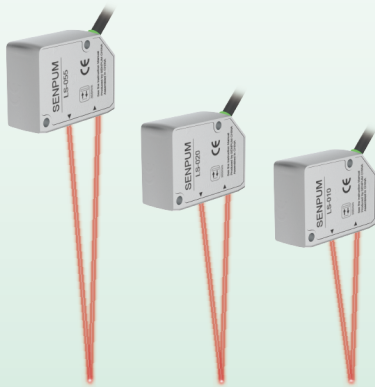


High Accuracy MINI Type
Laser Displacement Sensor
LS Series



EtherCAT[®] RS-232C / RS-485 PROFIBUS[®]

EtherNet/IP[™] Ethernet (TCP/IP)

Ask Senpum

+86-755-83330055

Same-Day Delivery

Conventional model (SF)    

Most of the products are in stock and can be arranged to be shipped on the same day the order is received. Fast delivery reduces your overhead costs and losses caused by work stoppages.

※ Unconventional goods 3-5 days delivery



WeChat



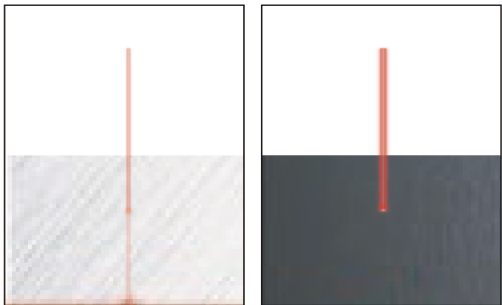
WhatsApp



LINE

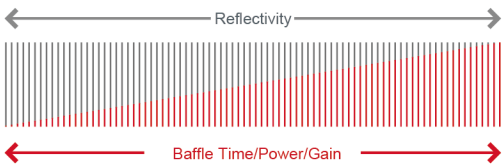
Optimization by automatically controlling the laser according to the target's reflectivity

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



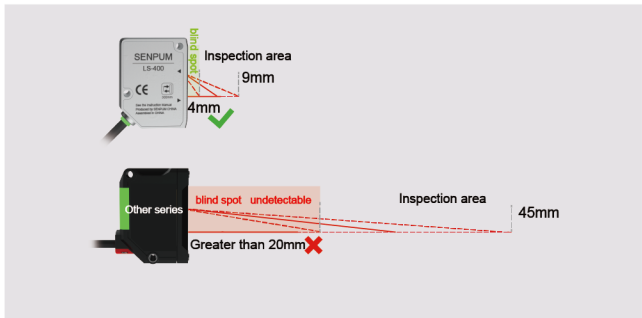
When the operating environment is bright The laser becomes weak

When the working environment is dark The laser becomes stronger



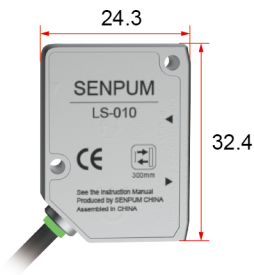
Ultra-small blind spot under 4mm

Solving the problem that traditional sensors cannot be detected due to close installation. Greatly improve the practicality of the product



Ultra small size, only 24.3*32.4mm

By adopting a unique aspherical lens, an ultra-small sensor construction has been realized.



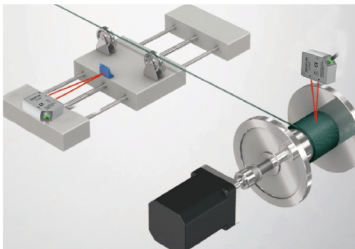
Supports detection distances of 4~600mm for a variety of applications

Ruggedized sensor construction

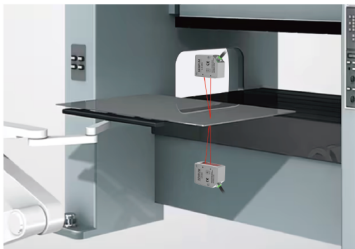
IP67 optical base compression molded parts are used.

