

KEYENCE



**General-Purpose
Photoelectric Sensors**

**Self-Contained
Photoelectric Sensor**

**PZ-G/V
SERIES**

**General-Purpose
Photoelectric Sensor**

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General Purpose Photoelectric Sensors

Self-Contained Photoelectric Sensor

PZ-G/V SERIES

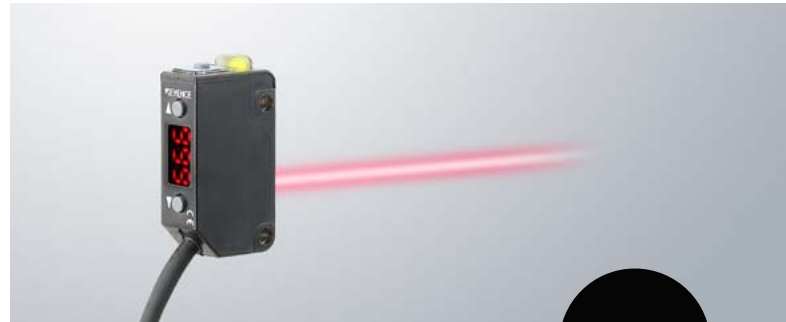
The two main necessities required for a general-purpose photoelectric sensor are "ease of use" and "consistently stable detection". The PZ-G/V Series is comprised of the PZ-G Series and the PZ-V/M Series. Even though each series has its own particular strengths, both series meet and exceed these requirements 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.



Thru-beam
type



Retro-reflective type



Reflective type

EASE OF USE

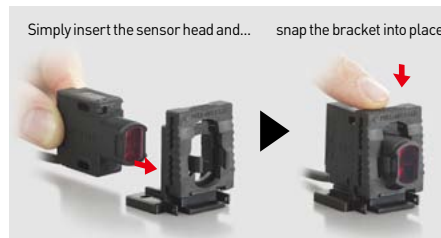
Alignment indicators and One-touch mounting brackets

PZ-G SERIES

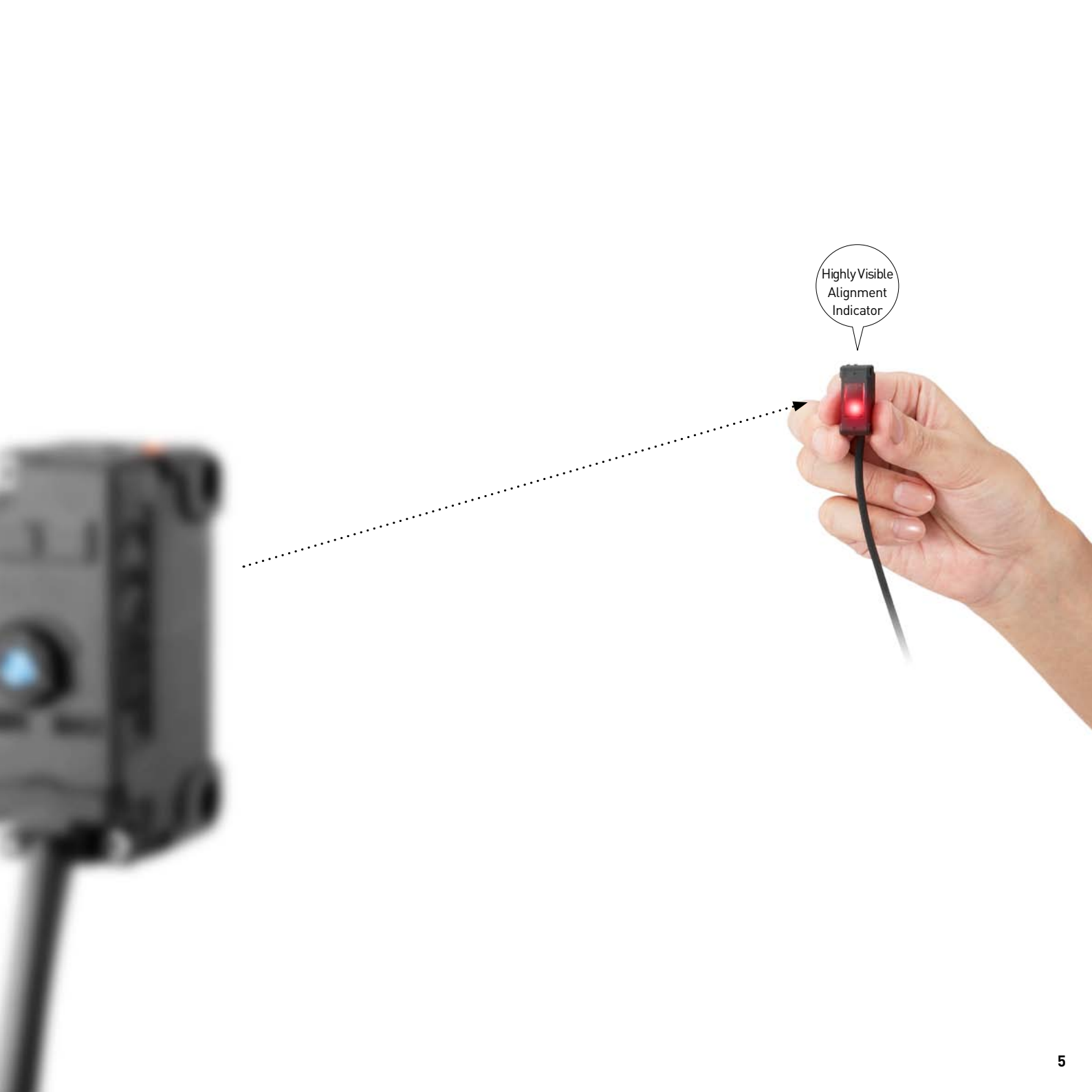
The PZ-G Series makes installation and calibration easier than ever with alignment indicators, one-touch mounting brackets, and easily adjustable trimmers. By using the innovative alignment indicators, aligning thru-beam sensors is quicker than ever. Simply adjust the sensors until the highly visible 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.



