KEYENCE

Self-Contained
Photoelectric Sensor

PZ-G/V SERIES

General-Purpose
Photoelectric Sensors

General-Purpose
Photoelectric Sensor

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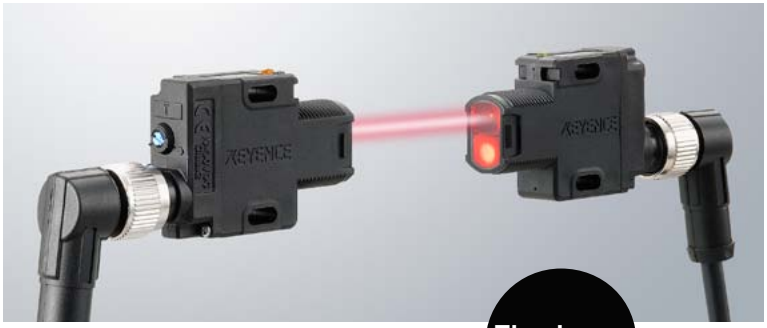
General Purpose Photoelectric Sensors

Self-Contained Photoelectric Sensor

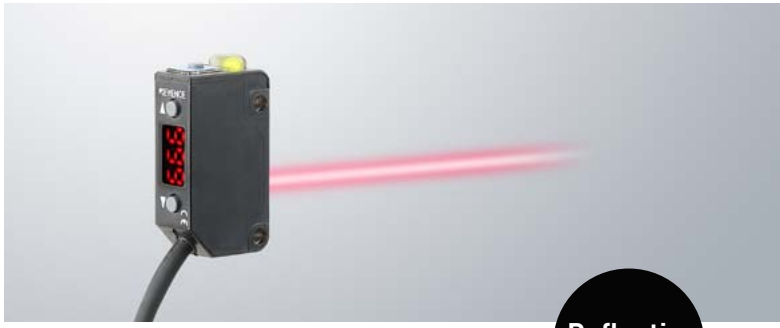
PZ-G/V SERIES

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.



Thrubeam type

Retro-reflective type



Reflective type

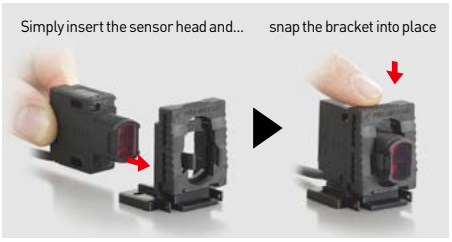
EASE OF USE

Alignment indicators and One-touch mounting brackets

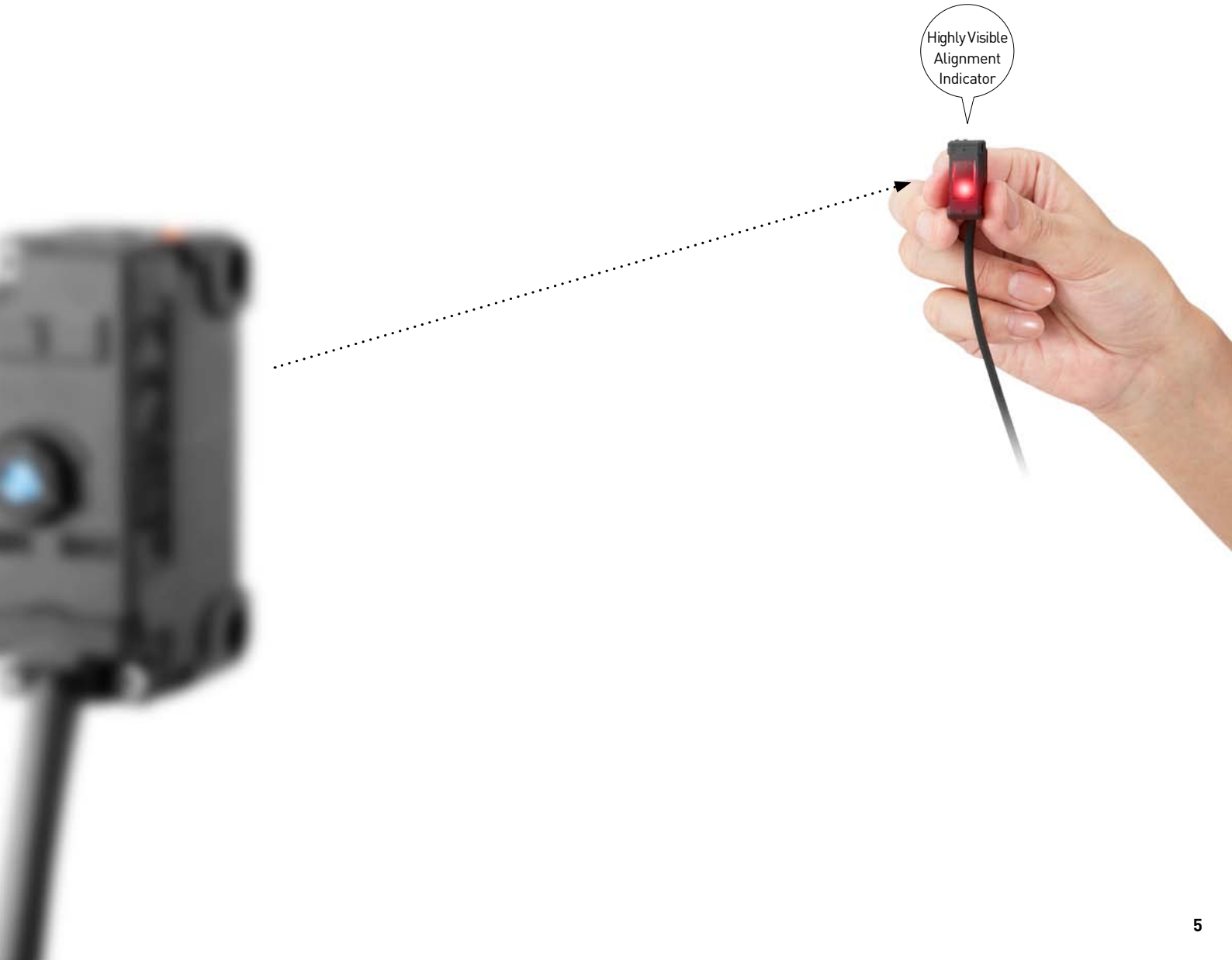
PZ-G SERIES

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 thrubeam 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



One-touch mounting brackets


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.

