Detecting distance at the maximum sensitivity.

*2 Cable sold separately for connector models / pigtail quick disconnect models. Reflector sold separately for retro-reflective models.

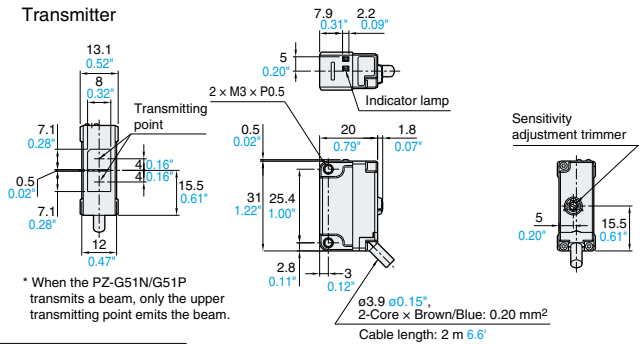
Sensors (thrubeam type)

PZ-G51N/G51P/G52N/G52P/G51EN/G51EP/G52EN/G52EP

Receiver

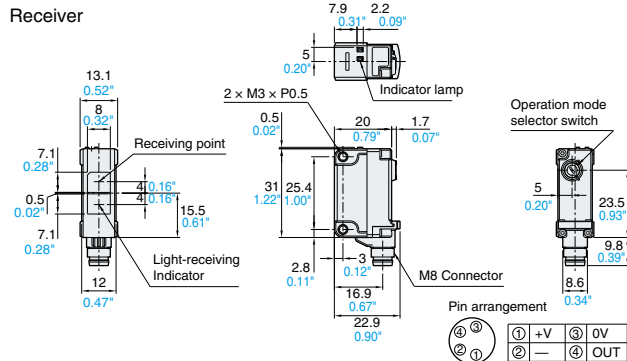


Transmitter

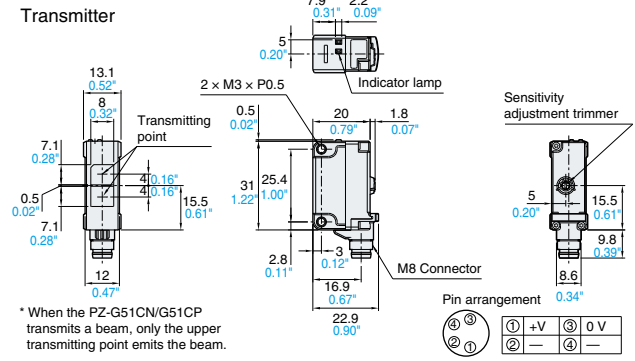


PZ-G51CN/G51CP/G52CN/G52CP

Receiver

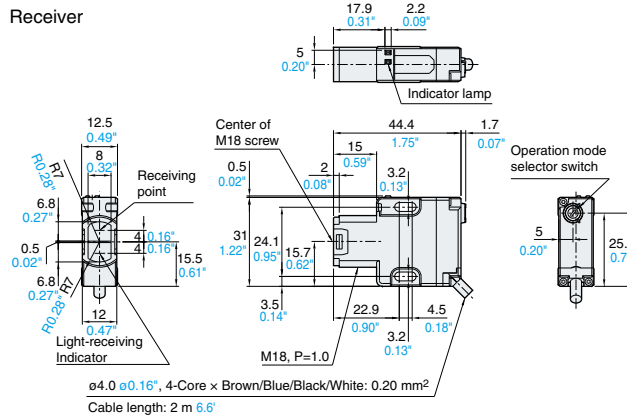


Transmitter

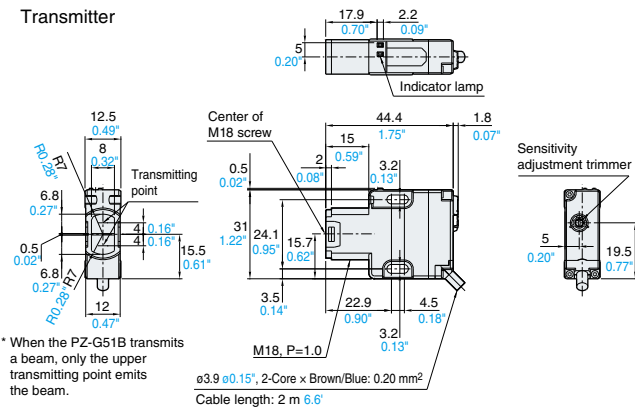


