

SENPUM

Sensors & Measuring Instruments

Sensors

Measuring Instruments,
Safety Vision, Static Discharge Devices



Fiber Optics



Photoelectric \ Laser



Color



Safety



Proximity



Laser Displacement Sensor /
Laser Micrometer



Contact Displacement



AI Vision Sensor



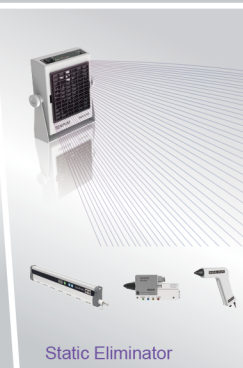
Barcode scanner



Infrared temperature



Flow rate



Static Eliminator



Company Overview

Letting the Value of Automation Serve the World

Global Headquarters: Shenzhen, China

Date of Establishment: September 18, 2016

Revenue: Continually growing

Over **80+** items
Patents and Software Copyrights

30+ Series
Products Comparable to International Brands

40+ Series
CE-certified products, over 700 styles

10,000+
Serving Customers



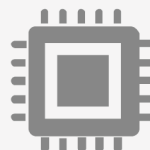
National-level
Specialized, Refined,
Unique, and Innovative
“Little Giants”

National-level
High-Tech Enterprise

National-level
Technology-Based
Small and Medium
-Sized Enterprises

Shenzhen
High-Tech Enterprise

SENPUM has already mastered core technology pathways in optics, magnetism, electricity, ultrasound, radar, and other fields, as well as R&D capabilities that span a wide range of interdisciplinary fields, including chips, hardware, software, computing, architecture, and materials.



Based in [Location] · Serving the Nation



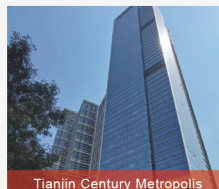
Shenzhen Sunshine Science and Technology Innovation Center



Shanghai Hongqiao Hub



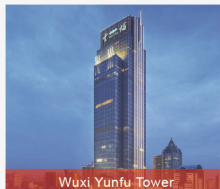
Suzhou Center



Tianjin Century Metropolis



Wuhan Zall International Center



Wuxi Yunfu Tower



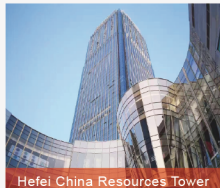
Shenyang Northern Media Tower



Hangzhou Ping An Financial Center



Qingdao China Resources Tower



Hefei China Resources Tower



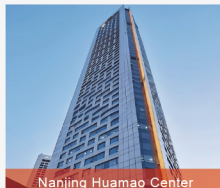
Chengdu IFS Tower



Chongqing Raffles



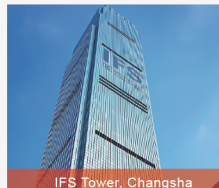
Xiamen China Resources Tower



Nanjing Huamao Center



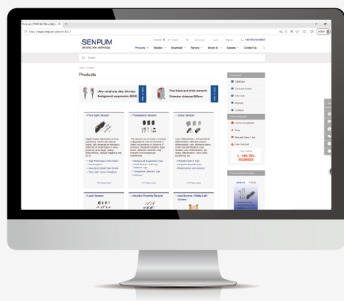
Ningbo Center Tower



IFS Tower, Changsha

We currently have offices in Shenzhen, Suzhou, Shanghai, Tianjin, Wuhan, Shenyang, Wuxi, Qingdao, Hefei, Hangzhou, Chengdu, Chongqing, Xiamen, Nanjing, Ningbo, Changsha, and other locations; by building a nationwide service network centered on these regional hubs, we provide 24/7 rapid response and ensure that our professional services reach every manufacturing site. In the future, we will continue to expand our service footprint, leveraging deep local engagement and digital collaboration to provide our customers with more efficient and precise solutions.

www.senpum.com



Technical Manual

Precise and detailed technical guidance, available to answer your questions anytime, anywhere.



Product Model

Covering the full range of specifications and operating instructions, this single volume provides a comprehensive solution.



Resource Sharing

A systematic knowledge base and the accumulation of industry solutions facilitate efficient decision-making and implementation.



Case Study

Backed by real-world case studies, every result stems from expertise and proven results.

SERVICE CENTER



Domestic Service Locations:

Shenzhen, Suzhou, Shanghai, Tianjin, Wuhan, Shenyang, Wuxi, Qingdao, Hefei, Hangzhou, Chengdu, Chongqing, Xiamen, Nanjing, Ningbo, Changsha

Actively Expanding International Operations to Create a New Pillar of Global Competitiveness

Since 2024, SENPUM has been actively expanding its overseas operations. In a short period of time, it has established a network of dozens of agents in multiple countries and regions, providing professional services to more than 100 clients across more than 30 countries and regions worldwide.

Global Shipments & Technical Engineers

We utilize a direct sales model nationwide to ensure that all delivered products are rigorously certified, highly reliable solutions that quickly meet customer needs.

Through information collaboration among our sales teams and systematic operations, we efficiently support our customers' system integration and project deployment both domestically and overseas, consistently delivering trusted brand value.

7×24 hours

24/7 Service / Remote
support with Peace of Mind

100+

Professional After-Sales
Service Technicians



SENPUM provides services to customers worldwide

As a leading brand in the field of industrial automation sensors, SENPUM is committed to building a more sustainable and resource-efficient future.

Leveraging its deep engineering expertise and digital know-how, SENPUM helps industries around the world achieve high-performance operations while enhancing efficiency, productivity, and sustainability—enabling them to surpass their own limits!

Meeting Diverse Needs with Advanced Technology

Fiber Optics

High-performance
Fiber Optic Components

SP Series



High Precision Digital
Fiber Amplifier

FX-N10 Series



Photoelectric \ Proximity

High-performance
Background Suppression
Photoelectric Sensors

PX-400 Series



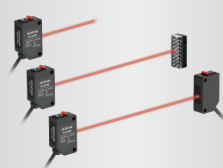
Ultra-compact
Photoelectric Sensors

PL-F Series



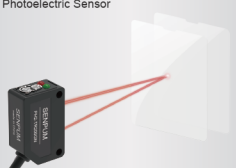
Medium and Long Distance
Photoelectric Sensors

PK-L Series



Transparent Detection Type
Photoelectric Sensor

PH2-T Series



High Performance
Proximity Sensor

DH/DH2 Series



Square / General Standard Type
Proximity Sensors

DT2-Q/
DL-Q Series



Color

Smart White Light

LA2-W Series



Digital display type

PC-W Series



White LED Smart

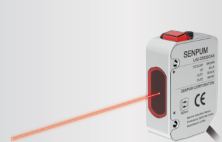
LA-F10 Series



Laser

CMOS type

LA2-ZB Series



Standard Model

LA-ZB Series



High-precision digital

LA-N Series



Ultra-high-precision digital
laser type

LA-H Series



Ultra-compact

LA3-S Series



Long-range type

LA-MR Series



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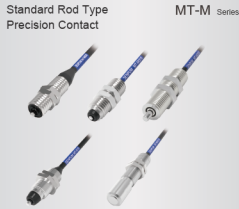
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S001

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Sensors

Measuring Instruments,
Safety Vision,
Static Discharge Devices

Precision Contact \
Contact Displacement



Laser Displacement/
Laser Micrometer



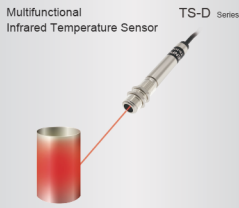
AI Vision Sensors \
Barcode Scanners



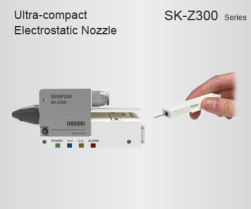
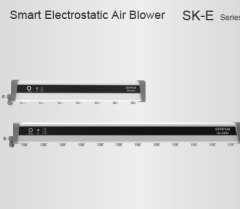
Safety



Flow Rate/
Temperature



Static



Fiber Optics

Photoelectric \
Proximity

Color

Laser

Safety

Precision Contact/
Contact-Type Displacement

Laser Displacement/
Micrometer

AI Vision \
Barcodes

Temperature \
Flow Rate

Static

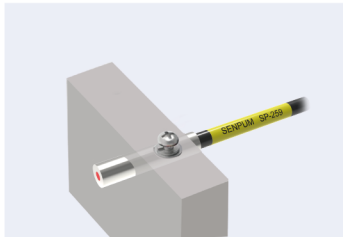


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S002



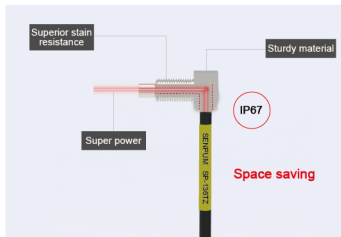
In limited occasions, it can be perforated and mounted by screw fixing.



Adopt long hole design screw holes, easy to adjust the optical axis.

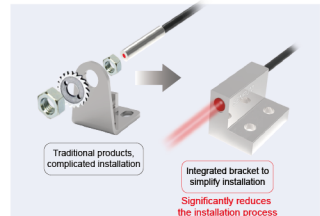
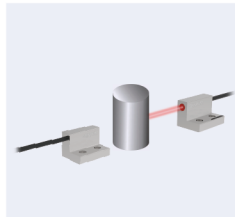


Combination of space saving, high power and high protection.

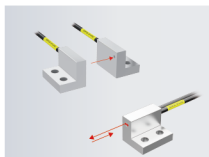


Simple and easy to install.

Sensor integrated into the bracket simplifies installation.

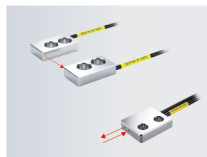


With mounting holes



Integrated mounting bracket type

The shape of the mounting metal part is L-shaped. Integration of the mounting metal part and the sensor simplifies cumbersome mounting work.



Flat plate bracket type

Thin and with its own mounting holes, it is easy to install directly in places where space is limited.



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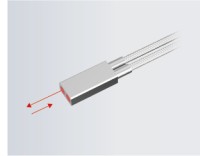
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Narrow field of view / High power



Narrow field of view / High power

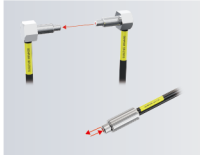
Narrow field of view with an aperture angle of 6°. Unaffected by light deflection, etc., enabling accurate inspection of workpieces. Side-view type is easy to install in places where space is limited.



Narrow beam / High power type

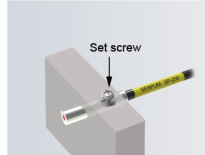
High-power reflective element with an 8° aperture angle. Workpieces can be inspected from a certain distance away. The double glass lens ensures stable inspection even when there is a small amount of dust adhering to the lens.

Standard



Screw-fixed mounting type

The cables are resistant to bending at 90°, which facilitates aesthetic wiring.



Cylindrical

Where space is limited, holes can be drilled for mounting set screws.

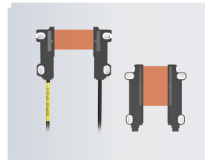
Small light spot



Small light spot

Spot size can be freely selected. Focus distance can be changed, so there is no need to fine-tune the distance between the sensor and the workpiece.

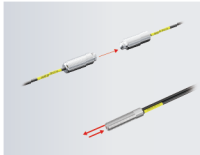
Wide range



Regional type

Built-in lens that creates a wide range of parallel light. Inspection range width up to 40mm can be used to detect cases where the passing position of the workpiece is uncertain, such as dropping.

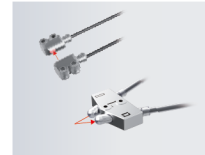
Bend-resistant



High elasticity type

Bending radius of 2mm can be maintained with excellent flex resistance.

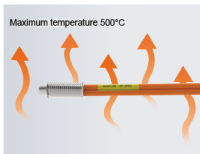
Oil and drug resistant



Oil / chemical resistant

Oil- and chemical-resistant protective housing prevents fiber optic deterioration. Can be used in a variety of harsh environments with oil or chemical splashes.

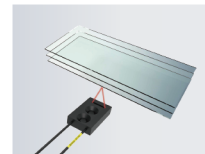
Heat-resistant



High temperature resistant type

High temperature resistant fiber optic sensor. Heat resistant up to 500°C.

Liquid crystal / semiconductor



Limited reflection type

The product lineup includes long-range positioning sensors, edge detection sensors, and wafer mapping sensors for inspection of glass substrates.

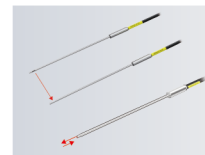
Liquid level



Liquid level type

Liquid level can be detected by installing a sensor inside the transparent pipe.

Casing



Casing type

The front part is thinner. The lineup includes side-view models for easy installation where space is limited.



Screw-fixed mounting type

The sensor is self-threaded and can be fixed directly by screws simply and conveniently.

Through-beam type

Type	Fiber element length (diameter)	Shape(mm)	Bending radius(mm)	Detection distance(mm)	Optical axis diameter	Smallest detectable object	Model / Weight
Size / Shape	Ambient temperature						
M3	Threaded	1 m free cutting (ø1.3×2) -40 to +50°C		R25	0~550	-	SP-236FA Approx. 12g
		1 m free cutting (ø1.3×2) -40 to +70°C		R2 Bend-resistant	0~450	-	SP-236TZ Approx. 12g
	Hexagonal type	2 m free cutting (ø2.3) -20 to +50°C		R1 Bend-resistant	0~3600	ø2.3	SP-271TZ Approx. 22g
		2 m free cutting (ø2.2) -40 to +50°C		R2 Bend-resistant	0~3100	ø1.13	SP-278TZ Approx. 43g
		1 m non-cuttable -40 to +50°C		R10 Stainless steel	0~1800		SP-278TG Approx. 43g
M4	2 m free cutting (ø2.2) -40 to +70°C		R25	0~3600	ø1		SP-28F Approx. 21g
	2 m free cutting (ø1.3) -40 to +70°C		R4	0~2200		SP-279 Approx. 9g	
	2 m free cutting (ø2.2) -40 to +50°C		R4 Bend-resistant	0~3600		SP-278 Approx. 25g	
			R0.5 Bend-resistant		SP-278V Approx. 25g		
	Threaded	1 m non-cuttable -40 to +50°C		R10 Stainless steel	0~1800	ø1.13	SP-278G Approx. 39g
		2 m free cutting (ø2.2) SP-272Z: -40 to +50°C SP-272: -40 to +70°C		R2 Bend-resistant	0~3600		SP-272Z Approx. 25g
				R25			SP-272 Approx. 25g

Through-beam type

Type	Fiber element length (diameter)	Shape(mm)	Minimum bending radius(mm)	Detection distance(mm)*1	Optical axis diameter	Model / Weight	
Size / Shape	Ambient temperature						
M4	Hexagonal type	2 m free cutting (ø2.2) -40 to +60°C		R2 Bend-resistant	0~3600	Light casting: ø1 Receiving light: ø3.2	SP-R278TZ Approx. 25g
		1 m non-cuttable -40 to +60°C		R10 Stainless steel	0~1800		SP-R278TG Approx. 43g
	Threaded	2 m free cutting (ø2.2) -40 to +60°C		R2 Bend-resistant	0~3600		SP-R278 Approx. 21g
		2 m free cutting (ø2.2) -40 to +60°C		R25	0~3600		SP-R28F Approx. 21g
		1 m non-cuttable -40 to +60°C		R10 Stainless steel	0~1800		SP-R278G Approx. 41g

*1 When using the FX-N10 Series, "3600 mm (1800 mm)" is the maximum value because the cable length is 2 m (1 m).

Limited reflection type

Limited detection range allows detection of transparent objects. Self-contained mounting holes for direct installation.

Reflective type

Detection direction	Fiber element length (diameter)	Shape(mm)	Bending radius(mm)	Detection distance(mm)	Optical axis diameter	Smallest detectable object	Model / Weight
	Ambient temperature						
Side	2 m free cutting (ø1.0×2) -40 to +70°C		R10	3 Center of detection distance	Approx. ø4.5 [Approx. ø3.5 (Distance is 3)]	ø0.005 Gold wire	SP-138 Approx. 6g
	2 m free cutting (ø1.0×2) -40 to +70°C			0~4	—	ø0.08 Copper wire	SP-139V Approx. 5g
Flat	2 m free cutting (ø1.0×2) -40 to +70°C			6 Center	Approx. ø1.5 (Distance is 6)	-	SP-139 Approx. 5g
	2 m free cutting (ø2.2×2) -40 to +50°C		R25	0~89	-	-	SP-139L Approx. 20g
	2 m free cutting (ø2.2×2) -40 to +70°C		R5	0~25	-	-	SP-139S Approx. 20g
	2 m free cutting (ø2.2×2) -40 to +70°C		R25	0~14	-	-	SP-139R Approx. 20g
	2 m free cutting (ø2.2×2) -40 to +70°C		R25	0~150	-	-	SP-141S Approx. 25g



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Screw-fixed mounting type

The sensor is self-threaded and can be fixed directly by screws simply and conveniently.

Reflective type

Size	Appearance	Detection arrangement	Fiber element length (diameter) Ambient temperature	Shape(mm)	Bending radius(mm)	Detection distance(mm)	Smallest detectable object	Model / Weight
M3	Threaded	Coaxial	50cm non-cuttable SP-122X : -40 to +70°C SP-125X : -40 to +50°C		R25	0~130	ø0.005 Gold wire	SP-122X Approx. 4g
					R10	0~100		SP-125X Approx. 4g
	Hexagonal type		1 m free cutting (ø1.3×2) -40 to +50°C		R2 Bend-resistant	0~400		SP-136TZ Approx. 7g
			1 m free cutting (ø1.3×2) -40 to +50°C			0~450		SP-136FZ Approx. 6g
	Threaded		1 m free cutting (ø1.3×2) 30cm spiral -40 to +50°C		R10 Stainless steel			SP-136FG Approx. 6g
			1 m free cutting (ø1.3×2) -40 to +70°C		R25	0~550		SP-136FA Approx. 6g
M4	Hexagonal type	Parallel	2 m free cutting (ø1.3×2) SP-167 : -40 to +70°C SP-167Z : -40 to +50°C		R25	0~1100	ø0.005 Gold wire	SP-167 Approx. 10g
					R2 Bend-resistant	0~770		SP-167Z Approx. 10g
		2 m free cutting (ø1.3×2) -40 to +50°C			0~640	SP-167TZ Approx. 10g		
M6	Hexagonal type	Coaxial	1 m non-cuttable -40 to +50°C		R10 Stainless steel	0~400	ø0.005 Gold wire	SP-136TG Approx. 32g
			2 m free cutting (ø2.2×2) -40 to +70°C			0~720		SP-126 Approx. 18g
	Threaded	Coaxial	2 m free cutting (ø2.2×2) -40 to +70°C		R25	0~1100		SP-17F Approx. 21g
			2 m free cutting (ø2.2×2) -40 to +70°C			0~1300		SP-162 Approx. 21g
			2 m free cutting (ø2.2×2) -40 to +50°C		R2 Bend-resistant			SP-168 Approx. 21g
			2 m free cutting (ø2.2×2) -40 to +50°C		R0.5 Bend-resistant	0~900		SP-168V Approx. 25g
		Parallel	2 m free cutting (ø2.2×2) -40 to +50°C		R0.5 Bend-resistant			SP-168TZ Approx. 32g
			2 m free cutting (ø2.2×2) -40 to +50°C					
	Hexagonal type		2 m free cutting (ø2.2×2) -40 to +50°C					

Reflective type

Type	Shape / Size	Ambient temperature	Shape(mm)	Minimum bending radius(mm)	Detection distance(mm)*1	Model / Weight
M4	Hexagonal type	2m free cutting (ø2.2×2) -40 to +60°C		R2 Bend-resistant	0~710	SP-R168TZ Approx. 25g
		1m non-cuttable -40 to +60°C		R10 Stainless steel	0~710	SP-R168TG Approx. 32g
	Threaded	2m free cutting (ø2.2×2) -40 to +60°C		R2 Bend-resistant	0~900	SP-R168 Approx. 21g
		2m free cutting (ø2.2×2) -40 to +60°C		R25	0~1100	SP-R17F Approx. 21g
		1m non-cuttable -40 to +60°C		R10 Stainless steel	0~900	SP-R168G Approx. 29g

*1 When using the FX-N10 series.

Small spot type

Suitable for detecting smaller targets, free to choose the spot size and change the focus distance.

Adjustable optoelectronics (built-in lens fiber optic element)

Type	Spot diameter	Focal length	Fiber element length (diameter)	Shape(mm)	Bending radius(mm)	Model / Weight
Adjustable light point	ø0.9~3.5	10~30	2 m free cutting (ø1.3×2) -40 to +70°C		R25	SP-111 Approx. 5g

Small spot type (built-in lens fiber optic element)

Type	Spot diameter	Focal length	Fiber element length (diameter)	Shape(mm)	Bending radius(mm)	Model / Weight
Small light point	Approx. ø0.1	5	50 cm non-cuttable -40 to +70°C		R25	SP-121 Approx. 2g

Fiber Optics

Photoelectric / Proximity

Color

Laser

Safety

Reflective Contact / Contactless displacement

Linear Displacement / Microdisplacement

AI Vision / Barcodes

Temperature / Flow Rate

Static



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Cylindrical

Tight spaces, drilled holes and mounted via set screws.

