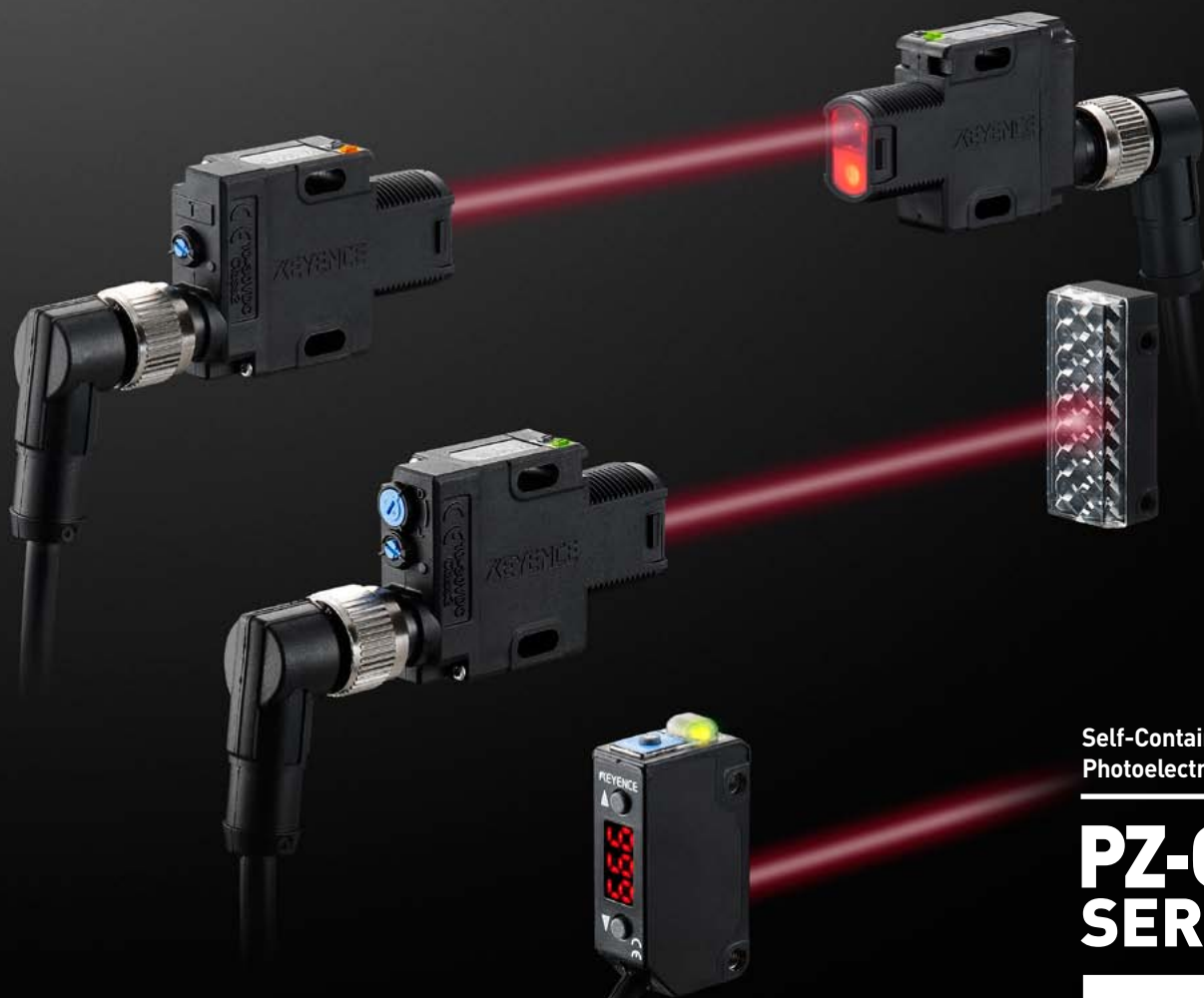


KEYENCE



**General-Purpose
Photoelectric Sensors**

**Self-Contained
Photoelectric Sensor**

**PZ-G/V
SERIES**

**General-Purpose
Photoelectric Sensor**

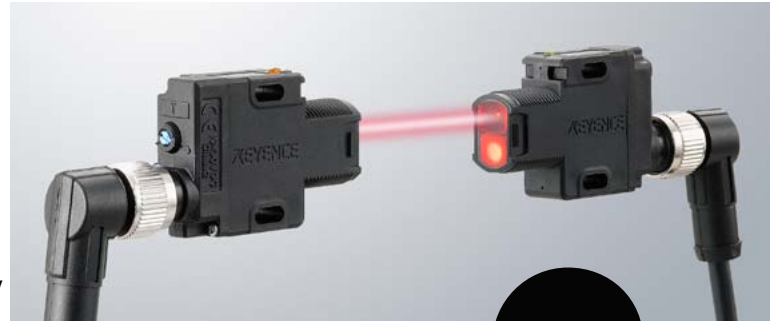
00

General Purpose Photoelectric Sensors

Self-Contained Photoelectric Sensor

PZ-G/V SERIES

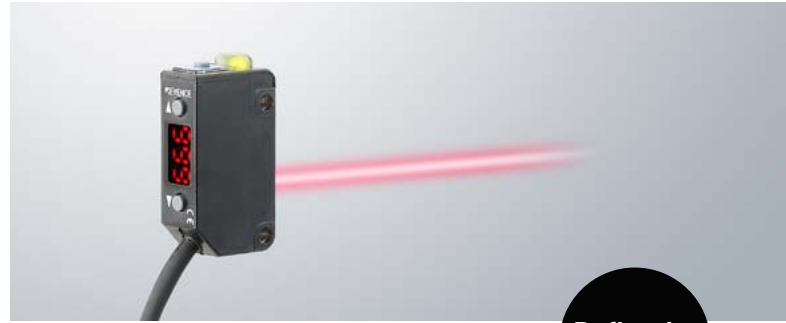
The two main necessities required for a general-purpose photoelectric sensor are "ease of use" and "consistently stable detection". The PZ-G/V Series is comprised of the PZ-G Series and the PZ-V/M Series. Even though each series has its own particular strengths, both series meet and exceed these requirements by offering a variety of self-contained sensors that can be easily integrated into countless applications and provide reliably stable detection for a range of targets.



**Thru-beam
type**



Retro-reflective type



Reflective type

EASE OF USE

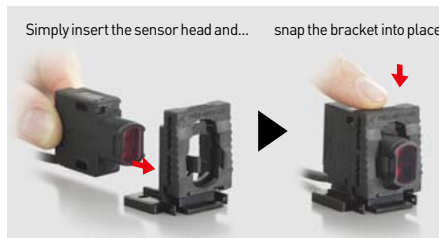
Alignment indicators and One-touch mounting brackets

PZ-G SERIES

The PZ-G Series makes installation and calibration easier than ever with alignment indicators, one-touch mounting brackets, and easily adjustable trimmers. By using the innovative alignment indicators, aligning thru-beam sensors is quicker than ever. Simply adjust the sensors until the highly visible alignment indicator illuminates, signifying a stable signal. The PZ-G Series also offers one-touch mounting brackets, which can secure a sensor in place with the touch of a finger (no tools required). In addition, the trimmers on the back of the sensor can be used to easily adjust the sensitivity and Light-ON / Dark-ON operation of the sensor.