PZ-G51B/G52B

Receiver

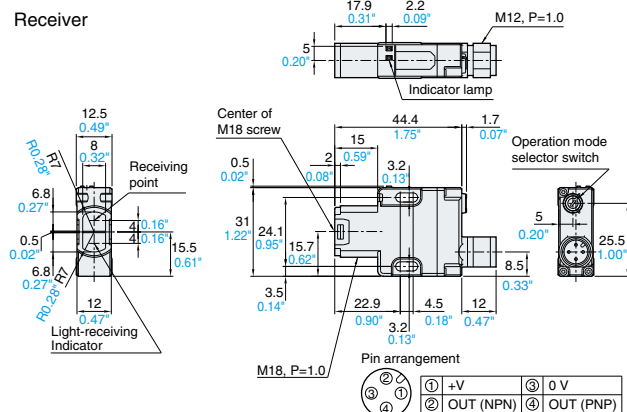


Transmitter

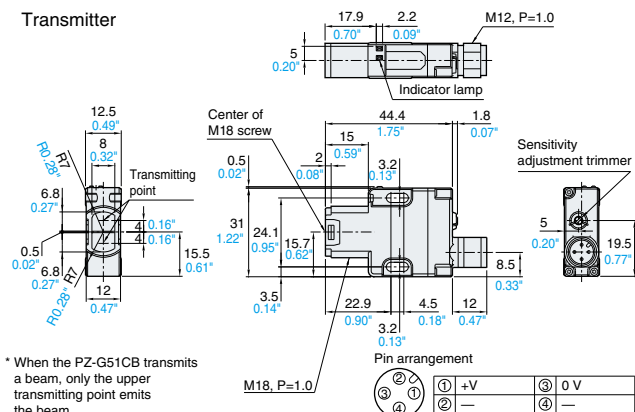


PZ-G51CB/G52CB

Receiver



Transmitter

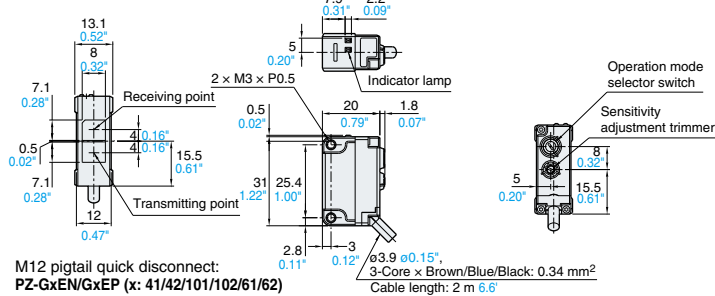


Dimensions

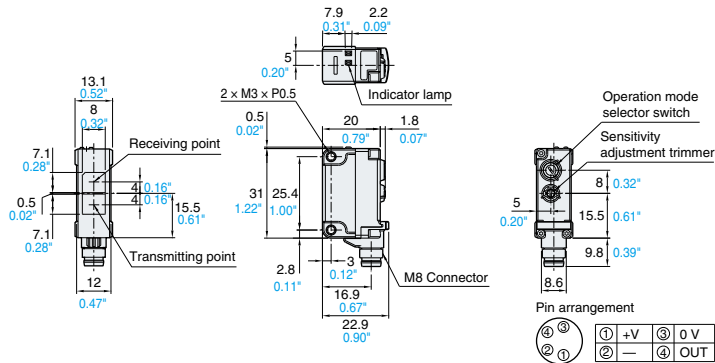
Unit: mm inch

Sensors (reflective / polarized retro-reflective type)

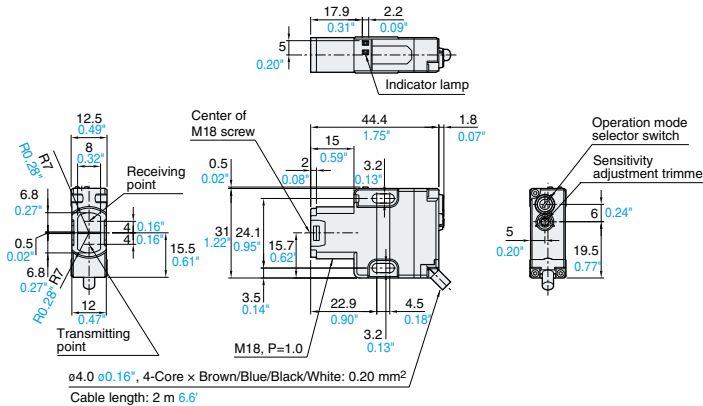
PZ-GxN/GxP/GxEN/GxEP (x: 41/42/101/102/61/62)



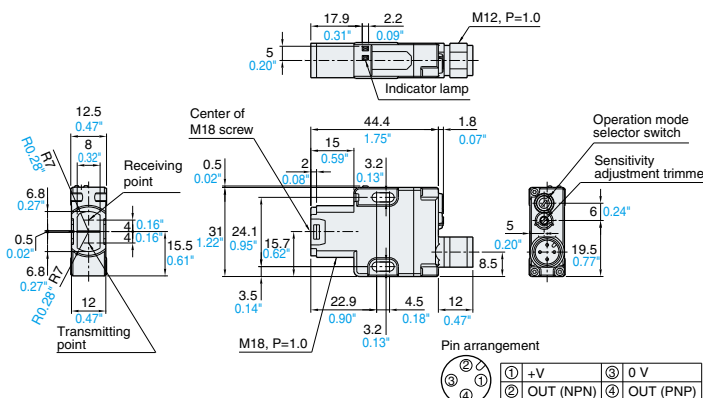
PZ-GxCN/GxCP (x: 41/42/101/102/61/62)