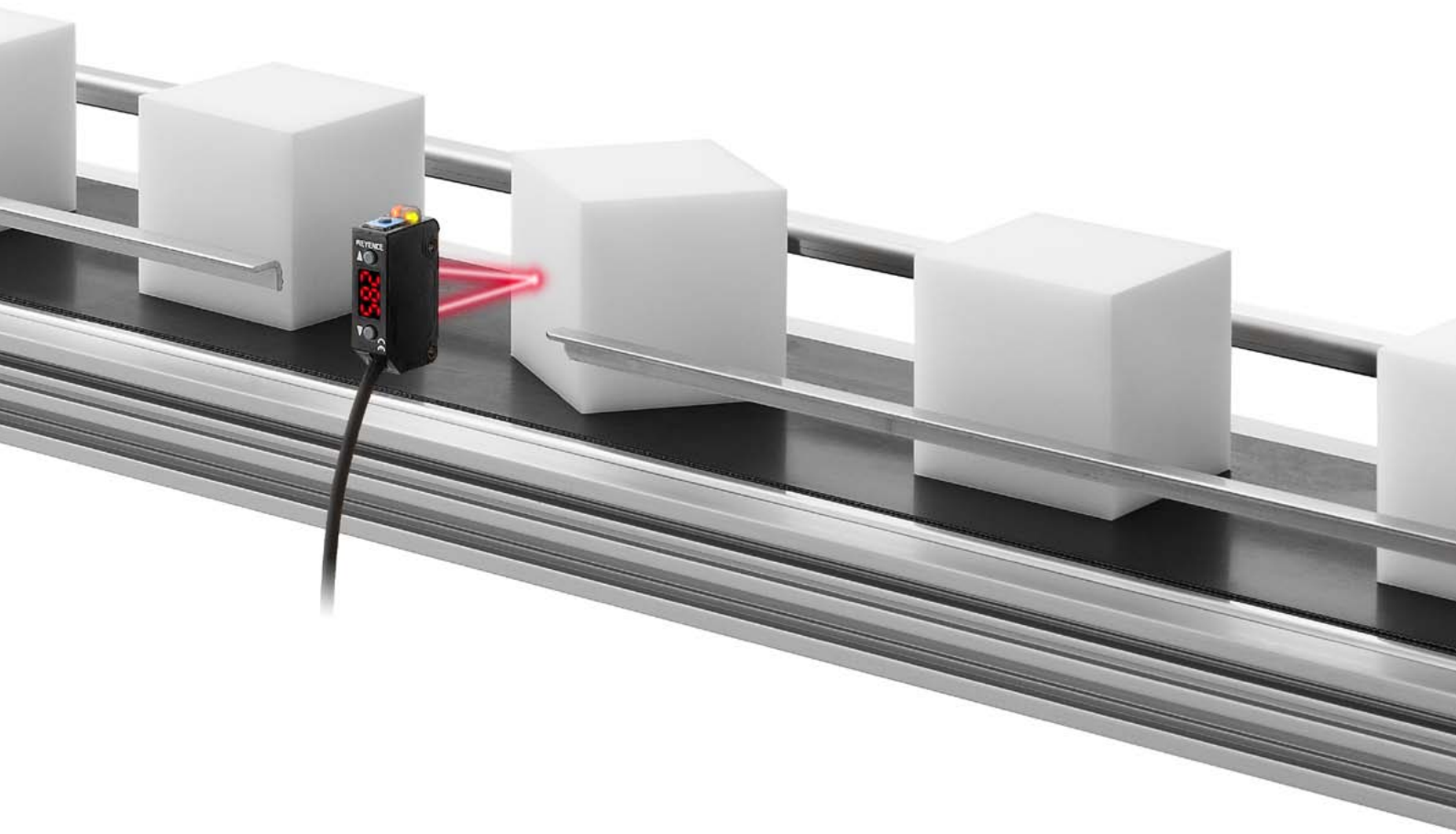
M3 stainless steel mounting threads

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


Threaded models

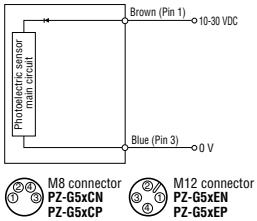

Rectangular models

Configuration		Type	Connection method	Detecting distance	Model			Weight
					NPN	PNP	Bipolar	
Thrubeam	Standard	Threaded	2 m 6.6' cable	20 m 65.6'	–	–	**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	131.2' 40 m*2	–	–	**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	0.1 to 4.2 m 0.3' to 13.8'*3	–	–	**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	0.1 to 1 m 0.3' to 3.3'*2*3	–	–	**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	1 m 3.3'	–	–	**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
		Threaded	2 m 6.6' cable	300 mm 11.81"	–	–	**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
	Narrow-view	Threaded	2 m 6.6' cable	200 mm 7.87"	–	–	**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	5 to 45 mm 0.20" to 1.77"	–	–	**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

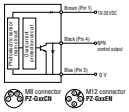
*1 Cable sold separately
*2 Infrared light source
*3 When the OP-84219 (R-2L) reflector is used.
*4 Reflector sold separately. Reflectors and corresponding detecting distances can be found on page 11.
*5 Polarized Reflective Optics

I/O circuit diagram

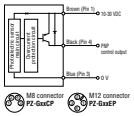
Thrubeam type transmitter
PZ-G5x



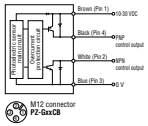
NPN output type (Thrubeam type receiver, reflective type, retro-reflective type)
PZ-GxxN



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



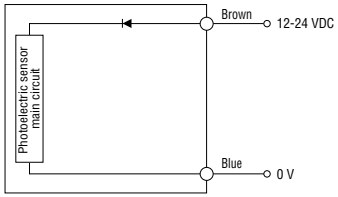
PZ-V/M Sensor head lineup

Configuration		Type	Connection method	Detecting distance	Model NPN	Model PNP	Weight
Thrubeam		Rectangular	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
Intelligent Reflective	Manual Calibration Type		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-M33**	Approx. 25 g
			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
	Visual/Automatic Calibration Type		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
			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

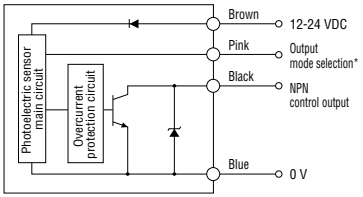
*1 Cable sold separately
*2 Alternate-frequency models are available to prevent mutual interference when several sensors are used in close proximity. The models are as follows: PZ-M65/M75/M35/M35P/M15/V75/V35/V35P/V15.
*3 PZ-M6x(P) models come with an R-5 reflector, additional reflectors are listed on page 11.
*4 When the R-5 reflector is used.