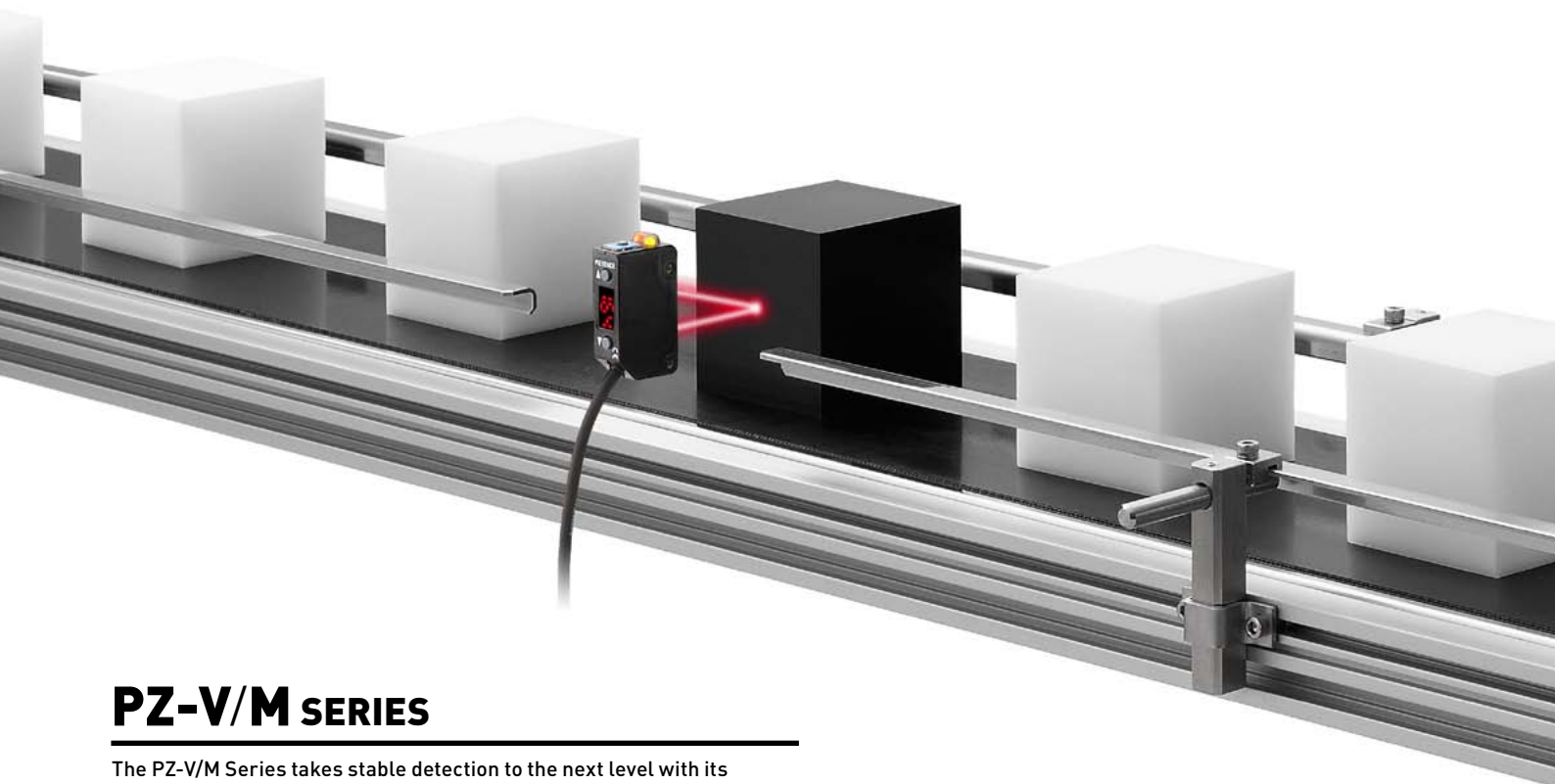
Easy to adjust trimmers



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



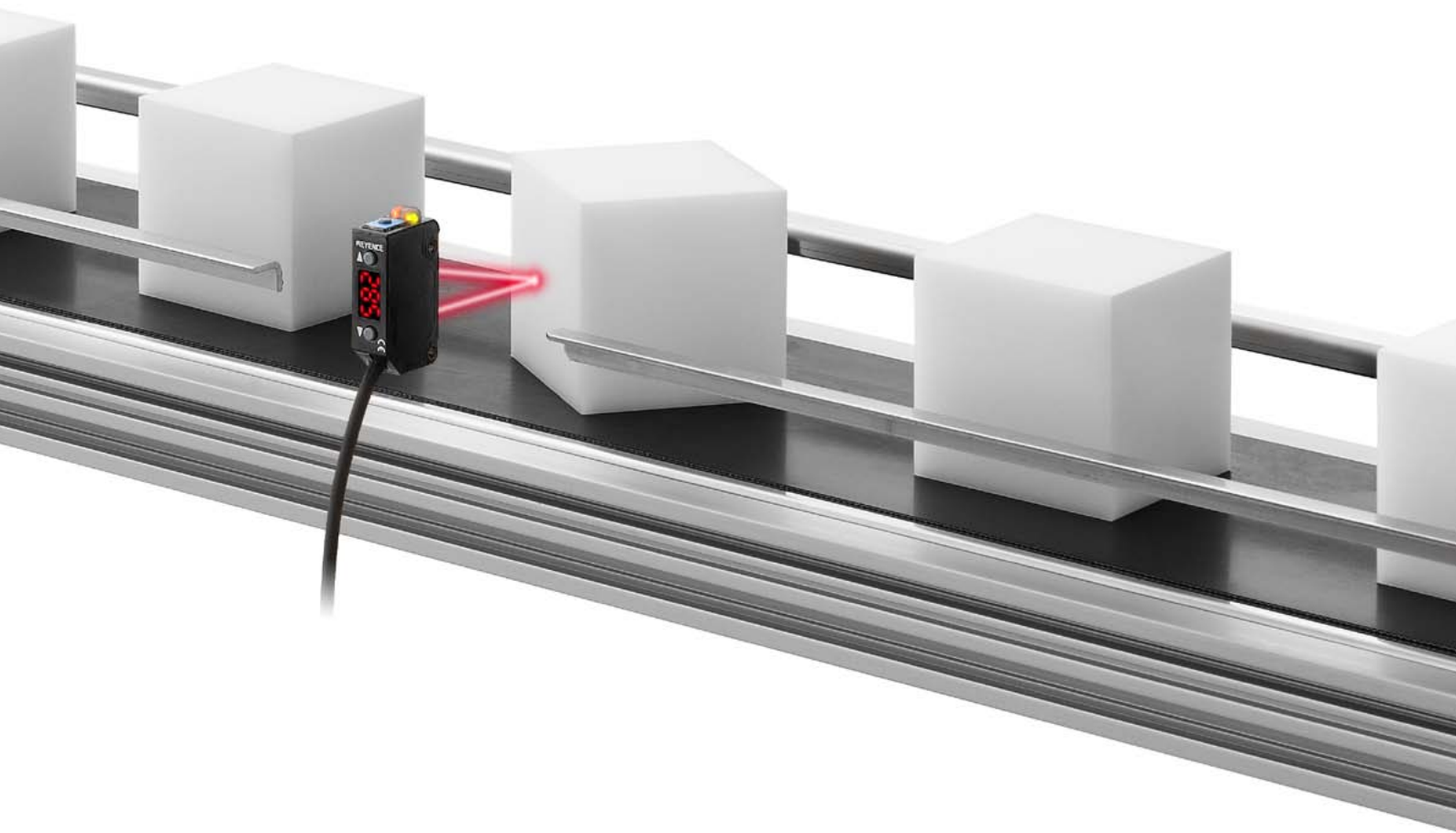
Automatic calibration type (PZ-V)