Through-beam type

Size	Fiber element length (diameter) Ambient temperature	Shape(mm)	Bending radius(mm)	Detection distance(mm)	Optical axis diameter(mm)	Smallest detectable object	Model / Weight
ø1.0	50cm non-cutttable -40 to +50°C		R10	0~380	ø0.265	ø0.005	SP-259 Approx. 8g
	1m free cutting (ø1.0) -40 to +50°C		R2 Bend-resistant Highly elastic type	0~590	ø0.5		SP-259U Approx. 4g
ø1.5	1 m free cutting (ø1.0) -40 to +70°C		R4 Highly elastic type	0~1200	ø0.7		SP-260 Approx. 3g
	1 m free cutting (ø1.0) -40 to +50°C		R2 Bend-resistant Highly elastic type	0~590	ø0.5		SP-260U Approx. 4g
ø2.5	50 cm non-cutttable -40 to +70°C		R10	0~45	ø0.125		SP-256 Approx. 3g
	50 cm non-cutttable -40 to +70°C The casing is not bendable						SP-257 Approx. 3g
ø3	2m free cutting (ø2.2) -40 to +70°C		R25	0~3600	ø1		SP-26F Approx. 19g
	2 m free cutting (ø2.2) -40 to +50°C		R2 Bend-resistant	0~3600	ø1.13		SP-26FZ Approx. 19g

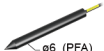
Reflective type

Size	Fiber element length (diameter) Ambient temperature	Shape(mm)	Bending radius(mm)	Detection distance(mm)	Smallest detectable object	Model / Weight
ø1.5	1 m non-cutttable -40 to +70°C		R10	0~27	ø0.005 Gold wire	SP-147 Approx. 2g
	1 m non-cutttable -40 to +70°C		R4 Highly elastic type	0~150		SP-150X Approx. 3g
ø2	1 m free cutting (ø1.0×2) -40 to +50°C		R2 Bend-resistant Highly elastic type	0~140		SP-150U Approx. 4g
ø2.5	50 cm non-cutttable -40 to +70°C		R25	0~72		SP-123X Approx. 4g
	2 m free cutting (ø1.3×2) SP-15F : -40 to +70°C SP-15FZ : -40 to +50°C			0~1100		SP-15F Approx. 8g
ø3	50 cm non-cutttable -40 to +70°C		R2 Bend-resistant	0~770		SP-15FZ Approx. 8g
	50 cm non-cutttable -40 to +70°C		R25	0~830		SP-124X Approx. 4g
	50 cm non-cutttable -40 to +70°C		R4	0~68		SP-146X Approx. 4g
	2 m free cutting (ø1.0×2) -40 to +70°C		R4 Highly elastic type	0~290		SP-149 Approx. 7g

Liquid level type

Detecting the liquid level in a transparent pipe requires only a fixed installation outside the pipe, without contact.

Reflective type

Detection method	Transparent pipe diameter	Beam axis	Fiber element length (diameter) Ambient temperature	Shape	Bending radius(mm)	Annexes	Model / Weight
Pipe-mounted type	ø4~ø26	1	2 m free cutting (ø1.0×2) SP-196 : -40 to +70°C SP-196Z : -40 to +50°C SP-196HA : -40 to +105°C *When fiber optic components are frequently used in high-temperature environments, a maximum ambient temperature of 90°C is recommended during operation.		R10	End strap×2 Anti-slip rubber×2 Gasket×2 Screw×2 Nut×2	SP-196 Approx. 7g
					R2 Bend-resistant		SP-196Z Approx. 7g
					R10		SP-196HA Approx. 7g
					R25		SP-196S Approx. 23g
Infiltration type	-	-	2 m free cutting (ø1.3×2) SP-194 : -40 to +70°C SP-194Z : -40 to +50°C		R25	-	SP-194 Approx. 78g
					R0.5 Bend-resistant		SP-194Z Approx. 78g



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Flat plate bracket type

Thin profile, the sensor comes with its own mounting holes for easy direct mounting where space is limited.

Through-beam type

Detection direction	Fiber element length (diameter) Ambient temperature	Shape(mm)	Bending radius(mm)	Detection distance(mm)	Optical axis diameter(mm)	Smallest detectable object	Model / Weight
Top	1 m free cutting (ø1.0) -40 to +50°C	 Thickness: 3	R2 Bend-resistant	0~810	ø0.5	ø0.005	SP-452TZ Approx. 5g
	2 m free cutting (ø1.3) -40 to +50°C	 Thickness: 3.5		0~2900	ø1		SP-453TZ Approx. 15g
Flat	1 m free cutting (ø1.0) -40 to +50°C	 Thickness: 2		0~500	ø0.5		SP-454TZ Approx. 10g
	2 m free cutting (ø2.2) -40 to +50°C	 Thickness: 4		0~2900	ø1		SP-455TZ Approx. 25g
	2 m free cutting (ø2.2) -40 to +50°C	 Thickness: 3.5		0~750	ø1.13		SP-457TZ Approx. 20g
Side	1 m free cutting (ø1.0) -40 to +50°C	 Thickness: 2.5		0~740	ø0.5		SP-458TZ Approx. 5g
	1 m free cutting (ø1.0) -40 to +70°C	 Thickness: 6		0~630	ø0.7		SP-458TE Approx. 5g

Reflective type

Detection direction	Fiber element length (diameter) Ambient temperature	Shape(mm)	Bending radius(mm)	Detection distance(mm)	Smallest detectable object	Model / Weight	
Flat	1 m free cutting (ø1.0×2) -40 to +50°C	 Thickness: 2	R2 Bend-resistant	0~120	ø0.005 Gold wire	SP-342TZ Approx. 5g	
	2 m free cutting (ø2.2×2) -40 to +50°C	 Thickness: 4		0~500		SP-343TZ Approx. 24g	
	2 m free cutting (ø2 x 2.2) -40 to +50°C	 Thickness: 4		0~120		SP-344TZ Approx. 22g	
Top	1 m free cutting (ø1.0×2) -40 to +50°C	 Thickness: 2		0~160		SP-345TZ Approx. 3g	
Side	1 m free cutting (ø1.0×2) -40 to +50°C	 Thickness: 2.5				SP-348TZ Approx. 4g	

Oil/chemical resistant type

The sensor is encapsulated in a carbon-oxygen resin cartridge.

Through-beam type

Type	Beam emission direction	Fiber element length (diameter) Ambient temperature	Shape(mm)	Minimum bending radius(mm)	Detection distance(mm)*1	Optical axis diameter(mm)	Model / Weight
Chemical resistant	Top	2 m free cutting (ø2.2) -40 to +70°C	 ø5	R40	0~3600	ø3.7	SP-893 Approx. 71g
		2 m free cutting (ø2.2) -40 to +70°C	 ø5.5			ø6	SP-899 Approx. 70g
	Side	2 m free cutting (ø2.2) -40 to +70°C	 ø5	R40		ø2.8	SP-897 Approx. 71g
		2 m free cutting (ø2.2) 0 to +60°C	 ø5 Thickness: 7	R25*2		ø3.7	SP-897T Approx. 35g
Oil resistant	Side	2m free cutting (ø2.2) -20 to +100°C	 ø4.5 Thickness: 7	R2 Bend-resistant		ø2.3	SP-881TZ Approx. 30g
		2 m free cutting (ø2.2) -20 to +100°C	 ø5 Thickness: 7			ø4.3	SP-881MTZ Approx. 55g

*1 When using the SP series, the cable length is 2m, so "3600mm" is the maximum value.
*2 The optical fiber must not be bent within 25mm of the end of the fixing screw cap.

*3 For continuous use, use within the range of -40 to +130°C.
*4 The optical fiber is 2m long on one side, so the length is 4000mm.

Reflective type

Type	Beam emission direction	Fiber element length (diameter) Ambient temperature	Shape(mm)	Minimum bending radius(mm)	Detection distance(mm)*1	Standard objectives to be tested	Model / Weight
Oil / chemical resistant	Top	2 m free cutting (ø1.3×2) -40 to +70°C	 ø1.5	R40	0~310	—	SP-792 Approx. 32g
		2 m free cutting (ø1.3×2) -40 to +60°C	 Thickness: 9.6 (ø4.1 width of mounting hole support surface)		0~20	200×200mm t=0.7mm Glass substrate	SP-798P Approx. 75g
		2 m free cutting (ø1.3×2) -40 to +85°C	 Thickness: 9				SP-798S Approx. 90g

*1 When using the SP series: Standard target object: White matte paper (reflective type only).

The front part is thin and side-view type is available, which makes it easier to install in places with limited space.

Detection direction	Fiber element length (diameter) Ambient temperature	Shape(mm)	Bending radius(mm)	Detection distance(mm)	Optical axis diameter(mm)	Smallest detectable object	Model / Weight	
Side	1 m free cutting (ø1.3) -40 to +70°C		The casing is not bendable	R25	0~520	ø0.6	ø0.005	SP-233 Approx. 5g
	2 m free cutting (ø2.2) -40 to +70°C		Minimum bending radius of casing: R25		0~1600	ø1		SP-235 Approx. 17g
Top	2 m free cutting (ø2.2) -40 to +70°C		Minimum bending radius of casing: R10	R10	0~3600			ø0.5
	1 m free cutting (ø1.0) -40 to +70°C		The casing is not bendable		0~690	SP-276F Approx. 10g		
	50 cm non-cutttable -40 to +70°C		The casing is not bendable		0~45	ø0.125	SP-257 Approx. 3g	

Detection direction	Fiber element length (diameter) Ambient temperature	Shape(mm)	Bending radius(mm)	Detection distance(mm)	Smallest detectable object	Model / Weight
Coaxial narrow beam 10°	50 cm non-cuttable -40 to +70°C	 The casing is not bendable	R25	0~72	ø0.005 Gold wire	SP-123X Approx. 4g
Side	2 m free cutting (ø1.0×2) -40 to +70°C	 The casing is not bendable	R10	0~180		SP-132 Approx. 5g
	1 m free cutting (ø2.2×2) -40 to +70°C	 Minimum bending radius of casing: R25	R25	0~320		SP-134 Approx. 10g
Top	2 m free cutting (ø1.3×2) -40 to +70°C	 The casing is not bendable				0~330
	50 cm non-cuttable -40 to +70°C	 The casing is not bendable	R4	0~68		SP-146X Approx. 4g
	1 m non-cuttable -40 to +70°C	 The casing is not bendable	R10	0~27		SP-147 Approx. 2g
	1 m free cutting (ø1.0) -40 to +70°C	 The casing is not bendable		0~390		SP-277F Approx. 10g
	2 m free cutting (ø1.3×2) -40 to +70°C	 Minimum bending radius of casing: R10	R25	0~330		SP-164 Approx. 10g
	2 m free cutting (ø1.3×2) -40 to +70°C	 Minimum bending radius of casing: R10				SP-164T Approx. 10g
	2 m free cutting (ø1.3×2) -40 to +50°C	 Minimum bending radius of casing: R10	R2 Bend-resistant	0~290		SP-164Z Approx. 10g
	50 cm non-cuttable -40 to +70°C	 The casing is not bendable	R4	0~68	SP-166X Approx. 5g	

Long range, narrow beam makes the beam more focused.

Detection direction	Opening angle	Fiber element length (diameter) Ambient temperature	Shape(mm)	Bending radius(mm)	Detection distance(mm)	Optical axis diameter(mm)	Model / Weight
Side	Approx. 2°	2 m free cutting (ø1.0) SP-217Z -40 to +50°C SP-217 / 219 -20 to +70°C		R10	0~3600	ø2.5	SP-219 Approx. 8g
	Approx. 6°		R2	SP-217 Approx. 8g			
	Approx. 3°	2 m free cutting (ø1.0) -20 to +70°C		R10			SP-217Z Approx. 8g
Top	Approx. 6°	2 m free cutting (ø1.0) -20 to +50°C		R2 Bend-resistant		ø2.8	SP-251 Approx. 8g

Detection direction	Bore angle	Fiber element length (diameter) Ambient temperature	Shape(mm)	Bending radius(mm)	Detection distance(mm)	Smallest detectable object	Model / Weight
Top	Approx. 8°	2 m free cutting (ø2.2) -40 to +50°C	Thickness: 5.2	R2 Band-resistant	0~2300	ø0.3 Copper wire (vertical)	SP-141 Approx. 23g
		1 m non-cuttable (ø1.0) -40 to +50°C	Thickness: 5.2	R10 Stainless steel	0~2700		SP-141G Approx. 50g



High elasticity type

Manufactured from fiber optic cable materials that are elastic and flexible and can be bent repeatedly up to tens of millions of times.

Through-beam type

Size	Fiber element length (diameter) Ambient temperature	Shape(mm)	Bending radius(mm)	Detection distance(mm)	Optical axis diameter(mm)	Smallest detectable object	Model / Weight
ø1.5	1 m free cutting (ø1.0) -40 to +70°C		R4 Highly elastic type	0~1200	ø0.7	ø0.005	SP-260 Approx. 3g
M3	1 m free cutting (ø1.0) -40 to +70°C						SP-280 Approx. 6g
ø1.0	1 m free cutting (ø1.0) -40 to +50°C						SP-259U Approx. 4g
ø1.5	1 m free cutting (ø1.0) -40 to +50°C		R2 Bend-resistant Highly elastic type	0~590	ø0.5		SP-260U Approx. 4g
M3	1 m free cutting (ø1.0) -40 to +50°C						SP-280U Approx. 5g
M4	1 m free cutting (ø1.0) -40 to +50°C					R1 Bend-resistant	0~1800
	2 m free cutting (ø1.0) -40 to +50°C		0~3600	SP-271TU Approx. 5g			

Reflective type

Size	Fiber element length (diameter) Ambient temperature	Shape(mm)	Bending radius(mm)	Detection distance(mm)	Smallest detectable object	Model / Weight
ø3	2 m free cutting (ø1.0×2) -40 to +70°C		R4 Highly elastic type	0~290	ø0.005 Gold wire	SP-149 Approx. 7g
M4	2 m free cutting (ø1.0×2) -40 to +70°C					SP-169 Approx. 8g
ø3	1 m free cutting (ø1.0×2) -40 to +50°C		R2 Bend-resistant Highly elastic type	0~140		SP-149U Approx. 4g
ø2	1 m free cutting (ø1.0×2) -40 to +50°C					SP-150U Approx. 4g
M3	1 m free cutting (ø1.0×2) -40 to +50°C					SP-170U Approx. 4g
ø1.5	1 m non-cuttable -40 to +70°C		R4 Highly elastic type	0~150		SP-150X Approx. 3g
M3	1 m non-cuttable -40 to +70°C					SP-170X Approx. 3g

Regional type

It can detect objects in a certain area range, and the width of the detection area can be up to 15mm or more.

Through-beam type

Detection method	Optical axis width	Fiber element length (diameter) Ambient temperature	Shape(mm)	Bending radius(mm)	Detection distance(mm)	Optical axis diameter(mm)	Model / Weight	
Region	10	2m free cutting (ø2.2) -40 to +50°C		R2 Bend-resistant	0~3600	10×3 (with 1.0mm wide seam allowance)	SP-A223 Approx. 23g	
	11	2 m free cutting (ø2.2) -40 to +50°C				11×2	SP-E212 Approx. 20g	
	40	2 m free cutting (ø2.2) -40 to +50°C				40×3	SP-E241 Approx. 30g	
Array	5	2 m free cutting (ø2.2) -40 to +70°C		R4	0~3600	Approx. 6×0.3	SP-A206 Approx. 20g	
	10	2 m free cutting (ø2.2) -40 to +70°C				Approx. 11×0.3	SP-A201 Approx. 20g	
	40	2 m free cutting (except spiral section 50 mm) -20 to +50°C		R10		Approx. 40×0.25	SP-A241 Approx. 70g	
	100	2 m free cutting (except spiral section 50 mm) -20 to +50°C				Approx. 100×0.25	SP-A2100 Approx. 110g	

Reflective type

Detection method	Width of optical point	Fiber element length (diameter) Ambient temperature	Shape(mm)	Bending radius(mm)	Detection distance(mm)	Smallest detectable object	Model / Weight
Region	15 (Distance is 15)	2 m free cutting (ø2.2) -40 to +70°C		R25	0~200	ø0.1 Gold wire	SP-112 Approx. 19g
Array	10 (Distance is 4)	2 m free cutting (ø2.2×2) -40 to +70°C	 Thickness: 4.0	R4	0~1200		SP-A106D Approx. 20g
	15 (Distance is 4)	2 m free cutting -40 to +70°C	 Thickness: 4.0				SP-A111D Approx. 20g



Heat-resistant type

The sensors are heat resistant from 100°C to 500°C.

Through-beam type

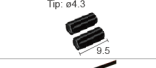
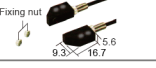
Heat-resistant temperature	Fiber element length (diameter) Ambient temperature	Shape(mm)	Bending radius(mm)	Detection distance(mm)	Optical axis diameter(mm)	Smallest detectable object	Model / Weight
100℃	2 m free cutting (ø2.2) -40 to +100℃		R5 Bend-resistant	0~3600	ø1	ø0.005	SP-687Z Approx. 25g
105℃	2 m free cutting (ø2.2) -40 to +105℃		R25				SP-687A Approx. 22g
150℃	2 m free cutting (ø2.2) -40 to +150℃		R20	0~2700	ø1.5		SP-687H Approx. 35g
180℃	2 m free cutting (ø2.2) -60 to +180℃		R35				SP-689 Approx. 36g
300℃	2 m non-cuttable -40 to +300℃		R25	0~1800	ø1		SP-685C Approx. 66g
	2 m non-cuttable -40 to +300℃						SP-685TZC Approx. 43g
	2 m non-cuttable -40 to +300℃						SP-685TZC-6 Approx. 43g

Reflective type

Heat-resistant temperature	Fiber element length (diameter) Ambient temperature	Shape(mm)	Bending radius(mm)	Detection distance(mm)	Smallest detectable object	Model / Weight
350℃	1 m non-cuttable -30 to +350℃	 Minimum bending radius of casing: R10	R25	0~650	ø0.005 Gold wire	SP-582C Approx. 24g
300℃	1 m non-cuttable -40 to +300℃	 Minimum bending radius of casing: R10		0~770		SP-583C Approx. 29g
	1 m non-cuttable -40 to +300℃	 Minimum bending radius of casing: R10				SP-584C Approx. 23g
	2 m non-cuttable -40 to +250℃	 Minimum bending radius of casing: R10				SP-584TZC Approx. 22g
	1 m non-cuttable -40 to +250℃	 Minimum bending radius of casing: R10				SP-584TZC-6 Approx. 22g
250℃	2 m free cutting (ø2.2×2) -40 to +105℃	 Thickness: 5		0~86		SP-139LK Approx. 70g
	1 m non-cuttable -40 to +200℃	 Thickness: 5		0~150		SP-139K Approx. 45g
105℃	2 m free cutting (ø2.2×2) -40 to +150℃	 Minimum bending radius of casing: R8	R8	0~1100		SP-586A Approx. 21g
200℃	2 m free cutting (ø2.2×2) -40 to +100℃	 Minimum bending radius of casing: R8	R8	0~790		SP-588K Approx. 15g
150℃	2 m free cutting (ø2.2×2) -60 to +180℃	 Minimum bending radius of casing: R20	R20	0~720	SP-586H Approx. 35g	
100℃	2 m free cutting (ø2.2×2) -40 to +180℃	 Minimum bending radius of casing: R5	R5 Bend-resistant	0~740	SP-586Z Approx. 25g	
180℃		 Minimum bending radius of casing: R35	R35	0~860	SP-588 Approx. 33g	
		 Minimum bending radius of casing: R35		0~150	SP-139H Approx. 45g	

Focus lens

Through-beam type (Detection distance when using a light-transmitting lens)

Type	Ambient temperature	Shape(mm)	Model / Weight	Detection distance(mm)	Applicable fiber optics
Long detection distance type Aperture angle: Approx. 15°	-40 to +300°C		Economy type P-22 Approx. 2g High-performance type P-41 Approx. 2g	0~3600	SP-278TZ/278V/278/285C/289K
				0~1800	SP-28F SP-287A/SP-287Z/279
Ultra-long detection distance type Aperture angle: Approx. 8°	-40 to +70°C		P-24 Approx. 1g	0~3600	SP-278TZ/278V/278
				0~1800	SP-28F SP-279
Side view type with mounting holes	-40 to +105°C		P-25 Approx. 10g	0~3600	SP-278V/278 SP-28F/288A
				0~1800	SP-287Z SP-279



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Focus lens

Reflective type

Small spot type (lens + fiber optic element)

Type	Spot diameter	Focal length	Lens			Fiber optic components			
			Model / Weight	Ambient temperature	Shape(mm)	Bending radius(mm)		Model	
Small light spot	Approx. ø0.2	7±2	Economy type P-12HA Approx. 1g	-30 to +70°C	 Tip: ø3.3 15.6 P-12HA	R25		SP-122X	
	Approx. ø0.1					R10		SP-125X	
						Approx. ø0.4	R25		SP-136FA
	High-performance type P-33HA Approx. 1g							 Tip: ø4 15 P-33HA	R10 Stainless steel
			R2 Bend-resistant		SP-136FZ				
			R10 Stainless steel		SP-136TG				
			R2 Bend-resistant		SP-136TZ				

Small spot type (lens + fiber optic element)

Type	Spot diameter	Focal length	Lens			Fiber optic components		
			Model / Weight	Ambient temperature	Shape(mm)	Bending radius(mm)		Model
Small light spot	Approx. ø0.5	15±2	P-14HA Approx. 2g	-30 to +70°C	 Tip: ø7.4 27 P-14HA	R25		SP-136FA
						R10 Stainless steel		SP-136FG
						R2 Bend-resistant		SP-136FZ
						R10 Stainless steel		SP-136TG
	Approx. ø1.0	35±3	P-16HA Approx. 5g	-40 to +70°C	 Tip: ø10.6 26 P-16HA	R2 Bend-resistant		SP-136TZ
						R25		SP-122X
						R10 Stainless steel		SP-136FG
						R2 Bend-resistant		SP-136FZ

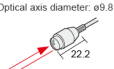
Lens + fiber optic element

Type	Spot diameter	Focal length	Lens			Fiber optic components		
			Model / Weight	Ambient temperature	Shape(mm)	Bending radius(mm)	Shape	Model
Slide-view adjustable light point	ø0.5~3	8~30	P-15HA Approx. 2g	-30 to +70°C		R25		SP-136FA
						R10 Stainless steel		SP-136FG
						R2 Bend-resistant		SP-136FZ

Parallel spot (lens + fiber optic element)

Type	Spot diameter	Model/Weight	Lens			Fiber optic components		
			Ambient temperature	Shape(mm)		Bending radius(mm)	Detection distance(mm)	Shape
Parallel beam type	Approx. ø4 spot diameter (Detection distance within 0~20)	P-13HA Approx. 2g	-30 to +70°C	 Tip: ø4.3 9.5 P-13HA	R25	0~65		SP-136FA
					R10 Stainless steel	0~45		SP-136FG
					R2 Bend-resistant	0~45		SP-136FZ
					R10 Stainless steel	0~40		SP-136TG
					R2 Bend-resistant	0~40		SP-136TZ

High temperature resistant ultra-long distance lens

Type	Ambient temperature	Shape(mm)	Model / Weight	Detection distance(mm)	Applicable fiber optics
High temperature resistant ultra long distance lens ^{*1}	-60°C to +350°C	 Optical axis diameter: ø9.8 22.2 P-615-3	Approx. 20g	0~3600	SP-278TZ/278V/278/279
					SP-689/687Z/687A/687H
				0~1600	SP-28F
					SP-685C/SP-584C

^{*1} When a lens is mounted on a transmission type optical fiber for use, the light will be narrowed, so use it after fully adjusting the optical axis.