I/O circuit diagram

Thrubeam type transmitter
PZ-M5x(P)

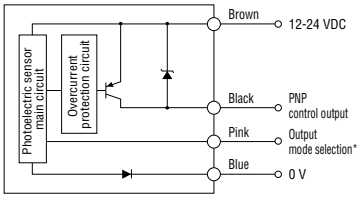


NPN output type (Thrubeam type receiver, reflective type, retro-reflective type)
PZ-Mxx/Vxx



*(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
							10 m 32.8'	**OP-85502**	Approx. 230 g
			M8				2 m 6.6'	**OP-73864**	Approx. 55 g
							10 m 32.8'	**OP-73865**	Approx. 220 g
	Oil-resistant (PUR)		M12				2 m 6.6'	**OP-87636**	Approx. 75 g
							10 m 32.8'	**OP-87637**	Approx. 330 g
			M8				2 m 6.6'	**OP-87628**	Approx. 55 g
							10 m 32.8'	**OP-87629**	Approx. 260 g
	Standard (PVC)		M12	L-shaped			2 m 6.6'	**OP-75722**	Approx. 65 g
			M8				2 m 6.6'	**OP-85497**	Approx. 55 g
	Oil-resistant (PUR)						2 m 6.6'	**OP-87632**	Approx. 55 g
							10 m 32.8'	**OP-87633**	Approx. 260 g
Connector to Connector	Standard (PVC)		M12	Straight	M12	Straight	2 m 6.6'	**OP-85503**	Approx. 70 g
							5 m 16.4'	**OP-85504**	Approx. 130 g
			M8		M8		2 m 6.6'	**OP-85498**	Approx. 55 g
	Oil-resistant (PUR)		M12		M12		2 m 6.6'	**OP-88075**	Approx. 80 g
							5 m 16.4'	**OP-88076**	Approx. 180 g
			M8		M8		2 m 6.6'	**OP-88069**	Approx. 70 g
					M12		2 m 6.6'	**OP-88071**	Approx. 70 g
							5 m 16.4'	**OP-88072**	Approx. 140 g
			M8	L-shaped	M8		2 m 6.6'	**OP-88070**	Approx. 70 g
					M12		2 m 6.6'	**OP-88073**	Approx. 70 g
							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
Side-mounting bracket (Vertical R) (M3 screw x 2 supplied)	**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
Side-mounting bracket (Landscape R) (M3 screw x 2 supplied)	**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

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
Side-mounting bracket (Vertical R) (M3 screw x 2 supplied)	**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 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

*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.
** Mounting brackets are sold individually (1 piece/pack).
*** PZ-V/M7x(P) sensor heads are not compatible with the brackets above. For the appropriate brackets, contact KEYENCE.

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 (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: Long-range	Diffuse reflective: Short-range	Narrow-view	Definite reflective	Long-range (with P.R.O. function)	Transparent object detection (without P.R.O. function)
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.					
Environ-mental 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/s² 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/s² 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	
	M8 connector	Approx. 60 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	
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.

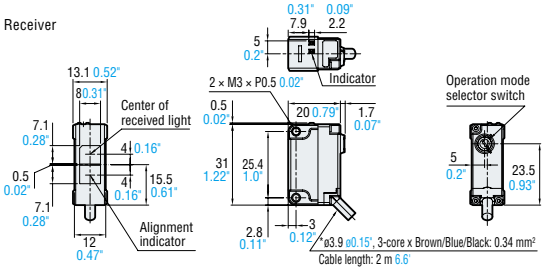
*3 The alternate-frequency type is indicated by replacing "1" at the end of the part number with "5". The models are PZ-M65, M75, M35(P), M15, V75, V35(P) and V15.

*4 Includes the weight of the cable.

Dimensions

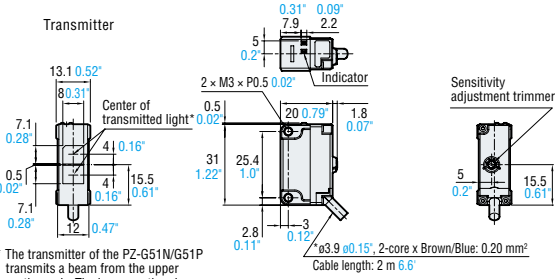
PZ-G51N/G51P/G52N/G52P/G51EN/G51EP/G52EN/G52EP

Receiver



*(PZ-G51N/PZ-G51P/PZ-G52N/PZ-G52P only)

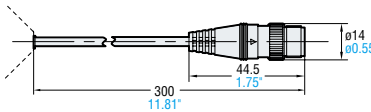
Transmitter



* The transmitter of the PZ-G51N/G51P transmits a beam from the upper section only. The lower section does not transmit a beam.