PZ-GxB (x: 41/42/101/102/61/62)

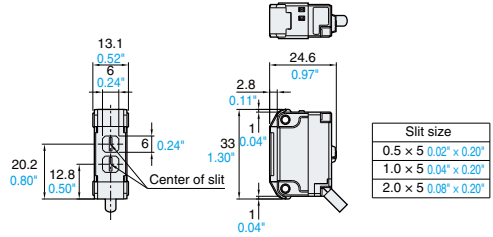


PZ-GxCB (x: 41/42/101/102/61/62)

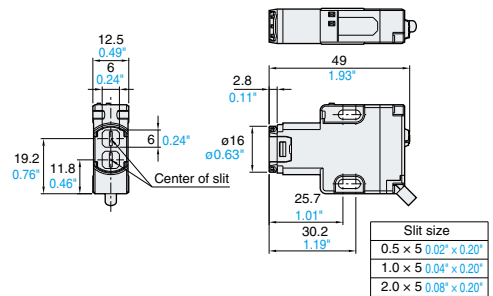


Attachments (optional)

OP-85136 + PZ-G52

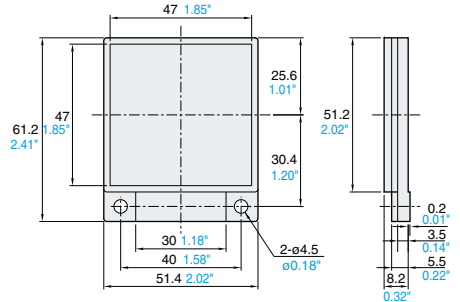


OP-85135 + PZ-G52B

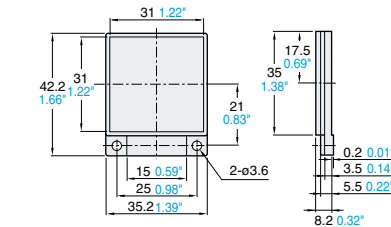


Reflectors (optional)

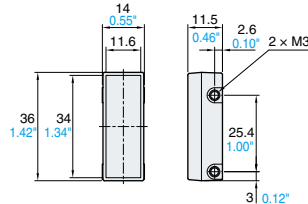
OP-84219 (R-2L)



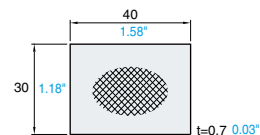
OP-96436 (R-3)



R-5

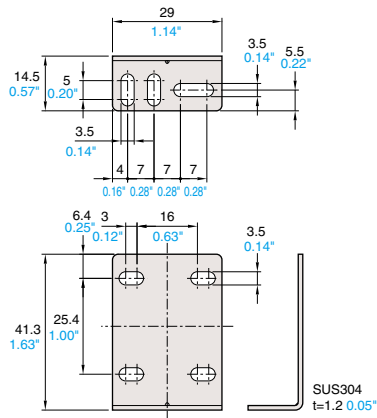


OP-84221 (reflective tape)

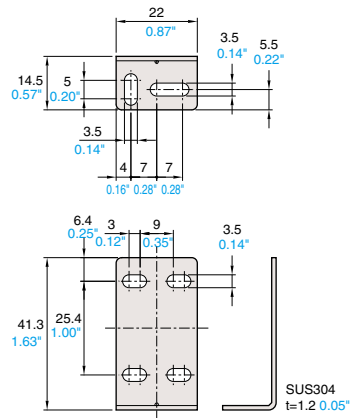


Mounting brackets / Rectangular models (Optional)