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"Stability" and "Ease of Use"



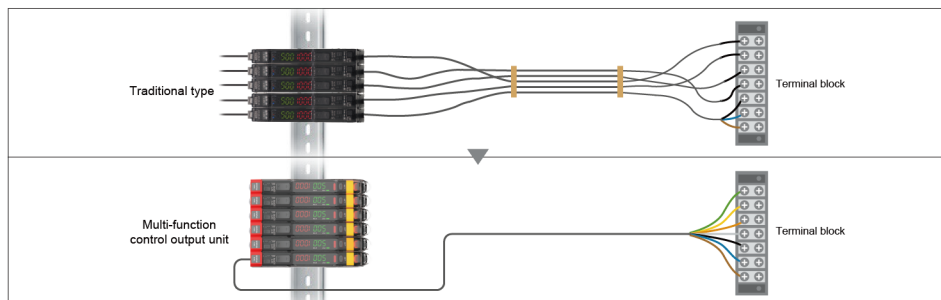
Effective reduction of total cost of ownership (with cascade function)

Simplify wiring and cabling by reducing the number of man-hours required for start-up, operation and maintenance.



Reducing the number of cables

In the past, the optical fiber was in the front and the power supply cable was in the back, and space was required in both the front and back. By using a multi-function control output unit, the cables can be brought together at the front of the amplifier, thus saving space.



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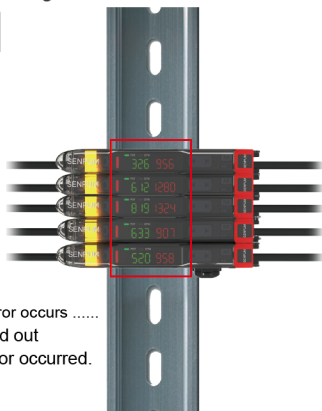
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Quickly identify anomalous values

Easier identification of error occurrences with the FX-N10 series

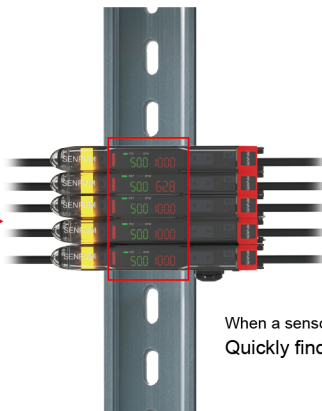
By uniformly setting the display of light intensity received by multiple sensors to "100" and "0", it is easier to recognize when an abnormal value occurs.

Traditional



When a sensor error occurs
It is difficult to find out
which sensor error occurred.

FX-N10

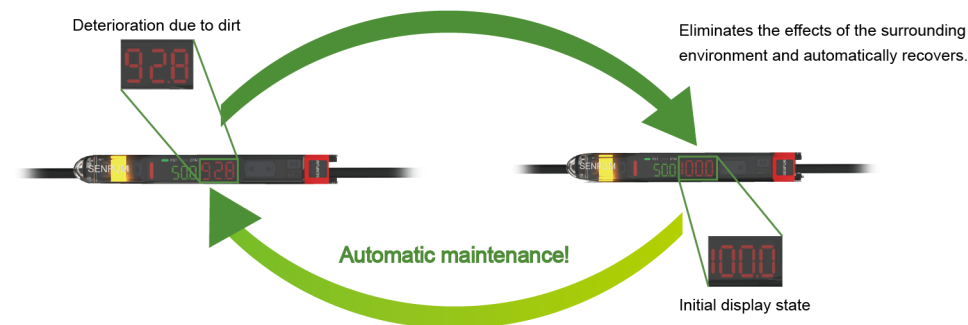


When a sensor error occurs
Quickly find out to the error!

Automatic maintenance

DATUM

The sensor automatically detects if the light is degraded by dirt and automatically recalibrates to the original display.



Amplifier device



Connection cable type

Type		Model		Control outputs	External inputs
		NPN output	PNP output		
Standard	Main module	FX-N18N	FX-N18P	1	1
	Main module	FX-N11N	FX-N11P		
	Expansion module	FX-N12N	FX-N12P		
Dual outputs	Main module	FX-N13N	FX-N13P	2	1
	Expansion module	FX-N14N	FX-N14P		
Zero line type	Expansion module	FX-N10 (No output; NPN/PNP not distinguished)			—
Analog Output Type	Main module	FX-N11MN	FX-N11MP	1	1



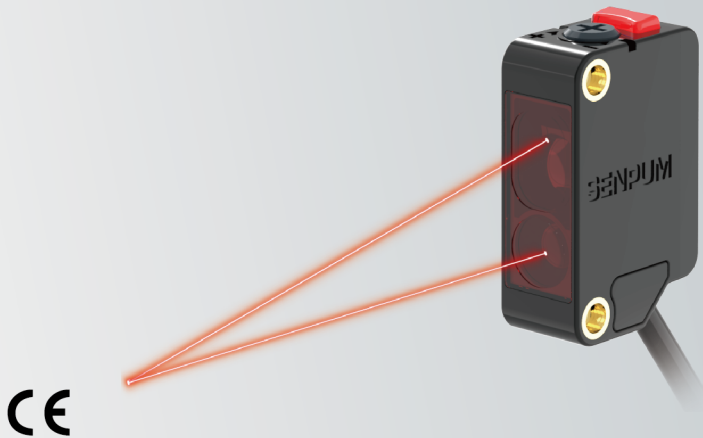
M8 connector type

Type	Model	Control outputs		External inputs
		NPN output	PNP output	
Standard	Main module	FX-N11CAN	FX-N11CAP	1
	Expansion module	FX-N12CAN	FX-N12CAP	
Dual outputs	Main module	FX-N13CAN	FX-N13CAP	2
	Expansion module	FX-N14CAN	FX-N14CAP	

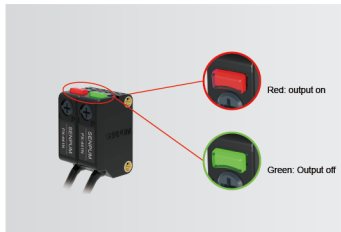
Cable (M8 connector type option)

Appearance	Sensor side	Cable termination	Length	Model	Adaptive amplifier body
	M8 GPN straight	Loose wire	2m**	OW-FXN001	FX-N11CAN
				OW-FXN002	FX-N12CAN
				OW-FXN003	FX-N13CAN
				OW-FXN004	FX-N13CAN

*1. The standard cable length is 2m, if you need other cable length can be customized, such as 5m cable length model OW-FXN001-5M

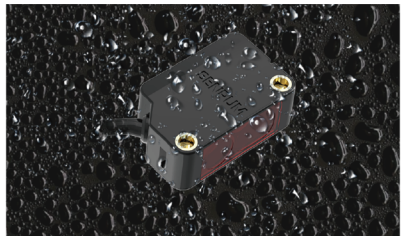


High definition indicator

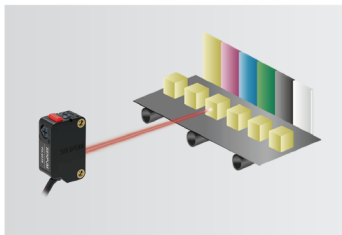


High protection class IP67

Even if the surface of the sensor head is contaminated with some dust or stains and other minor impurities, the accuracy of the detection distance can be better maintained, and the housing has an IP67 protection level to ensure the reliability of the detection.



Stable detection performance



Less than 1ms response time

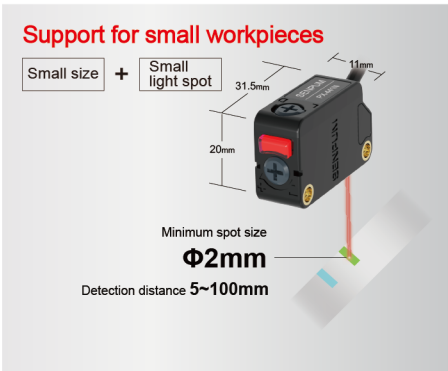
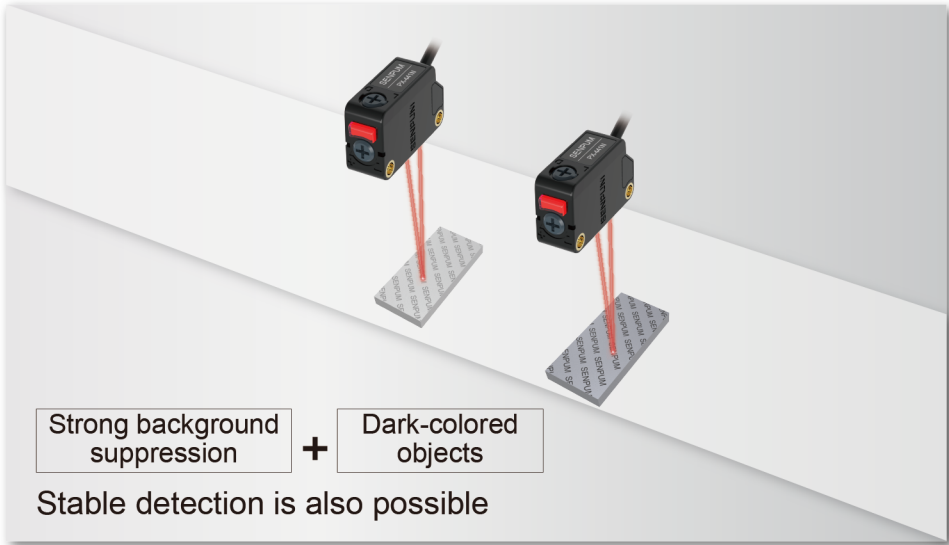


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Strong background suppression



Product list

Cable type

Type	Appearance	Detection distance(mm)	Spot size (mm)	Output method	Model
Small spot type		5~100	Approx. Φ5mm (at 100mm)	NPN	PX-441N
				PNP	PX-441P
Standard		10~300	Approx. Φ24mm (at 300mm)	NPN	PX-442N
				PNP	PX-442P
Infrared type		20~400	-	NPN	PX-450MN
				PNP	PX-450MP

Cable (sold separately)

Appearance	Sensor side	Cable Termination	Cable length	Model
	M8 4PIN Straight	Loose wires	2m	OW-PX2000
			5m	OW-PX5000
			10m	OW-PX10M
			20m	OW-PX20M

Relay-type

Type	Appearance	Detection distance(mm)	Spot size (mm)	Output method	Model
Small spot type		5~100	Approx. Φ5mm (at 100mm)	NPN	PX-441CAN
				PNP	PX-441CAP
Standard		10~300	Approx. Φ24mm (at 300mm)	NPN	PX-442CAN
				PNP	PX-442CAP
Infrared type		20~400	-	NPN	PX-450MCAN
				PNP	PX-450MCAP



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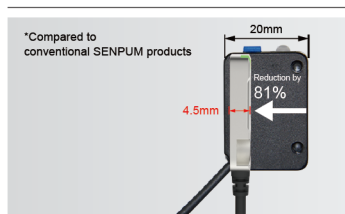
Photoelectric

Ultra-compact Photoelectric Sensors

PL-F Series



Ultra-thin



Ultra-small

Unique design and technology have been used to achieve extremely small dimensions with guaranteed performance, meeting the needs of applications in space-constrained environments.



High protection class IP67



Easy to use

With standard mounting dimensions and easy operation, they are equipped with multi-angle indicators for easy visualization in different mounting orientations, and some models have integrated L/Don outputs to reduce the number of spare parts.



Rugged and durable

Adopting SUS316L sturdy body, it has high impact resistance and anti-interference ability, and can adapt to the harsh working environment.



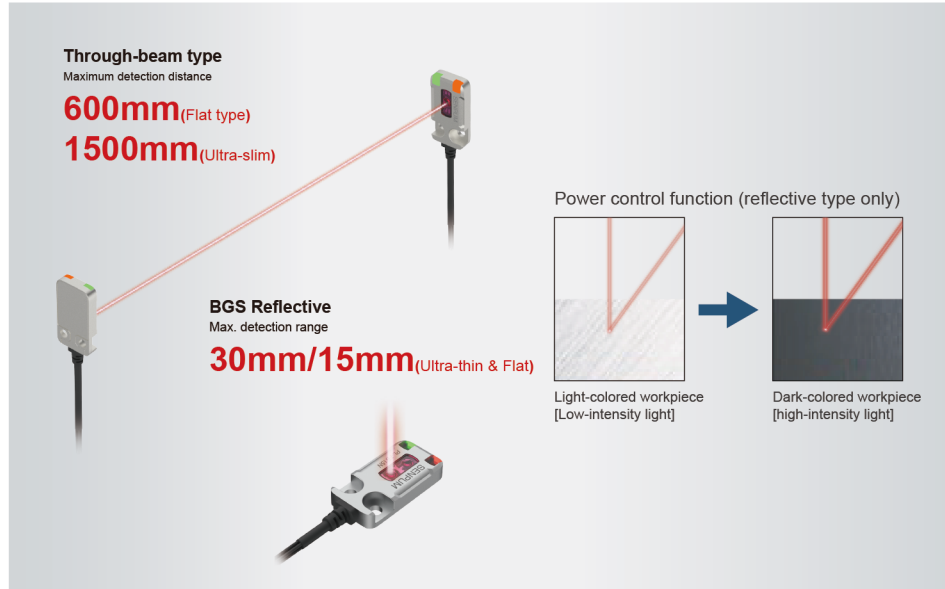
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Stabilized detection

Background suppression (BGS) / Automatic interference prevention.



Product list

Cable type

Type	Appearance	Detection range	Model	
			NPN	PNP
Through-beam		1500mm	PL-M51N	PL-M51P
	Ultra-slim			
BGS Reflection		1~15mm	PL-MB15N	PL-MB15P
	Ultra-slim	1~30mm	PL-MB30N	PL-MB30P
Through-beam	Flat type	600mm	PL-F51N	PL-F51P
BGS Reflection		1~15mm	PL-FB15N	PL-FB15P
	Flat type	1~30mm	PL-FB30N	PL-FB30P

Cable (sold separately)

Appearance	Sensor side	Cable Termination	Cable length	Model
	M8 4PIN straight	Loose wires	3M	OW-PL3000
			5M	OW-PL5000

Relay-type

Type	Appearance	Detection range	Model	
			NPN	PNP
Through-beam		1500mm	PL-M51CAN	PL-M51CAP
	Ultra-slim			
BGS Reflection		1~15mm	PL-MB15CAN	PL-MB15CAP
	Ultra-slim	1~30mm	PL-MB30CAN	PL-MB30CAP
Through-beam	Flat type	600mm	PL-F51CAN	PL-F51CAP
BGS Reflection		1~15mm	PL-FB15CAN	PL-FB15CAP
	Flat type	1~30mm	PL-FB30CAN	PL-FB30CAP

Fiber Optics

Photoelectric / Proximity

Color

Laser

Safety

Position Contact / Contact / Proximity

Linear Displacement / Micro-switch

AI Vision / Barcodes

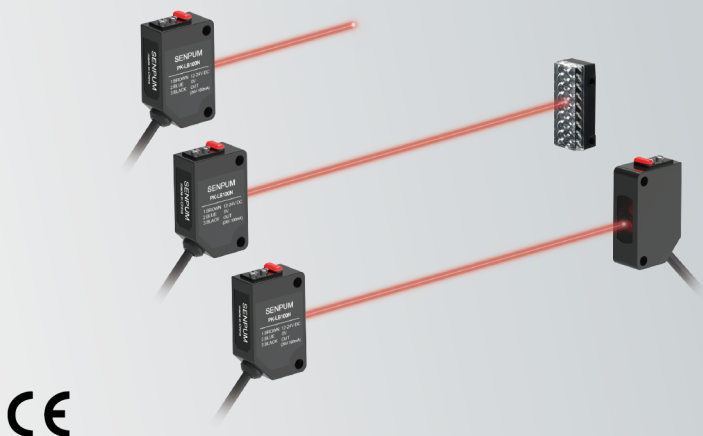
Temperature / Flow Rate

Static

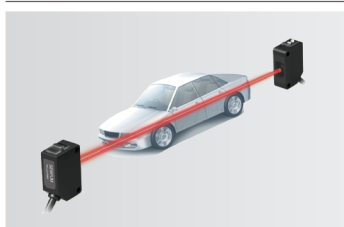


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PK-L Series

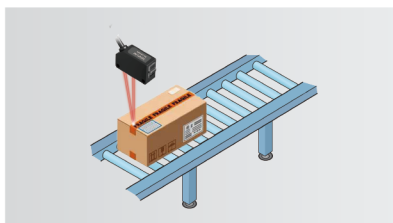


The maximum distance is 15m



Optical system specially designed for easy and stable detection

High grayscale LEDs enable long-distance detection and are easy to align and adjust.



Product list

Type	Appearance	Detection range	Wiring Method	Model	
				NPN	PNP
Reflective	 2m cable	 1m	2m cables	PK-LB100N	PK-LB100P
	 M8 Connector		M8 Connector	PK-LB100CN	PK-LB100CP
	 2m cable	 300mm	2m cables	PK-LC030N	PK-LC030P
	 M8 Connector		M8 Connector	PK-LC030CN	PK-LC030CP
Retro-reflective	 2m cable	 3m	2m cables	PK-LR300N	PK-LR300P
	 M8 Connector		M8 Connector	PK-LR300CN	PK-LR300CP
Opposite-facing type	 2m cable	 10m	2m cables	PK-LD10MN	PK-LD10MP
	 M8 Connector		M8 Connector	PK-LD10MCN	PK-LD10MCP
	 2m cable	 15m	2m cables	PK-LD15MN	PK-LD15MP
	 M8 Connector		M8 Connector	PK-LD15MCN	PK-LD15MCP

Cable (sold separately)

Type	Appearance	Material	cable	Model
Straight		PVC	2m	OW-PK-008M-04
L-shaped				OW-PK-008ML-04



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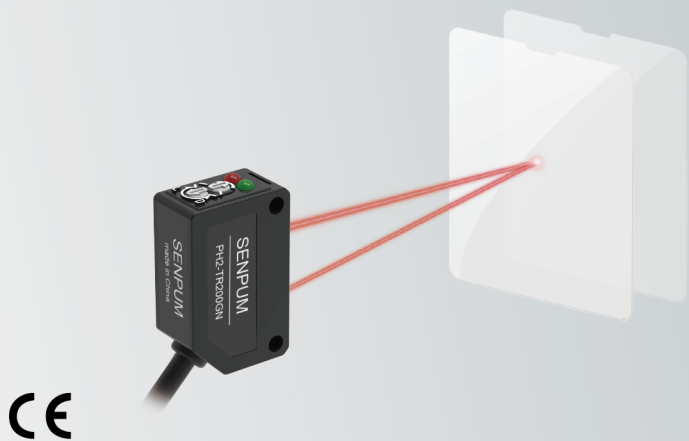
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S019

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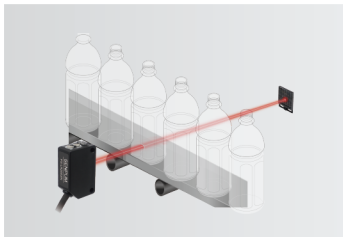
Photoelectric

Transparent Detection Type Photoelectric Sensor

PH2-T Series

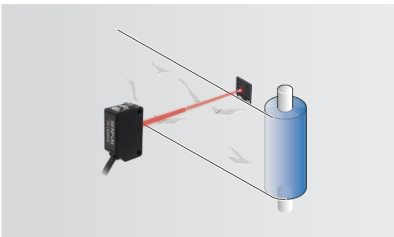


High quality LED light source



Enhanced transparent detection type

With no blind spots in the sensor area, this model is ideal for detecting transparent objects with different shapes, sizes, and contours that are not fixed in position on the conveyor belt.