Trimmer type (PZ-M)








CONSISTENTLY STABLE DETECTION

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



■ PZ-G Sensor head lineup



Configuration		Type	Connection method	Detecting distance	NPN	Model	PNP	Bipolar	Weight
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			—	—	PZ-G42B	Approx. 65 g
			M12 4-pin*1			—	—	PZ-G42CB	Approx. 15 g
			2 m 6.6' cable			PZ-G42N	PZ-G42P	—	Approx. 60 g
	Rectangular	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
	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
	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

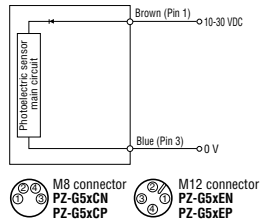
*3 When the OP-84219 (R-2L) reflector is used.

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

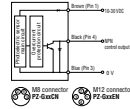
*5 Polarized Reflective Optics

I/O circuit diagram

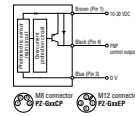
Thrubeam type transmitter
PZ-G5x



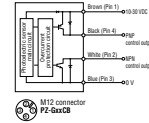
NPN output type (Thrubeam type receiver, reflective type, retro-reflective type)
PZ-GxxN



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		Weight
					NPN	PNP	
Thrubeam	Manual Calibration Type	Rectangular	2 m 6.6' cable		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		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			2 m 6.6' cable		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		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
			2 m 6.6' cable		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		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			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			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

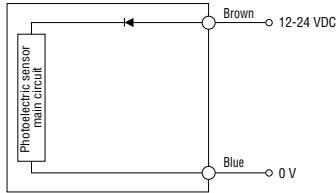
*2 Alternate-frequency models are available to prevent mutual interference when several sensors are used in close proximity. The models are as follows: PZ-M65/M75/M35/M35P/M15/V75/V35/V35P/V15.

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

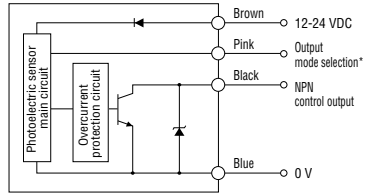
*4 When the R-5 reflector is used.

I/O circuit diagram

Thrubeam type transmitter
PZ-M5x(P)

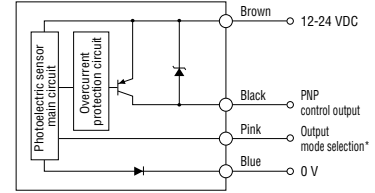


NPN output type (Thrubeam type receiver, reflective type,
retro-reflective type)
PZ-Mxx/Vxx









* (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
							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	
			M8				M8	5 m 16.4'	OP-85504	Approx. 130 g
	Oil-resistant (PUR)		M12	M12	2 m 6.6'		OP-88075	Approx. 80 g		
				M8	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		
			M8	L-shaped	M8		5 m 16.4'	OP-88072	Approx. 140 g	
					M12		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
	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 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 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.

■ 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					
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/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/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	
	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.

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

Receiver

Technical drawing of the Receiver showing dimensions: 13.1 (0.52"), 80.31", 7.1 (0.28"), 0.5 (0.02"), 7.1 (0.28"), 12 (0.47"), 4.1 (0.16"), 4.1 (0.16"), 15.5 (0.61").

Indicator

Technical drawing of the Indicator showing dimensions: 0.31", 0.09", 7.9, 2.2, 5, 0.2, 2 x M3 x P0.5 (0.02"), 0.5 (0.02"), 31 (1.22"), 25.4 (1.0"), 1.7 (0.07"), 20 (0.79"), 3 (0.12"), 2.8 (0.11"), 31.9 (±0.15"), 3-core x Brown/Blue/Black: 0.34 mm², Cable length: 2 m (6.6').

Operation mode selector switch

Technical drawing of the Operation mode selector switch showing dimensions: 5 (0.2"), 23.5 (0.93").

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

Transmitter

Receiver

Sensitivity adjustment trimmer

* The transmitter of the PZ-G51N/G51P

* 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)

Technical drawing of a pin assembly. The drawing shows a side view of the pin with dimensions: a total length of 300 (11.81 inches) and a section length of 44.5 (1.75 inches). The pin has a diameter of $\varnothing 14$ and a taper of $\varnothing 0.55^\circ$. To the right is a circular pin assignment diagram with four numbered positions: 1 (top), 2 (right), 3 (bottom), and 4 (left).

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

[illegible]

Pin assignment

①	+V	③	0 V
②	—	④	OUT

Transmitter

Dimensions (inches / millimeters):

- Top section: 13.1 0.52", 8 0.31", 7.1 0.28", 0.5 0.02", 7.1 0.28", 12 0.47"
- Center of transmitted light
- Indicator: 0.31" 7.9, 0.09" 2.2, 5 0.2"
- 2 x M3 x P0.5 0.02", 0.5 0.02", 20 0.79", 1.8 0.07"
- 31 1.22", 25.4 1.0", 2.8 0.11", 3 0.12", 16.9 0.67", 22.9 0.9"
- M8 connector

Receiver

Dimensions (inches / millimeters):

- Sensitivity adjustment trimmer: 5 0.2", 15.5 0.61", 9.8 0.39", 8.6 0.34"

Pin assignment

Pin	Signal
①	+V
②	-
③	0V
④	-

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

* 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	—

Receiver

Technical drawing of the Receiver (Fig. 10) showing front, side, and detail views with dimensions in inches and millimeters.