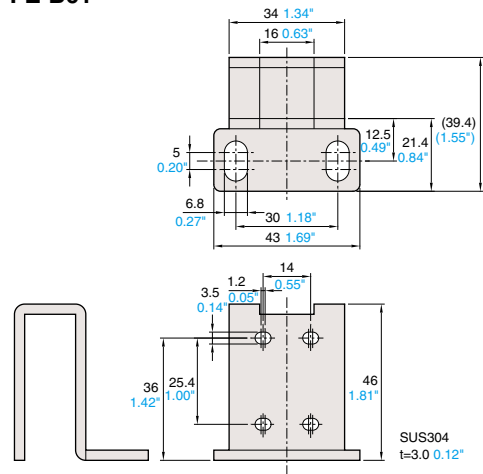
PZ-B41A



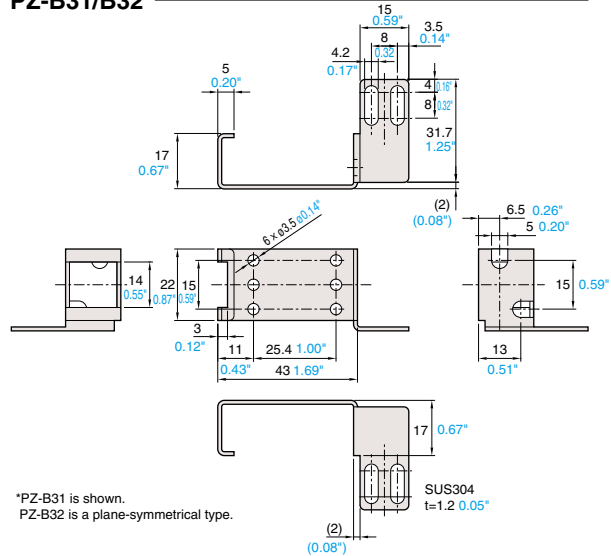
PZ-B01A



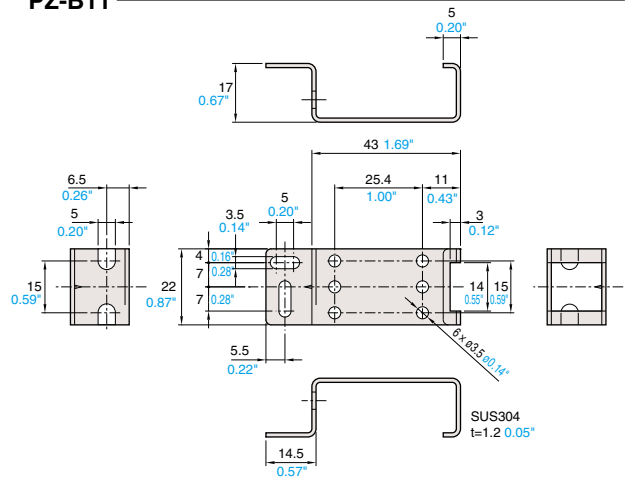
PZ-B61



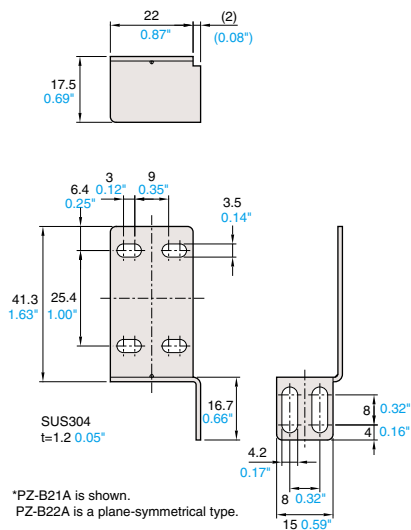
PZ-B31/B32



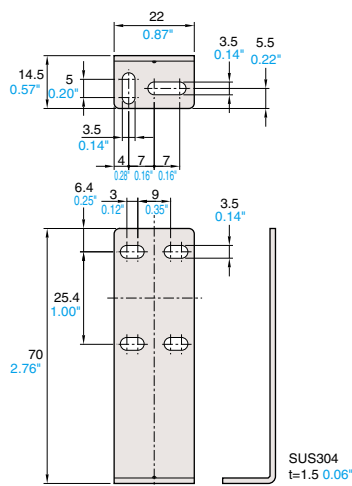