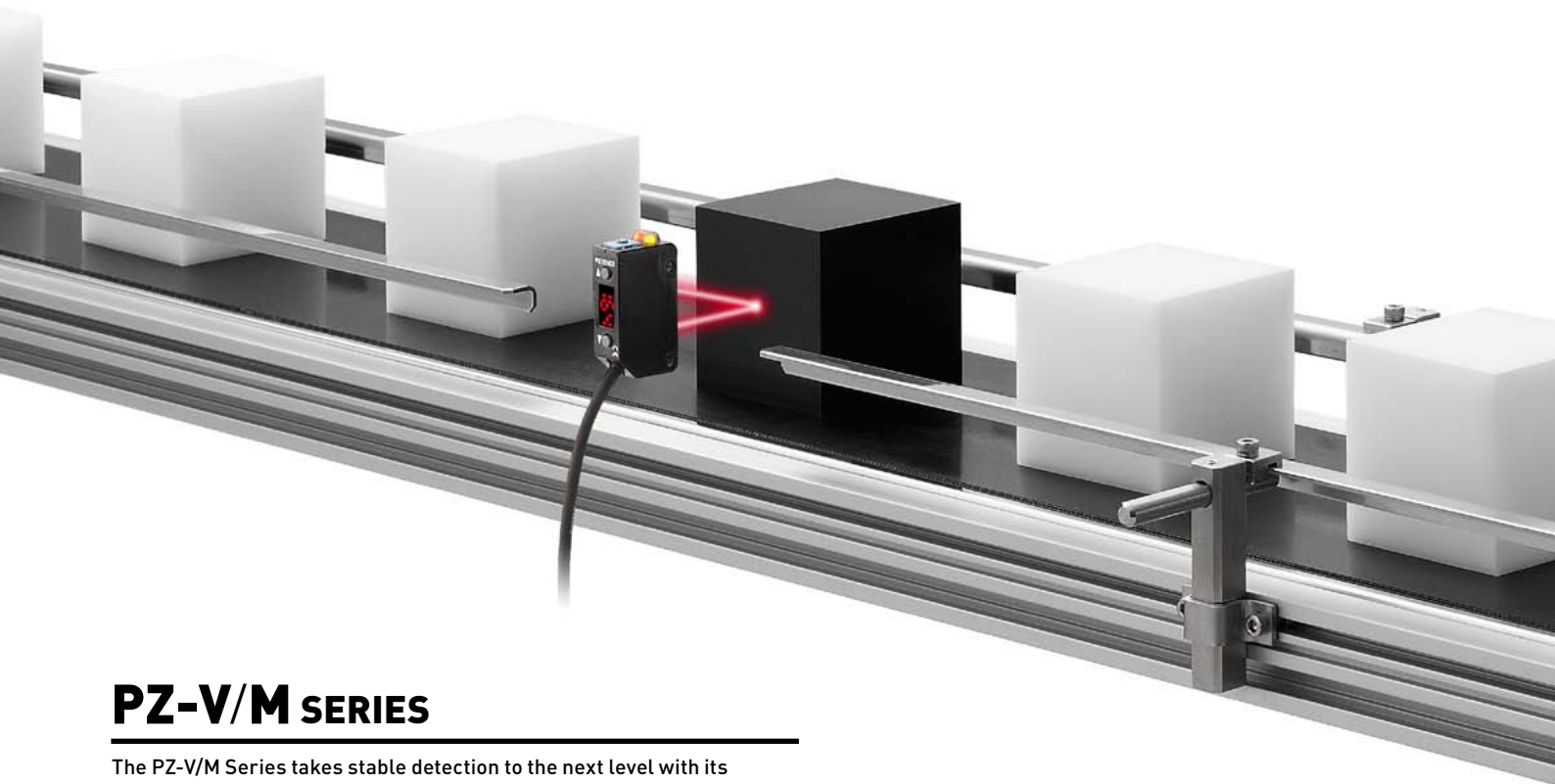
Easy to adjust trimmers



Simply insert the sensor head and... snap the bracket into place



Highly Visible
Alignment
Indicator



PZ-V/M SERIES

The PZ-V/M Series takes stable detection to the next level with its intelligent reflective models, which eliminate the effects of target color, surface finish, and angle. By using a position sensitive detector (P.S.D.), these models are able to detect targets based on position, negating the effects of color or surface finish. These models also contain an automatic power reinforcement (A.P.R.) function, that adjusts the power of the sensor to maintain stable detection on dark or angled targets. The PZ-V/M Series also features models that contain a digital display for easy troubleshooting and a push-button for simplified calibration.



M3 stainless steel mounting threads



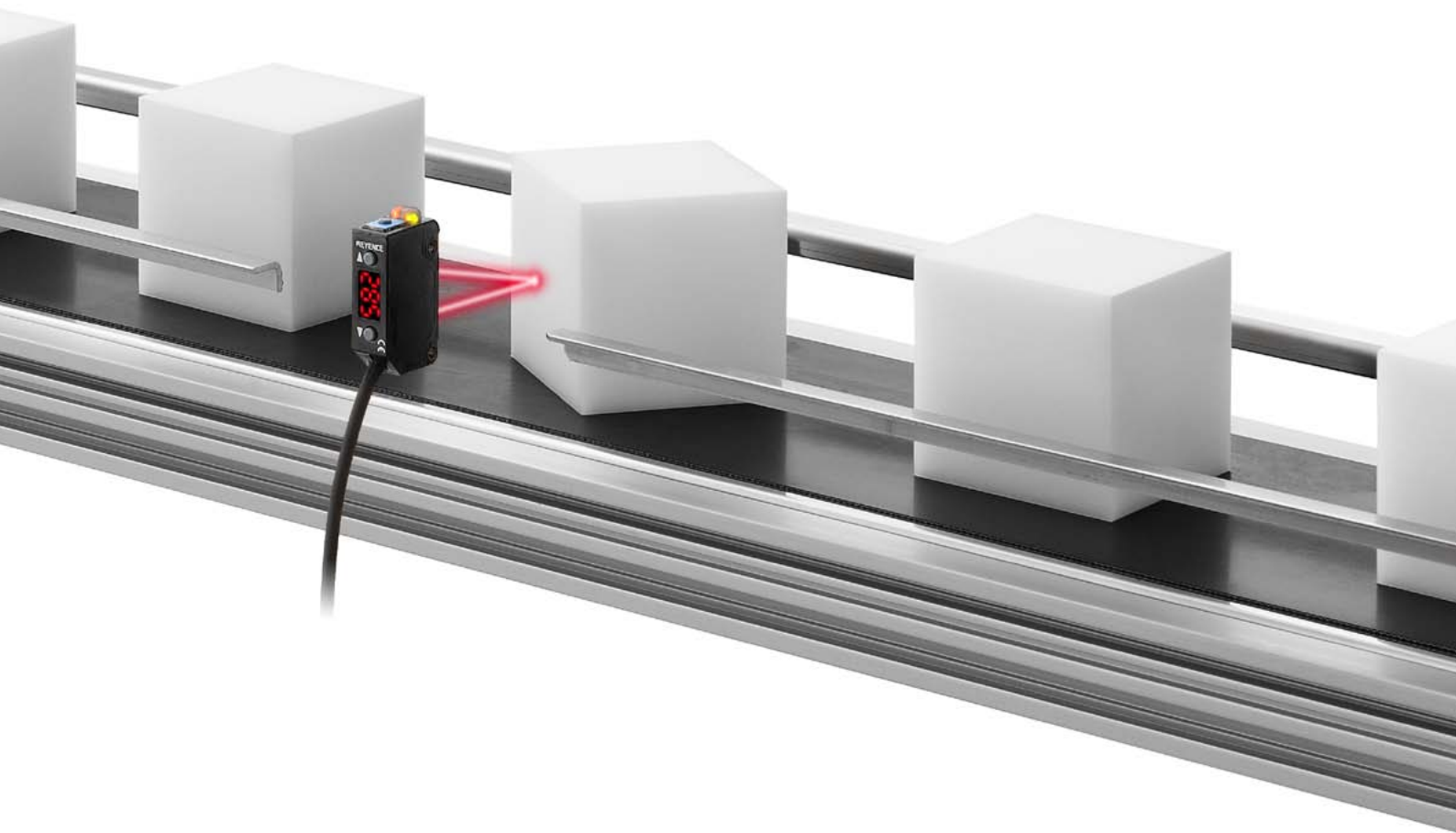
Automatic calibration type [PZ-V]



Trimmer type [PZ-M]

CONSISTENTLY STABLE DETECTION

Intelligent reflective models are unaffected
by color, angle, and surface finish



■ PZ-G Sensor head lineup



| Configuration | Type | Connection method | Detecting distance | Model | | | Weight | | |
|---------------------|---|---------------------|---------------------|------------------|------------------|------------------|------------------|-----------------|---------------|
| | | | | NPN | PNP | Bipolar | | | |
| Thrubeam | Standard | Threaded | 2 m 6.6' cable | | - | - | PZ-G51B | Approx. 120 g | |
| | | | M12 4-pin*1 | | - | - | PZ-G51CB | Approx. 30 g | |
| | | Rectangular | 2 m 6.6' cable | | PZ-G51N | PZ-G51P | - | Approx. 110 g | |
| | | | M8 4-pin*1 | | PZ-G51CN | PZ-G51CP | - | Approx. 20 g | |
| | | | M12 4-pin pigtail*1 | | PZ-G51EN | PZ-G51EP | - | Approx. 60 g | |
| | High-power | Threaded | 2 m 6.6' cable | | | - | - | PZ-G52B | Approx. 120 g |
| | | | M12 4-pin*1 | | | - | - | PZ-G52CB | Approx. 30 g |
| | | Rectangular | 2 m 6.6' cable | | | PZ-G52N | PZ-G52P | - | Approx. 110 g |
| | | | M8 4-pin*1 | | | PZ-G52CN | PZ-G52CP | - | Approx. 20 g |
| | | | M12 4-pin pigtail*1 | | | PZ-G52EN | PZ-G52EP | - | Approx. 60 g |
| Retro-reflective*4 | Long-range (with P.R.O.*5 function) | Threaded | 2 m 6.6' cable | | - | - | PZ-G61B | Approx. 65 g | |
| | | | M12 4-pin*1 | | - | - | PZ-G61CB | Approx. 15 g | |
| | | Rectangular | 2 m 6.6' cable | | PZ-G61N | PZ-G61P | - | Approx. 60 g | |
| | | | M8 4-pin*1 | | PZ-G61CN | PZ-G61CP | - | Approx. 10 g | |
| | | | M12 4-pin pigtail*1 | | PZ-G61EN | PZ-G61EP | - | Approx. 30 g | |
| | Transparent object detection (without P.R.O.*5 function) | Threaded | 2 m 6.6' cable | | | - | - | PZ-G62B | Approx. 65 g |
| | | | M12 4-pin*1 | | | - | - | PZ-G62CB | Approx. 15 g |
| | | Rectangular | 2 m 6.6' cable | | | PZ-G62N | PZ-G62P | - | Approx. 60 g |
| | | | M8 4-pin*1 | | | PZ-G62CN | PZ-G62CP | - | Approx. 10 g |
| | | | M12 4-pin pigtail*1 | | | PZ-G62EN | PZ-G62EP | - | Approx. 30 g |
| Reflective | Standard | Threaded | 2 m 6.6' cable | | | - | - | PZ-G41B | Approx. 65 g |
| | | | M12 4-pin*1 | | | - | - | PZ-G41CB | Approx. 30 g |
| | | Rectangular | 2 m 6.6' cable | | | PZ-G41N | PZ-G41P | - | Approx. 60 g |
| | | | M8 4-pin*1 | | | PZ-G41CN | PZ-G41CP | - | Approx. 10 g |
| | | | M12 4-pin pigtail*1 | | | PZ-G41EN | PZ-G41EP | - | Approx. 30 g |
| | Narrow-view | Threaded | 2 m 6.6' cable | | | - | - | PZ-G42B | Approx. 65 g |
| | | | M12 4-pin*1 | | | - | - | PZ-G42CB | Approx. 15 g |
| | | Rectangular | 2 m 6.6' cable | | | PZ-G42N | PZ-G42P | - | Approx. 60 g |
| | | | M8 4-pin*1 | | | PZ-G42CN | PZ-G42CP | - | Approx. 10 g |
| | | | M12 4-pin pigtail*1 | | | PZ-G42EN | PZ-G42EP | - | Approx. 30 g |
| Definite reflective | Threaded | 2 m 6.6' cable | | - | | - | PZ-G101B | Approx. 65 g | |
| | | M12 4-pin*1 | | - | | - | PZ-G101CB | Approx. 15 g | |
| | Rectangular | 2 m 6.6' cable | | PZ-G101N | | PZ-G101P | - | Approx. 60 g | |
| | | M8 4-pin*1 | | PZ-G101CN | | PZ-G101CP | - | Approx. 10 g | |
| | | M12 4-pin pigtail*1 | | PZ-G101EN | | PZ-G101EP | - | Approx. 30 g | |
| Definite reflective | Threaded | 2 m 6.6' cable | | | - | - | PZ-G102B | Approx. 65 g | |
| | | M12 4-pin*1 | | | - | - | PZ-G102CB | Approx. 15 g | |
| | Rectangular | 2 m 6.6' cable | | | PZ-G102N | PZ-G102P | - | Approx. 60 g | |
| | | M8 4-pin*1 | | | PZ-G102CN | PZ-G102CP | - | Approx. 10 g | |
| | | M12 4-pin pigtail*1 | | | PZ-G102EN | PZ-G102EP | - | Approx. 30 g | |