- More merits
- High-definition numerical display
 - Clearly visible status indicators
 - Ultra-small sensor head for easy installation
 - Protection class IP67

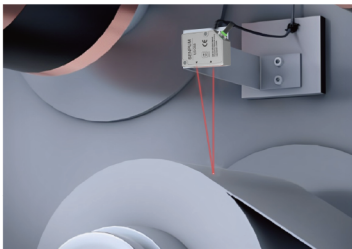
Application



Material level monitoring



Chip Inspection



Diaphragm and pole piece roll diameter inspection

Product List

Inductive probe

Appearance	Schematic	Datum distance (mm)	Measuring range (mm)	Model
		6.5	4~9	LS-009
		15	10~20	LS-020
		35	20~55	LS-055
		75	45~105	LS-105
		100	50~150	LS-150
		155	55~255	LS-255
		200	65~600	LS-600

Controllers

Appearance	Type	Output method	Model
 Main module	DIN rail mounting	NPN/PNP	LS-1000
 Expansion module		NPN/PNP	LS-1050

Cable (extension cable to connect the probe to the controller)

Appearance	Sensor side	Cable termination	Material	Cable length	Model
	M8 4PIN Straight	Controllers	Highly flexible drag chain type	2M	OW-LS2000
				5M	OW-LS5000
				10M	OW-LS10M
				20M	OW-LS20M

Communications module

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

Laser Displacement Sensors

- LM2-Q
- LM2-H
- LM
- LS
- LM-S

- Fiber Optic Sensors
- Photoelectric Sensors
- Color Sensors
- Laser Sensors
- Inductive Proximity Sensors
- Precision Contact Sensors
- Area/Safety Light
- Curtain Laser Scanners
- Digital Contact Sensors
- Laser Displacement Sensors

- Laser micrometer
- Confocal Displacement Sensors
- Barcode Scanners
- AI Vision Sensor
- RFID
- Infrared Temperature Sensors
- Digital Pressure Sensors
- Flow Test Sensors
- Gate Magnetic Sensors
- Ultrasonic Displacement Sensors
- Gate Magnetic Sensors
- Static Eliminators



LM2-Q

LM2-H

LM

LS

LM-S

Laser Displacement Sensors

Fiber Optic Sensors

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Ultrasonic Displacement Sensors