*(PZ-G51N/PZ-G51P/PZ-G52N/PZ-G52P only)

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

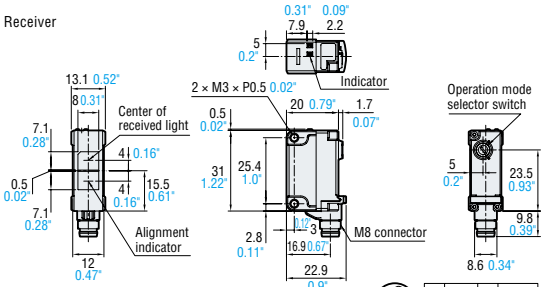


Pin assignment

Receiver				Transmitter			
①	+V	③	0 V	①	+V	③	0 V
②	—	④	OUT	②	—	④	—

PZ-G51CN/G51CP/G52CN/G52CP

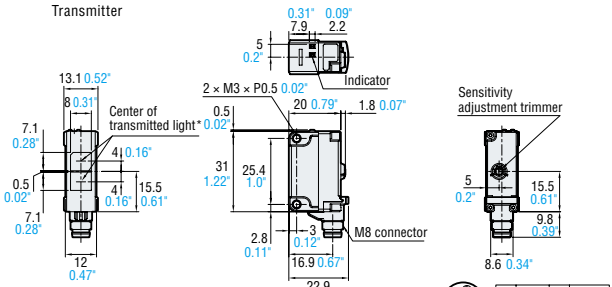
Receiver



Pin assignment

①	+V	③	0 V
②	—	④	OUT

Transmitter



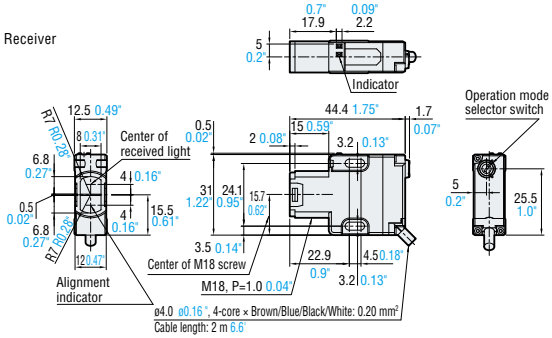
* The transmitter of the PZ-G51CN/G51CP transmits a beam from the upper section only. The lower section does not transmit a beam.

Pin assignment

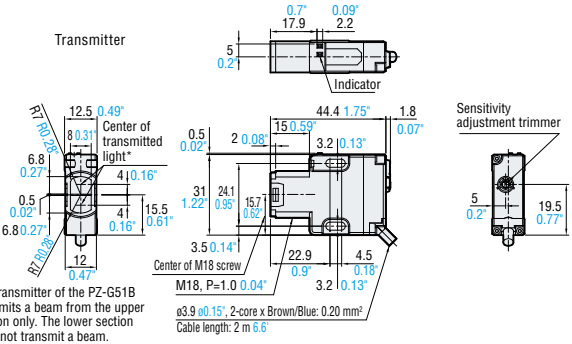
①	+V	③	0 V
②	—	④	—

PZ-G51B/G52B

Receiver



Transmitter

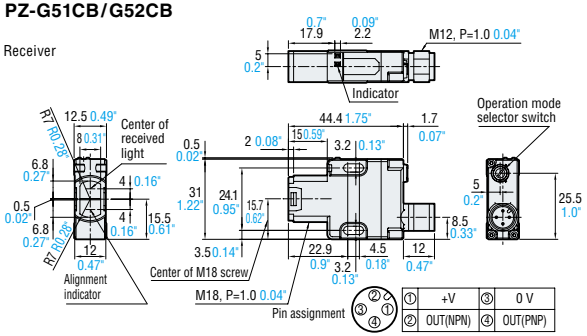


* The transmitter of the PZ-G51B transmits a beam from the upper section only. The lower section does not transmit a beam.

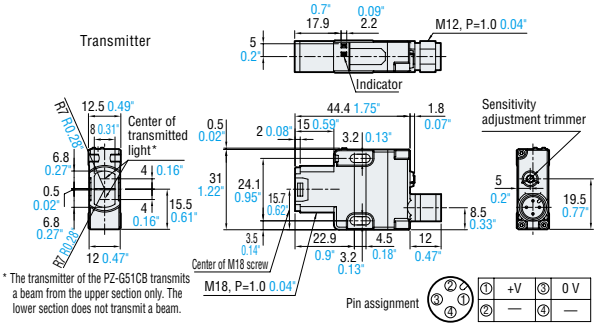
Unit: mm inch

PZ-G51CB/G52CB

Receiver

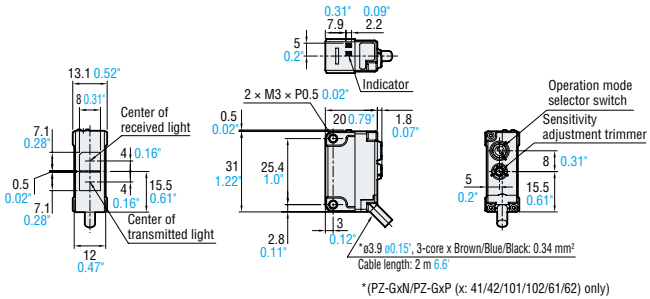


Transmitter



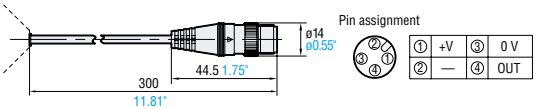
* The transmitter of the PZ-G51CB transmits a beam from the upper section only. The lower section does not transmit a beam.

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

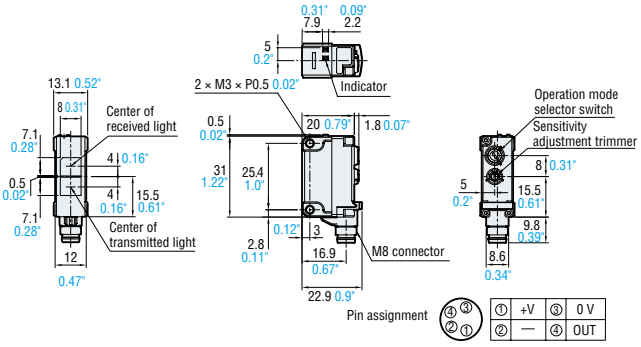


*(PZ-GxN/PZ-GxP (x: 41/42/101/102/61/62) only)