Product list

Type	Appearance	Detection distance	Spot size	Output type	Model
Regressive reflective type	Standard	 0.01~2m	Opaque and transparent objects	NPN	PH2-TR200GN
				PNP	PH2-TR200GP
	Enhanced	 0~2m		NPN	PH2-TR200SN
				PNP	PH2-TR200SP

Fiber Optics

Photoelectric \ Proximity

Color

Laser

Safety

Precision Contact / Contactless Displacement

Laser Displacement / Microscope

AI Vision \ Barcodes

Temperature \ Flow Rate

Static



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Proximity High Performance Proximity Sensor

DH / DH2 Series



Rugged metal housing

Excellent locking strength

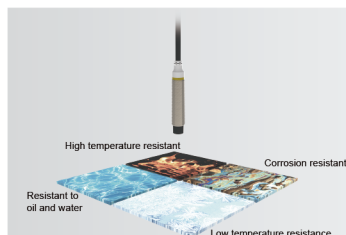


High quality IC

Adopting high quality IC,
high stability circuit,
excellent anti-interference.



Supports a wide range of workpiece inspection



High protection class IP67

Strong resistance to oil
mist, in the humid, dusty
and complex environment
can still be stable and
accurate detection.



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DH/DH2 product list



Ordering
Example

Please follow the selection steps 1-4 to select the model and parameters and then place an order
Model(DH-M005CP-L1.2)
① Main model ② Output type (-: Normally open/C: Normally closed)
③ Output signal (-: NPN/P: PNP) ④ Detection distance (mm)

DH series

Detection distance(mm)	Type	Dimensions(mm)	Model	
1.2	3-core standard type	 ø2.9	DH-004*	
		 ø2.9	DH-M005*	
2		 ø3.8	DH-M008*	
4		 ø3.8	DH-U008*	
		 ø4.8	DH-M012*	
8		 ø4.8	DH-U012*	
		 ø4.8	DH-M018*	
16		 ø4.8	DH-U018*	
15		 ø4.8	DH-M030*	
30		 ø4.8	DH-U030*	
2	3-pore connector type	 ø3.8	DH-EM008*	
4		 ø3.8	DH-EU008*	
		 ø4.8	DH-EM012*	
8		 ø4.8	DH-EU012*	
		 ø4.8	DH-EM018*	
16		 ø4.8	DH-EU018*	
15		 ø4.8	DH-EM030*	
30		 ø4.8	DH-EU030*	
2		3-core relay type	 ø3.8	DH-CM008*
4			 ø3.8	DH-CU008*
	 ø4.8		DH-CM012*	
8	 ø4.8		DH-CU012*	
	 ø4.8		DH-CM018*	
16	 ø4.8		DH-CU018*	
15	 ø4.8		DH-CM030*	
30	 ø4.8		DH-CU030*	

- * For more products and applications, please consult SENPUM engineers;
- * Through on-site operation guidance and after-sales technical support, we provide customers with full support from product selection to production line operation.

DH2 series

Detection distance(mm)	Type	Dimensions(mm)	Model	
2	2-core standard type		DH2-M008*	
4			DH2-U008*	
		M12×P1		DH2-M012*
			DH2-U012*	
8		M18×P1		DH2-M018*
				DH2-U018*
15		M30×P1.5		DH2-M030*
30				DH2-U030*
2	2-pore connector type		DH2-EM008*	
4			DH2-EU008*	
		M12×P1		DH2-EM012*
			DH2-EU012*	
8		M18×P1		DH2-EM018*
				DH2-EU018*
15		M30×P1.5		DH2-EM030*
30				DH2-EU030*
2		2-core relay type		DH2-CM008*
4				DH2-CU008*
	M12×P1			DH2-CM012*
			DH2-CU012*	
8	M18×P1			DH2-CM018*
				DH2-CU018*
15	M30×P1.5			DH2-CM030*
30				DH2-CU030*

Fiber Optics

Photoelectric \ Proximity

Color

Laser

Safety

Proximity Contact / Contact Type Displacement

Limit Displacement / Micro-switch

AI Vision \ Barcodes

Temperature \ Flow Rate

Static

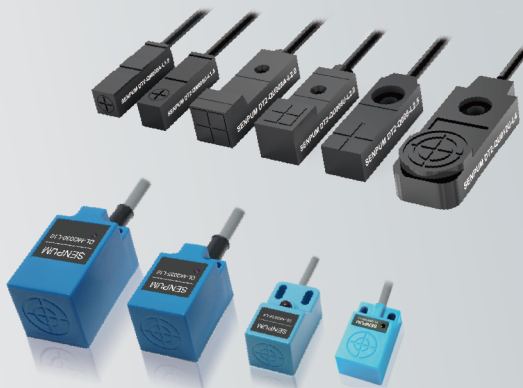


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Proximity

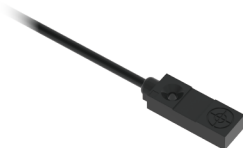
Ultra-compact Square Proximity Sensor

DT2-Q / DL-Q Series



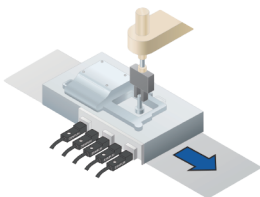
Ultra-compact square design for easy installation;
the thinnest model is just 5.5 mm thick

Easy to install—just one screw is all it takes to secure it firmly

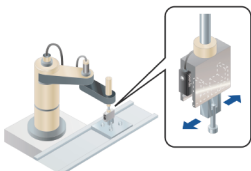


Detecting metal presence, limit switches, etc.

Detecting out-of-limit movement of the workbench



Confirmation of robotic arm-assisted movement



Square shape, minimum
dimensions 18 x 18 mm

Ultra-compact size, saving installation space



The status indicator is clearly visible



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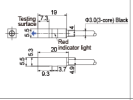
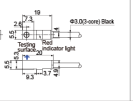
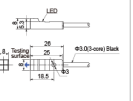
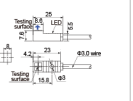
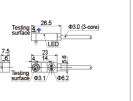
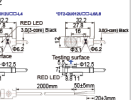
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Specifications (Detection Range)

- Each product offers a variety of detection distances to choose from. For example: L1 indicates a detection distance of 1 mm; L6 indicates a detection distance of 6 mm.

Order	Model Number	Detection range	Ordering Number
Order Examples	DT2-QU005A	L1.5	DT2-QU005A-L1.5

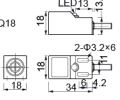
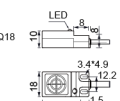
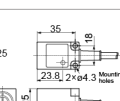
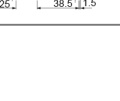
Type	Dimensions (mm)	Detection range (mm)	Output Type	Model Number	
				Normally open	Normally closed
Non-flush type		1.5	NPN	DT2-QU005A	DT2-QU005AC
			PNP	DT2-QU005AP	DT2-QU005ACP
		1.5	NPN	DT2-QU005U	DT2-QU005UC
			PNP	DT2-QU005UP	DT2-QU005UCP
		2.0	NPN	DT2-QU008A	DT2-QU008AC
			PNP	DT2-QU008AP	DT2-QU008ACP
		2.0	NPN	DT2-QU008U	DT2-QU008UC
			PNP	DT2-QU008UP	DT2-QU008UCP
		2.5	NPN	DT2-QU008	DT2-QU008C
			PNP	DT2-QU008P	DT2-QU008CP
		4.0	NPN	DT2-QU012U	DT2-QU012UC
			PNP	DT2-QU012UP	DT2-QU012UCP

*1. Custom production is available to meet special requirements

Specifications (Detection Range)

- Each product offers a variety of detection distances to choose from. For example: L1 indicates a detection distance of 1 mm; L6 indicates a detection distance of 6 mm.

Order	Model Number	Detection range	Ordering Number
Order Examples	DL-QM018	L5	DL-QM018-L5

Type	Dimensions (mm)	Detection range (mm)	Output Type	Model Number	
				Normally open	Normally closed
Flush type		5.0	NPN	DL-QM018	DL-QM018C
Non-flush type			PNP	DL-QM018P	DL-QM018CP
Non-flush type		8.0	NPN	DL-QU018	DL-QU018C
			PNP	DL-QU018P	DL-QU018CP
Flush type		5.0	NPN	DL-QM018M	DL-QM018MC
Non-flush type			PNP	DL-QM018MP	DL-QM018MCP
Non-flush type		8.0	NPN	DL-QU018M	DL-QU018MC
			PNP	DL-QU018MP	DL-QU018MCP
Flush type		10.0	NPN	DL-QM025	DL-QM025C
Non-flush type			PNP	DL-QM025P	DL-QM025CP
Non-flush type		15.0	NPN	DL-QU025	DL-QU025C
			PNP	DL-QU025P	DL-QU025CP



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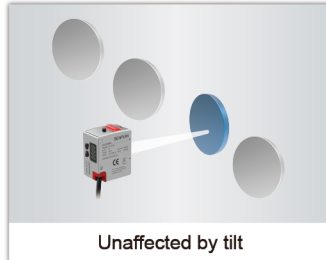
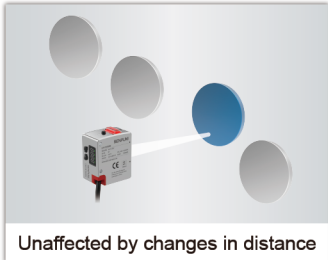
Color

Intelligent White Light Color Sensor

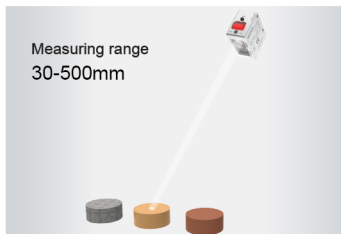
LA2-W Series



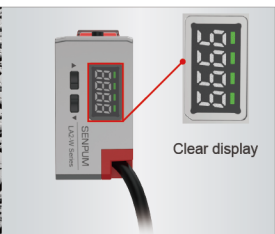
Unaffected by changes in state or distance



Detectable from a distance, superb numerical stability



Rugged and easy to use



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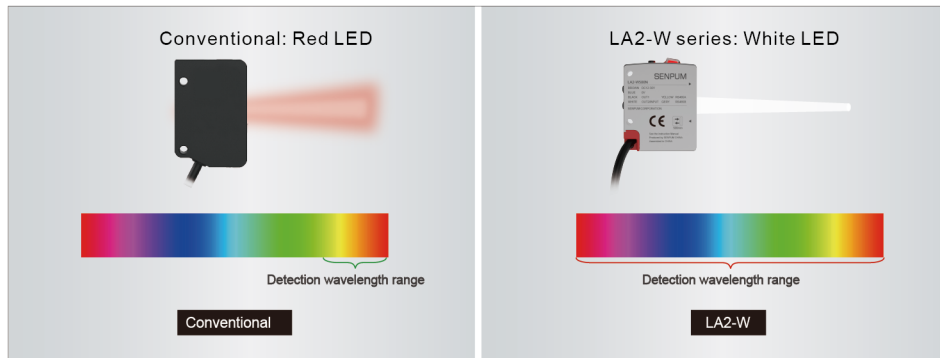
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S025

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Stable detection of appearance (color) differences

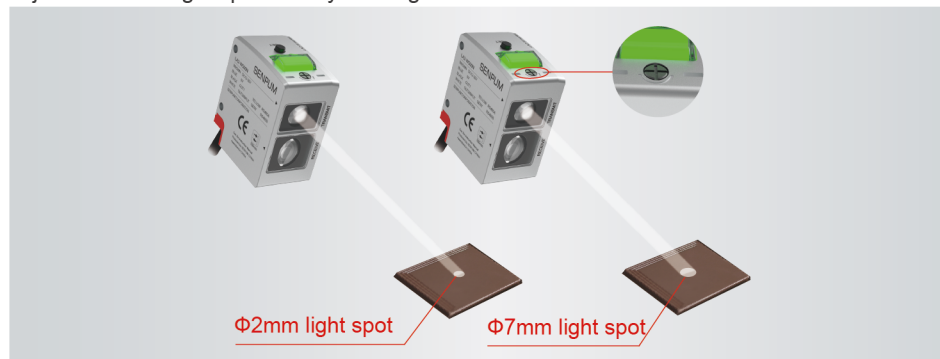
White LED + customized light receiving element

Unlike conventional color sensors, the LA2-W series can capture subtle color differences.



Adjustable light spot, support small workpiece

Adjust the size of light spot according to the demand, support small workpiece detection; adjust the small light spot size by rotating the knob.



Product List

LA2-W Series

Appearance	Type	Detection Range (mm)	Spot size (mm)	Output Type	Model
	Cable type	30~70mm	At 45mm Approx. 1.6x2.9mm	NPN	LA2-W70N
				PNP	LA2-W70P
				NPN/PNP	LA2-W70
				NPN	LA2-W70CAN
	Relay-type	30~70mm	At 45mm Approx. 1.6x2.9mm	PNP	LA2-W70CAP
				NPN/PNP	LA2-W70CA
				NPN	LA2-WS300N
				PNP	LA2-WS300P
	Cable type	30~300mm	Variable spot Approx. $\Phi 2 \pm 0.2\text{mm}$ (At 90mm) Approx. $\Phi 5 \pm 0.5\text{mm}$ (At 200mm) Approx. $\Phi 7 \pm 0.8\text{mm}$ (At 300 mm)	NPN	LA2-WS300N
				PNP	LA2-WS300P
				NPN/PNP	LA2-WS300CAN
				PNP	LA2-WS300CAP
	Relay-type	30~300mm	Variable spot Approx. $\Phi 2 \pm 0.2\text{mm}$ (At 90mm) Approx. $\Phi 5 \pm 0.5\text{mm}$ (At 200mm) Approx. $\Phi 7 \pm 0.8\text{mm}$ (At 300 mm)	NPN/PNP	LA2-WS300CA
				NPN	LA2-WS500N
				PNP	LA2-WS500P
				NPN/PNP	LA2-WS500CAN
	Cable type	30~500mm	Variable spot Approx. $\Phi 3.5 \pm 0.2\text{mm}$ (At 100mm) Approx. $\Phi 9 \pm 0.5\text{mm}$ (At 250mm) Approx. $\Phi 18 \pm 1\text{mm}$ (At 500 mm)	NPN	LA2-W500N
				PNP	LA2-W500P
				NPN/PNP	LA2-W500CAN
				PNP	LA2-W500CAP
	Relay-type	30~500mm	Variable spot Approx. $\Phi 3.5 \pm 0.2\text{mm}$ (At 100mm) Approx. $\Phi 9 \pm 0.5\text{mm}$ (At 250mm) Approx. $\Phi 18 \pm 1\text{mm}$ (At 500 mm)	NPN/PNP	LA2-W500CA

Cable (sold separately)

Appearance	Sensor side	Cable Termination	Material	Cable length	Model
	M8 6PIN Straight	Loose wires	High-flex drag chain type	2m	OW-LAW2000
				5m	OW-LAW5000
				10m	OW-LAW10M
				20m	OW-LAW20M

Stand (sold separately)

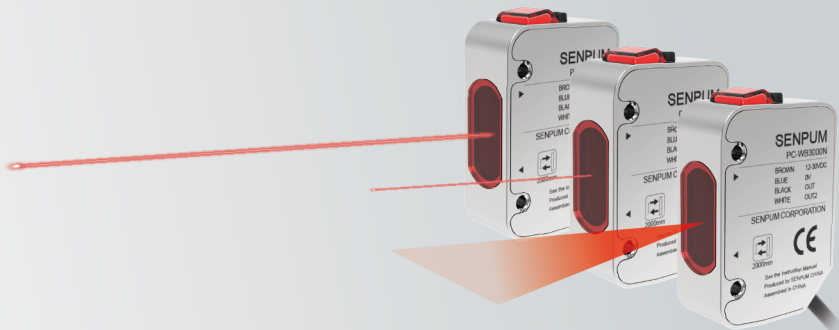
Types	Material / Weight	Model
Standard mounting bracket for LA2-W series (includes 2 M3 screws)	SUS304 Approx.110g	OW-LA2W001
Small mounting bracket (includes 2 M3 screws)	SUS304 Approx.50g	OW-LA2W002
Adjustable Bracket for LA2-W Series (includes 2 M3 screws)	SUS304 Approx.110g	OW-LA2W003
Adjustable bracket mounting screw (105 mm)	Nickel-plated iron Approx.140g	OW-LA2W004



Color

Digital Display Type Color Sensor

PC-W Series

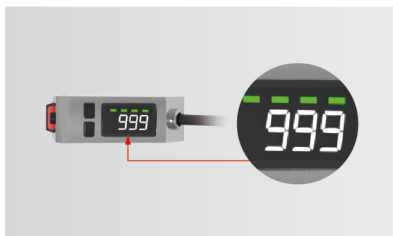


One key setting, simple and fast



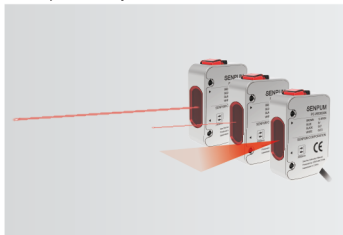
High-definition digital display, at a glance

High-definition digital display, real-time grasp of the status of the work; key operation, compare two colors for setting, stable distinction between objects of different colors.



Multiple laser spots

Standard, small light spot, line light spot, to meet most of the shape of the object detection.



Sturdy body

The shell is made of zinc alloy and has IP67 waterproof structure.



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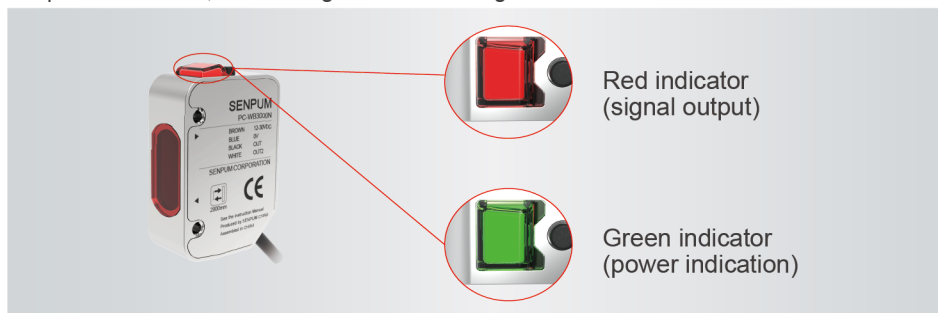
Maximum detection distance up to 3000mm

Can be separated by a certain distance, do not have to worry about the installation position.



Fast response

Response time 1ms, indicator light shows working status



Product List

Cable type

Type	Appearance	Detection range (mm)		Spot size	Output Type	Model
		Matte white cardboard	Matte black cardboard			
Standard		MEGA; 0~3000 FINE; 0~1000 HSPD; 0~700	MEGA; 7~800 FINE; 7~350 HSPD; 7~200	Approx. Φ 2mm at 1000mm	NPN	PC-WB3000N
					PNP	PC-WB3000P
Small dot		MEGA; 0~700 FINE; 0~300 HSPD; 0~200	MEGA; 7~200 FINE; 7~80 HSPD; 7~50	Approx. Φ 0.5mm at 100mm	NPN	PC-WB700N
					PNP	PC-WB700P
Line-spot		MEGA; 0~3000 FINE; 0~1000 HSPD; 0~700	MEGA; 7~800 FINE; 7~350 HSPD; 7~200	Approx. 1.5*120mm at 1000mm	NPN	PC-WB3000N
					PNP	PC-WB3000P

Relay-type

Type	Appearance	Detection range (mm)		Spot size	Output Type	Model
		Matte white cardboard	Matte black cardboard			
Standard		MEGA; 0~3000 FINE; 0~1000 HSPD; 0~700	MEGA; 7~800 FINE; 7~350 HSPD; 7~200	Approx. Φ 2mm at 1000mm	NPN	PC-WB3000CAN
					PNP	PC-WB3000CAP
Small dot		MEGA; 0~700 FINE; 0~300 HSPD; 0~200	MEGA; 7~200 FINE; 7~80 HSPD; 7~50	Approx. Φ 0.5mm at 100mm	NPN	PC-WB700CAN
					PNP	PC-WB700CAP
Line-spot		MEGA; 0~3000 FINE; 0~1000 HSPD; 0~700	MEGA; 7~800 FINE; 7~350 HSPD; 7~200	Approx. 1.5*120mm at 1000mm	NPN	PC-WB3000CAN
					PNP	PC-WB3000CAP

Cable (sold separately)

Appearance	Sensor side	Cable Termination	Cable length	Model
	M8 4PIN Straight	Loose wires	2M	OW-PCW2000
			5M	OW-PCW5000
			10M	OW-PCW10M
			20M	OW-PCW20M





EtherCAT

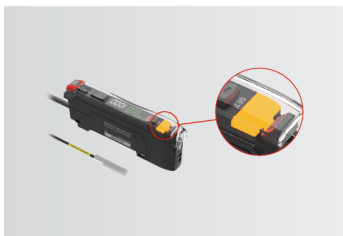
RS-232C / RS-485

PROFINET

EtherNet/IP™ Ethernet (TCP/IP)

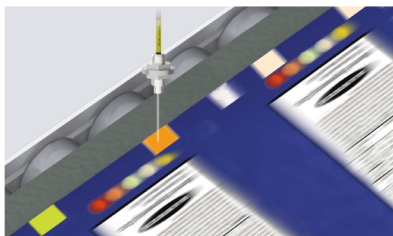
High color discrimination capability can be achieved, and the original general-purpose fiber-optic unit can also be directly connected to use.

Clearly visible indicator light



White LED light source stabilizes detection of subtle color differences by threshold setting

The white light source contains a variety of wavelengths of light to reflect the color characteristics of objects more fully.



Zero drift

Zeroing the display value has been made easier.
Simply press the PRESET and RIGHT buttons simultaneously.



Simple sensitivity setting

Simply press the SET button once with and without the target to complete the setting.