Front View Dimensions:

- Top: 0.7" (17.9), 0.09" (2.2)
- Left: 5" (127), 0.2"
- Right: 1.7" (42.7), 0.07"
- Bottom: 0.5" (12.7), 0.02"
- Internal: 2.08", 44.4" (1128.2), 1.75" (44.3), 3.2" (81.3), 0.13"
- Detail View (Left): 12.5" (317.5), 0.49" (12.4), 8.3" (210.8), 0.31" (7.9), 6.8" (173.0), 0.27" (6.9), 0.5" (12.7), 0.2" (5.1), 6.8" (173.0), 0.27" (6.9), 12.4" (315.1), 0.47" (11.9), 4" (101.6), 0.16" (4.1), 15.5" (393.0), 0.61" (15.5), 4" (101.6), 0.16" (4.1)
- Detail View (Right): 31" (787.4), 24.1" (611.8), 1.22" (31.0), 0.95" (24.1), 157" (4000.0), 0.62" (15.7), 3.5" (88.9), 0.14" (3.5), 22.9" (581.8), 4.5" (114.3), 0.18" (4.5), 3.2" (81.3), 0.13" (3.2), 0.9" (22.9)
- Center of received light
- Center of M18 screw
- M18, P=1.0 (0.04")
- Alignment indicator

Side View Dimensions:

- Top: 0.7" (17.9), 0.09" (2.2)
- Left: 5" (127), 0.2"
- Right: 1.7" (42.7), 0.07"
- Bottom: 0.5" (12.7), 0.02"
- Internal: 2.08", 44.4" (1128.2), 1.75" (44.3), 3.2" (81.3), 0.13"

Operation mode selector switch

Technical drawing of the Operation mode selector switch showing dimensions:

- Top: 5" (127), 0.2"
- Right: 25.5" (647.7), 1.0" (25.4)

Notes:

- ø4.0 ø0.16 : 4-core x Brown/Blue/Black/White: 0.20 mm²
- Cable length: 2 m Cable

Operation mode selector switch

25.5
1.0"

Transmitter

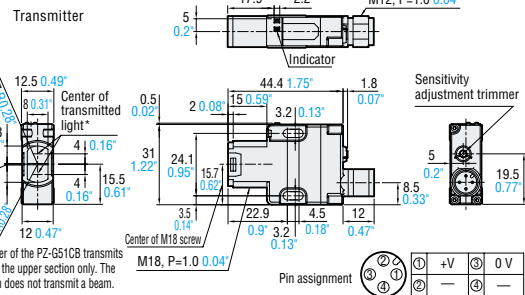
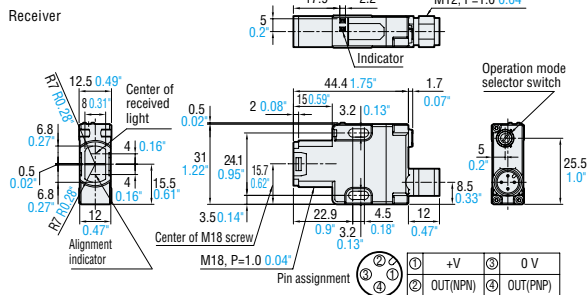
Receiver

* The transmitter of the PZ-G51B transmits a beam from the upper section only. The lower section

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

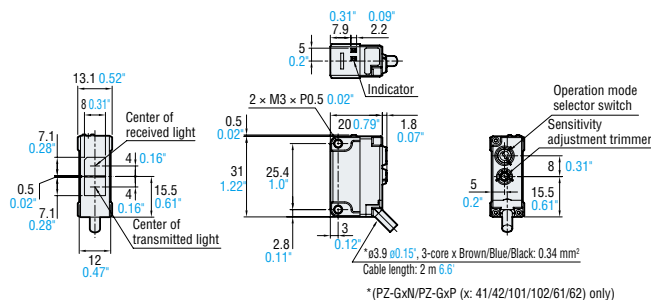
ø3.9 ø0.15", 2-core x Brown/Blue: 0.20 mm²
Cable length: 2 m 6.6"

PZ-G51CB/G52CB



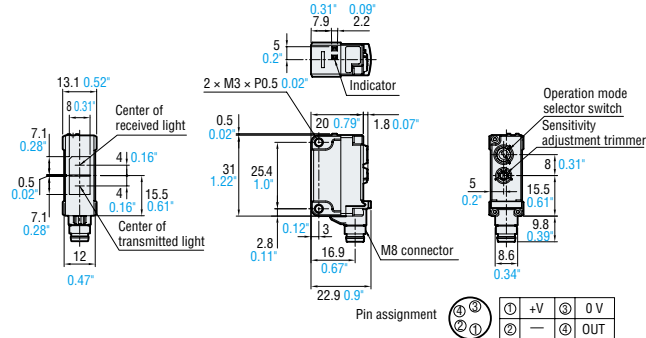
* The transmitter of the PZ-G51CB transmits a beam from the upper section only. The lower section does not transmit a beam.

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

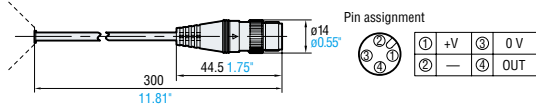


*(PZ-GxN/PZ-GxP (x: 41/42/101/102/61/62) only)

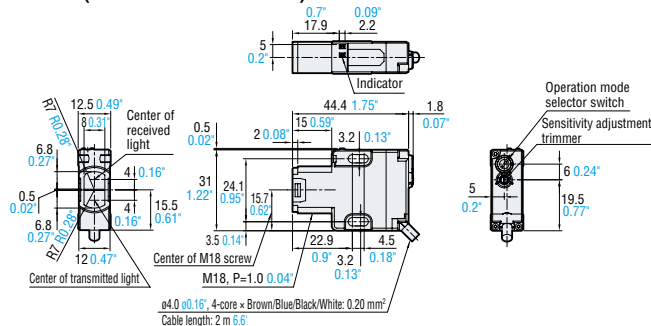
PZ-GxCN/GxCN (x: 41/42/101/102/61/62)



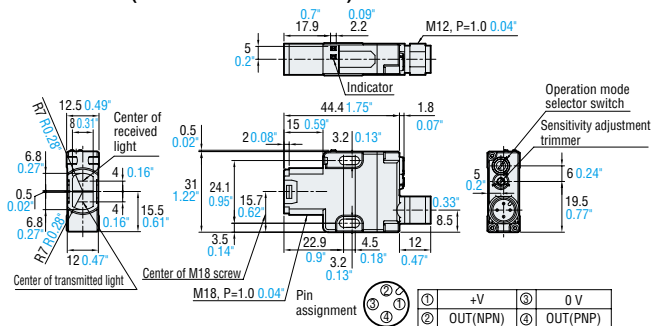
M12 connector model with pigtail: **PZ-GxEN/GxEP (x:41/42/101/102/61/62)**



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



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



Z-M5x(P)/M6x(P)

10.8 0.43" 7.08" 0.28" 15.2 0.6" 11.7 0.46" 7" 10.8 0.43" 7.08" 0.28" 15.2 0.6" 11.7 0.46" 7"