PZ-B11



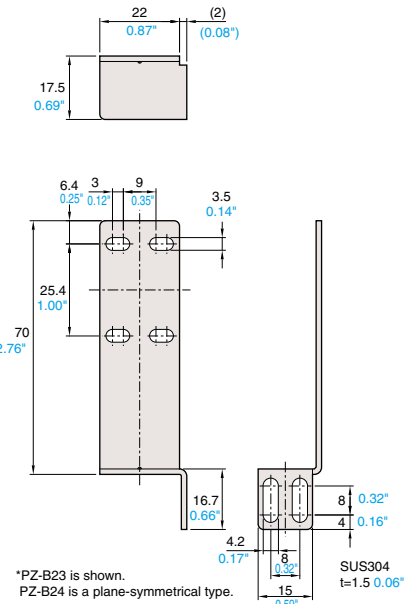
PZ-B21A/B22A



PZ-B02

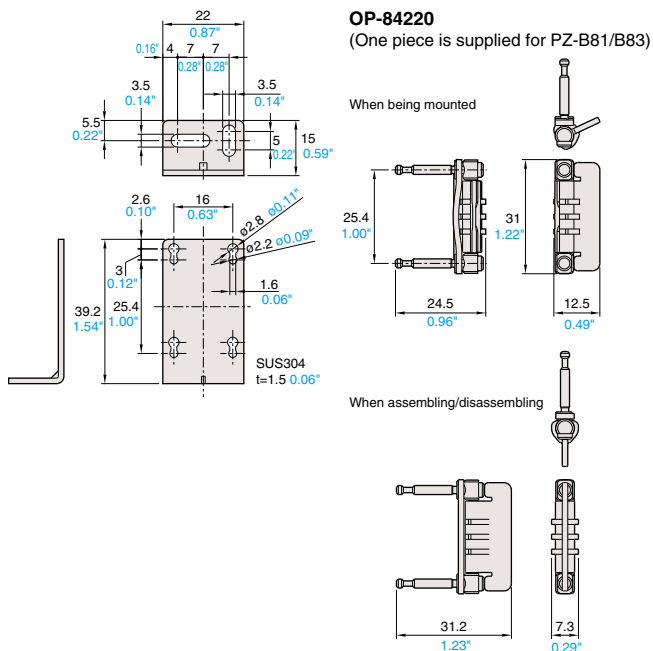


PZ-B23/B24

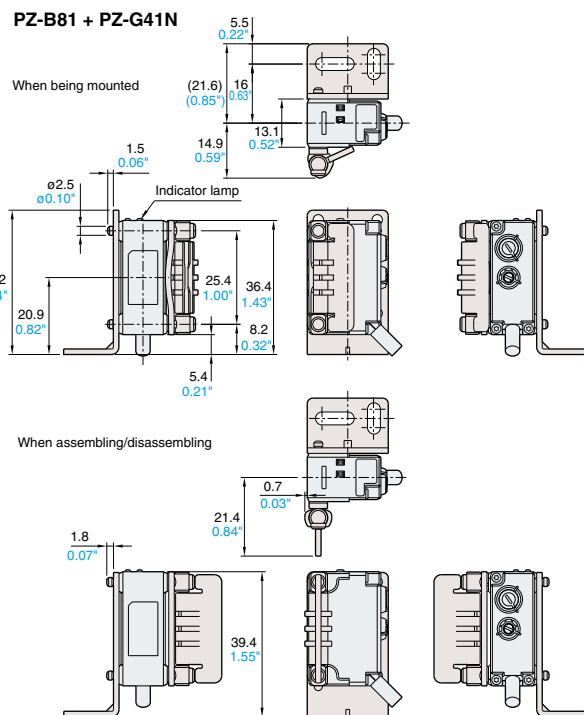


Mounting brackets / Rectangular models (Optional)