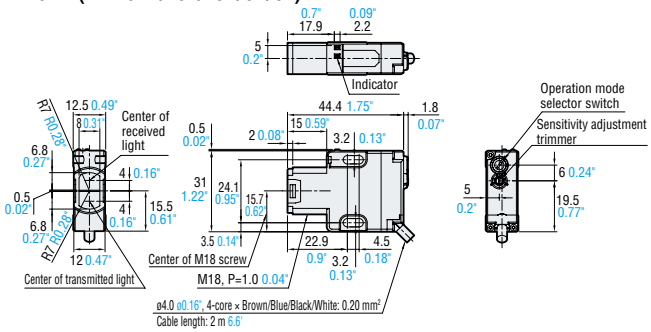
M12 connector model with pigtail: **PZ-GxEN/GxEP (x:41/42/101/102/61/62)**



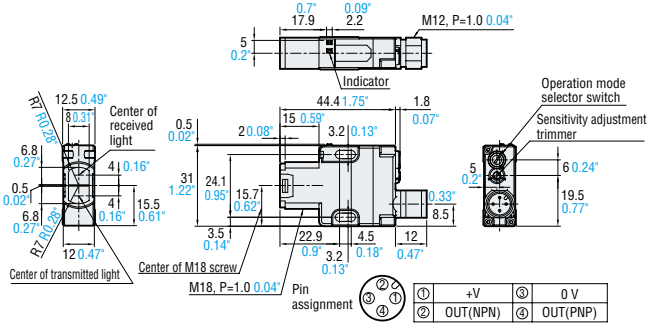
PZ-GxCN/GxCP (x: 41/42/101/102/61/62)



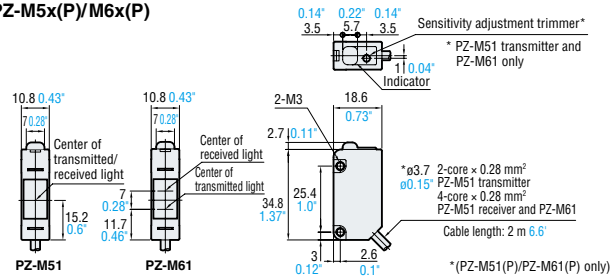
PZ-GxB (x: 41/42/101/102/61/62)



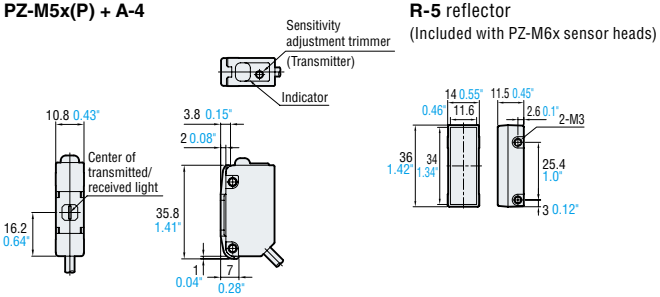
PZ-GxCB (x: 41/42/101/102/61/62)



PZ-M5x(P)/M6x(P)

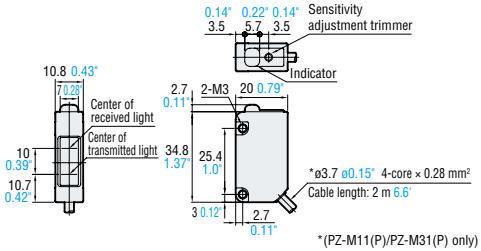


PZ-M5x(P) + A-4

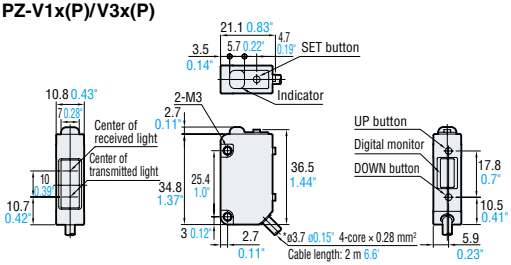


R-5 reflector
(Included with PZ-M6x sensor heads)

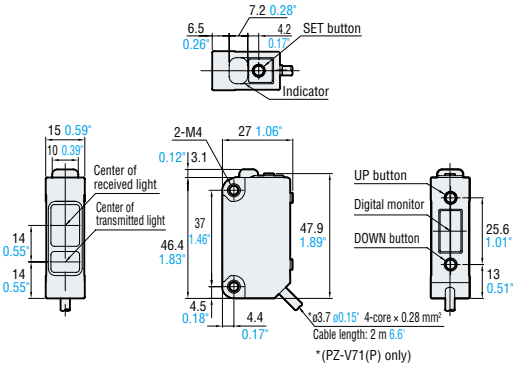
PZ-M1x(P)/M3x(P)



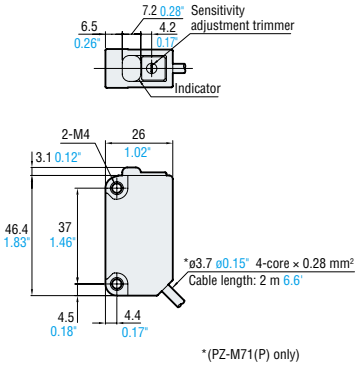
PZ-V1x(P)/V3x(P)



PZ-V7x(P)

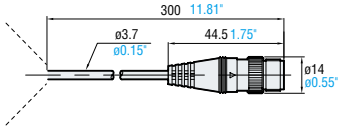


PZ-M7x(P)



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

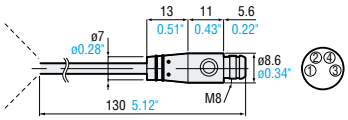
M12 connector model with pigtail:



No.	PZ-M53(P) (Transmitter)	Other
①	12–24 VDC	12–24 VDC
②	–	L.ON/D.ON selection
③	0 V	0 V
④	–	Output

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

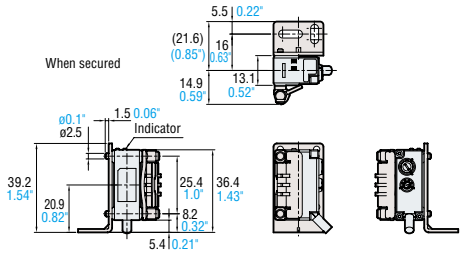
M8 connector model with pigtail:



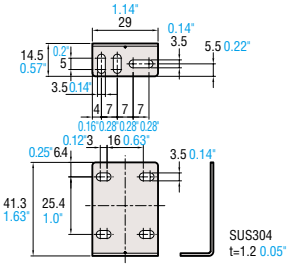
No.	PZ-M52(P) (Transmitter)	Other
①	12–24 VDC	12–24 VDC
②	–	L.ON/D.ON selection
③	0 V	0 V
④	–	Output

Unit: mm inch

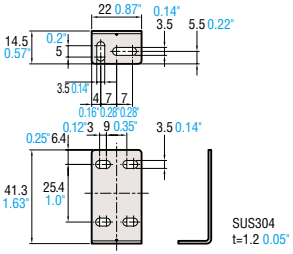
PZ-B81 + PZ-G41N



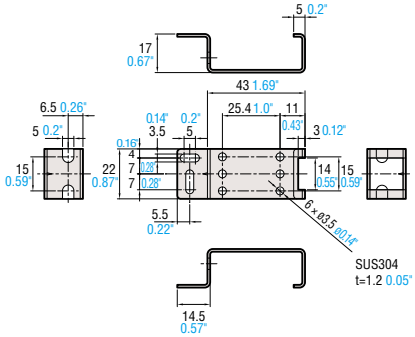
PZ-B41A



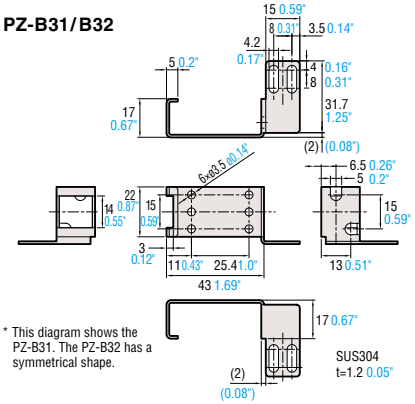
PZ-B01A



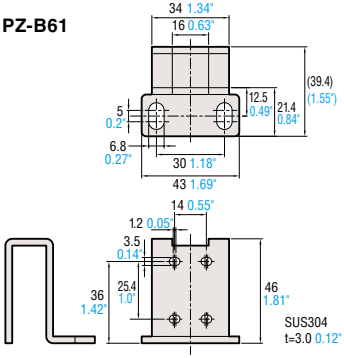
PZ-B11



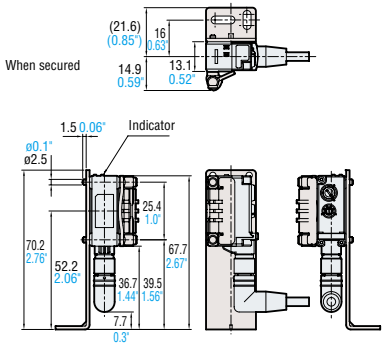
PZ-B31/B32



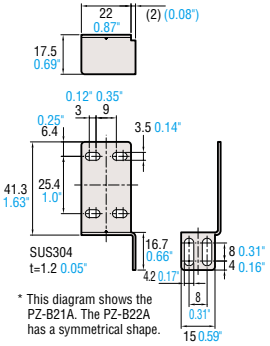
PZ-B61



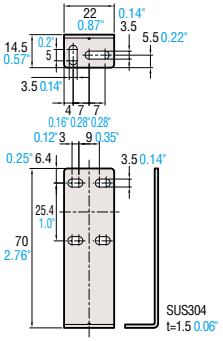
PZ-B83 + PZ-G41CN + OP-85497



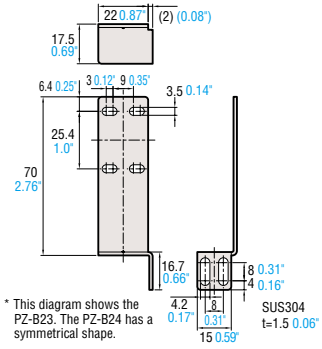
PZ-B21A/B22A



PZ-B02



PZ-B23/B24



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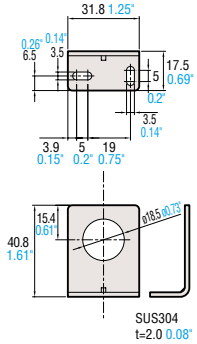

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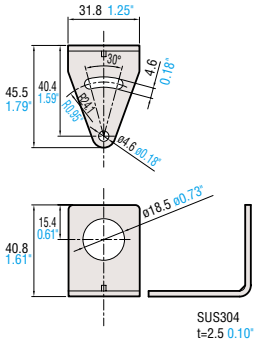

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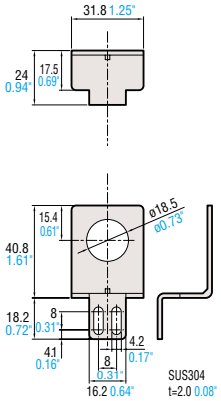
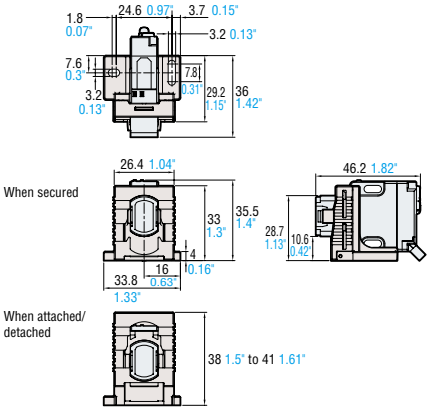
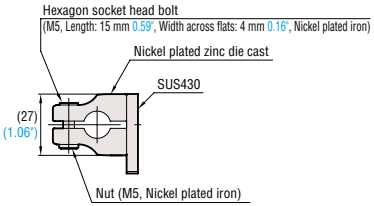