Gate Magnetic Sensors

Static Eliminators



SENPUM
1245

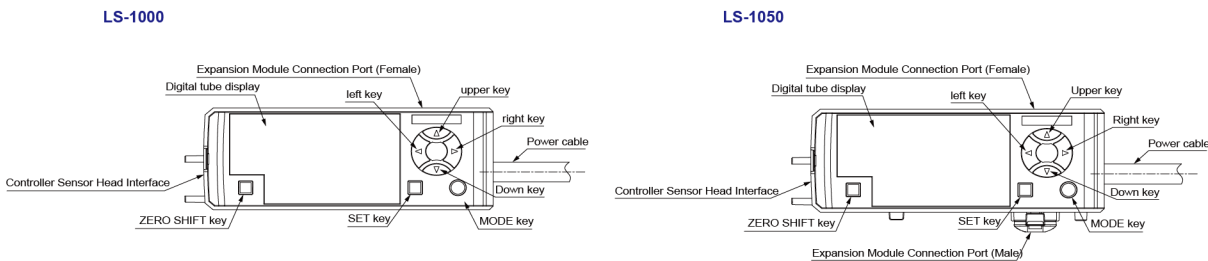
LS

High Accuracy MINI Type Laser Displacement Sensor

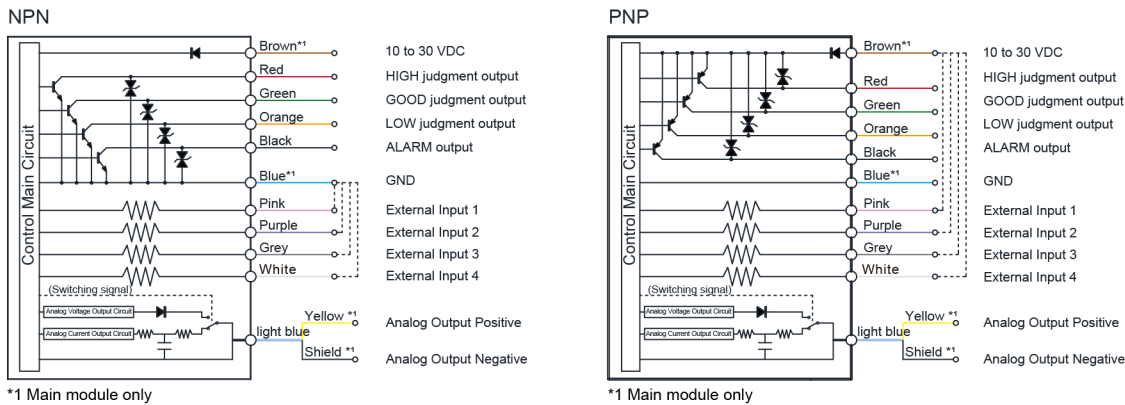
Specs							
Inductive probe							
Model	LS-009	LS-020	LS-055	LS-105	LS-150	LS-255	LS-600
Reference distance (mm)	6.5	15	35	75	100	155	200
Measuring range (mm)	4~9	10~20	20~55	45~105	50~150	55~255	65~600
Repeatability*2	0.5μm	1μm	6μm	7μm	10μm	20μm(55~155)/ 60μm(155~255)	50μm(65-200)/ 200μm(200-400)
Linearity accuracy*1*2	±0.1%F.S.(±5μm)	±0.1%F.S.(±10μm)	±0.1%F.S.(±35μm)	±0.1%F.S.(±60μm)	When measuring 50~100: ±0.1%F.S. (±100μm) When measuring 100~150: ±0.2%F.S. (±200μm)	When measuring 55~155mm; ±0.1%F.S.(±200μm) When measuring 155~255mm; ±0.25%F.S.(±500μm)	When measuring 65~200; ±0.08%F.S.(±428μm) When measuring 200~400; ±0.4%F.S.(±2.1mm) When measuring 400~600; ±1%F.S.(±5.3mm)
Dimension of light point (at datum distance)	Approx. 0.1*0.7mm	Approx. 0.1*0.6mm	Approx. 0.2*0.8mm	Approx. 0.2*0.8mm	Approx. 0.2*0.8mm	Φ0.5mm	Φ1mm
light source	Type	Red Laser (639nm)					
	Laser Type	Class 2 laser products					
	Output	600μW					800μW
Sampling period		0.33/1/2/5ms switching					
Temperature characteristics*2		±0.06%F.S./°C					
Enclosure protection class		IP67					
Ambient luminosity*2		Incandescent lamp: below 5000lux					
Ambient temperature		-10~50℃ (no condensation, no freezing)					
Ambient humidity		35%~85%RH (no condensation)					
Vibration resistance		10 to 55Hz double amplitude 1.5mmX, Y, Z each direction 2 hours					
Material		Housing: Zinc Alloy, Lens: Acrylic, Cable: PVC , Lampshade: Silicone					
Weight		About 30 grams					
*1. Each model F.S. is as follows: LS-009: 5mm, LS-020: 10mm, LS-055: 35mm, LS-105: 60mm, LS-150: 100mm, LS-255: 200mm, LS-600: 535mm							
*2. Sampling period of 2ms, average number of times 128, and data when the target object is detected as a white diffuser.							
Controllers							
Model	NPN/PNP	LS-1000			LS-1050		
Main Module/Expansion Module		Main module			Expansion module		
Mounting Type		DIN rail mounting					
Sensor Head Compatibility		Yes					
Monitor	Minimum display unit	LS-009: 0.1um, LS-020: 1um, LS-055/LS-105: 5um, LS-150: 10um, LS-255: 20um, LS-600: 50um					
	Display range	LS-009: ±19.9999 to ±19 (changeable in 5 levels), LS-020/LS-055/LS-105: ±199.999 to ±199 (changeable in 4 levels). LS-020/LS-055/LS-105: ±199.999 to ±199 (can be varied in 4 levels), LS-150/LS-255/LS-600: ±1999.99 to ±1999 (can be varied in 3 levels)					
	Display rate	Approx. 10 times / sec.					
Analog Voltage Output		±5V, 1 to 5V, 0 to 5V Output Impedance 100Ω			-		
Analog Current Output		4 to 20 mA Maximum Load Resistance 350Ω					
Control input	Channel switching input	NPN: ON when connected to 0V, OFF when connected to 24V; PNP: ON when connected to 24V, OFF when connected to 0V;					
	Zero drift input						
	Transmit stop input						
	Timer input						
	Reset input						
Control output**	Judgment Output	Open collector, 50mA max (NPN/PNP; normally open/closed, switchable)					
	Alarm output	Open collector, 50mA max (NPN/PNP; normally closed, non-switchable)					
Power supply	Supply voltage*1	10 to 30 VDC including ripple (P-P) 10 percent			Power supply through the main unit		
	Power consumption (without load)	1950 mW or less (at 30 V, 65 mA maximum)			1800 mW or less (at 30 V, 60 mA max.)		
Ambient Temperature		-10 to + 50 °C (non-freezing)					
Ambient Humidity		35 to 85% RH (non-condensing)					
Vibration resistance		10 to 55 Hz, 1.5 mm dual amplitude, 2 hours each for X, Y, and Z axes					
Material		Case: Polycarbonate Key: Polyacetal Cable: PVC					
Weight (including accessories)		Approx. 150g			Approx. 140g		
*1 The following limitations apply depending on the number of units to be connected to the expansion unit.							
When connecting 2 to 8 units including the main unit							
- Power supply voltage: 20 to 30 VDC							
- Control output current: 20 mA max.							