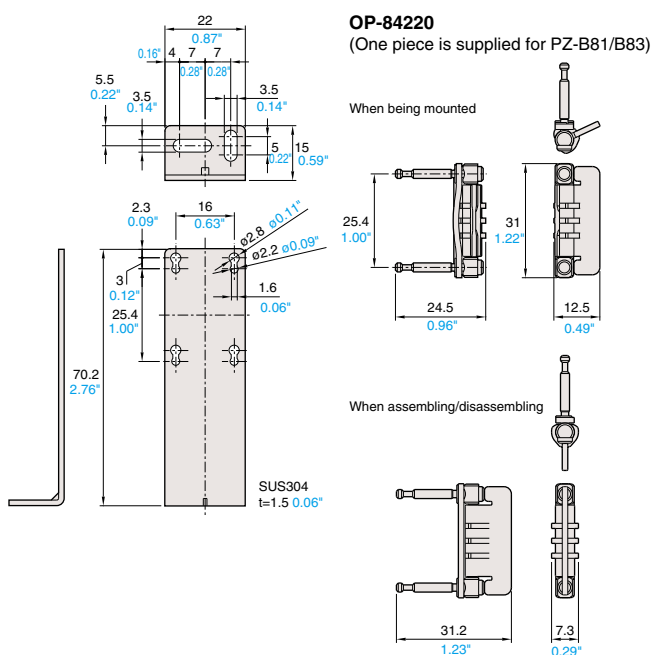
PZ-B81



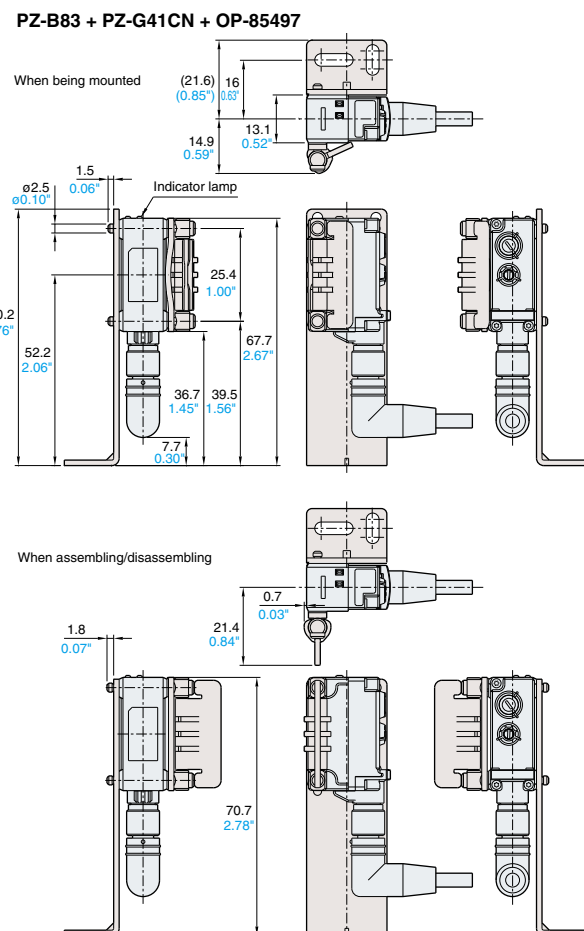
PZ-B81 + PZ-G41N



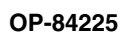
PZ-B83



PZ-B83 + PZ-G41CN + OP-85497



PZ-B03



M18, P=1.0

22
0.87"

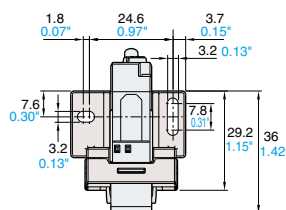
16
0.63"

8
0.31"

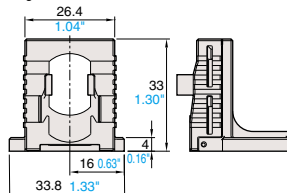
4
0.16"

24.5
0.96"

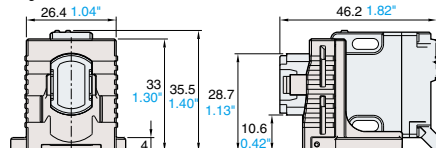
PZ-B82 + PZ-G41B



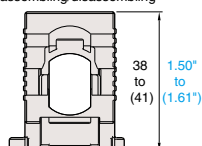
When being mounted



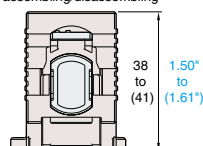
When being mounted



When assembling/disassembling

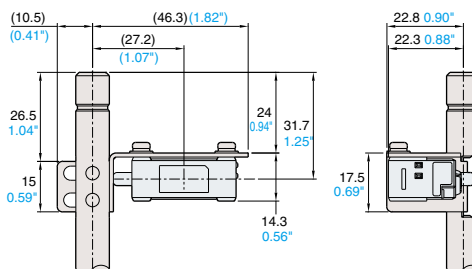
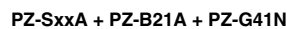


When assembling/disassembling

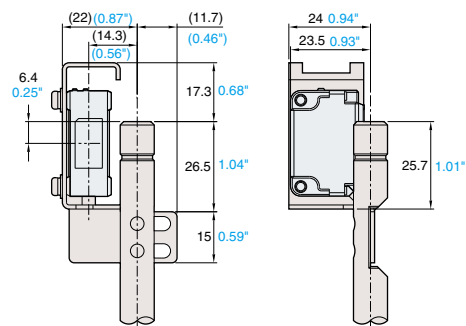


PZ-S10A/S20A

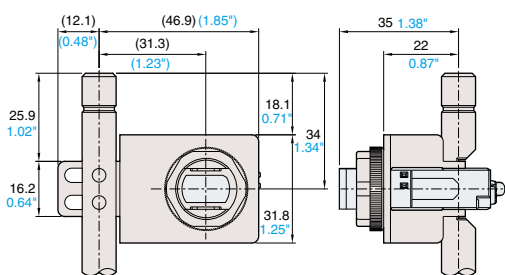
L=100 mm 3.94": PZ-S10A
L=200 mm 7.87": PZ-S20A



PZ-SxxA + PZ-B31 + PZ-G41N

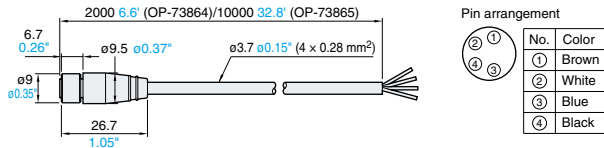


PZ-SxxA + PZ-B25 + PZ-G41B

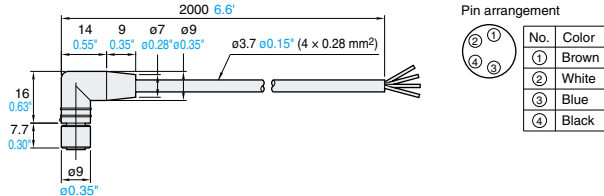


M8 connector cable (Optional)