*1 Cable sold separately

*2 Infrared light source

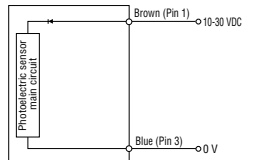
*3 When the OP-84219 (R-2L) reflector is used.

*4 Reflector sold separately. Reflectors and corresponding detecting distances can be found on page 11.

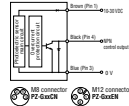
*5 Polarized Reflective Optics

I/O circuit diagram

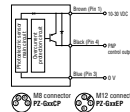
Thrubeam type transmitter
PZ-G5x



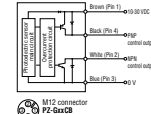
NPN output type (Thrubeam type receiver, reflective type, retro-reflective type)
PZ-GxxN



PNP output type (Thrubeam type receiver, reflective type, retro-reflective type)
PZ-GxxP



Bipolar output type (Thrubeam type receiver, reflective type, retro-reflective type)
PZ-GxxB



PZ-V/M Sensor head lineup

| Configuration | Type | Connection method | Detecting distance | Model | | Weight | | | | | |
|-----------------------------------|-------------|---------------------------------|---------------------------------|--|-----------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------|----------------|--------------|
| | | | | NPN | PNP | | | | | | |
| Thrubeam | | 2 m 6.6' cable | | 10 m 32.8' | PZ-M51 | PZ-M51P | Approx. 100 g | | | | |
| | | M8 4-pin pigtail* ¹ | | | PZ-M52 | PZ-M52P | Approx. 60 g | | | | |
| | | M12 4-pin pigtail* ¹ | | | PZ-M53 | PZ-M53P | Approx. 100 g | | | | |
| Retro-reflective ³ | | 2 m 6.6' cable | | 0.1 to 1.5 m 0.3' to 4.9'' ⁴ | PZ-M61 ^{*2} | PZ-M61P | Approx. 55 g | | | | |
| | | M8 4-pin pigtail* ¹ | | | PZ-M62 | PZ-M62P | Approx. 15 g | | | | |
| | | M12 4-pin pigtail* ¹ | | | PZ-M63 | PZ-M63P | Approx. 25 g | | | | |
| Manual Calibration Type | Rectangular | 2 m 6.6' cable | | 20 to 900 mm 0.79' to 35.43" | PZ-M71 ^{*2} | PZ-M71P | Approx. 70 g | | | | |
| | | M8 4-pin pigtail* ¹ | | | PZ-M72 | PZ-M72P | Approx. 30 g | | | | |
| | | M12 4-pin pigtail* ¹ | | | PZ-M73 | PZ-M73P | Approx. 40 g | | | | |
| | | 2 m 6.6' cable | | | | 5 to 300 mm 0.20' to 11.81" | PZ-M31 ^{*2} | PZ-M31P ^{*2} | Approx. 55 g | | |
| | | M8 4-pin pigtail* ¹ | | | | | PZ-M32 | PZ-M32P | Approx. 15 g | | |
| | | M12 4-pin pigtail* ¹ | | | | | PZ-M33 | PZ-M33P | Approx. 25 g | | |
| | | Intelligent Reflective | | | Rectangular | 2 m 6.6' cable | | 5 to 100 mm 0.20' to 3.94" | PZ-M11 ^{*2} | PZ-M11P | Approx. 55 g |
| | | | | | | M8 4-pin pigtail* ¹ | | | PZ-M12 | PZ-M12P | Approx. 15 g |
| | | | | | | M12 4-pin pigtail* ¹ | | | PZ-M13 | PZ-M13P | Approx. 25 g |
| 2 m 6.6' cable | | | 20 to 900 mm 0.79' to 35.43" | PZ-V71 ^{*2} | | PZ-V71P | | | Approx. 70 g | | |
| M8 4-pin pigtail* ¹ | | | | PZ-V72 | | PZ-V72P | | | Approx. 30 g | | |
| M12 4-pin pigtail* ¹ | | | | PZ-V73 | | PZ-V73P | | | Approx. 40 g | | |
| 2 m 6.6' cable | | | | 5 to 300 mm 0.20' to 11.81" | PZ-V31 ^{*2} | PZ-V31P ^{*2} | Approx. 55 g | | | | |
| M8 4-pin pigtail* ¹ | | | | | PZ-V32 | PZ-V32P | Approx. 15 g | | | | |
| M12 4-pin pigtail* ¹ | | | | | PZ-V33 | PZ-V33P | Approx. 25 g | | | | |
| Visual/Automatic Calibration Type | Rectangular | 2 m 6.6' cable | | 5 to 100 mm 0.20' to 3.94" | PZ-V11 ^{*2} | PZ-V11P | Approx. 55 g | | | | |
| | | M8 4-pin pigtail* ¹ | | | PZ-V12 | PZ-V12P | Approx. 15 g | | | | |
| | | M12 4-pin pigtail* ¹ | | | PZ-V13 | PZ-V13P | Approx. 25 g | | | | |
| | | 2 m 6.6' cable | | | | | | | | | |

*1 Cable sold separately

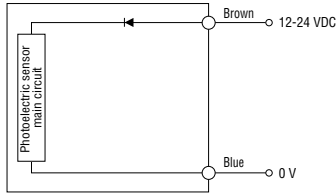
*2 Alternate-frequency models are available to prevent mutual interference when several sensors are used in close proximity. The models are as follows: PZ-M65/M75/M35/M35P/M15/V75/V35/V35P/V15.

*3 PZ-M6x(P) models come with an R-5 reflector, additional reflectors are listed on page 11.

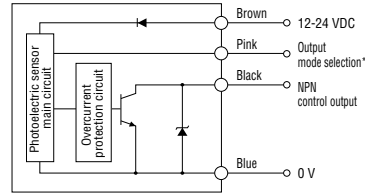
*4 When the R-5 reflector is used.

I/O circuit diagram

Thrubeam type transmitter
PZ-M5x(P)

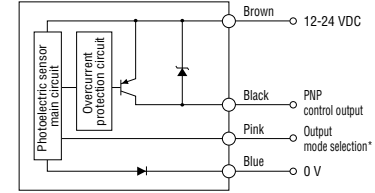


NPN output type (Thrubeam type receiver, reflective type,
retro-reflective type)
PZ-Mxx/Vxx



*(DARK-ON mode → 12 to 24 VDC)
(LIGHT-ON mode → 0 V)

PNP output type (Thrubeam type receiver, reflective type,
retro-reflective type)
PZ-MxxP/VxxP










*(DARK-ON mode → 12 to 24 VDC)
(LIGHT-ON mode → 0 V)