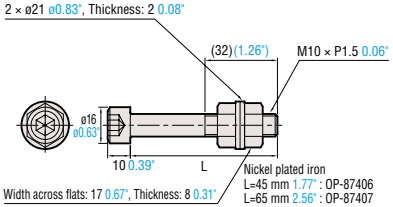
PZ-B82 + PZ-G41B



OP-87404



OP-87406/87407



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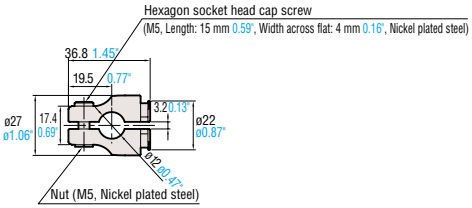
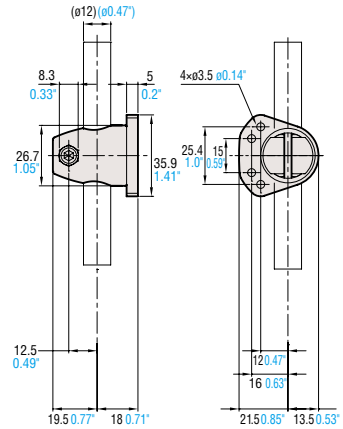
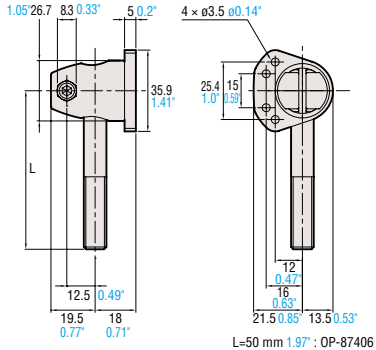
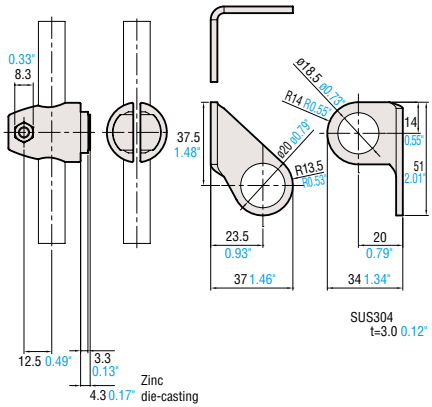




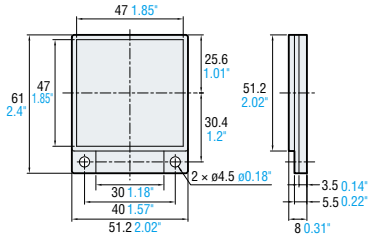
OP-87406 (87407) + OP-87404



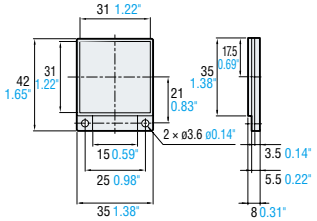


Unit: mm inch

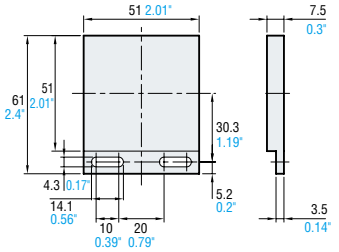
OP-84219 (R-2L)



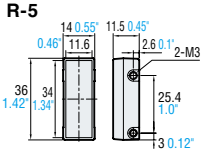
OP-96436 (R-3)



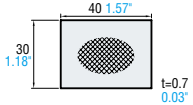
OP-87623



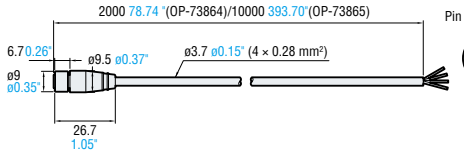
R-5



OP-84221 (Reflective tape)



OP-73864/73865



No.	Color
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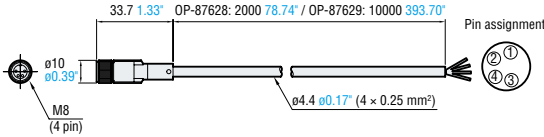
②	White
③	Blue
④	Black

OP-87628/87629



No.	Color
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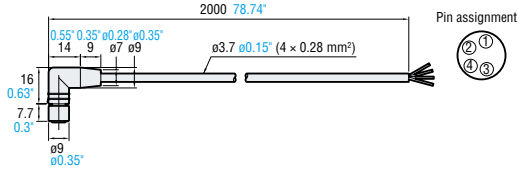
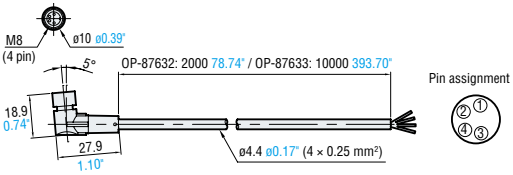
②	White
③	Blue
④	Black

OP-85497



No.	Color
①	Brown
②	White
③	Blue
④	Black

OP-87632/87633



No.	Color
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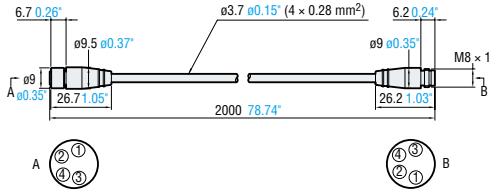
④	Black

OP-85498



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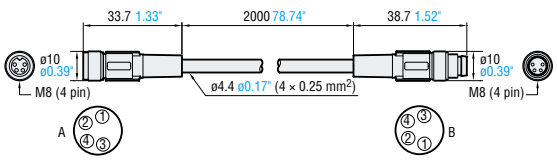
②	②
③	③
④	④

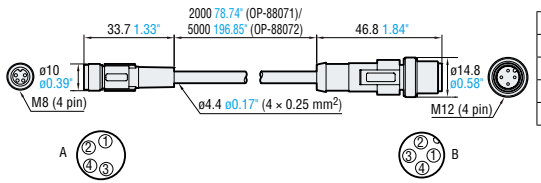
OP-88069



No.	No.
①	①
②	②
③	③
④	④

Unit: mm inch

OP-88071/88072



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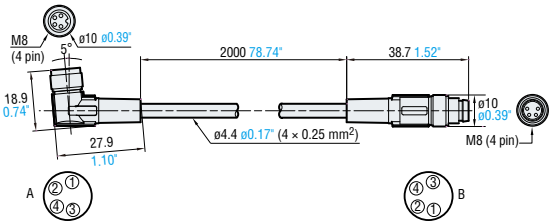
②	②
③	③
④	④