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Dual Display & Direct Access

It displays both the current value and the setpoint, allowing for manual fine-tuning and sensitivity adjustment.



Supports various communication networks

It supports connection to various communication modules, enabling the reading and writing of parameters via a network; up to eight communication units can be added to a single system.



Product List

Sensor head

Type/Model	Adjustable spot	Adjustable spot light (side view)	Long-distance	Little Dot	Long-distance	Regional
	LA-F20	LA-F22	LA-F24	LA-F25	LA-F26	LA-F28
Appearance						
	Detection range: 10-30mm Spot diameter: Ø0.9-3.5mm	Detection range: 3-15mm Spot diameter: Ø0.9-1.5mm	Detection range: 70-200mm Spot diameter: Ø6mm	Detection range: 16-40mm Spot diameter: Ø1mm	Detection range: 60-100mm Spot diameter: Ø2mm	Detection range: 5-20mm

Optical fiber components

Type/Model	Screw Mount		Cylinder (screw-mounted)	Small spot (reflection)		Narrow beam/ High power	Sleeve type	Heat-resistant	
	SP-136TZ	SP-136FZ	SP-150U	SP-111	SP-121	SP-141	SP-132	SP-584C	
Appearance									

amplifier

Appearance	Output Type	Model	Appearance	Output Type	Model
	NPN	LA-F11N		NPN	LA-F12N
	PNP	LA-F11P		PNP	LA-F12P
	NPN/PNP	LA-F11		NPN/PNP	LA-F12

Lens + Fiber Optic Element

Fiber Optic Component Model	SP-122X	SP-125X	SP-136FA	SP-136FG	SP-136FZ	SP-136TG	SP-136TZ
Appearance							
Spot diameter: Approx. Ø0.2		Spot diameter: Approx. Ø0.1	Spot diameter: Approx. Ø0.4	Spot diameter: Approx. Ø0.4	Spot diameter: Approx. Ø0.4	Spot diameter: Approx. Ø0.4	Spot diameter: Approx. Ø0.4
Compatible lens models	P-14HA	P-14HA - P-15HA	P-14HA - P-15HA	P-14HA - P-15HA	P-14HA - P-15HA	P-14HA - P-15HA	P-14HA - P-15HA
Lens Appearance							

Lens + Fiber Optic Element

Fiber Optic Component Model	SP-111	SP-136FA	SP-136FG	SP-121
Appearance				
Spot diameter: Ø0.9-3.5		Spot diameter: Approx. Ø0.4	Spot diameter: Approx. Ø0.4	Spot diameter: Approx. Ø0.1
Compatible lens models	—	P-16HA	P-15HA	—
Lens Appearance	—			—

Fiber Optics
Proximity
Color
Laser
Safety
Protect Contact /
Contactless displacement
Laser Displacement /
Microscope
AI Vision /
Barcodes
Temperature /
Flow Rate
Static

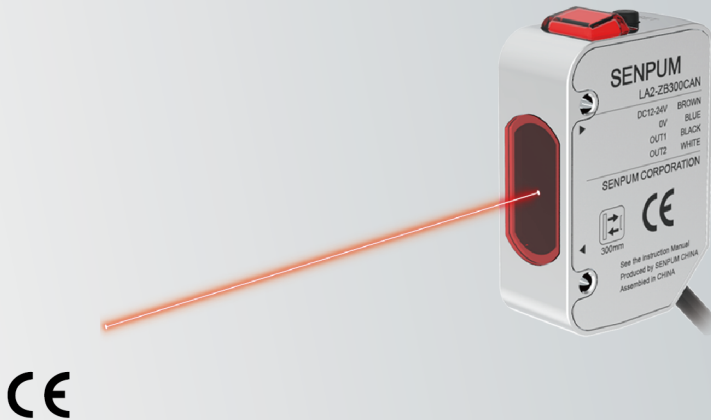


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Laser

CMOS Type Laser Sensors

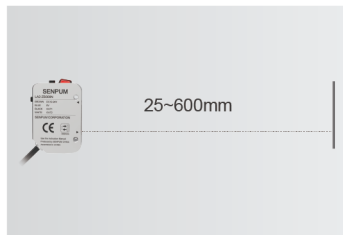
LA2-ZB Series



CE

True black and white isometric; not easily affected by workpiece surface finish, material, tilt, etc.

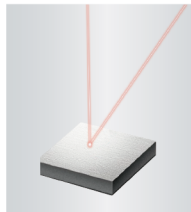
Maximum detection distance 600mm



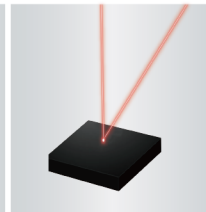
High definition dynamic range

With conventional sensors, if the color or surface condition of the workpiece changes, the light intensity level will also change. However, with the LA2-ZB series, the light intensity is controlled according to the workpiece, and the ideal light intensity level is achieved, so that individual workpieces can be accurately detected.

Dim light when the workpiece is bright

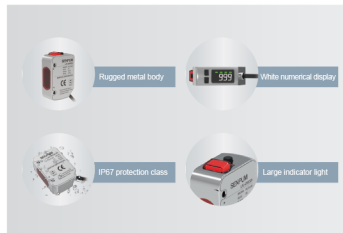


Strong light when the workpiece is dark



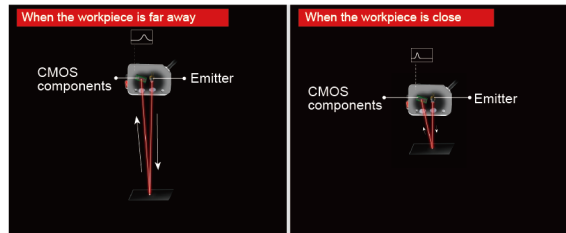
Assured structure

The housing is made of zinc alloy and meets the IP67 housing protection level; it is equipped with a white LED display so that the status can be seen at a glance, and the large indicator light is convenient for customers to observe from all angles.



Triangulation principle

Triangulation is one of the detection principles of displacement sensors, where the light from the transmitter is projected onto the workpiece and the reflected light enters the receiver. The receiver is equipped with a CMOS image sensor, which changes the peak position of the light waveform it receives by the distance from the workpiece. As a result, the distance to the workpiece can be deduced.



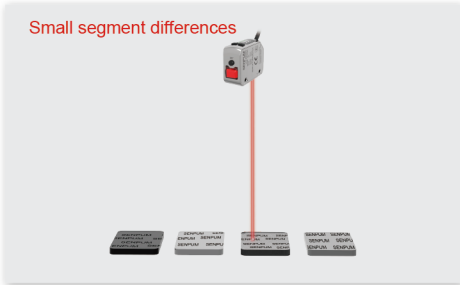
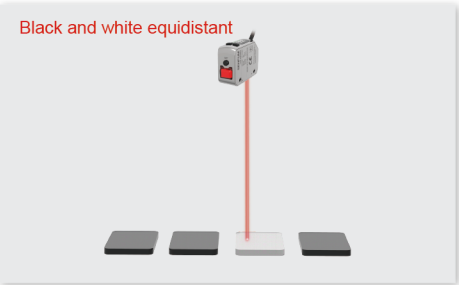
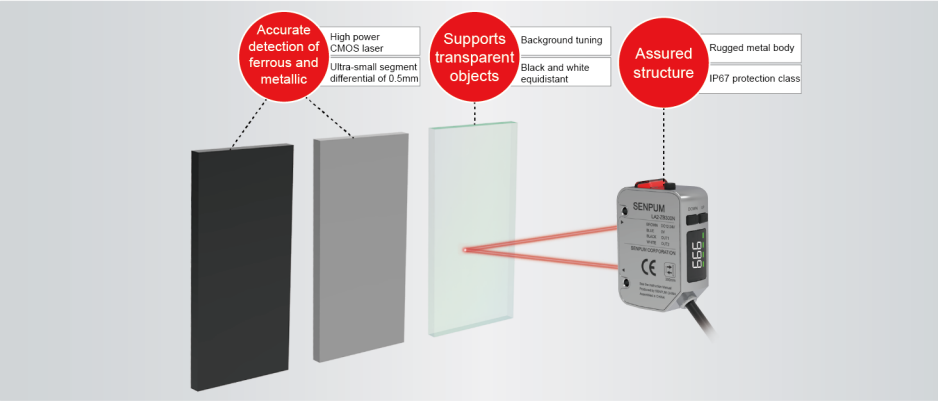
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Background suppression CMOS

High-power CMOS laser accurately black workpieces and metallic workpieces, and supports the detection of transparent objects. Stable detection is possible regardless of the type or condition of each workpiece.



Product List

Standard type

Appearance	Detection rang (mm)	Spot diameter	Output Type	Model
	25~100	Approx. 1×2mm at 100mm	NPN	LA2-ZB100N
			PNP	LA2-ZB100P
	25~150		NPN	LA2-ZB150N
			PNP	LA2-ZB150P
	25~250	Approx. 1×2mm at 100mm	NPN	LA2-ZB250N
			PNP	LA2-ZB250P
	25~300		NPN	LA2-ZB300N
			PNP	LA2-ZB300P
	25~500	Approx. Φ2mm at 500mm	NPN	LA2-ZB500N
			PNP	LA2-ZB500P
	25~600		NPN	LA2-ZB600N
			PNP	LA2-ZB600P
	25~1000	Approx. Φ2mm at 800mm	NPN	LA2-ZB1000N
			PNP	LA2-ZB1000P

Relay-type

Appearance	Detection rang (mm)	Spot diameter	Output Type	Model	
	25~100	Approx. 1×2mm at 100mm	NPN	LA2-ZB100CAN	
			PNP	LA2-ZB100CAP	
	25~150		NPN	LA2-ZB150CAN	
			PNP	LA2-ZB150CAP	
	25~250	Approx. 1×2mm at 100mm	NPN	LA2-ZB250CAN	
			PNP	LA2-ZB250CAP	
	25~300		NPN	LA2-ZB300CAN	
			PNP	LA2-ZB300CAP	
	25~500	Approx. ϕ 2mm at 500mm	NPN	LA2-ZB500CAN	
			PNP	LA2-ZB500CAP	
	25~600		NPN	LA2-ZB600CAN	
			PNP	LA2-ZB600CAP	

Mounting bracket (adjustable bracket) (sold separately)

Types	Material/Weight	Model
 Adjustable bracket (includes 2 M3 screws)	Zinc-nickel plating and other materials, approx. 95 g	OW-LA2Z001
 Screw length: 45 mm	Zinc-nickel plating approx. 70g	OW-LA2Z002
	Screw length: 65 mm	OW-LA2Z003

Mounting bracket(sold separately)

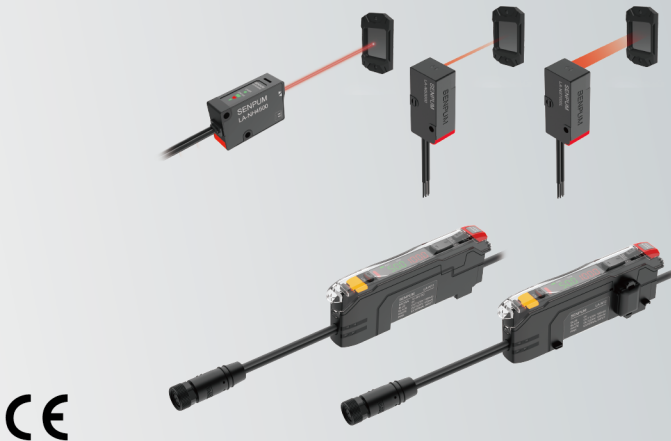
Types	Material/Weight	Model
 Standard mounting bracket (t = 2) (includes 2 M3 screws)	SUS316L Approx. 24g	OW-LA2Z004
 Rear mounting bracket (t = 2) (includes 2 M3 screws)		OW-LA2Z005
 Mounting bracket (t = 3) (includes 2 M3 screws)	SUS316L Approx. 155g	OW-LA2Z006

Cable (sold separately)

Appearance	Sensor side	Cable Termination	Cable length	Model
 M8 4PIN Straight	Loose wires		2M	OW-LA2Z000
			5M	OW-LA2Z000
			10M	OW-LA2Z010M
			20M	OW-LA2Z020M



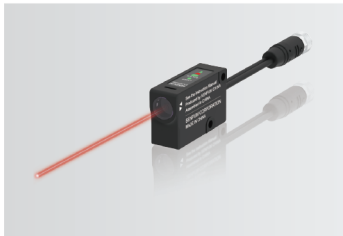
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Long-range visible beams for improved laser detection

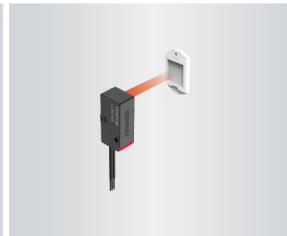
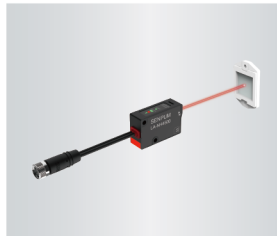
Visible laser light source

- The light source is a laser and the spot is clearly visible
- Therefore, the detection position is clear and easy to install
- Each sensor head supports Class 1 lasers



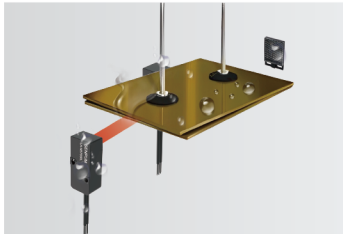
Precise alignment detection

- Spot laser type does not diffuse light
- Line spot type enables wide range detection
- Therefore, it can be easily aligned depending on the workpiece to be inspected and the mounting condition.



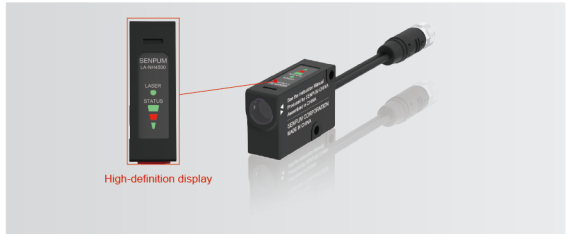
High environmental resistance

It has good environmental resistance, such as stable operation under certain conditions of temperature, humidity, vibration, and shock.



High-definition indicator light

High-definition indicator lights show the inspection status at a glance; the laser indicator light is green and the output indicator light is red.

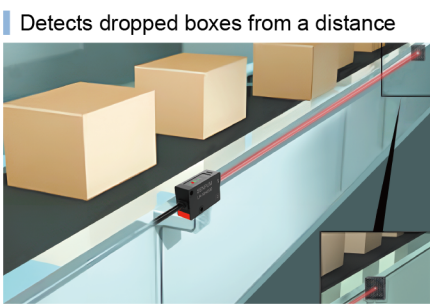
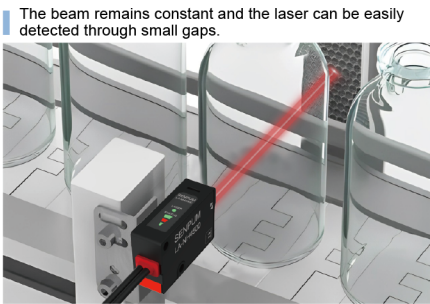
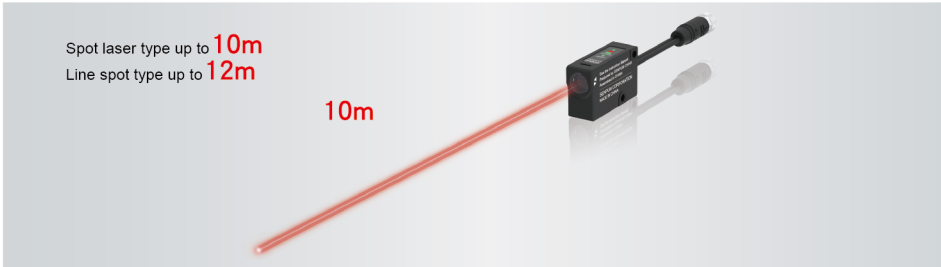


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Long-range inspections can be performed, eliminating installation limitations
Easily aligned according to the workpiece and mounting conditions.



Product List

Reflective sensor

Type	Appearance	Detection range(mm)		Spot size	Model
Reflective		HSP: 150 MSP: 200 LSP: 300	SUPER: 400 ULTRA: 500 MEGA: 600	Approx. Φ 2.0mm	LA-NS350
Side-emitting reflective type		HSP: 120 MSP: 160 LSP: 240	SUPER: 320 ULTRA: 400 MEGA: 480		LA-NS350L
Reflective		HSP: 100 MSP: 150 LSP: 300	SUPER: 450 ULTRA: 600 MEGA: 750	Approx. Φ 1.5mm (at 1m distance)	LA-NT750

Retro-reflective sensor

Type	Appearance	Detection range(mm)		Spot size	Model
Retro-reflection		HSP: 2.5 MSP: 4 LSP: 6	SUPER: 7 ULTRA: 8 MEGA: 10	Approx. Φ 1.5mm (at 1m distance)	LA-NH4500
		HSP: - MSP: 0.7 LSP: 2	SUPER: 3.5 ULTRA: 5 MEGA: 6	Approx. 2×2mm (at a distance of 500 mm or closer)	LA-NS3000
		HSP: - MSP: 2.5 LSP: 5	SUPER: 8 ULTRA: 10 MEGA: 12	Approx. 2×10mm (at a distance of 500 mm or closer)	LA-NS7000L

amplifier

Appearance	Control Output	External Input	Input method	Model
	2	1	NPN	LA-N11N
			PNP	LA-N11P
	2	1	NPN/PNP	LA-N11
			NPN	LA-N12N
			PNP	LA-N12P
			NPN/PNP	LA-N12

Stand (sold separately)

Appearance	Compatible sensor models	Model
	LA-NS350 / LA-NS350L	OW-LAN001
	LA-NT750 / LA-NH4500	OW-LAN002
	LA-NS3000 / LA-NS7000L	OW-LAN003
		OW-LAN004
		OW-LAN005

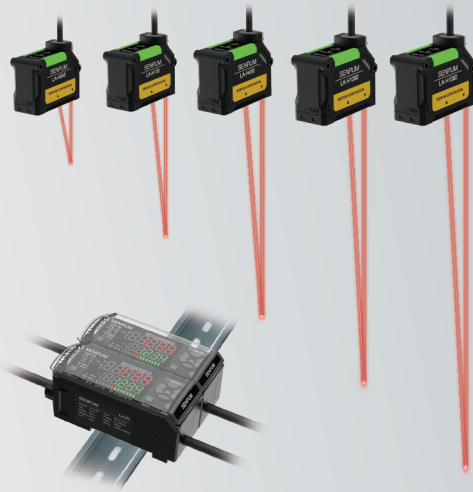
Reflective tape (sold separately)

Appearance	Model	Appearance	Model
	N-1010		N-2525
	N-1020		N-5015
	N-10100		N-5050
	N-10250		-

Laser

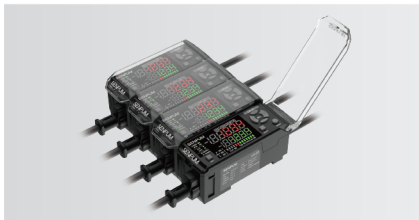
Digital Type Laser Sensors

LA-H Series



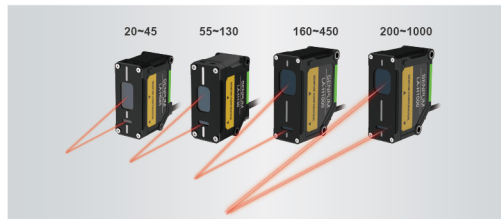
Anti-jamming function

When connecting expansion units, interference is prevented between sensor heads connected to adjacent amplifiers.



Five different sensing heads from long range to high precision detection

It can support a detection distance of 20~1000mm to support various applications.



Product List

Sensor head

Appearance	Standard deviation	Measurement distance (mm)	Laser Classification	Model
	0.5mm	20~45	Class 2	LA-H45
			Class 1	LA-H45L
	1mm	55~130	Class 2	LA-H130
			Class 1	LA-H130L
	3mm	160~450	Class 2	LA-H450
			Class 1	LA-H450L
	20mm (detection range: 200~800) 30mm (detection range: 800~1000mm)	200~1000	Class 2	LA-H1000
			Class 1	LA-H1000L

controller

Appearance	Type	Output method	Model
	DIN rail mounting	NPN	LA-21
		PNP	LA-21P
		NPN	LA-22
		PNP	LA-22P

Cable (extension cable for connection between sensing head and controller) (sold separately)

Appearance	Sensor side	Cable Termination	Material	Cable length	Model
	M8 4PIN Straight	controller	High-flex drag chain type	2M	OW-LAH2000
				5M	OW-LAH5000
				10M	OW-LAH10M
				20M	OW-LAH20M



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Laser

Standard Laser Sensors

LA-ZB Series



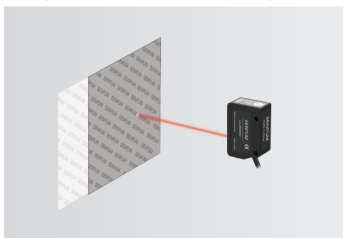
Spot $\Phi 0.5\text{mm}$
Detecting fine objects



The industry's ultra-small 0.5mm laser spot, more suitable for tiny object detection

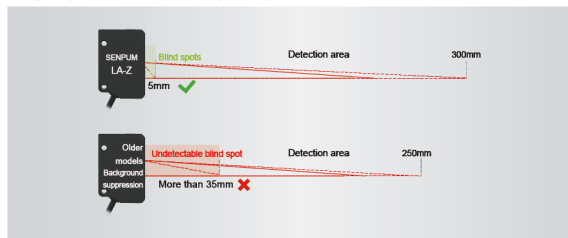
Competent detection in complex environments

Small segment differences can also be detected when the target is the same or similar to the background color.