Cables (for connector type sensor heads)

| Description | Specification/ Material | Appearance | Sensor side | | Terminal side | | Cable length | Model | Weight | | | |
|-----------------------------|----------------------------|-------------------|------------------------|------------|----------------|-------------|---------------|---------------|---------------|---------------|----------|---------------|
| | | | Connector size | Shape | Connector size | Shape | | | | | | |
| Connector to Loose wires | Standard (PVC) | | M12 | Straight | - | Loose wires | 2 m 6.6' | OP-75721 | Approx. 65 g | | | |
| | | | M8 | | | | 10 m 32.8' | OP-85502 | Approx. 230 g | | | |
| | | | Oil-resistant (PUR) | | | | M12 | 2 m 6.6' | OP-73864 | Approx. 55 g | | |
| | | | | | | | M8 | 10 m 32.8' | OP-73865 | Approx. 220 g | | |
| | Standard (PVC) | | M12 | 2 m 6.6' | | | OP-87636 | Approx. 75 g | | | | |
| | | | M8 | 10 m 32.8' | | | OP-87637 | Approx. 330 g | | | | |
| | Oil-resistant (PUR) | | M12 | 2 m 6.6' | | | OP-87628 | Approx. 55 g | | | | |
| | | | M8 | 10 m 32.8' | | | OP-87629 | Approx. 260 g | | | | |
| | Connector to Connector | Standard (PVC) | | M12 | | | Straight | M12 | Straight | 2 m 6.6' | OP-85503 | Approx. 70 g |
| | | | | M8 | | | | | | 5 m 16.4' | OP-85504 | Approx. 130 g |
| Oil-resistant (PUR) | | | | M12 | 2 m 6.6' | OP-85498 | | | | Approx. 55 g | | |
| | | | | M8 | 2 m 6.6' | OP-88075 | | | | Approx. 80 g | | |
| Standard (PVC) | | | M12 | M8 | 2 m 6.6' | OP-88076 | Approx. 180 g | | | | | |
| | | | M8 | M12 | 2 m 6.6' | OP-88069 | Approx. 70 g | | | | | |
| Oil-resistant (PUR) | | | M12 | M12 | 2 m 6.6' | OP-88071 | Approx. 70 g | | | | | |
| | | | M8 | M8 | 5 m 16.4' | OP-88072 | Approx. 140 g | | | | | |
| Standard (PVC) | | | M8 | M8 | 2 m 6.6' | OP-88070 | Approx. 70 g | | | | | |
| | | | M12 | M12 | 2 m 6.6' | OP-88073 | Approx. 70 g | | | | | |
| Oil-resistant (PUR) | | | M8 | M12 | 5 m 16.4' | OP-88074 | Approx. 140 g | | | | | |

■ Mounting brackets (for rectangular type)

| Type | Model | Material/weight |
|---|-----------------|--|
|  Standard, L-shaped mounting bracket (M3 screw x 2 supplied) | PZ-B41A | Mounting bracket: SUS304 Screw: Stainless steel Approx. 15 g |
|  Small, L-shaped mounting bracket (M3 screw x 2 supplied) | PZ-B01A | Mounting bracket: SUS304 Screw: Stainless steel Approx. 10 g |
|  Robust, L-shaped mounting bracket (M3 screw x 2 supplied) | PZ-B61 | Mounting bracket: SUS304 Screw: Stainless steel Approx. 90 g |
|  ^{*1} Side-mounting bracket (Vertical L) (M3 screw x 2 supplied) | PZ-B21A | Mounting bracket: SUS304 Screw: Stainless steel Approx. 15 g |
| | PZ-B22A | Mounting bracket: SUS304 Screw: Stainless steel Approx. 15 g |
|  ^{*2} Side-mounting bracket (Landscape L) (M3 screw x 2 supplied) | PZ-B31 | Mounting bracket: SUS304 Screw: Stainless steel Approx. 20 g |
| | PZ-B32 | Mounting bracket: SUS304 Screw: Stainless steel Approx. 20 g |
|  Landscape mounting bracket (M3 screw x 2 supplied) | PZ-B11 | Mounting bracket: SUS304 Screw: Stainless steel Approx. 20 g |
|  One-touch mounting bracket (Mounting bar supplied) | PZ-B81*3 | Mounting bracket: SUS304 Mounting bar: SUS303, polyacetal Approx. 20 g |






^{*1} The PZ-B21A and PZ-B22A are plane-symmetrical. The picture shows the PZ-B21A.

^{*2} The PZ-B31 and PZ-B32 are plane-symmetrical. The picture shows the PZ-B31.




^{*3} Dedicated to the PZ-G Series sensor heads.

^{*4} The PZ-B23 and PZ-B24 are plane-symmetrical. The picture shows the PZ-B23.





■ Reflectors

| Type | Model | Detecting distance | | |
|--|-----------------|-------------------------------|------------------------------|-------------------------------|
| | | PZ-G61x | PZ-G62x | PZ-M6x(P) |
|  Reflective mirror R-2L | OP-84219 | 0.1 to 4.2 m 0.3' to 13.8' | 0.1 to 1 m 0.3' to 3.3' | 0.15 to 2.6 m 0.5' to 8.5' |
|  Reflective mirror R-3 | OP-96436 | 0.1 to 2.9 m 0.3' to 9.5' | 0.1 to 0.4 m 0.3' to 1.3' | 0.15 to 1.9 m 0.5' to 6.2' |
|  Reflective mirror R-5 | R-5 | 0.1 to 2.5 m 0.3' to 8.2' | 0.1 to 0.5 m 0.3' to 1.6' | 0.1 to 1.5 m 0.3' to 4.9' |
|  Reflective tape | OP-84221 | 0.2 to 0.7 m 0.7' to 2.3' | - | 0.2 to 0.9 m 0.7' to 3.0' |
|  Oil/chemical-resistant reflector | OP-87623 | 0.1 to 2.4 m 0.3' to 7.9' | 0.1 to 0.5 m 0.3' to 1.6' | 0.1 to 1.4 m 0.3' to 4.6' |




■ Mounting brackets (for rectangular M8 connector type, L-shaped cable only)

| Type | Model | Material/weight |
|--|-----------------|--|
|  Standard, L-shaped mounting bracket (M3 screw x 2 supplied) | PZ-B02 | Mounting bracket: SUS304 Screw: Stainless steel Approx. 20 g |
|  ^{*4} Side-mounting bracket (Vertical L) (M3 screw x 2 supplied) | PZ-B23 | Mounting bracket: SUS304 Screw: Stainless steel Approx. 25 g |
| | PZ-B24 | Mounting bracket: SUS304 Screw: Stainless steel Approx. 25 g |
|  One-touch mounting bracket (Mounting bar supplied) | PZ-B83*3 | Mounting bracket: SUS304 Mounting bar: SUS303, polyacetal Approx. 30 g |

■ Mounting brackets (for threaded type)

| Type | Model | Material/weight |
|---|---------------|---|
|  Standard, L-shaped mounting bracket | PZ-B03 | SUS304 Approx. 25 g |
|  Adjustable angle, L-shaped steel mounting bracket | PZ-B04 | SUS304 Approx. 35 g |
|  Side-mounting bracket | PZ-B25 | SUS304 Approx. 30 g |
|  One-touch mounting bracket | PZ-B82 | Base: Polyacetal Slide: Glass-fiber reinforced polyamide Approx. 10 g |

■ Mounting Brackets (adjustable brackets)

| Type | Model | Material/weight |
|---|------------------------------|---|
|  Adjustable bracket for rectangular models (M3 screw x 2 supplied) | OP-87404 | Nickel plated zinc Approx. 95 g |
|  Adjustable bracket for threaded models | OP-87405 | Nickel plated zinc Approx. 100 g |
|  Screw length Adjustable bracket fixing screw | Screw length: 45 mm 1.77" | OP-87406 Nickel plated iron Approx. 70 g |
| | Screw length: 65 mm 2.56" | OP-87407 Nickel plated iron Approx. 80 g |

*** PZ-V/M7x(P) sensor heads are not compatible with the brackets above. For the appropriate brackets, contact KEYENCE.

PZ-G Series Specifications



| Configuration | | Thrubeam | | Reflective | | | | Retro-reflective | | |
|--|---|--|---|--------------|---|--|--|---|--|--|
| Type | Connection Method | Output | Standard | High-power | Diffuse reflective | | Narrow-view | Definite reflective | Long-range (with P.R.O. function) | Transparent object detection (without P.R.O. function) |
| | | | | | Long-range | Short-range | | | | |
| Rectangular | Cable | 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 connector with pigtail | 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 | 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 30 x 30 cm 11.81" x 11.81" white paper is detected) | 300 mm 11.81" (when 10 x 10 cm 3.94" x 3.94" white paper is detected) | 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 is used) | 0.1 to 1 m 0.3' to 3.3' (when R-2L is used) |
| Beam spot diameter | | | - | - | - | - | Approx. ø5 mm ø0.20" (at detecting distance of 100 mm 3.94") | Approx. ø2 mm ø0.08" (at detecting distance of 40 mm 1.57") | - | - |
| Light source (LED) | | | Red | Infrared x 2 | Red | | | | | Infrared |
| Sensitivity adjustment | | One-turn trimmer (230°) | | | | | | | | |
| Response time | | 500 µs | | | | | | | | |
| Operation mode | | LIGHT-ON/DARK-ON (selectable with a trimmer) | | | | | | | | |
| Indicator (LED) | | Transmitter: Power indicator (Orange), Receiver: Output indicator (Orange), Stable operation indicator (Green), Alignment indicator (Red) | | | Output indicator (Orange), Stable operation indicator (Green) | | | | | |
| Control output | | Open collector output: 30 V max., 100 mA max., Residual voltage: 1 V max. | | | | | | | | |
| Protection circuit | | Protection against reverse power connection, output overcurrent, output surge | | | | | | | | |
| Rating | Power supply voltage | 10 to 30 VDC including ripple ±10% (P-P) | | | | | | | | |
| | Current consumption | Transmitter: 20 mA max. Receiver: 28 mA max. | Transmitter: 25 mA max. Receiver: 28 mA max. | 34 mA max. | | | | | | |
| Environmental resistance | Enclosure rating | IEC, JEM:IP67/NEMA:4X, 6, 12/DIN: IP69K | | | | | | | | |
| | Ambient light | Incandescent lamp: 5000 lux max., Sunlight: 20000 lux max. | | | | | | | | |
| | Ambient temperature | -20 to +55°C -4 to +131°F (No freezing) | | | | | | | | |
| | Ambient humidity | 35 to 85% (No condensation) | | | | | | | | |
| | Vibration resistance | 10 to 55 Hz, 1.5 mm 0.06" double amplitude in X, Y, and Z directions, 2 hours respectively | | | | | | | | |
| Shock resistance | | 1000 m/s ² in X, Y, and Z directions, 6 times respectively | | | | | | | | |
| Mutual interference prevention | | Up to 2 units (when polarization attachments are used) | | | Up to 2 units (automatic alternate-frequency function provided) | | | | | |
| Material | Housing | Glass-fiber reinforced polybutylene terephthalate (PBT) | | | | | | | | |
| | Lens cover | Polyarylate (PAR) | | | | | | Acrylic (PMMA) | Polyarylate (PAR) | |
| | Trimmer | Glass-fiber reinforced polyamide (PA) | | | | | | | | |
| | Housing connection | Screw: Zinc nickel plated iron, Packing: Nitrile-butadiene rubber (NBR) | | | | | | | | |
| | Cable (Cable type and Connector type with pigtail only) | Polyvinyl chloride (PVC) | | | | | | | | |
| Connector (Connector type with pigtail only) | | Nickel plated brass, polybutylene terephthalate (PBT), polyvinyl chloride (PVC) | | | | | | | | |
| Accessories*2 | | Instructions manual, Thrubeam threaded type: M18 nut x 2, Other threaded type: M18 nut x 1 | | | | | | | | |
| Weight | | Cable type: Approx. 60 g (Thrubeam type transmitter: Approx. 50 g), M8 connector type: Approx. 10 g, M12 connector type with pigtail: Approx. 30 g Threaded cable models: Approx. 65 g (Thrubeam transmitter: Approx. 55 g) Threaded connector models: Approx. 15 g | | | | | | | | |