*1 The following limitations apply depending on the number of units to be connected to the expansion unit.
When connecting 2 to 8 units including the main unit
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Control Panel Description



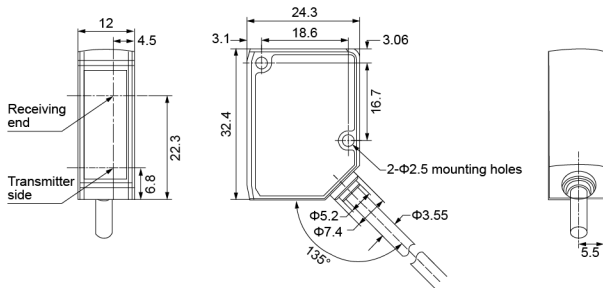
I/O Circuit Connection Diagram



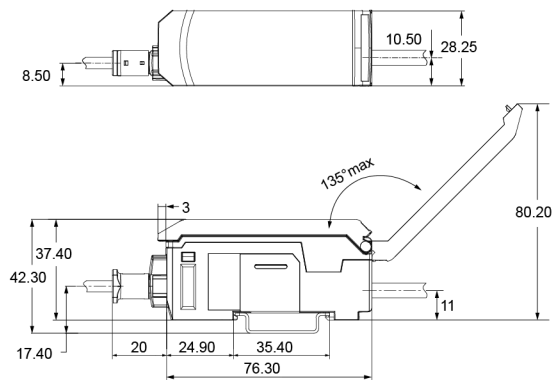
Dimensional Specifications

Inductive probe
LS-009/ LS-020 / LS-055 / LS-105 / LS-150 / LS-255 / LS-600

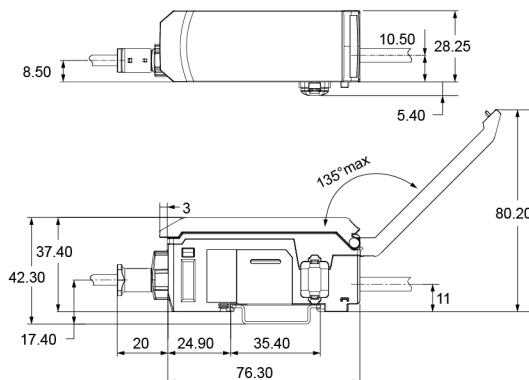
Unit: mm



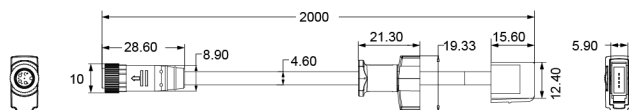
Controllers
LS-1000



LS-1050



Cable
OW-LS2000 / OW-LS5000 / OW-LS10M / OW-LS20M



Pin Definitions

Serial number	Coat color
①	Brown
②	Orange
③	Blue
④	Black

Laser Displacement Sensors

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LM2-H
LM
LS
LM-S

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