Ultra-small blind spot under 5mm

It solves the problem that traditional sensors cannot be detected due to close installation, and greatly improves the practicality of the product.



Product list

Appearance	Type	Detection distance(mm)	Spot size (mm)	Model	
				NPN	PNP
2m cable	Normal spot	100	Approx. $\Phi 2$ at 100mm	LA-ZB010N	LA-ZB010P
	Small spot		Approx. $\Phi 1$ at 100mm	LA-ZB010LN	LA-ZB010LP
2m cable	Ultra small spot	60	Approx. $\Phi 0.5$ at 60mm	LA-ZB006SN	LA-ZB006SP
2m cable	Normal spot	300	Approx. $\Phi 2.5$ for 300mm	LA-ZB030N	LA-ZB030P

Fiber Optics

Photoelectric / Proximity

Color

Laser

Safety

Proximity Contact / Contactless / Proximity

Laser Displacement / Macroscopic

AI Vision / Barcodes

Temperature / Flow Rate

Static



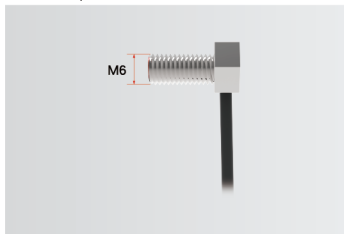
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Ultra-long detection distance up to 10m or more; 0.5mm small light spot

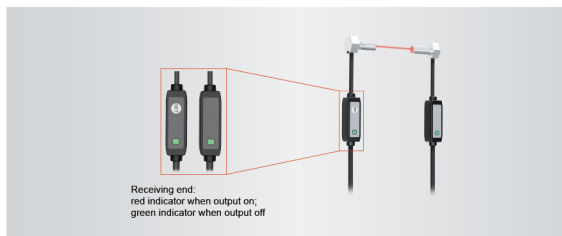
Ultra small size

Extremely small size, only M6 size, easy to install in the narrow workplace.



High definition indicator light

Transmitter and receiver are equipped with indicator lights for quick checking of output status.



High environmental resistance

Adopting stainless steel shell, it can work stably under certain conditions such as anti-vibration and shock resistance.



Product List

Type	Dimensions (mm)	Detection range	Model	
			NPN	PNP
Through beam	 M6×P0.75	1000mm	LA3-S100LN	LA3-S100LP
		500mm	LA3-S050LN	LA3-S050LP
		10m	LA3-S10MLN	LA3-S10MLP

Stand (sold separately)

Appearance	Model
	OW-LA2S-001



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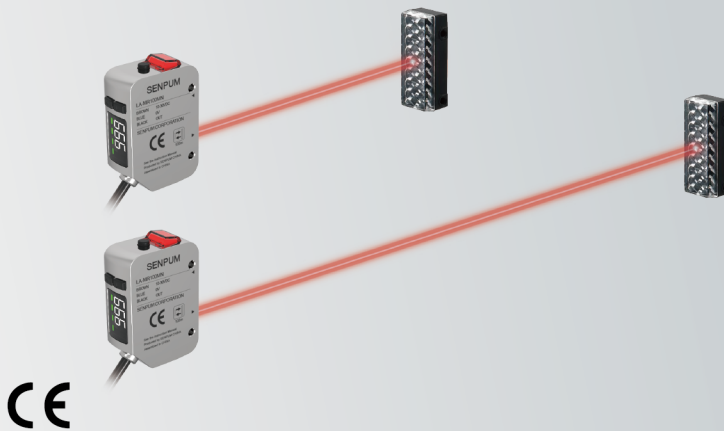
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Laser

Long-range Type Laser Sensors

LA-MR Series



Ultra-long detection distance, up to 100m

Push button setting, easy to use

It's super easy to operate and can be set up with a single click.



Metal housing with excellent impact resistance

Made of metal for greater impact resistance.

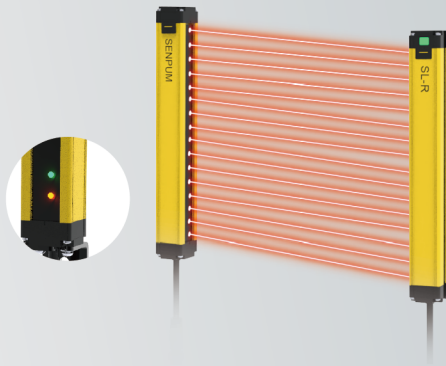


Product list

Appearance	Detection distance	Spot size	Output type	Model
	50m	Approx. 15mm	NPN	LA-MR50MN
			PNP	LA-MR50MP
	100m	Approx. 80mm	NPN	LA-MR100MN
			PNP	LA-MR100MP



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Simple to use, robust body, stable grating for long term use

High protection class

Impact-resistant, thick and robust housing

High safety, TUV4 safety level, performance up to PLe level, IP65/IP67 protection level.

IP65

Dust-proof and anti-jet type

IP67

Dustproof and waterproof



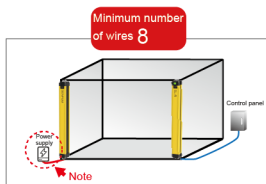
Optional simplified wiring

Compatible with both optical and wire synchronization communication methods



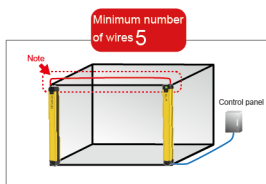
Optical synchronization system

- No need to assemble synchronization cables.
- Wiring operations are simple.



Single-line system

- The number of wiring and the amount of wiring work is reduced to 1/3.
- Simply wire the receiver to the control panel.



*Comparison with our SA-V series products.

Product list

Connection cable (optional)

Appearance	Cable specification	Length	Model
	UL2464 (8×24AWG)	5m	OW-SLR-5M (Standard Configuration)
		10m	OW-SLR-10M
		20m	OW-SLR-20M

Mounting accessories (optional)

Appearance	Installation method	Model
	Front side mounting bracket	OW-SLR001 (Standard Configuration)
	T-bracket	OW-SLR002
	Tube mounting bracket	OW-SLR003



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Selection list

Please follow the selection steps 2~5 to select the model and parameters and then order.

Model(SL-R150-08-*)

① Series name ② Total length of grating(mm) ③ Optical axis distance (mm) ④ Detection distance(m)
⑤ Output signal (N:PNP/P:PNP) Note: Safety type is recommended to choose PNP output; safety encoder products are all normally closed outputs

Optical axis distance 8mm Selection table

Model	A Total length	Number of optical axes	B Detection height
SL-R150-8-*	150	15	112
SL-R190-8-*	190	20	152
SL-R230-8-*	230	25	192
SL-R270-8-*	270	30	232
SL-R310-8-*	310	35	272
SL-R350-8-*	350	40	312
SL-R390-8-*	390	45	352
SL-R430-8-*	430	50	392
SL-R470-8-*	470	55	432
SL-R510-8-*	510	60	472
SL-R550-8-*	550	65	512
SL-R590-8-*	590	70	552
SL-R630-8-*	630	75	592
SL-R670-8-*	670	80	632
SL-R710-8-*	710	85	672
SL-R750-8-*	750	90	712
SL-R790-8-*	790	95	752
SL-R830-8-*	830	100	792
SL-R870-8-*	870	105	832
SL-R910-8-*	910	110	872
SL-R950-8-*	950	115	912
SL-R990-8-*	990	120	952
SL-R1030-8-*	1030	125	992
SL-R1070-8-*	1070	130	1032
SL-R1110-8-*	1110	135	1072
SL-R1150-8-*	1150	140	1112
SL-R1190-8-*	1190	145	1152
SL-R1230-8-*	1230	150	1192
SL-R1270-8-*	1270	155	1232
SL-R1310-8-*	1310	160	1272
SL-R1350-8-*	1350	165	1312
SL-R1390-8-*	1390	170	1352
SL-R1430-8-*	1430	175	1392
SL-R1470-8-*	1470	180	1432
SL-R1510-8-*	1510	185	1472
SL-R1550-8-*	1550	190	1512
SL-R1590-8-*	1590	195	1552
SL-R1630-8-*	1630	200	1592
SL-R1670-8-*	1670	205	1632
SL-R1710-8-*	1710	210	1672
SL-R1950-8-*	1950	240	1912
SL-R2190-8-*	2190	270	2152
SL-R2430-8-*	2430	300	2392
SL-R2910-8-*	2910	360	2872

Optical axis distance 24mm Selection table

Model	A Total length	Number of optical axes	B Detection height
SL-R150-24-*	150	5	112
SL-R190-24-*	190	7	152
SL-R230-24-*	230	9	192
SL-R270-24-*	270	11	232
SL-R310-24-*	310	13	272
SL-R350-24-*	350	15	312
SL-R390-24-*	390	16	352
SL-R430-24-*	430	18	392
SL-R470-24-*	470	20	432
SL-R510-24-*	510	21	472
SL-R550-24-*	550	23	512
SL-R590-24-*	590	25	552
SL-R630-24-*	630	26	592
SL-R670-24-*	670	28	632
SL-R710-24-*	710	30	672
SL-R750-24-*	750	31	712
SL-R790-24-*	790	33	752
SL-R830-24-*	830	35	792
SL-R870-24-*	870	36	832
SL-R910-24-*	910	38	872
SL-R950-24-*	950	40	912
SL-R990-24-*	990	41	952
SL-R1030-24-*	1030	43	992
SL-R1070-24-*	1070	45	1032
SL-R1110-24-*	1110	46	1072
SL-R1150-24-*	1150	48	1112
SL-R1190-24-*	1190	50	1152
SL-R1230-24-*	1230	51	1192
SL-R1270-24-*	1270	53	1232
SL-R1310-24-*	1310	55	1272
SL-R1350-24-*	1350	56	1312
SL-R1390-24-*	1390	58	1352
SL-R1430-24-*	1430	60	1392
SL-R1470-24-*	1470	61	1432
SL-R1510-24-*	1510	63	1472
SL-R1550-24-*	1550	65	1512
SL-R1590-24-*	1590	66	1552
SL-R1630-24-*	1630	68	1592
SL-R1670-24-*	1670	70	1632
SL-R1710-24-*	1710	71	1672
SL-R1950-24-*	1950	81	1912
SL-R2190-24-*	2190	91	2152
SL-R2430-24-*	2430	101	2392
SL-R2910-24-*	2910	121	2872

Optical axis distance 40mm Selection table

Model	A Total length	Number of optical axes	B Detection height
SL-R150-40-*	150	4	112
SL-R190-40-*	190	5	152
SL-R230-40-*	230	6	192
SL-R270-40-*	270	7	232
SL-R310-40-*	310	8	272
SL-R350-40-*	350	9	312
SL-R390-40-*	390	10	352
SL-R430-40-*	430	11	392
SL-R470-40-*	470	12	432
SL-R510-40-*	510	13	472
SL-R550-40-*	550	14	512
SL-R590-40-*	590	15	552
SL-R630-40-*	630	16	592
SL-R670-40-*	670	17	632
SL-R710-40-*	710	18	672
SL-R750-40-*	750	19	712
SL-R790-40-*	790	20	752
SL-R830-40-*	830	21	792
SL-R870-40-*	870	22	832
SL-R910-40-*	910	23	872
SL-R950-40-*	950	24	912
SL-R990-40-*	990	25	952
SL-R1030-40-*	1030	26	992
SL-R1070-40-*	1070	27	1032
SL-R1110-40-*	1110	28	1072
SL-R1150-40-*	1150	29	1112
SL-R1190-40-*	1190	30	1152
SL-R1230-40-*	1230	31	1192
SL-R1270-40-*	1270	32	1232
SL-R1310-40-*	1310	33	1272
SL-R1350-40-*	1350	34	1312
SL-R1390-40-*	1390	35	1352
SL-R1430-40-*	1430	36	1392
SL-R1470-40-*	1470	37	1432
SL-R1510-40-*	1510	38	1472
SL-R1550-40-*	1550	39	1512
SL-R1590-40-*	1590	40	1552
SL-R1630-40-*	1630	41	1592
SL-R1670-40-*	1670	42	1632
SL-R1710-40-*	1710	43	1672
SL-R1950-40-*	1950	49	1912
SL-R2190-40-*	2190	55	2152
SL-R2430-40-*	2430	61	2392
SL-R2910-40-*	2910	73	2872

Remarks:

- Maximum optical axis number is related to the pitch.
- Special requirements can be customized, please consult with SENPUM sales engineers.



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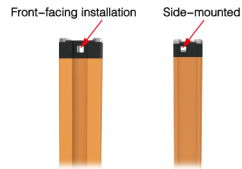
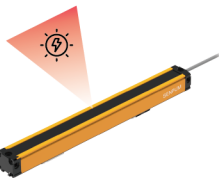
It features exceptional resistance to electromagnetic and optical interference, ensuring that the detection process remains unaffected.

Exceptional resistance to electromagnetic and light interference, without affecting detection

Exceptional resistance to electromagnetic and light interference, without affecting detection

IP65 Dust-proof and splash-proof

The product features mounting holes at the top and bottom, allowing for easy installation using M4 screws without the need for a mounting bracket.



Model Selection List

Spindle center distance:10mm

unit: mm

Model	A Director-General	Number of optical axes	B Detection height
SA-V10-16-**-2	197	16	150
SA-V10-24-**-2	277	24	230
SA-V10-32-**-2	357	32	310
SA-V10-40-**-2	437	40	390
SA-V10-48-**-2	517	48	470
SA-V10-56-**-2	597	56	550
SA-V10-64-**-2	677	64	630
SA-V10-72-**-2	757	72	710
SA-V10-80-**-2	837	80	790
SA-V10-88-**-2	917	88	870
SA-V10-96-**-2	997	96	950
SA-V10-104-**-2	1077	104	1030
SA-V10-112-**-2	1157	112	1110
SA-V10-120-**-2	1237	120	1190
SA-V10-128-**-2	1317	128	1270
SA-V10-136-**-2	1397	136	1350
SA-V10-144-**-2	1477	144	1430
SA-V10-152-**-2	1557	152	1510
SA-V10-160-**-2	1637	160	1590
SA-V10-168-**-2	1717	168	1670

Spindle center distance:20mm

unit: mm

Model	A Director-General	Number of optical axes	B Detection height
SA-V20-08-**-2	182	8	140
SA-V20-12-**-2	262	12	220
SA-V20-16-**-2	342	16	300
SA-V20-20-**-2	422	20	380
SA-V20-24-**-2	502	24	460
SA-V20-28-**-2	582	28	540
SA-V20-32-**-2	662	32	620
SA-V20-36-**-2	742	36	700
SA-V20-40-**-2	822	40	780
SA-V20-44-**-2	902	44	860
SA-V20-48-**-2	982	48	940
SA-V20-52-**-2	1062	52	1020
SA-V20-56-**-2	1142	56	1100
SA-V20-60-**-2	1222	60	1180
SA-V20-64-**-2	1302	64	1260
SA-V20-68-**-2	1382	68	1340
SA-V20-72-**-2	1462	72	1420
SA-V20-76-**-2	1542	76	1500
SA-V20-80-**-2	1622	80	1580
SA-V20-84-**-2	1702	84	1660
SA-V20-88-**-2	1782	88	1740
SA-V20-92-**-2	1862	92	1820
SA-V20-96-**-2	1942	96	1900

Spindle center distance:40mm

unit: mm

Model	A Director-General	Number of optical axes	B Detection height
SA-V40-04-**-2	182	4	120
SA-V40-06-**-2	262	6	200
SA-V40-08-**-2	342	8	280
SA-V40-10-**-2	422	10	360
SA-V40-12-**-2	502	12	440
SA-V40-14-**-2	582	14	520
SA-V40-16-**-2	662	16	600
SA-V40-18-**-2	742	18	680
SA-V40-20-**-2	822	20	760
SA-V40-22-**-2	902	22	840
SA-V40-24-**-2	982	24	920
SA-V40-26-**-2	1062	26	1000
SA-V40-28-**-2	1142	28	1080
SA-V40-30-**-2	1222	30	1160
SA-V40-32-**-2	1302	32	1240
SA-V40-34-**-2	1382	34	1320
SA-V40-36-**-2	1462	36	1400
SA-V40-38-**-2	1542	38	1480
SA-V40-40-**-2	1622	40	1560
SA-V40-42-**-2	1702	42	1640
SA-V40-44-**-2	1782	44	1720
SA-V40-46-**-2	1862	46	1800
SA-V40-48-**-2	1942	48	1880



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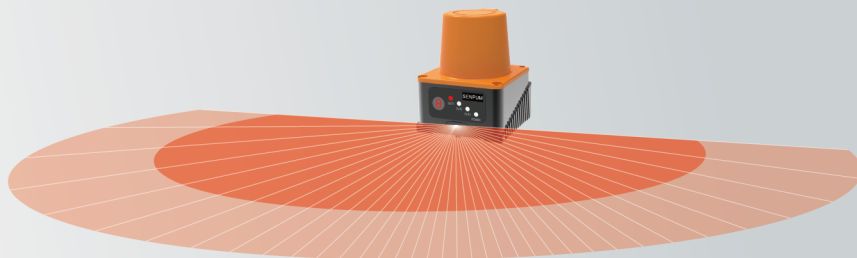
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*1. Custom production is available to meet special requirements

Safety

High-speed Laser Scanners

SC-V Series



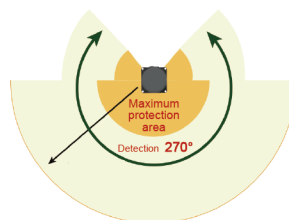
Using a new detection algorithm to avoid the interference of dust, maximum protection distance of 20 meters

1 unit protects a wide range

Maximum protection area 20m

With a maximum protection area of 20 m, only one unit can be used for equipment that requires distance, such as vehicle body processes.

In addition, the guarding area can be recognized up to 270°, expanding the range of applications that can be supported.



Significantly improved environmental resistance

Dirt resistant & High precision

Protection class IP65 to avoid dust interference. Highly accurate detection to recognize people or objects, comprehensively detecting the tiny gap of reflected light from objects.



Product list

High-speed obstacle avoidance type

Appearance	Detection range	Output method	Model
 High-speed obstacle avoidance type	6m (70% reflectance white object) 2m (10% reflective black object)	NPN	SC-V06N
		PNP	SC-V06P
		NPN	SC-V06GN
		PNP	SC-V06GP
	10m (70% reflectance white object) 4m (10% reflective black object)	NPN	SC-V10N
		PNP	SC-V10P
		NPN	SC-V10GN
		PNP	SC-V10GP

High-speed measurement type

Appearance	Detection range	Output method	Model
 High-speed measurement type	4m (10% reflective black object)	Ethernet, ROS, windows, and linux drivers are available	SC-V10MGS
	8m (10% reflective black object)		SC-V20MGS
	10m (70% reflectance white object)		SC-V10MS
	4m (10% reflective black object)		SC-V20MS
	20m (70% reflectance white object)	RS232 output	SC-V20MS
	8m (10% reflective black object)		SC-V20MS
	6m (70% reflectance white object)		SC-V06MGST
	2m (10% reflective black object)		SC-V06MGST

* For more products and applications, please consult a SENPUM engineer;
 * Through on-site operation guidance and after-sales technical support, we provide customers with full support from product selection to production line operation.

Contact Displacement

Digital Display Type Contact Displacement Sensor

MT1 Series



CE EtherCAT  RS-232C / RS-485  EtherNet/IP™ Ethernet (TCP/IP)

High-precision absolute measurement method

Outstanding performance

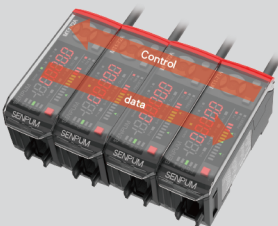
Unparalleled realism and absolute precision

Resolution 0.1μm	Accuracy 1μm	Repeatability ±0.1μm
----------------------------	------------------------	--------------------------------

*All products can be tested at national metrology institutes at the provincial level or above

This helps significantly reduce maintenance costs and labor hours required for replacements. •

Can be installed at the sub-district level



One-click reset or externally triggered reset

Automatic Tolerance Setting and Manual Tolerance Setting

Batch read data from multiple controllers, or change settings

Up to **16** units can be connected via the main module and expansion modules to enable batch data communication.

Setpoints can be rewritten via a PC or PLC, helping to significantly reduce labor hours.



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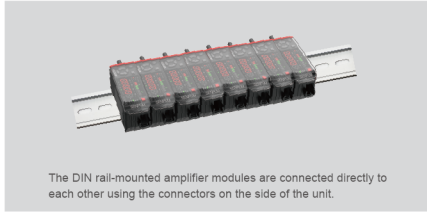
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Multi-probe measurement and cable savings

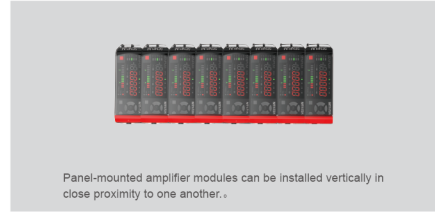
Expandable to 15 modules

Since each additional amplifier can communicate with the others, the data from each amplifier is stored on the host computer, which facilitates processing.