Center of transmitted/received light

Center of received light

Center of transmitted light

PZ-M51 PZ-M61

0.14" 0.22" 0.14" 3.5 5.7 3.5 Sensitivity adjustment trimmer* 11 0.04" Indicator

2-M3 18.6 0.73" 2.7 10.11" 25.4 1.0" 34.8 1.37" 3 0.12" 2.6 0.1"

*PZ-M51 transmitter and PZ-M61 only

*P3.7 2-core x 0.28 mm² PZ-M51 transmitter 4-core x 0.28 mm² PZ-M51 receiver and PZ-M61

Cable length: 2 m 6.6

*(PZ-M51(P)/PZ-M61(P) only)

Technical drawing of the PZ-M11(P)/PZ-M31(P) sensor unit. The drawing includes three views: a side view of the sensor head, a top view of the sensor head, and a side view of the main unit. Dimensions are given in millimeters (mm) and inches (in). Key features include the center of received light, center of transmitted light, sensitivity adjustment trimmer, and indicator. The main unit has a 4-core cable with a diameter of 3.7 mm and a length of 2 m.

Dimensions (mm):

- Top view of sensor head: 10.8, 0.43, 70.28, 3.5, 5.7, 3.5, 2.7, 0.11, 2-M3, 20, 0.79, 25.4, 1.0, 34.8, 1.37, 3.012, 2.7, 0.11.
- Side view of sensor head: 10.8, 0.43, 70.28, 10, 0.39, 10.7, 0.42.
- Side view of main unit: 3.012, 2.7, 0.11, 25.4, 1.0, 34.8, 1.37, 2.7, 0.11.

Key features and labels:

- Center of received light
- Center of transmitted light
- Sensitivity adjustment trimmer
- Indicator
- * $\varnothing 3.7$ $\varnothing 0.15$ 4-core $\times 0.28$ mm²
- Cable length: 2 m 6.6'

* (PZ-M11(P)/PZ-M31(P) only)

Technical drawing of the PZ-V11(P) / PZ-V31(P) device, showing three views: front, side, and top.

Front View Dimensions:

- Top width: 21.1 0.83
- Top right corner: 4.7
- Top left corner: 3.5
- Top center: 5.7 0.22
- Top right corner: 3.19
- Top left corner: 0.14
- Left side width: 10.8 0.43
- Left side top: 7.28
- Left side bottom: 10.39
- Left side bottom: 10.7
- Left side bottom: 0.42
- Bottom width: 2.7
- Bottom center: 0.11
- Bottom left: 25.4
- Bottom left: 1.0
- Bottom left: 34.8
- Bottom left: 1.37
- Bottom left: 3.0
- Bottom left: 1.2
- Bottom right: 2.7
- Bottom right: 0.11
- Bottom right: 36.5
- Bottom right: 1.44

Side View Dimensions:

- Top width: 2.7
- Top center: 0.11
- Top left: 25.4
- Top left: 1.0
- Top left: 34.8
- Top left: 1.37
- Top left: 3.0
- Top left: 1.2
- Top right: 2.7
- Top right: 0.11
- Top right: 36.5
- Top right: 1.44

Top View Dimensions:

- Top width: 2.7
- Top center: 0.11
- Top left: 25.4
- Top left: 1.0
- Top left: 34.8
- Top left: 1.37
- Top left: 3.0
- Top left: 1.2
- Top right: 2.7
- Top right: 0.11
- Top right: 36.5
- Top right: 1.44

Labels:

- SET button
- Indicator
- UP button
- Digital monitor
- DOWN button

Notes:

- 2-M3
- 3/8" ϕ 15.7 4-core x 0.28 mm²
- Cable length: 2 m 6.6'
- * (PZ-V11(P)/PZ-V31(P) only)

Technical drawings of the PZ-V71(P) monitor showing front, top, and side views with dimensions in millimeters (mm) and inches (in).

Front View Dimensions:

- Top bezel: 15 mm (0.59 in)
- Top mounting hole offset: 10 mm (0.39 in)
- Center of received light
- Center of transmitted light
- Bottom bezel: 14 mm (0.55 in)
- Bottom mounting hole offset: 14 mm (0.55 in)

Top View Dimensions:

- Left bezel: 6.5 mm (0.26 in)
- Top bezel: 7.2 mm (0.28 in)
- Right bezel: 4.2 mm (0.17 in)
- SET button
- Indicator
- Mounting hole offset (left): 0.12 in
- Mounting hole offset (right): 3.1 mm
- Distance between mounting holes: 27 mm (1.06 in)
- Distance from left bezel to mounting hole: 3.7 mm (0.14 in)
- Distance from right bezel to mounting hole: 47.9 mm (1.89 in)
- Distance from bottom bezel to mounting hole: 46.4 mm (1.83 in)
- Bottom bezel: 4.5 mm (0.18 in)
- Distance from bottom bezel to mounting hole: 4.4 mm (0.17 in)
- Mounting hole diameter: $\phi 3.7 \pm 0.15$ 4-core $\times 0.28$ mm²
- Cable length: 2 m (6.6 ft)

Side View Dimensions:

- UP button
- Digital monitor
- DOWN button
- Distance from top bezel to UP button: 25.6 mm (1.01 in)
- Distance from DOWN button to bottom bezel: 13 mm (0.51 in)

* (PZ-V71(P) only)

PZ-M7x(P)

Technical drawing of the PZ-M7x(P) sensor, showing top and side views with dimensions in mm and inches.

Top View Dimensions:

- Overall width: 6.5 mm (0.26")
- Distance from left edge to center of indicator: 7.2 mm (0.28")
- Distance from center of indicator to right edge: 4.2 mm (0.17")
- Indicator label: Indicator
- Sensitivity adjustment trimmer label: Sensitivity adjustment trimmer

Side View Dimensions:

- Overall height: 46.4 mm (1.83")
- Distance from top edge to center of top M4 screw: 37 mm (1.46")
- Distance from bottom edge to center of bottom M4 screw: 4.51 mm (0.18")
- Distance between centers of M4 screws: 4.4 mm (0.17")
- Top screw label: 2-M4
- Overall width: 26 mm (1.02")
- Bottom screw label: *ø3.7 ø0.15" 4-core × 0.28 mm²
- Cable length label: Cable length: 2 m 6.6'

Notes:

- * (PZ-M71(P) only)

Mechanical drawing of the PZ-MS3(P) Transmitter. The drawing shows a side view of the device with the following dimensions:

- Total length: 300 mm (11.81")
- Distance from the front flange to the center of the connector: 44.5 mm (1.75")
- Front flange outer diameter: $\phi 3.7$
- Front flange inner diameter: $\phi 0.15$
- Connector outer diameter: $\phi 14$
- Connector inner diameter: $\phi 0.55$

Pin configuration diagram (circular symbol with numbers 1, 2, 3, 4):

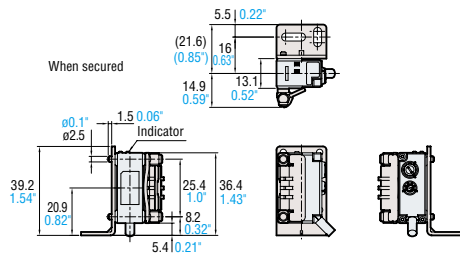
No.	PZ-MS3(P) Transmitter	Other
①	12-24 VDC	12-24 VDC
②	—	L.O.W.D.ON selection
③	0 V	0 V
④	—	Output

Technical drawing of the PZ-M52(P) connector. The drawing shows a side view of the connector with dimensions in millimeters (mm) and inches (in). The dimensions are: 13 mm (0.51 in), 11 mm (0.43 in), 5.6 mm (0.22 in), 0.7 mm (0.28 in), 130 mm (5.12 in), 8.6 mm (0.34 in), and M8. The drawing also shows a circular pin configuration with pins numbered 1 through 4. A table to the right of the drawing provides the pin configuration for the PZ-M52(P) (Transmitter) and Other (Receiver) versions.

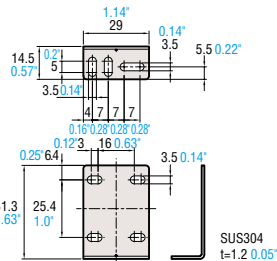
No.	PZ-M52(P) (Transmitter)	Other
①	12-24 VDC	12-24 VDC
②	-	LOW ON selection
③	0 V	0 V
④	-	Output

Unit: mm inch

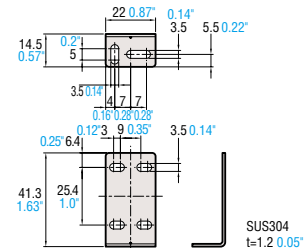
PZ-B81 + PZ-G41N



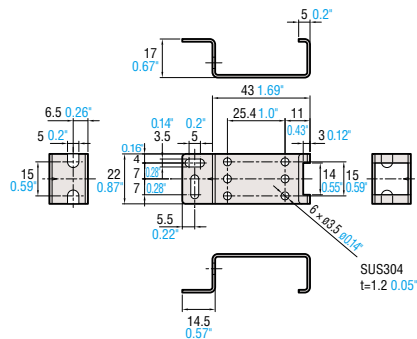
PZ-B41A



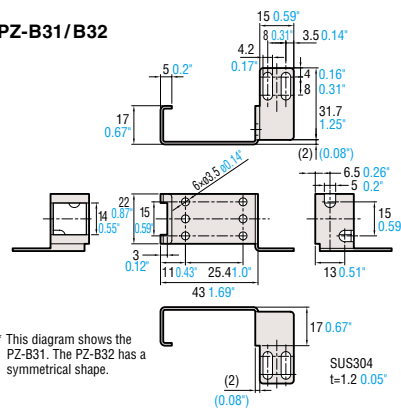
PZ-B01A



PZ-B11

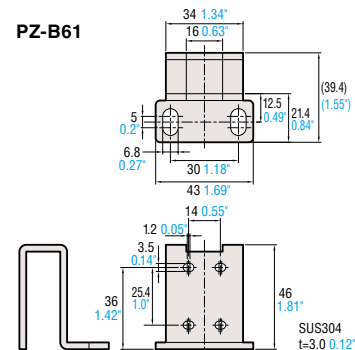


PZ-B31/B32

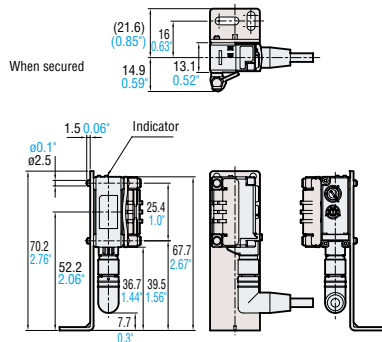


* This diagram shows the PZ-B31. The PZ-B32 has a symmetrical shape.

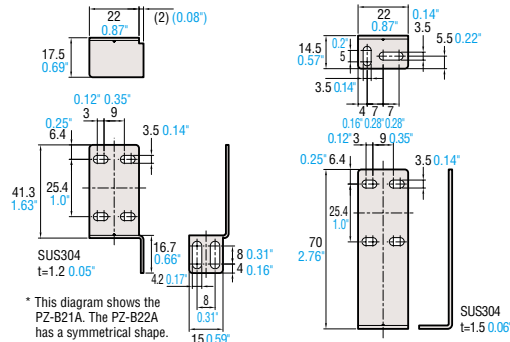
PZ-B61



PZ-B83 + PZ-G41CN + OP-85497

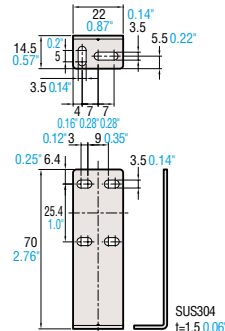


PZ-B21A/B22A

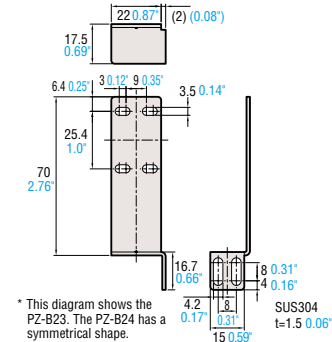


* This diagram shows the PZ-B21A. The PZ-B22A has a symmetrical shape.

PZ-B02



PZ-B23/B24



* This diagram shows the PZ-B23. The PZ-B24 has a symmetrical shape.

[illegible]

Technical drawing of a SUS304 L-shaped part. The drawing includes a top view and a side view. The top view shows a square base with a circular hole in the center. The side view shows the L-shaped profile with a rounded corner. Dimensions are provided in millimeters (mm) and inches (in).