*1 Detecting distance at the maximum sensitivity.

*2 Cable sold separately for the M8 connector types and M12 connector pigtail types. Reflectors for the retro-reflective type are sold separately.

PZ-V/M Series Specifications



| Configuration | | Thrubeam | Retro-reflective (with P.R.O. function) | Intelligent Reflective | | | | | |
|----------------------------------|--|---|--|--|---|--|--|---|--|
| Cable | NPN | PZ-M51 | PZ-M61^{*3} | PZ-M71^{*3} | PZ-M31^{*3} | PZ-M11^{*3} | PZ-V71^{*3} | PZ-V31^{*3} | PZ-V11^{*3} |
| | PNP | PZ-M51P | PZ-M61P | PZ-M71P | PZ-M31P^{*3} | PZ-M11P | PZ-V71P | PZ-V31P^{*3} | PZ-V11P |
| M8 connector pigtail | NPN | PZ-M52 | PZ-M62 | PZ-M72 | PZ-M32 | PZ-M12 | PZ-V72 | PZ-V32 | PZ-V12 |
| | PNP | PZ-M52P | PZ-M62P | PZ-M72P | PZ-M32P | PZ-M12P | PZ-V72P | PZ-V32P | PZ-V12P |
| M12 connector pigtail | NPN | PZ-M53 | PZ-M63 | PZ-M73 | PZ-M33 | PZ-M13 | PZ-V73 | PZ-V33 | PZ-V13 |
| | PNP | PZ-M53P | PZ-M63P | PZ-M73P | PZ-M33P | PZ-M13P | PZ-V73P | PZ-V33P | PZ-V13P |
| Detecting distance ^{*1} | | 10 m 32.8' | 0.1 to 1.5 m 0.3' to 4.9' (when R-5 is used) | 20 to 900 mm 0.79' to 35.43' (30 x 30 cm 11.81' x 11.81' white paper) | 5 to 300 mm 0.20' to 11.81' (10 x 10 cm 3.94' x 3.94' white paper) | 5 to 100 mm 0.20' to 3.94' (10 x 10 cm 3.94' x 3.94' white paper) | 20 to 900 mm 0.79' to 35.43' (30 x 30 cm 11.81' x 11.81' white paper) | 5 to 300 mm 0.20' to 11.81' (10 x 10 cm 3.94' x 3.94' white paper) | 5 to 100 mm 0.20' to 3.94' (10 x 10 cm 3.94' x 3.94' white paper) |
| Setting distance | | – | – | 150 to 900 mm 5.91' to 35.43' (30 x 30 cm 11.81' x 11.81' white paper) | 40 to 300 mm 1.57' to 11.81' (10 x 10 cm 3.94' x 3.94' white paper) | 30 to 100 mm 1.18' to 3.94' (10 x 10 cm 3.94' x 3.94' white paper) | 150 to 900 mm 5.91' to 35.43' (30 x 30 cm 11.81' x 11.81' white paper) | 40 to 300 mm 1.57' to 11.81' (10 x 10 cm 3.94' x 3.94' white paper) | 30 to 100 mm 1.18' to 3.94' (10 x 10 cm 3.94' x 3.94' white paper) |
| Light source (LED) | | Red | | Infrared | Red | | Infrared | Red | |
| Sensitivity adjustment | | One-turn trimmer (230°) | | | | | Automatic calibration | | |
| Response time | | 1.5 ms max. | 1 ms max. (2 ms max. for the alternate-frequency type ^{*3} of M61; 1.2 ms max. for the other alternate-frequency types ^{*3}) | | | | | | |
| Operation mode | | LIGHT-ON/DARK-ON (selectable by wiring) | | | | | | | |
| Indicator (LED) ^{*2} | | Output indicator (Orange), Stable operation indicator (Green) | | | | | | | |
| Digital monitor | | – | | | | | 7-segment, 3-digit red LED | | |
| Control output | | Open collector 100 mA max. for both NPN and PNP outputs (NPN: 30 V max., PNP: 26.4 V max.), Residual voltage: 1 V max. | | | | | | | |
| Protection circuit | | Protection against reverse power connection, output overcurrent, output surge | | | | | | | |
| Power supply voltage | | 12 to 24 VDC ±10% including ripple (P-P) 10% max. | | | | | | | |
| Rating | Current consumption | Transmitter: 24 mA max. Receiver: 27 mA max. | 34 mA max. | 38 mA max. | 30 mA max. | 45 mA max. | 37 mA max. | | |
| | Enclosure rating | IP67 | | | | | | | |
| Environmental resistance | Ambient light | Incandescent lamp: 5000 lux max., Sunlight: 20000 lux max. | | | | | | | |
| | Ambient temperature/ Ambient humidity | –20 to +55°C –4 to +131°F (No freezing)/35 to 85% (No condensation) | | | | | | | |
| | Vibration/Shock resistance | 10 to 55 Hz, 1.5 mm 0.06" double amplitude in X, Y, and Z directions, 2 hours respectively/1000 m/s ² in X, Y, and Z directions, 6 times respectively | | | | | | | |
| Housing material | | Glass-fiber reinforced plastic | | | | | | | |
| Weight | Cable ^{*4} | Approx. 100 g | Approx. 55 g | Approx. 70 g | Approx. 55 g | Approx. 70 g | Approx. 55 g | Approx. 70 g | Approx. 55 g |
| | M8 connector | Approx. 60 g | Approx. 15 g | Approx. 30 g | Approx. 15 g | Approx. 30 g | Approx. 15 g | Approx. 30 g | Approx. 15 g |
| | M12 connector | Approx. 100 g | Approx. 25 g | Approx. 40 g | Approx. 25 g | Approx. 40 g | Approx. 25 g | Approx. 40 g | Approx. 25 g |
| Accessories | | Instructions Manual | Instructions Manual, R-5 reflector | Instructions Manual | | | | | |

^{*1} Detecting distance at the maximum sensitivity.

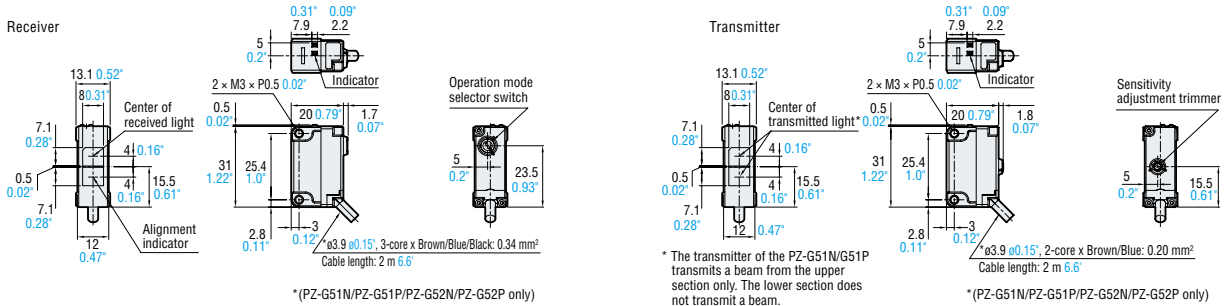
^{*2} Only the power indicator will illuminate on the PZ-M5x(P) transmitter.

^{*3} The alternate-frequency type is indicated by replacing "1" at the end of the part number with "5". The models are PZ-M65, M75, M35(P), M15, V75, V35(P) and V15.

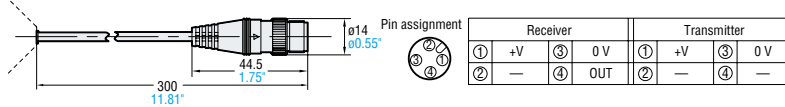
^{*4} Includes the weight of the cable.