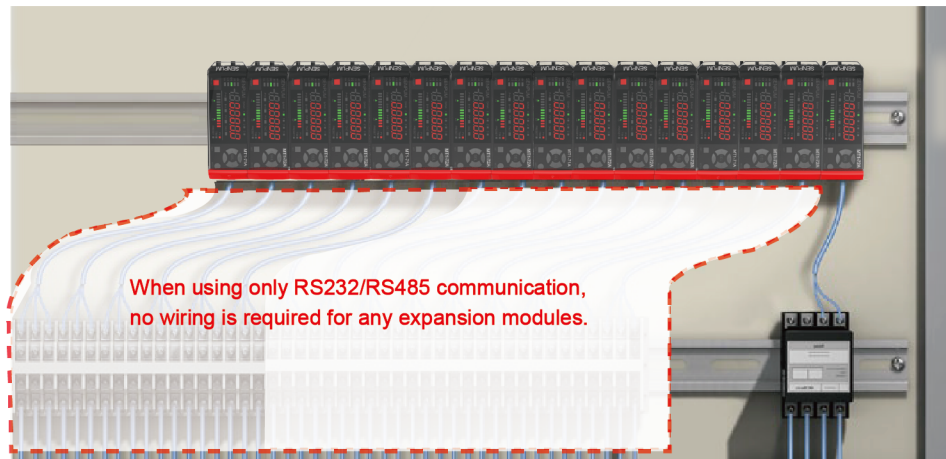
Reduce wiring

Since the additional power supply is also connected via the side connector, a single amplifier can eliminate the need for two power cables.



Reduce wiring and installation time

For example: A system consisting of 16 main and expansion modules requires 50 wires (including power cables) to transmit the three signals (HI, GO, and LO) from each module's amplifier to the PLC. If RS-232/485 communication is used, only three wires are needed—one for powering the main module and two for communication.



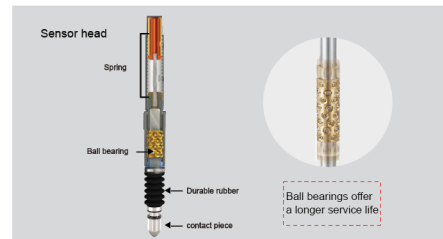
Bending strength

Flexible, freely cut robotic cables



Long service life

Durability testing: 210 million cycles



Fiber Optics

Photoelectric \ Proximity

Color

Laser

Safety

Position Contact / Contact type displacement

Linear Displacement / Microlinear

AI Vision \ Barcodes

Temperature \ Flow Rate

Static



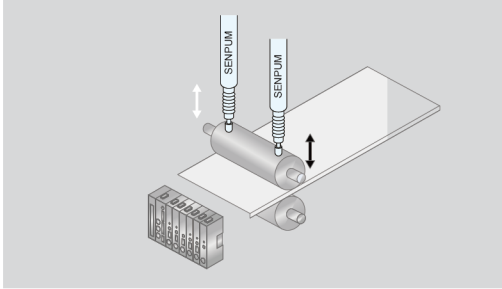
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Connect via PC to export data

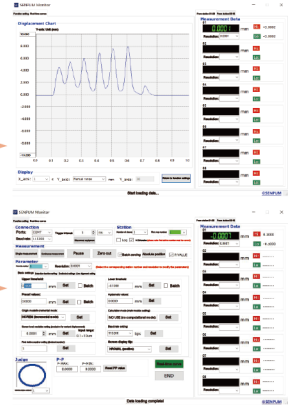
You can export data in CSV format to an Excel spreadsheet for viewing; the PC software must be purchased separately.

Displayable Items

maximum value	minimum value	Baseline Difference	Distortion value
Peak value	mean	Thickness	Warpage



Data shows

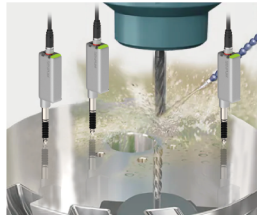


Can be used in oily environments

Even in environments with water or oil splashes, there are no restrictions on installation locations, and detection is not affected by environmental conditions.



With oil and water resistance meeting the IP67 standard, it can be used even in oily environments such as machining operations.



Contact-based design enables high-precision measurement from 0 mm to 50 mm; equally durable in water and oil environments; 1 μ m accuracy; 200 million cycles.

8 types of sensors to choose from

The new ultra-high-speed sensor can measure speeds more than **50** times faster than traditional sensors.

Different types of sensors reliably detect a variety of objects



Standard Cartridge Type



Standard Low-Force Cartridge Type



Standard Flange Type



Cylinder-Type Low-Force Cartridge Type



Standard Pen Type



Standard Cylinder-Type Pen Type



Long Range



Long Range



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Product Lineup

Type	Measuring range	Accuracy	Standard Type	Low-Force Type	Flange Type		
Box-type	Standard Type	5mm	Resolution 0.1μm ; Accuracy 1μm	MT1-H5K	MT1-H5KG	—	
			Resolution 0.5μm ; Accuracy 2μm	MT1-H5	MT1-H5G	—	
			Resolution 0.5μm ; Accuracy 5μm	MT1-H5S	MT1-H5SG	—	
			Appearance			—	
		12mm	Resolution 0.1μm ; Accuracy 1μm	MT1-H12K	MT1-H12KG	MT1-H12KF	
			Resolution 0.5μm ; Accuracy 2μm	MT1-H12	MT1-H12G	MT1-H12F	
			Resolution 0.5μm ; Accuracy 5μm	MT1-H12S	MT1-H12SG	MT1-H12SF	
			Appearance				
		22mm	Resolution 0.5μm ; Accuracy 5μm	MT1-H22	—	—	
			Appearance		—	—	
		32mm	Resolution 0.5μm ; Accuracy 3μm	MT1-H32	—	—	
			Appearance		—	—	
	50mm	Resolution 0.5μm ; Accuracy 3.5μm	MT1-H50	—	—		
		Appearance		—	—		
	Cylinder type	12mm	Resolution 0.1μm ; Accuracy 1μm	MT1-A12K	—	—	
			Resolution 0.5μm ; Accuracy 2μm	MT1-A12	—	—	
			Resolution 0.5μm ; Accuracy 5μm	MT1-A12S	—	—	
			Appearance		—	—	
		22mm	Resolution 0.5μm ; Accuracy 5μm	MT1-A22	—	—	
			Appearance		—	—	
		32mm	Resolution 0.5μm ; Accuracy 3μm	MT1-A32	—	—	
			Appearance		—	—	
		50mm	Resolution 0.5μm ; Accuracy 3.5μm	MT1-A50	—	—	
			Appearance		—	—	
Pen-type		Standard Type	12mm	Resolution 0.1μm ; Accuracy 1μm	MT1-P12K	—	—
		Resolution 0.5μm ; Accuracy 2μm		MT1-P12	—	—	
	Resolution 0.5μm ; Accuracy 5μm	MT1-P12S		—	—		
	Appearance			—	—		
	Cylinder type	12mm	Resolution 0.1μm ; Accuracy 1μm	MT1-PA12K	—	—	
			Resolution 0.5μm ; Accuracy 2μm	MT1-PA12	—	—	
			Resolution 0.5μm ; Accuracy 5μm	MT1-PA12S	—	—	
			Appearance		—	—	



EtherCAT

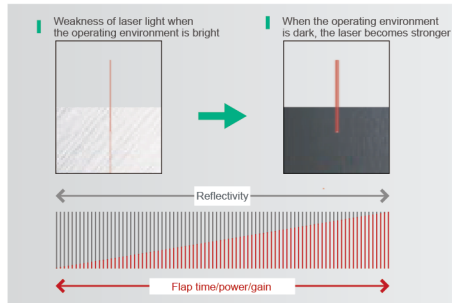
RS-232C / RS-485

PROFINET

Automatic laser control according to target reflectivity

Optimization by automatically controlling the laser according to the target's reflectivity

Stable detection is achieved by real-time control based on the detection target and surface state.

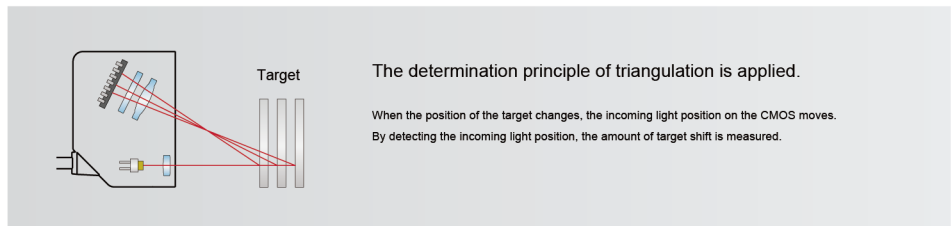


Ruggedized sensor construction

Ultra-small sensor construction realized through the use of a unique aspherical lens; IP67 optical base compression molded parts.



Triangulation principle

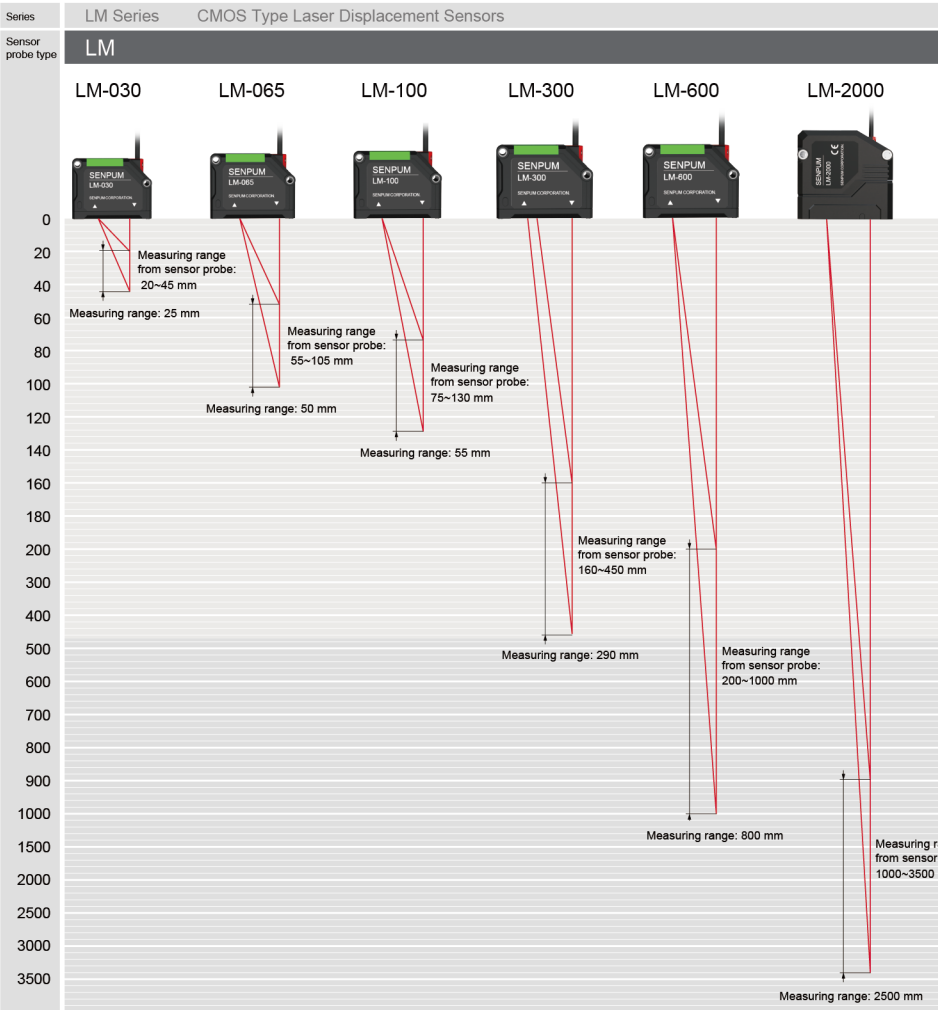


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A variety of sensors are prepared to cope with various functions



Product list

Sensor head

Appearance	Repeatability	Linearity*	Reference distance	Model
	1 μm	±0.1%F.S.	30 mm	LM-030
	2 μm	±0.1%F.S.	65 mm	LM-065
	4 μm	±0.15%F.S.	100 mm	LM-100
	30 μm	±0.25%F.S.	300 mm	LM-300
	50 μm	±0.25%F.S.	600 mm	LM-600
	100 μm	±0.16%F.S.	2000 mm	LM-2000

*F.S. for each model is follows: LM-030: ±5mm, LM-065: ±10mm, LM-100: ±20mm, LM-300: ±140mm, LM-600: ±400mm, LM-2000: ±1000mm~1500mm

Cable (connecting cable between sensor head and controller) (sold separately)

Appearance	Sensor side	Cable termination	Material	Cable length	Model
	M8 4PIN Straight	Controllers	Highly flexible drag chain type	2M	OW-LM2000
				5M	OW-LM5000
				10M	OW-LM10M
				20M	OW-LM20M

Controllers

Appearance	Type	Output method	Model
	DIN rail mounting:	NPN	LM-1000N
		PNP	LM-1000P
		NPN/PNP	LM-1000
		NPN	LM-1050N
		PNP	LM-1050P
		NPN/PNP	LM-1050

Communication module

Appearance	Internet	Model
	EtherCAT	OW-EC2A
	PROFINET	OW-PN2
	Ethernet™/TCP/IP	OW-EN2
	EtherNet/IP™	OW-EP2
	RS-232C / RS-485	OW-RS1A

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Fiber Optics

Photoelectric / Proximity

Color

Laser

Safety

Position Contact / Contact Type Displacement

Linear Displacement / Micro Encoder

AI Vision / Barcodes

Temperature / Flow Rate

Static

LM2-Q Series



A wide range of sensing heads are available for a variety of functions with detection distances ranging from 25 to 2,000 mm.

Product list

Cable type						Relay type							
Appearance	Diffuse reflective	Detection distance (mm)	Repeatability	Output method	Model	Appearance	Diffuse reflective	Detection distance (mm)	Repeatability	Output method	Model		
	Short-range type	25~45	10μm	NP/NPN/IO-Link Analog voltage/current	LM2-Q045AV		Short-range type	25~45	10μm	NP/NPN/IO-Link Analog voltage/current	LM2-Q045CAAV		
				NP/NPN Analog voltage/current	LM2-Q045AV-R					NP/NPN Analog voltage/current	LM2-Q045CAAV-R		
				NP/NPN/IO-Link RS-485	LM2-Q045T					NP/NPN/IO-Link RS-485	LM2-Q045CAT		
				NP/NPN RS-485	LM2-Q045T-R					NP/NPN RS-485	LM2-Q045CAT-R		
	Medium-range type	35~80	30μm	NP/NPN/IO-Link Analog voltage/current	LM2-Q080AV		Medium-range type	35~80	30μm	NP/NPN/IO-Link Analog voltage/current	LM2-Q080CAAV		
				NP/NPN Analog voltage/current	LM2-Q080AV-R					NP/NPN Analog voltage/current	LM2-Q080CAAV-R		
				NP/NPN/IO-Link RS-485	LM2-Q080T					NP/NPN/IO-Link RS-485	LM2-Q080CAT		
				NP/NPN RS-485	LM2-Q080T-R					NP/NPN RS-485	LM2-Q080CAT-R		
		60~165	70μm	NP/NPN/IO-Link Analog voltage/current	LM2-Q165AV			60~165	70μm	NP/NPN/IO-Link Analog voltage/current	LM2-Q165CAAV		
				NP/NPN Analog voltage/current	LM2-Q165AV-R					NP/NPN Analog voltage/current	LM2-Q165CAAV-R		
				NP/NPN/IO-Link RS-485	LM2-Q165T					NP/NPN/IO-Link RS-485	LM2-Q165CAT		
				NP/NPN RS-485	LM2-Q165T-R					NP/NPN RS-485	LM2-Q165CAT-R		
		100~400	200μm	NP/NPN/IO-Link Analog voltage/current	LM2-Q400AV			100~400	200μm	NP/NPN/IO-Link Analog voltage/current	LM2-Q400CAAV		
				NP/NPN Analog voltage/current	LM2-Q400AV-R					NP/NPN Analog voltage/current	LM2-Q400CAAV-R		
				NP/NPN/IO-Link RS-485	LM2-Q400T					NP/NPN/IO-Link RS-485	LM2-Q400CAT		
				NP/NPN RS-485	LM2-Q400T-R					NP/NPN RS-485	LM2-Q400CAT-R		
	Long-range type	50~1000	0.5mm	NP/NPN/IO-Link Analog voltage/current	LM2-Q1000SAV		Long-range type	50~1000	0.5mm	NP/NPN/IO-Link Analog voltage/current	LM2-Q1000SCAAV		
				NP/NPN Analog voltage/current	LM2-Q1000SAV-R					NP/NPN Analog voltage/current	LM2-Q1000SCAAV-R		
				NP/NPN/IO-Link RS-485	LM2-Q1000ST					NP/NPN/IO-Link RS-485	LM2-Q1000SCAT		
				NP/NPN RS-485	LM2-Q1000ST-R					NP/NPN RS-485	LM2-Q1000SCAT-R		
		150~1000		NP/NPN/IO-Link Analog voltage/current	LM2-Q1000AV			150~1000		NP/NPN/IO-Link Analog voltage/current	LM2-Q1000CAAV		
				NP/NPN Analog voltage/current	LM2-Q1000AV-R					NP/NPN Analog voltage/current	LM2-Q1000CAAV-R		
				NP/NPN/IO-Link RS-485	LM2-Q1000T					NP/NPN/IO-Link RS-485	LM2-Q1000CAT		
				NP/NPN RS-485	LM2-Q1000T-R					NP/NPN RS-485	LM2-Q1000CAT-R		
		150~2000		NP/NPN/IO-Link Analog voltage/current	LM2-Q2000AV			150~2000		NP/NPN/IO-Link Analog voltage/current	LM2-Q2000CAAV		
				NP/NPN Analog voltage/current	LM2-Q2000AV-R					NP/NPN Analog voltage/current	LM2-Q2000CAAV-R		
				NP/NPN/IO-Link RS-485	LM2-Q2000T					NP/NPN/IO-Link RS-485	LM2-Q2000CAT		
				NP/NPN RS-485	LM2-Q2000T-R					NP/NPN RS-485	LM2-Q2000CAT-R		



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High-definition digital display

The white LED display makes the status clear at a glance, and the large indicator lights make it easy for the customer to see from all angles.

White display



Large indicator light



Sturdy and durable

It is made of zinc alloy and complies with IP67 enclosure protection class.

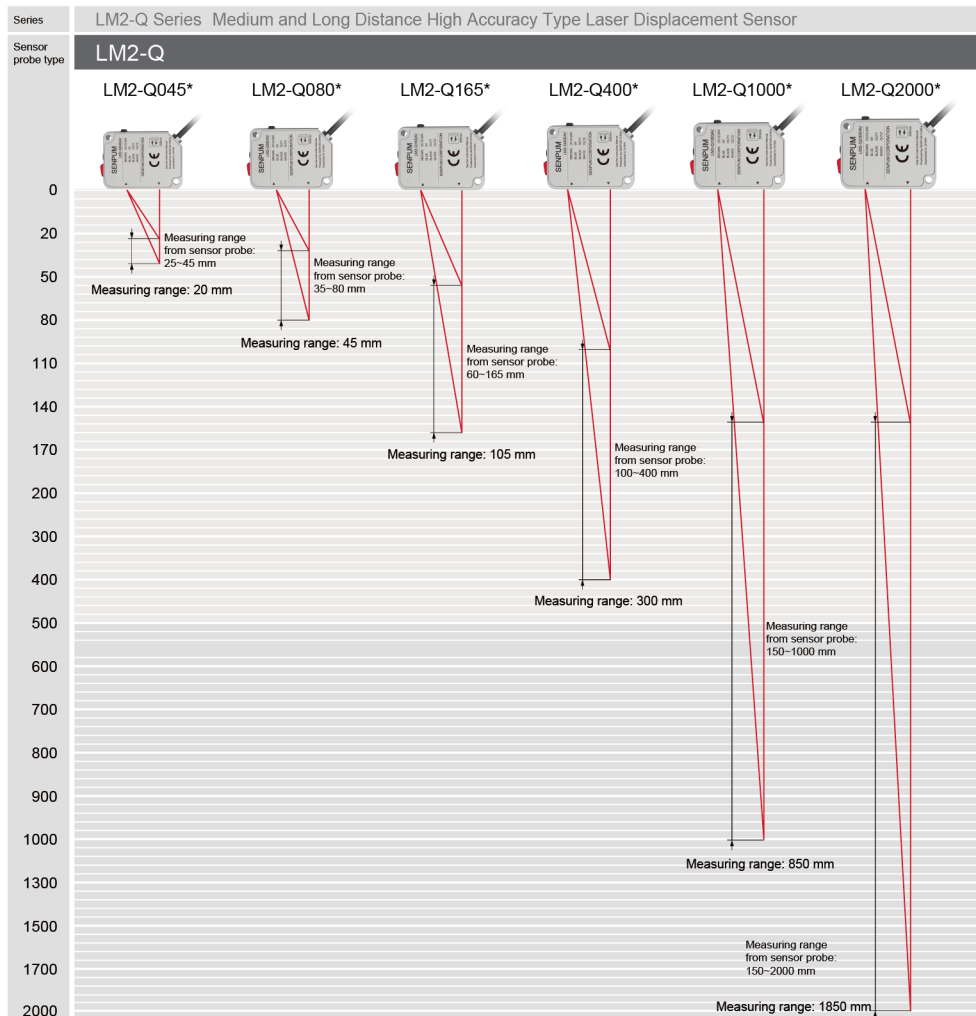
Rugged metal body



IP67 protection class



Six different sensing heads from long range to high precision detection



Fiber Optics

Photoelectric \ Proximity

Color

Laser

Safety

Proximity Contact / Contactless Displacement

Laser Displacement / Microscope

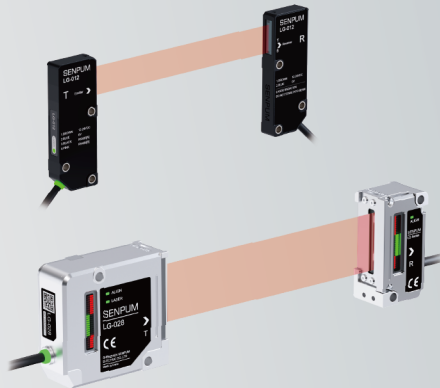
AI Vision \ Barcodes

Temperature \ Flow Rate

Static



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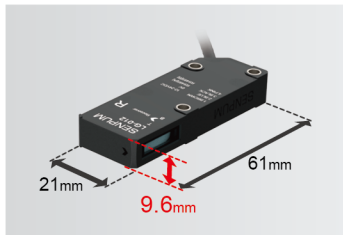
EtherCAT[®] RS-232C / RS-485 **PROFINET** EtherNet/IP[™] Ethernet (TCP/IP)

Achieve high-precision detection with ease

High-speed measurement of outer diameter, inner diameter, width, position, and more; transparent objects can also be measured.