OP-88070



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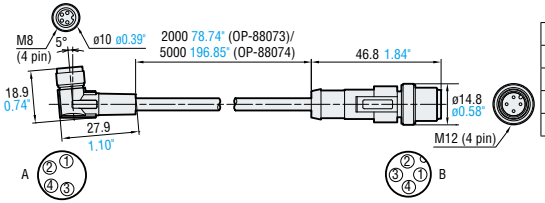
②	②
③	③
④	④

OP-88073/88074



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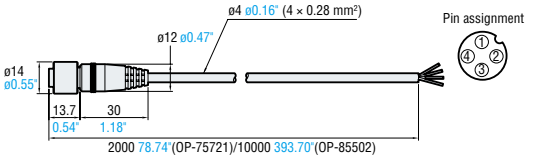
②	②
③	③
④	④

OP-75721/85502



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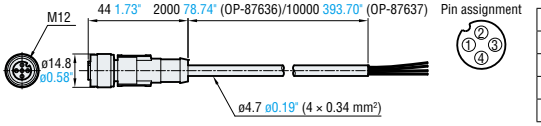
③	Blue
④	Black

OP-87636/87637



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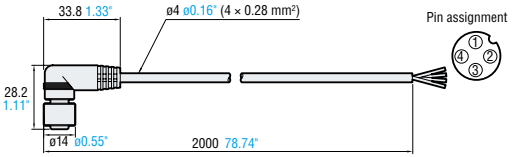
④	Black

OP-75722



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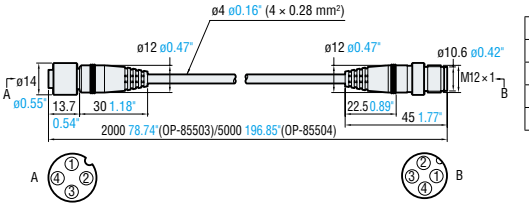
④	Black

OP-85503/85504



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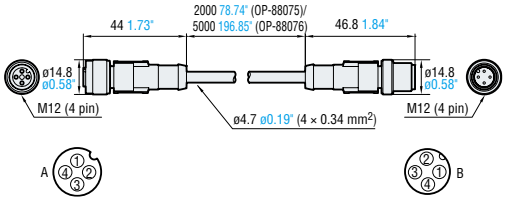
②	②
③	③
④	④

OP-88075/88076



No.	No.
①	①
②	②
③	③
④	④

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SELF-CONTAINED CMOS LASER SENSOR

LR-Z Series

CMOS Laser

Best detection ability in its class with CMOS laser stability

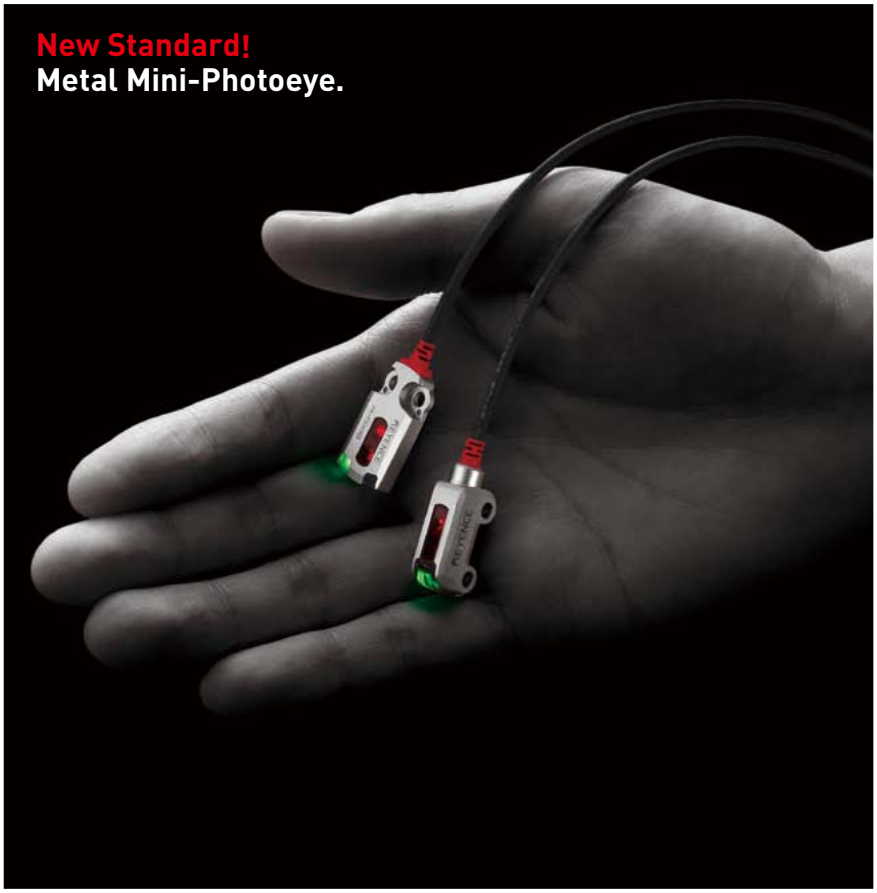
High enclosure rating and Stainless steel body (SUS316L) ensure durability and long life

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"	LR-ZB250 **35 to 250 mm** 1.38" to 9.84"

SELF-CONTAINED MINIATURE PHOTOELECTRIC SENSOR

PR-M/F Series LED



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	Thrubeam 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	15 mm 0.59"

SELF-CONTAINED PHOTOELECTRIC SENSOR

PR-G Series LED

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

Self-Contained
Photoelectric Sensor

PZ-G/V SERIES

00

Self-Contained
CMOS Laser Sensor

LR-Z SERIES

01

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PR-M/F SERIES

02

Self-Contained
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PR-G SERIES

03

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SAFETY INFORMATION
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Sales & Marketing Head Office 1100 North Arlington Heights Road, Suite 210, Itasca, IL 60143 PHONE: 888-539-3623 FAX: 855-539-0123

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