■ Dimensions

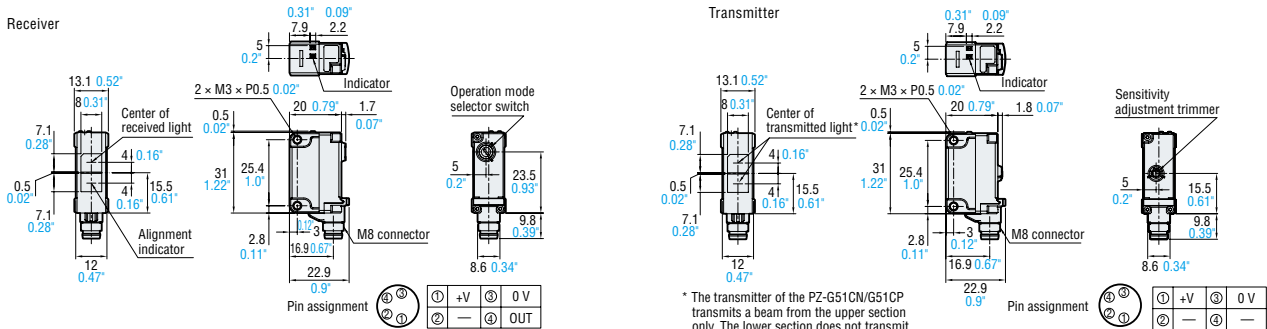
PZ-G51N/G51P/G52N/G52P/G51EN/G51EP/G52EN/G52EP



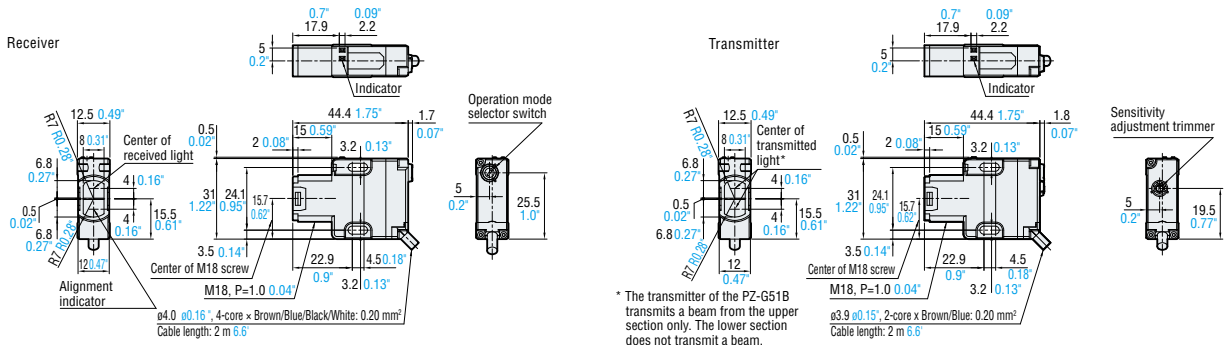
M12 connector model with pigtail: PZ-G51EN/G51EP/G52EN/G52EP



PZ-G51CN/G51CP/G52CN/G52CP

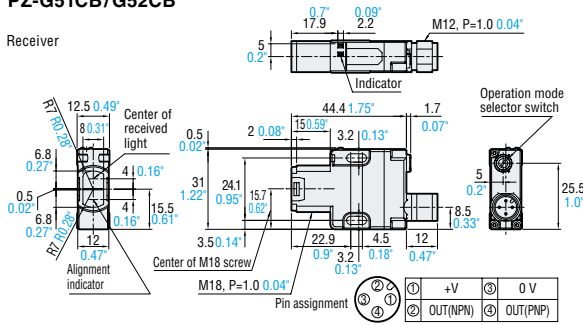


PZ-G51B/G52B

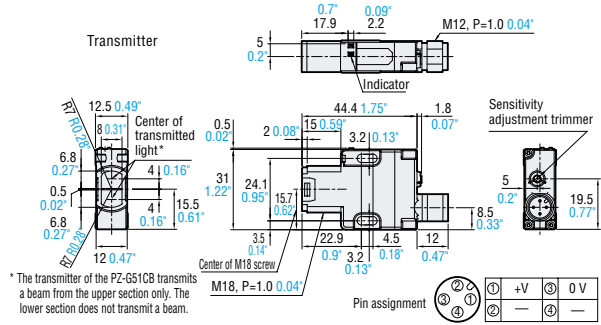


PZ-G51CB/G52CB

Receiver

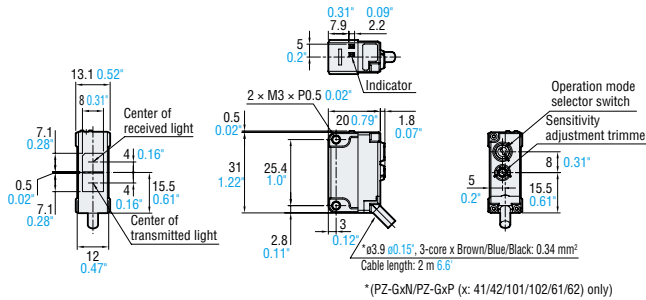


Transmitter



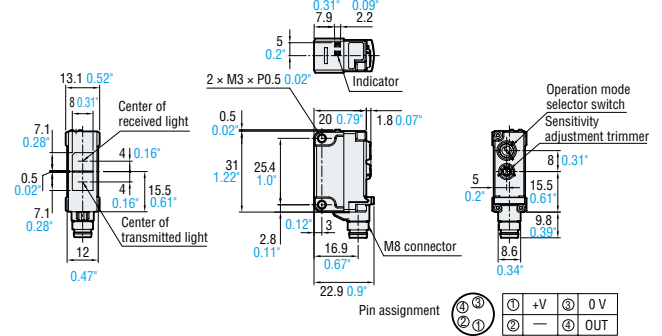
* The transmitter of the PZ-G51CB transmits a beam from the upper section only. The lower section does not transmit a beam.

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

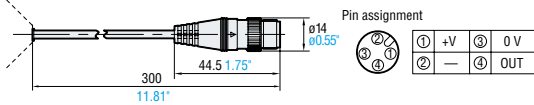


* (PZ-GxN/PZ-GxP (x: 41/42/101/102/61/62) only)

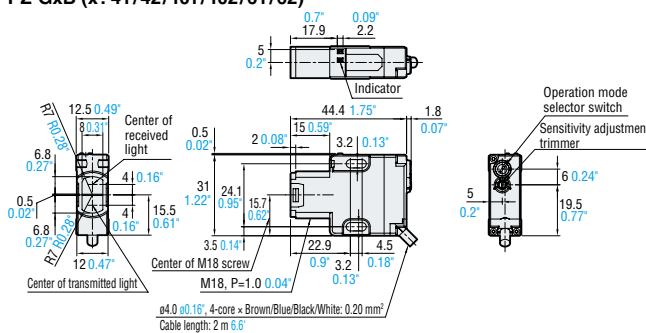
PZ-GxCN/GxCN (x: 41/42/101/102/61/62)



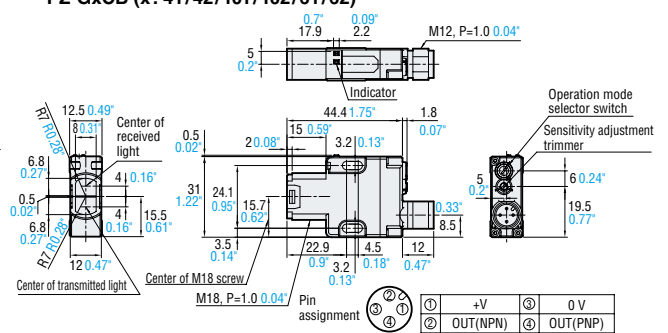
M12 connector model with pigtail: PZ-GxEN/GxEP (x: 41/42/101/102/61/62)



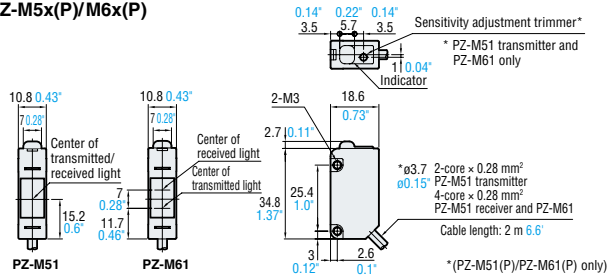
PZ-GxB (x: 41/42/101/102/61/62)



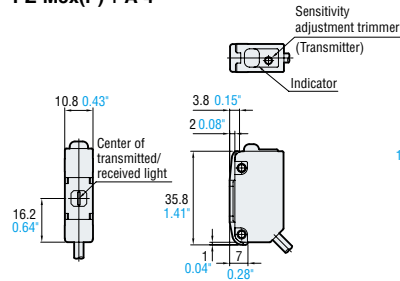
PZ-GxCB (x: 41/42/101/102/61/62)



PZ-M5x(P)/M6x(P)