Dimensions (mm / inches):

- Top view:
 - Outer side length: 45.5 / 1.79
 - Inner side length: 40.4 / 1.59
 - Inner corner radius: R10.2
 - Inner corner angle: 30°
 - Inner corner radius: R4.6
 - Inner corner angle: 15°
 - Inner corner radius: R18.5
 - Inner corner angle: 7.3°
- Side view:
 - Outer side length: 40.8 / 1.61
 - Inner side length: 15.4 / 0.61
 - Inner corner radius: R18.5
 - Inner corner angle: 7.3°

Material: SUS304
 Thickness: t=2.5 / 0.10

Technical drawing of a SUS304 pipe fitting. The drawing shows two views: a top view and a side view. The top view is a circle with a diameter of 31.8 mm (1.25 inches). The side view shows a flange with a thickness of 17.5 mm (0.69 inches) and a total height of 24 mm (0.94 inches). The flange has a central hole with a diameter of 15.4 mm (0.61 inches). The side view also shows a threaded section with a diameter of 16.2 mm (0.64 inches) and a length of 8 mm (0.31 inches). The material is SUS304 with a tolerance of ±2.0 mm (0.08 inches). The drawing includes dimensions for the flange, the central hole, and the threaded section.

When secured

Technical drawing showing the dimensions of the 1000 Series Locking System in the "When secured" state. The dimensions are as follows:

- Top width: 24.6 (0.97")
- Top right width: 3.7 (0.15")
- Top right height: 3.2 (0.13")
- Left height: 1.8 (0.07")
- Left height (lower): 7.6 (0.3")
- Left width: 3.2 (0.13")
- Right height: 29.2 (1.15")
- Right height (lower): 36 (1.42")
- Right width: 7.8 (0.31")
- Bottom width: 26.4 (1.04")
- Bottom height: 33 (1.3")
- Bottom height (lower): 4 (0.16")
- Bottom width (lower): 16 (0.63")
- Bottom width (lower): 33.8 (1.33")

When attached/detached

Technical drawing showing the dimensions of the 1000 Series Locking System in the "When attached/detached" state. The dimensions are as follows:

- Top width: 46.2 (1.82")
- Right height: 35.5 (1.4")
- Right height (lower): 28.7 (1.13")
- Right width: 10.6 (0.42")
- Bottom height: 38 (1.5" to 41 1.61")

Hexagon socket head bolt
(M5, Length: 15 mm 0.59, Width across flats: 4 mm 0.16, Nickel plated iron)

Nickel plated zinc die cast

SUS430

(27)
(1.06)

Nut (M5, Nickel plated iron)

2 x ø21 ± 0.83 ; Thickness: 2 0.08"

(32) (1.26") M10 x P1.5 0.06"

ø16 ± 0.63

10 0.39"

L

Nickel plated iron
 L=45 mm 1.77"; OP-87406
 L=65 mm 2.56"; OP-87407

Width across flats: 1.07 0.67"; Thickness: 8 0.31"

Hexagon socket head cap screw
(M5, Length: 15 mm ± 0.59 , Width across flat: 4 mm ± 0.16 , Nickel plated steel)

36.8 ± 1.45
19.5 ± 0.77

17.4 ± 0.69
3.2 ± 0.13

$\varnothing 27 \pm 0.106$
 $\varnothing 22 \pm 0.87$
 $\varnothing 12 \pm 0.47$

Nut (M5, Nickel plated steel)

Technical drawing of a mechanical part, showing two views: a front view (left) and a side view (right). Dimensions are provided in inches (in) and millimeters (mm).

Front View (Left):

- Top diameter: $\varnothing 12$ (in) / $\varnothing 0.47$ (mm)
- Top diameter length: 8.3 (in) / 0.33 (mm)
- Top diameter offset: 5 (in) / 0.2 (mm)
- Bottom diameter: 26.7 (in) / 1.05 (mm)
- Bottom diameter offset: 12.5 (in) / 0.49 (mm)
- Bottom diameter length: 19.5 (in) / 0.77 (mm)
- Bottom diameter offset: 18 (in) / 0.71 (mm)
- Bottom diameter length: 35.9 (in) / 1.41 (mm)

Side View (Right):

- Top diameter: $4 \times \varnothing 3.5$ (in) / $\varnothing 0.14$ (mm)
- Top diameter length: 25.4 (in) / 1.0 (mm)
- Top diameter offset: 15 (in) / 0.59 (mm)
- Bottom diameter: 21.5 (in) / 0.85 (mm)
- Bottom diameter offset: 120.47 (in) / 4.78 (mm)
- Bottom diameter length: 16 (in) / 0.63 (mm)
- Bottom diameter offset: 13.5 (in) / 0.53 (mm)

Technical drawing of the OP-87407 and OP-87407L components. The drawing shows two views: a side view on the left and a front view on the right.

Side View Dimensions:

- Total length: 19.5 (0.77) and 18 (0.71)
- Flange thickness: 5.0 (0.2)
- Central hole diameter: 0.83 (0.33)
- Shaft diameter: 16 (0.63)

Front View Dimensions:

- Flange diameter: 25.4 (1.0)
- Mounting hole diameter: 4 x Ø3.5 (0.14)
- Central hole diameter: 12 (0.47)
- Shaft diameter: 16 (0.63)

Legend:

- L=50 mm 1.97" : OP-87406
- L=70 mm 2.76" : OP-87407

Technical drawing of a Zinc die-casting part, showing three views: front, side, and top. The part is a complex, angular component with multiple dimensions in inches and millimeters. The material is SUS304 with a thickness of 0.12 inches. The drawing includes a title block with the material and thickness, and a note 'Zinc die-casting'.

Dimensions (inches and millimeters):

- Top view: 0.33" (8.3 mm), 12.5" (4.9"), 3.3" (0.13"), 4.3" (0.17")
- Front view: 37.5" (1.48"), 23.5" (0.93"), 37" (1.46")
- Side view: 34" (1.34"), 20" (0.79"), 14" (0.55"), 51" (2.01")
- Top view: 14" (0.55"), 51" (2.01"), 20" (0.79"), 34" (1.34")
- Top view: 0.18.5" (0.73"), R14 R0.55", R13.5" (0.53"), R20 R0.78"

Material: SUS304
Thickness: t=3.0 0.12"

Zinc die-casting

[illegible]

R-5

Technical drawing of the R-5 component. The front view (left) shows a rectangular part with a total height of 36 inches (914 mm) and a total width of 14 inches (355 mm). The central opening has a height of 34 inches (863 mm) and a width of 11.6 inches (295 mm). The side view (right) shows a total width of 11.5 inches (292 mm) and a total height of 25.4 inches (645 mm). The central opening has a height of 2.6 inches (66 mm) and a width of 3 inches (76 mm). The drawing includes dimensions in both inches and millimeters.