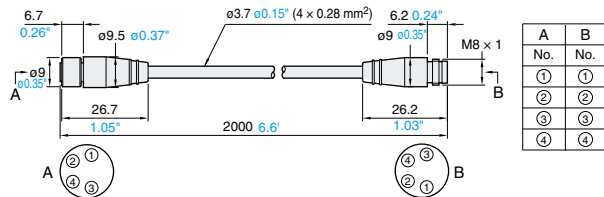
OP-73864/73865



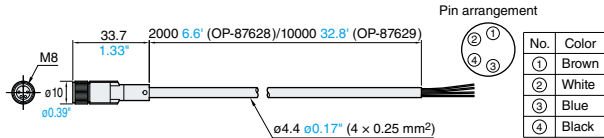
OP-85497



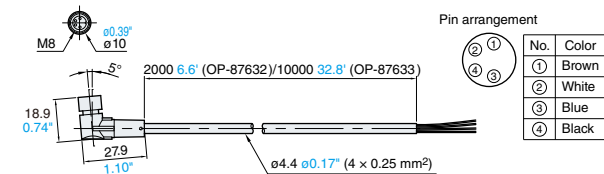
OP-85498



OP-87628/87629

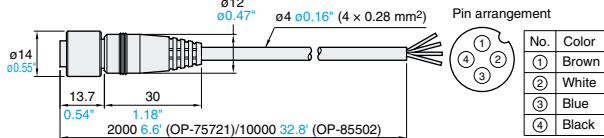


OP-87632/87633

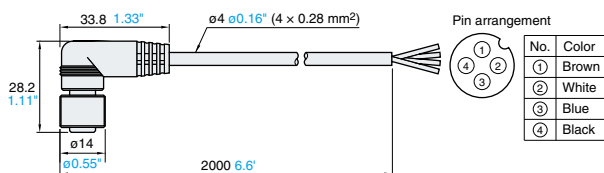


M12 connector cable (Optional)