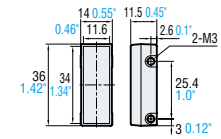


PZ-M5x(P) + A-4

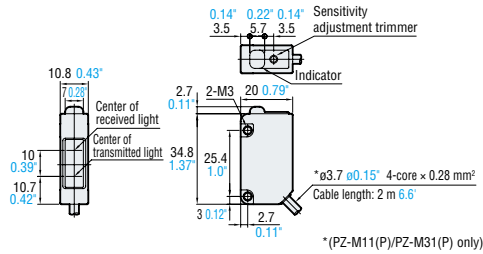


R-5 reflector

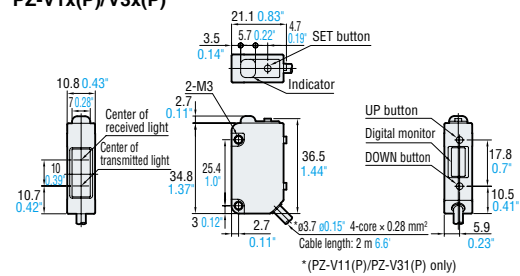
(Included with PZ-M6x sensor heads)



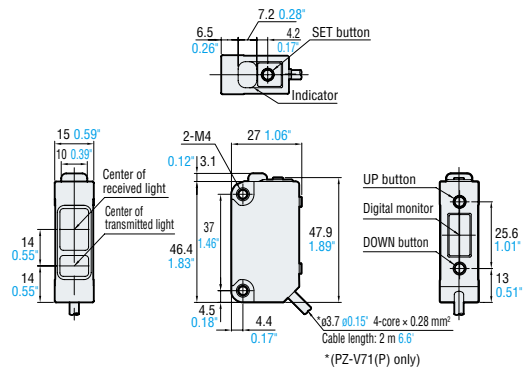
PZ-M1x(P)/M3x(P)



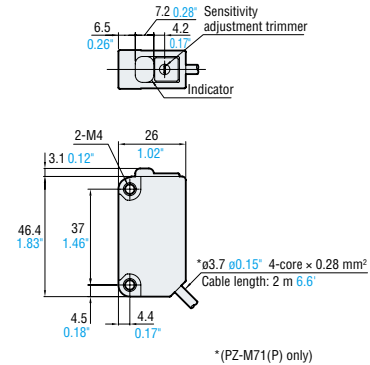
PZ-V1x(P)/V3x(P)



PZ-V7x(P)

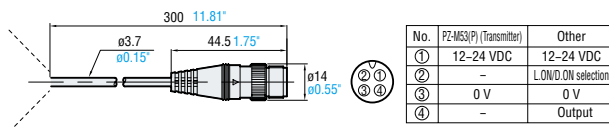


PZ-M7x(P)



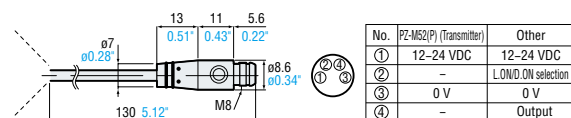
PZ-M53(P)/M63(P)/M73(P)/M13(P)/M33(P)/V13(P)/V33(P)/V73(P)

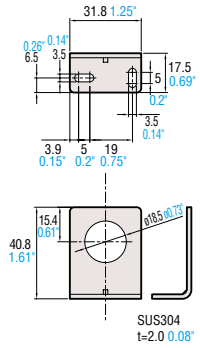
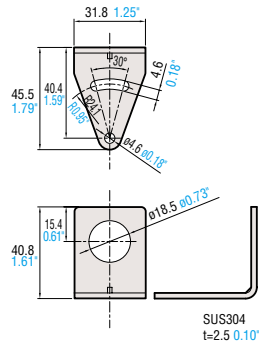
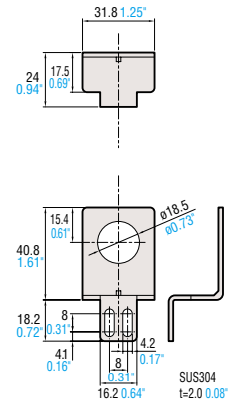
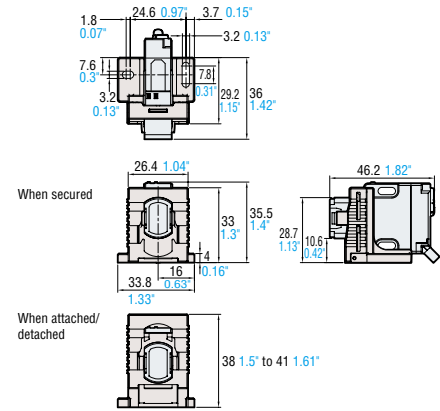
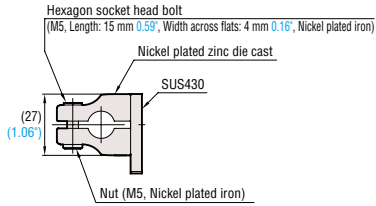
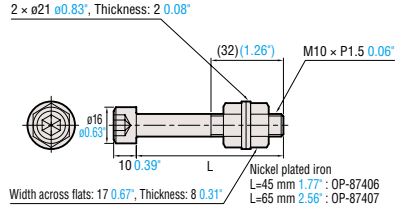
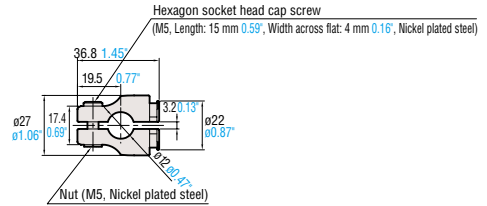
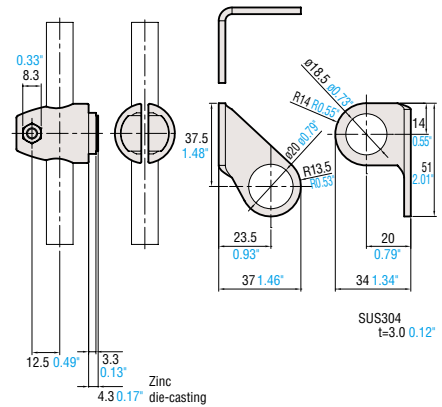
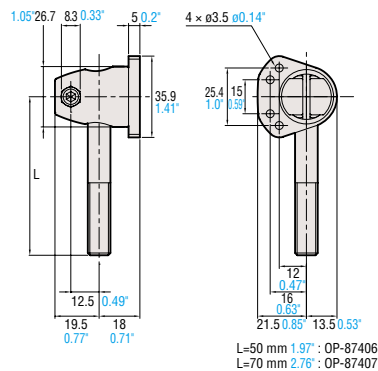
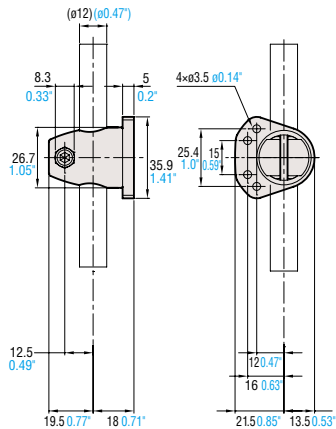
M12 connector model with pigtail:



PZ-M52(P)/M62(P)/M72(P)/M12(P)/M32(P)/V12(P)/V32(P)/V72(P)

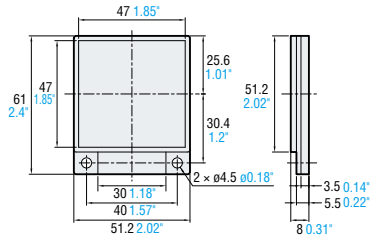
M8 connector model with pigtail:



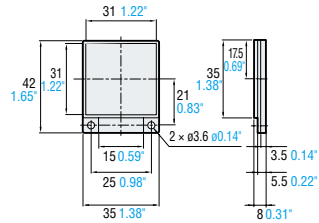
PZ-B03**PZ-B04****PZ-B25****PZ-B82 + PZ-G41B****OP-87404****OP-87406/87407****OP-87405****OP-87406 (87407) + OP-87404**

Unit: mm inch

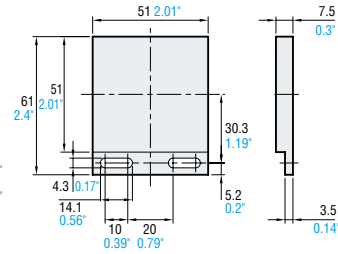
OP-84219 (R-2L)



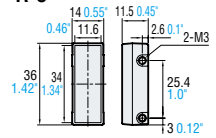
OP-96436 (R-3)



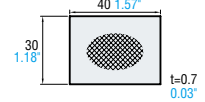
OP-87623



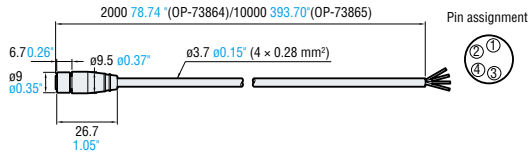
R-5



OP-84221 (Reflective tape)

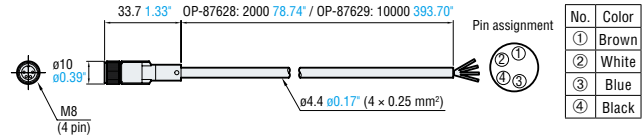


OP-73864/73865



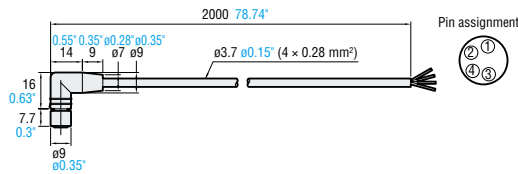
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| ② | White |
| ③ | Blue |
| ④ | Black |