Dimension	Value (inches)	Value (millimeters)
Total Height	36	914
Total Width	14	355
Central Opening Height	34	863
Central Opening Width	11.6	295
Side View Total Width	11.5	292
Side View Total Height	25.4	645
Side View Central Opening Height	2.6	66
Side View Central Opening Width	3	76

Technical drawing of a cable with the following dimensions and specifications:

- Overall length: 2000 78.74" (OP-73864)/10000 393.70" (OP-73865)
- Outer diameter: $\phi 9.26$
- Inner diameter: $\phi 9.35$
- Inner diameter: $\phi 9.37$
- Inner diameter: $\phi 3.7 \pm 0.15$ ($4 \times 0.28 \text{ mm}^2$)
- Length of inner diameter section: 26.7 1.05"
- Pin assignment: ①, ②, ③, ④

No.	Color
①	Brown
②	White
③	Blue
④	Black

33.7 1.33" OP-87628: 2000 78.74" / OP-87629: 10000 393.70"

Pin assignment

① ②
④ ③

ø10
ø0.39"

M8
(4 pin)

ø4.4 ø0.17" (4 x 0.25 mm²)

No.	Color
①	Brown
②	White
③	Blue
④	Black

Technical drawing of a cable assembly. The drawing shows a cable with a braided shield and a central conductor. The dimensions are as follows:

- Overall length: 2000 mm (78.74')
- Inner diameter of the central conductor: $\phi 3.7$ mm ($\phi 0.15"$) (4 \times 0.28 mm²)
- Outer diameter of the braided shield: $\phi 9$ mm
- Dimensions of the braided shield segments: 0.55", 0.35", $\phi 0.28"$, $\phi 0.35"$
- Dimensions of the central conductor segments: 14, 9, $\phi 7$, $\phi 9$
- Dimensions of the braided shield segments: 16, 0.63", 7.7, 0.3"
- Dimensions of the central conductor segments: $\phi 9$, $\phi 0.35"$

Pin assignment diagram:

- Pin 1: ①
- Pin 2: ②
- Pin 3: ③
- Pin 4: ④

No.	Color
①	Brown
②	White
③	Blue
④	Black

Technical drawing of the OP-87632 and OP-87633 optical modules. The drawing shows a side view of the module with dimensions in millimeters and inches. Key dimensions include: M8 (4 pin) connector, 10.0 ±0.39° angle, 5° angle, 18.9 ±0.74 mm height, 27.9 mm length, 1.10° angle, 4.4 ±0.17 mm (4 x 0.25 mm²) pin pitch, and overall lengths of 78.74 mm for OP-87632 and 393.70 mm for OP-87633. A pin assignment diagram shows pins 1, 2, 3, and 4 arranged in a circle.

No.	Color
①	Brown
②	White
③	Blue
④	Black

Technical drawing of a shaft assembly. The shaft has a total length of 2000 mm. The left end (A) has a diameter of $\phi 9$ and a length of 26.71.05 mm. The right end (B) has a diameter of $\phi 9$ and a length of 26.2.1.03 mm. The shaft is supported by bearings with dimensions $6.7.0.26^*$ and $6.2.0.24^*$. The shaft diameter is $\phi 3.7 \pm 0.15^*$ (4 x 0.28 mm²). The shaft is marked with A and B. The table below shows the dimensions and tolerances for the shaft and bearings.

No.	No.
①	①
②	②
③	③
④	④

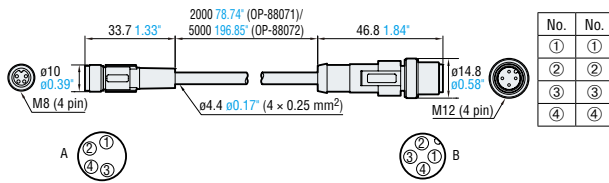
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④	④

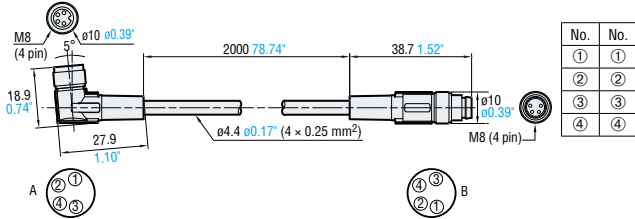
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②	②
③	③
④	④

Unit: mm inch

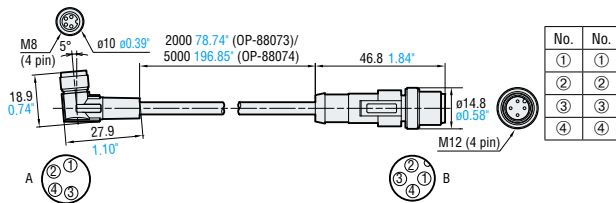
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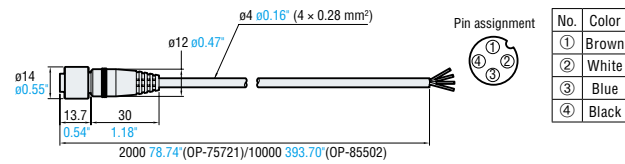
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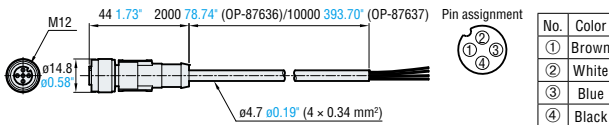
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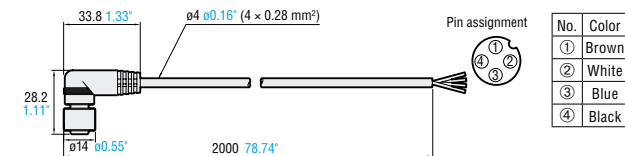
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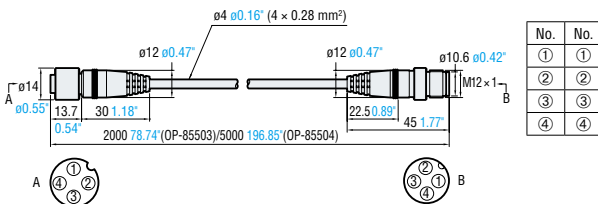
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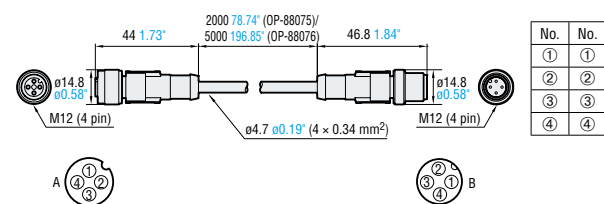
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	Slim type PR-M51	1.2 m 3.9'	Flat type PR-F51	0.6 m 2.0'
			Long distance type	30 mm 1.18"
			Short-distance type	15 mm 0.59"

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	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"



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