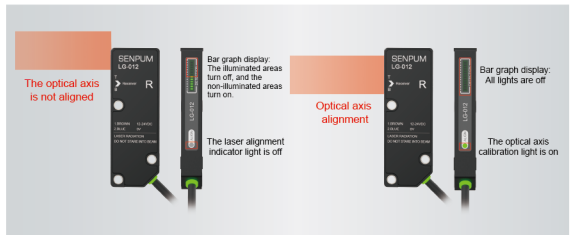
Ultra-thin and ultra-compact

Ultra-thin and ultra-compact, suitable for a variety of applications.



Easier optical axis calibration

The alignment indicator on the optical axis makes it easy to align and install the transmitter and receiver.



Ultra-thin and ultra-compact

Ultra-thin and ultra-compact, suitable for a variety of applications.



12~28 mm measurement range, maximum installation distance of 1500 mm

Maximum sampling cycle: up to 150 μ s; maximum repeatability: $\pm 1 \mu$ m.



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Transmissive Digital Laser Sensor

Offers exceptional stability



Product List

Sensor head

Appearance	Detection Range (mm)	Linearity	Repeatability	Model
 Through-beam	12mm	$\pm 0.28\% \text{F.S.}$ ($\pm 34\mu\text{m}$)	$\pm 1\mu\text{m}$ (Average of 16 times)	LG-012
			$\pm 1\mu\text{m}$ (Average of 1 times)	LG-012K
 Through-beam	28mm	$\pm 0.1\% \text{F.S.}$ ($\pm 28\mu\text{m}$)	$\pm 1\mu\text{m}$ (Average of 16 times)	LG-028

controller

Appearance	Type	Output method	Model
 Main Module	DIN Rail Installation	NPN/PNP	LG-1000
 Expansion Module		NPN/PNP	LG-1050

Communication cable (used to connect the sensor to the controller)

Appearance	Sensor side	Cable Termination	Material	length	Model
	M8 4PIN Straight	controller	High-flex drag chain type	2M	OW-LG2000EM
				5M	OW-LG5000EM
				10M	OW-LG10MEM

Sensor cabl

(for use when the sensor head is used independently)

Appearance	length	Model
	2M	OW-LG2000
	5M	OW-LG5000
	10M	OW-LG10M

Communication Module

Appearance	Internet	Model
	EtherCAT	OW-EC2A
	PROFINET	OW-PN2
	Ethernet (TCP/IP)	OW-EN2
	EtherNet/IP™	OW-EP2
	RS-232C / RS-485	OW-RS1A





EtherCAT  RS-232C / RS-485  EtherNet/IP™ Ethernet (TCP/IP)

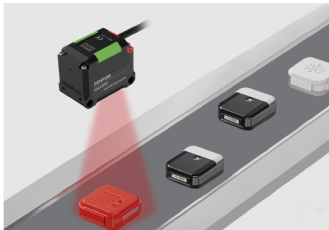
AI-powered, a sensor capable of independent thinking and detection

“Visualization” of status

Large indicator lights that display various statuses

Detects by surface; can detect even if misaligned

Stable detection is possible even if the position or orientation is misaligned.

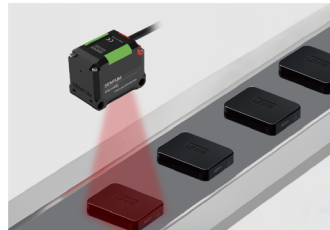


It operates the same way as a standard sensor and is easy to use.

Press the SET button to complete the setup.

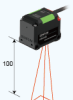
Use images to gain control and make distinctions

Since the target object can be identified through images, it is possible to distinguish it.



Product List

Sensor head

Appearance	Detection Range (mm)	Detection range	Model
	8x8mm~32x32mm	90 to 110mm	IVS-H100

controller

Appearance	Type	Output method	Model
	DIN rail mounting	NPN/PNP	IVS-1000
		NPN/PNP	IVS-1050

Cable (extension cable for connection between sensing head and controller) (sold separately)

Appearance	Sensor side	Cable termination	Material	Cable length	Model
	M8 4PIN Straight	controller	High-flex drag chain type	2M	OW-IVS2000
				5M	OW-IVS5000
				10M	OW-IVS10M
				20M	OW-IVS20M

Communication Module

Appearance	Internet	Model
	EtherCAT 	OW-EC2A
		OW-PN2
	EtherNet (TCP/IP)	OW-EN2
	EtherNet/IP™	OW-EP2
	RS-232C / RS-485	OW-RS1A



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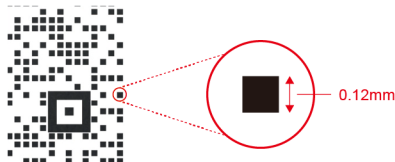
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1 megapixel processor for minimum resolution of 0.12mm

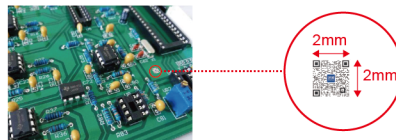
1 megapixel processor for minimum resolution of 0.12mm

1 megapixel processor with the latest technology to ensure stable readings.



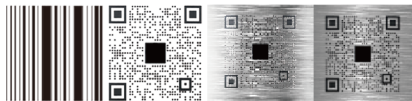
High-speed dynamic reading at speeds up to 100 codes/second

Built-in new reading algorithm, can efficiently read a variety of code system barcode and DPM code, reading speed up to 100 codes / sec, 2 * 2mm miniature barcode can also be easily read.



Reliably read 1D and 2D codes

1D / 2D barcodes can be read stably regardless of the barcode status.



Product list

Appearance	Read distance (mm)	Model
	70	XR-1000S
	100	XR-1000M
	150	XR-1000L

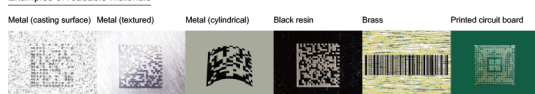
- * For more products and applications, please contact a SENPUM engineer;
- * Through on-site operational guidance and after-sales technical support, we provide customers with comprehensive support from product selection to production line operation.

Multiple detection conditions

Readable barcodes of difficulty



Examples of readable materials



Flexible Ethernet cable

Appearance	Cable length	Model
	3M(Standard configuration)	OW-XR3000
	5M	OW-XR5000
	10M	OW-XR10M

Fiber Optics

Photoelectric \ Proximity

Color

Laser

Safety

Precision Contact / Contact / Proximity

Laser Displacement / Microphone

AI Vision \ Barcodes

Temperature \ Flow Rate

Static

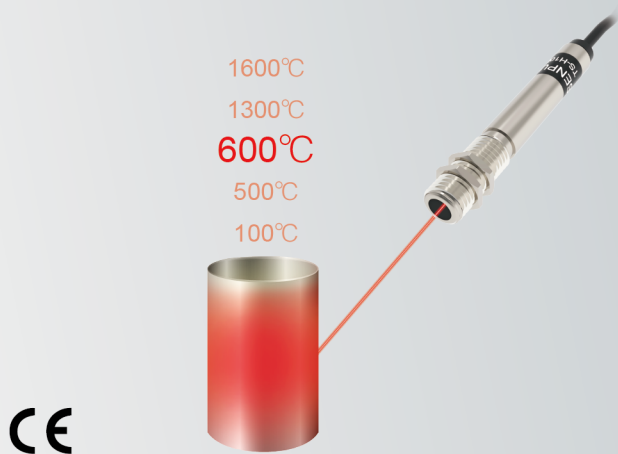


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Infrared Temperature

Digital Display Standard Type Infrared Temperature Sensor

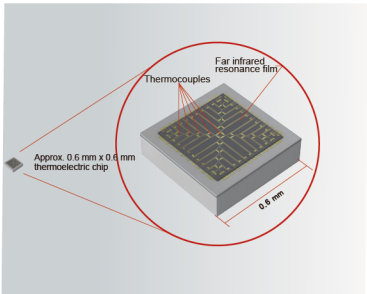
TS-D Series



Easily detects surface temperatures up to 1600°C

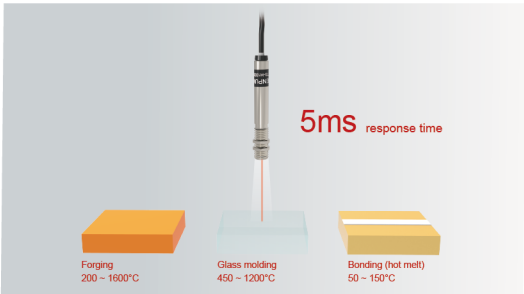
5ms high speed response

- 1. Dramatically reduces the thickness of the far infrared resonance film.
- 2. Extremely efficient positioning of thermocouples for fast and accurate detection of absorbed heat.



Non-contact temperature sensor

High-temperature type for temperatures up to 1600°C.



Laser indication

Two laser pointers clearly indicate the detection range and make sensor installation easy.



Product list

Sensor head

Appearance	Operating wavelength	Measure the temperature		Model	
		Celsius (°C)	Fahrenheit (°F)	With SF focusing lens	Includes a CF2 focusing lens
	8~14μm	0~500°C	32~932°F	TS-D500V	-
	2.3μm	100~600°C	212~1112°F	TS-D600S	TS-D600S-CF2
	1.6μm	300~1300°C	572~2372°F	TS-D1300S	TS-D1300S-CF2
	1μm	600~1600°C	1112~2912°F	TS-D1600S	TS-D1600S-CF2

Stand (sold separately)

Appearance	Type	Model
	M16 bracket	OW-TSD001
	M22 bracket	OW-TSD002
	Adjust the bracket	OW-TSD003



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flow rate

Clamp-on Flow Sensor

FT-Q Series



No professional training required—easy to install, making measurement a breeze

Making Measurement Easy

During installation, simply clip it into place; secure it with screws.



Easy to install—no professional training required

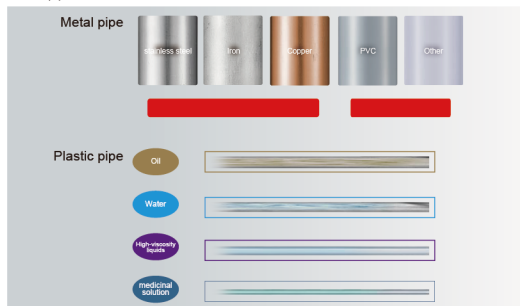
Can be installed and used without interrupting production



Suitable for various types of pipes and media

Metal pipes: stainless steel pipes, carbon steel pipes, copper pipes, etc.

Plastic pipes: PVC/CPVC, PVDF, PPR, PPH, PFA/PU, HDPE, etc.



Product List

Appearance	Maximum flow rate (L/min)	Nominal diameter (DN)	Model
	11.02	DN6	FT-Q6
	19.59	DN8	FT-Q8
	30.62	DN10	FT-Q10
	52.99	DN15	FT-Q15
	94.2	DN20	FT-Q20
	147.19	DN25	FT-Q25
	241.15	DN32	FT-Q32
	376.8	DN40	FT-Q40
	588.75	DN50	FT-Q50

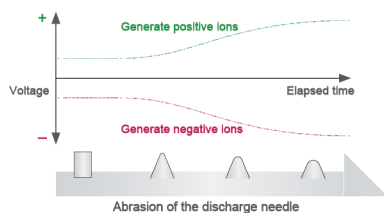




Self-cleaning function, also long-term without changing the electrode needle

Static electricity elimination performance

Ion generation is monitored in real time, and the applied voltage is automatically increased according to the decrease in the amount of ions caused by the wear of the discharge needle. Therefore, it is possible to maintain static electricity elimination capability without changing the needle.



Cylindrical discharge needles

The static elimination speed is twice as fast as conventional models, which greatly improves work efficiency.



No need for regular maintenance & superb static dissipation performance

Ion balance up to ± 5 V. Installation and removal with a single touch. Discharge window and discharge pin assembly can be mounted and dismantled with a single touch, improving maintainability. The angle is adjusted by a locking mechanism so that the angle does not change due to vibration.

LED display alerts to dirt, wear on discharge needle

Monitor the dirt and wear of the discharge needle, which can be alerted by the LED display and abnormal output.



Product list

Appearance	Air volume (m ³ /min)	Model
	1.6~3.3	SK3-A100



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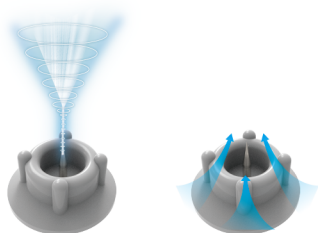
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Super static elimination x energy saving

Ultra-fast static elimination

Twice as much as conventional products.



High voltage alarm indication

Red light alarm when positive or negative high pressure is abnormal; Φ8 intake throttle valve.



Easy to install

Stainless steel mounting corners are provided to accommodate a variety of different installation environments.



Product list

Main body

Model	SK-E350	SK-E400	SK-E500	SK-E600	SK-E800	SK-E1000	SK-E1100	SK-E1200	SK-E1300	SK-E1500	SK-E1800	SK-E2000	SK-E2200	SK-E2500	SK-E2800	SK-E3000
Effective length (mm)	250	300	400	500	700	900	1000	1100	1200	1400	1700	1900	2100	2400	2700	2900
Pin spacing (mm)	50															

PoE Power Supply + Power Cable

Appearance	Cable length	Model
	1.8M (Standard)	OW-SKE1800
	3M	OW-SKE3000
	5M	OW-SKE5000
	10M	OW-SKE10M
	15M	OW-SKE15M

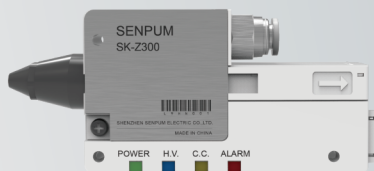
Ethernet cable (sold separately)

Appearance	Cable length	Model
	2.5M (Standard)	OW-SKE-TP2500
	5M	OW-SKE-TP5000
	10M	OW-SKE-TP10M

Nozzle (sold separately) & Mount

Name	Appearance	Model
nozzle		OW-SKE001
bracket	Standard configuration	OW-SKE101
	Sold separately	OW-SKE102

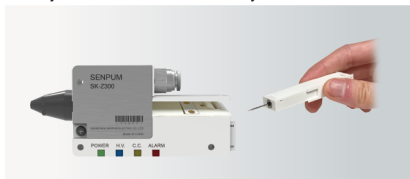




When cleaning and inspection is required, it can be detected by the LED indicator and the abnormal discharge of the discharge pin can be notified.

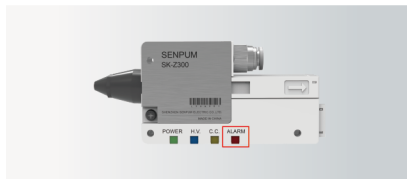
Detachable discharge pin for easy maintenance

Automatic stopping of the high voltage output by means of a safety device in case of disassembly.

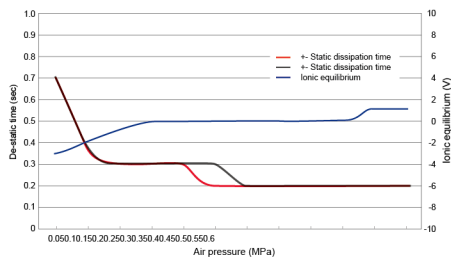


High voltage stop alarm

With high voltage stop alarm display function.



Anti-static properties



Note 1: Measured using a 150 mm, 20 pF charged board monitor
 Note 2: Static elimination time is ± 1000 V $\rightarrow$ ± 100 V decay time
 Note 3: Measurement distance from the board monitor 50 mm
 Note 4: The nozzle is to use our standard nozzle

Product list

Appearance	Type	Model
	High frequency standard type	SK-Z300
	High frequency clean type	SK-Z300C

Air Nozzle (sold separately)

Model	OW-SKZ3001
Appearance	



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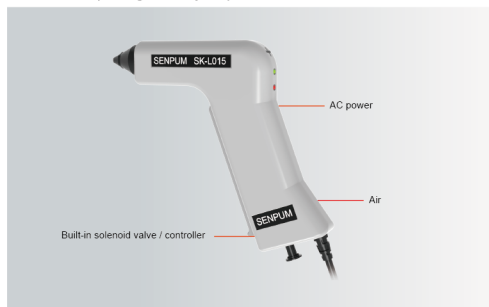
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Static elimination air guns for powerful static elimination

One-piece construction (built-in solenoid valve/controller)

Ready for immediate use as long as there is power and clean, dry air. Controller and solenoid valve can be easily introduced without wiring. Also suitable for replacing ordinary air pressure wheels.



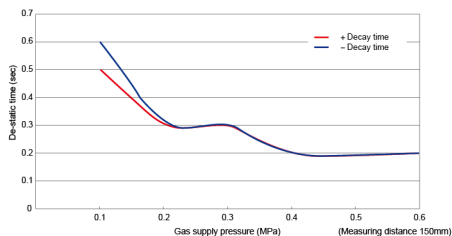
Strong dust removal capability, powerful air impact

An air nozzle ionizer with a built-in ultra-small high-voltage transformer is standardly equipped with a safety circuit for high-voltage anomaly detection and an alarm in case of anomaly.

The shape of the plastic gun fits in the hand, and it is lightweight at only 250g

The air gun is designed to be safe, with a built-in piezoelectric transformer, no exposed high-voltage parts and no high-voltage cables.

De-static characteristics



Product list

Appearance	Type	Ionic equilibrium	Model
	High-frequency type	±10V or less	SK-L015



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Non-contact vibration capacitance electrostatic detection technology

Ultra-long detection distance

It can be detected at a certain distance from each other, so you don't have to worry about the detection distance.

Maximum detection distance:
500mm



Extensive product lineup

Hand-held type for easy measurement of static electricity or compact stationary type for on-line monitoring of static electricity at any time.



Head can be rotated 180° with 45° stops each

Bright and wide LCD display for easy viewing of measurement results.



Setting the static alarm threshold

Set the electrostatic safety (alarm) threshold by remote control or monitoring software, beyond the threshold red light alarm, within the electrostatic threshold, the indicator light is green.



Product List

Handheld

Appearance	Measured distance (mm)	Model
	30	SK-T030

Ethernet cable (sold separately)

Appearance	Cable length	Model
	5M	OW-SK-TP5000
	10M	OW-SK-TP10M
	15M	OW-SK-TP15M

Power cord (sold separately)

Appearance	Cable length	Model
	5M	OW-SK5000
	10M	OW-SK10M

In-line sensor head

Appearance	Measured distance (mm)	Model
	5~500	SK-500 (Use on its own)
		SK-T500 (For use with a controller)

Online controller

Appearance	Installation Method	Output method	Model
 Main Module	DIN rail mounting	NPN/PNP	SK-1000
			SK-1050
 Expansion Module			



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EtherCAT

EtherCAT
OW-EC2A

PROFINET

PROFINET
OW-PN2

Ethernet(TCP/IP) Ethernet(TCP/IP)
OW-EN2

EtherNet/IP™ Ethernet/IP™
OW-EP2

RS-232C / RS-485 RS-232C / RS-485
OW-RS1A


Communication Module

Supports Ethercat® network modules

Model: OW-EC2A



EtherCAT

Supports PROFINET network modules

Model: OW-PN2



PROFINET

Supports Ethernet(TCP/IP) network modules

Model: OW-EN2



Ethernet(TCP/IP)

Supports Ethernet/IP network modules

Model: OW-EP2



Ethernet/IP™

Supports RS-232C / RS-485 network modules

Model: OW-RS1A

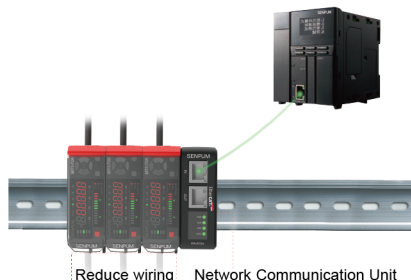


RS-232C / RS-485

Product Advantages

Significantly reduce wiring labor hours with open-architecture field networking

Connecting multiple sensor amplifiers requires a significant amount of wiring time. However, with the OW Series, no additional wiring is required beyond the power cable for the main amplifier unit, thereby reducing wiring time.



Reduce wiring

Network Communication Unit

Communication with the on-site network simplifies the processing of various types of data

• Monitoring

(You can check the sensor status on a PLC or computer; this makes it easy to identify issues before they become problems.)

• Change Settings

(Settings can be changed via external devices such as PLCs or computers; this can reduce switching time.)

Product List (sold separately)

Appearance	Internet	Model
		OW-EC2A
		OW-PN2
	Ethernet(TCP/IP)	OW-EN2
	EtherNet/IP™	OW-EP2
	RS-232C / RS-485	OW-RS1A



WhatsApp



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Safety Precautions

For safe use of the product,
be sure to read the Instruction
Manual carefully before use.

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