OP-87628/87629



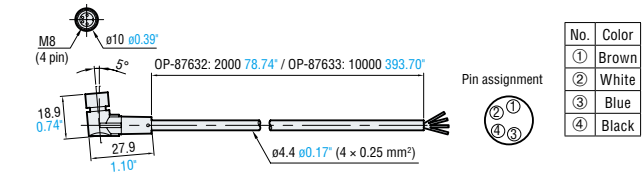
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|-----|-------|
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OP-85497



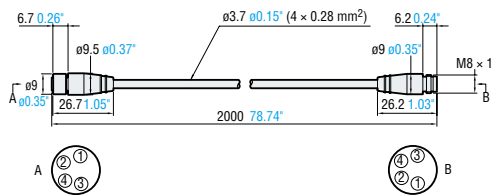
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OP-87632/87633



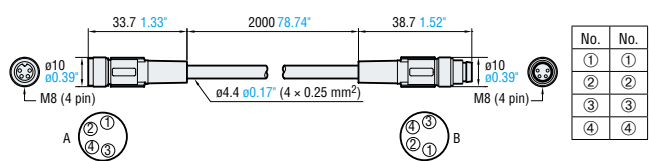
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| ③ | Blue |
| ④ | Black |

OP-85498



| No. | No. |
|-----|-----|
| ① | ① |
| ② | ② |
| ③ | ③ |
| ④ | ④ |

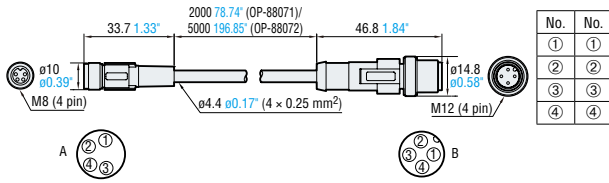
OP-88069



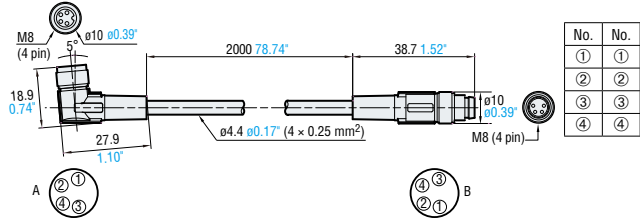
| No. | No. |
|-----|-----|
| ① | ① |
| ② | ② |
| ③ | ③ |
| ④ | ④ |

Unit: mm inch

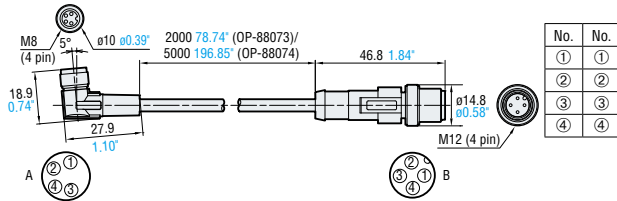
OP-88071/88072



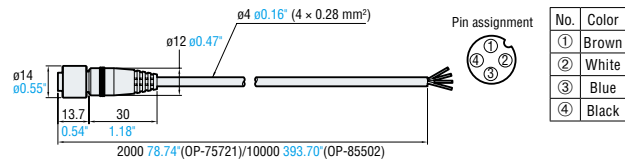
OP-88070



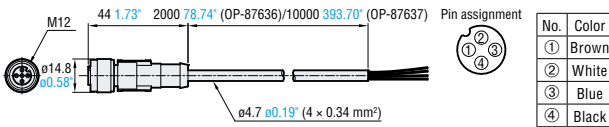
OP-88073/88074



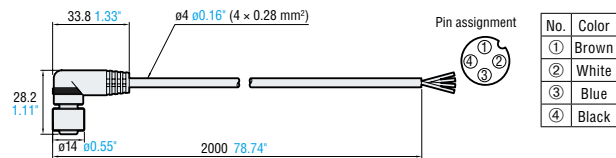
OP-75721/85502



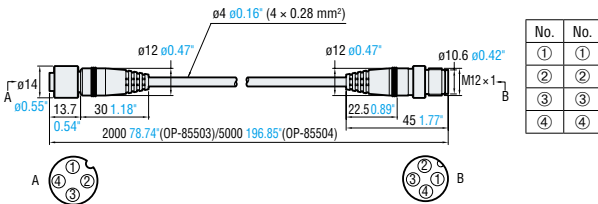
OP-87636/87637



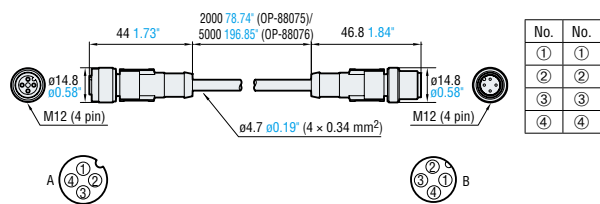
OP-75722



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SELF-CONTAINED CMOS LASER SENSOR

LR-Z Series CMOS Laser

All-Purpose Laser Photoeye



Best detection ability in its class with CMOS laser stability



High enclosure rating and Stainless steel body (SUS316L) ensure durability and long life

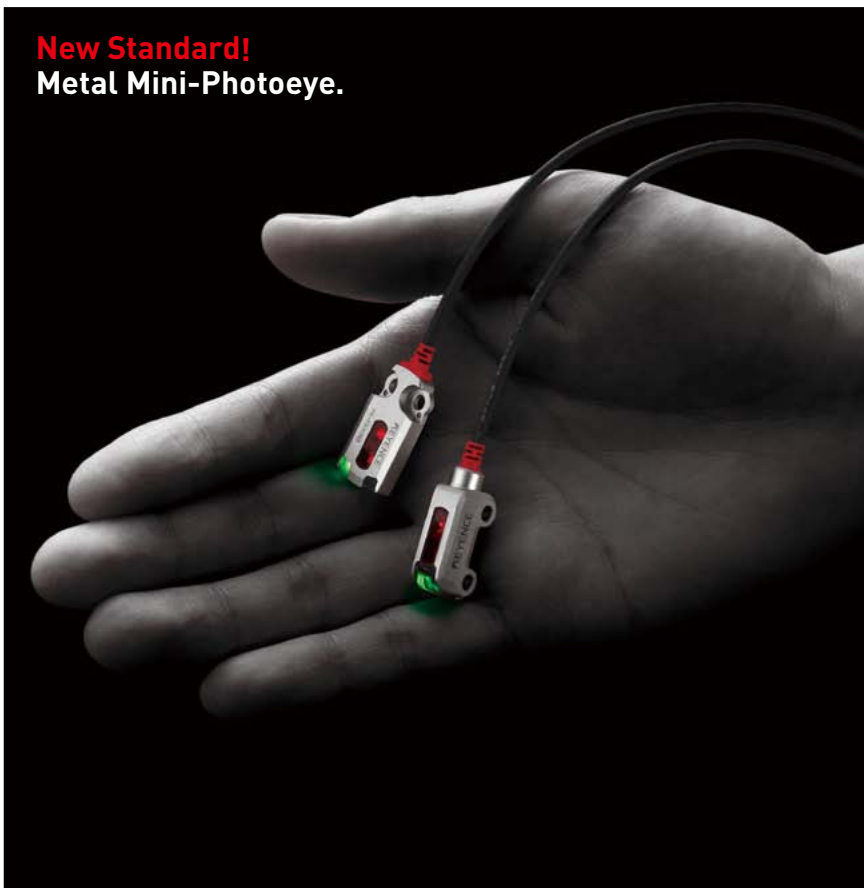


One-touch setup and Digital display simplify operation

| Detecting distance | Short-range type | Long-range type |
|--------------------|------------------|---|
| | | LR-ZB100 35 to 100 mm 1.38" to 3.94" |

SELF-CONTAINED MINIATURE PHOTOELECTRIC SENSOR

PR-M/F Series LED



New Standard!
Metal Mini-Photoeye.



Resin filled, stainless steel (SUS316L) body ensures durability and long life



IP67/69K, NEMA 4X, 6P, and 13 enclosure ratings allow for use in heavy washdown environments



Integrated M3 mounting holes allow for easy installation

| Detecting distance | Thru-beam type | | Reflective with background suppression type | | | | |
|--------------------|---------------------|-------------------|---|-------------------|--------------------|--------------------|---------------------|
| | Slim type PR-M51 | 1.2 m 3.9' | Flat type PR-F51 | 0.6 m 2.0' | Long distance type | 30 mm 1.18" | Short-distance type |

SELF-CONTAINED PHOTOELECTRIC SENSOR PR-G Series LED

New Standard!
General-Purpose
Metal Photoeye



The robust, durable housing prevents damage due to impact and overtightening



IP68/69K, NEMA 4X, 6P, and 13 enclosure ratings ensure stable operation in harsh environments



7-Segment display and easy to use trimmer allow for accurate sensitivity setting

| Detecting distance | Thru-beam type | | Retro-reflective type | | Reflective type | |
|--------------------|----------------|----------------------------|-----------------------|--------------------|-----------------|--------------------|
| | Standard type | Standard, narrow beam type | Standard type | Long distance type | Standard type | Long distance type |
| | PR-G51 | PR-G56 | PR-G61 | | PR-G61 | |
| | 30 m 98.4' | 600 mm 23.62" | 4.2 m 13.8' | | 500 mm 19.69" | |



Self-Contained
Photoelectric Sensor

**PZ-G/V
SERIES**



Self-Contained
CMOS Laser Sensor

**LR-Z
SERIES**



Self-contained Miniature
Photoelectric Sensor

**PR-M/F
SERIES**



Self-Contained
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**PR-G
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SAFETY INFORMATION

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

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