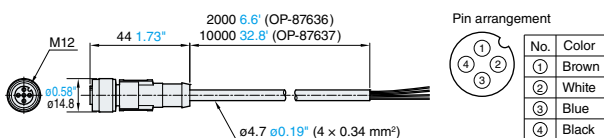
OP-75721/85502



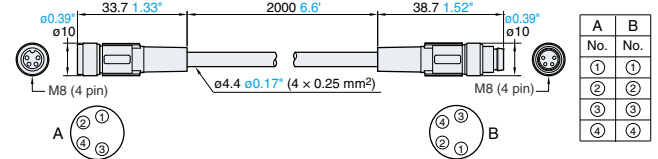
OP-75722



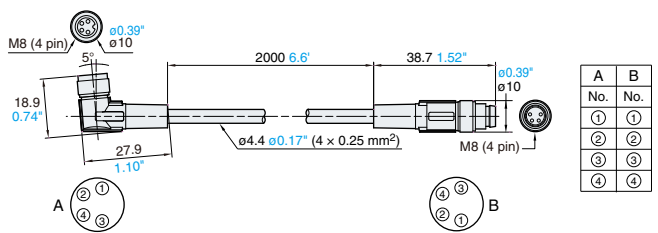
OP-87636/87637



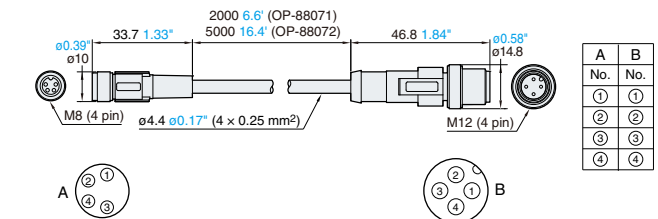
OP-88069



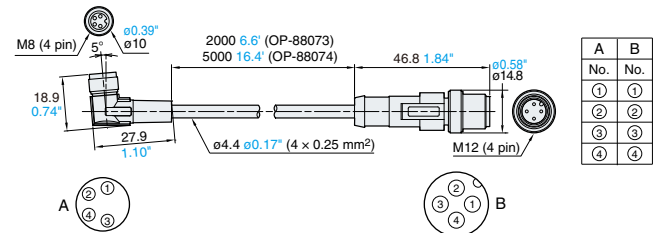
OP-88070



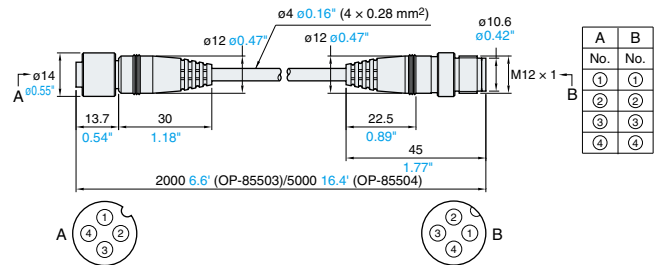
OP-88071/88072



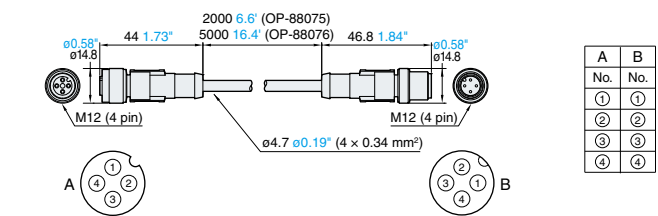
OP-88073/88074



OP-85503/85504



OP-88075/88076



MEMO

Background Suppression Model Unaffected by Color!

Self-contained Photoelectric Sensors PZ-V Series



Features

- Intelligent reflective type unaffected by a target's color or angle
- Digital display
- High-power custom red LED (Except for PZ-V71)
- High-intensity operation indicator



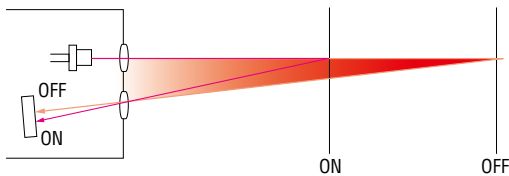
One-touch
Fully-automatic calibration

Here's How

PSD (Position-Sensitive Detector)

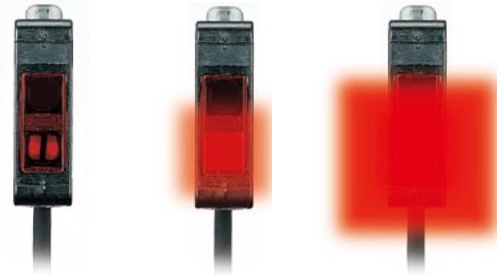
The target distance is detected according to the angle of the reflected light beam.

- Unaffected by a highly reflective target background
- Stable detection of targets with colors and materials of varying reflectance
- Highly accurate detection of minute objects



A.P.R. circuit (Automatic Power Reinforcement)

Stable detection is possible due to the A.P.R. circuit which automatically adjusts the amount of light emitted according to the color and angle of the target.



Sensor head lineup

| Type | Adjustment | Configuration | Detecting distance | Model | | Connector | Cable |
|------------------------|--------------|---------------|--------------------|-----------|------------|---------------|--------------|
| | | | | NPN | PNP | | |
| Intelligent reflective | PUSH Auto | | 900 mm 35.43" | PZ-V71 | PZ-V71P | — | 2 m 6.6' |
| | | | | PZ-V72 | PZ-V72P | M8 connector | 0.13 m 0.43' |
| | | | | PZ-V73 | PZ-V73P | M12 connector | 0.3 m 0.98' |
| | | | | PZ-V75 *1 | — | — | 2 m 6.6' |
| | | | 300 mm 11.81" | PZ-V31 | PZ-V31P | — | 2 m 6.6' |
| | | | | PZ-V32 | PZ-V32P | M8 connector | 0.13 m 0.43' |
| | | | | PZ-V33 | PZ-V33P | M12 connector | 0.3 m 0.98' |
| | | | | PZ-V35 *1 | PZ-V35P *1 | — | 2 m 6.6' |
| | | | 100 mm 3.94" | PZ-V11 | PZ-V11P | — | 2 m 6.6' |
| | | | | PZ-V12 | PZ-V12P | M8 connector | 0.13 m 0.43' |
| | | | | PZ-V13 | PZ-V13P | M12 connector | 0.3 m 0.98' |
| | | | | PZ-V15 *1 | — | — | 2 m 6.6' |

*1 Different frequency type



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SAFETY INFORMATION

Please read the instruction manual carefully in order to safely operate any KEYENCE product.

CONTACT YOUR NEAREST OFFICE FOR RELEASE STATUS

KEYENCE CORPORATION OF AMERICA

Head Office 500 Park Boulevard, Suite 200, Itasca, IL 60143, U.S.A.

PHONE: +1-201-930-0100 FAX: +1-855-539-0123

E-mail: keyence@keyence.com

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AR Little Rock
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KEYENCE CANADA INC.

Head Office PHONE: +1-905-366-7655 FAX: +1-905-366-1122 E-mail: keyencecanada@keyence.com

Montreal PHONE: +1-514-694-4740 FAX: +1-514-694-3206 Windsor PHONE: +1-905-366-7655 FAX: +1-905-366-1122

KEYENCE MEXICO S.A. DE C.V.

PHONE: +52-55-8850-0100 FAX: +52-81-8220-9097

E-mail: keyencemexico@keyence.com

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