SUNX

In response to the requirements of our customers

Industry No. 1* in stable sensing
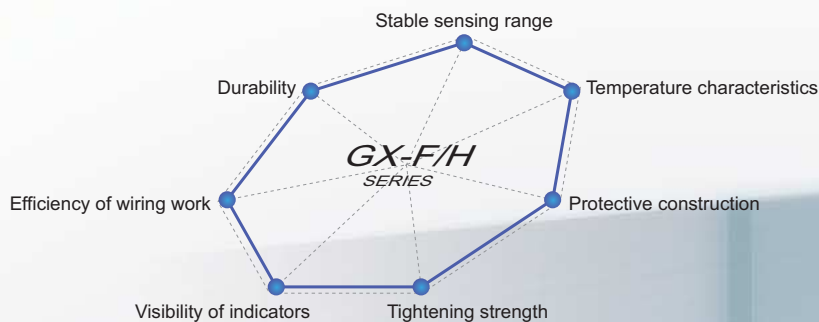
- Stable sensing range
- Temperature characteristics
- Durability
- GX-F/H SERIES
- Protective construction
- Efficiency of wiring work
- Tightening strength
- Visibility of indicators

Stable sensing range

Durability

Temperature characteristics

Efficiency of wiring work

Protective construction

Visibility of indicators

Tightening strength

— **GX-F/H** SERIES
— Previous models
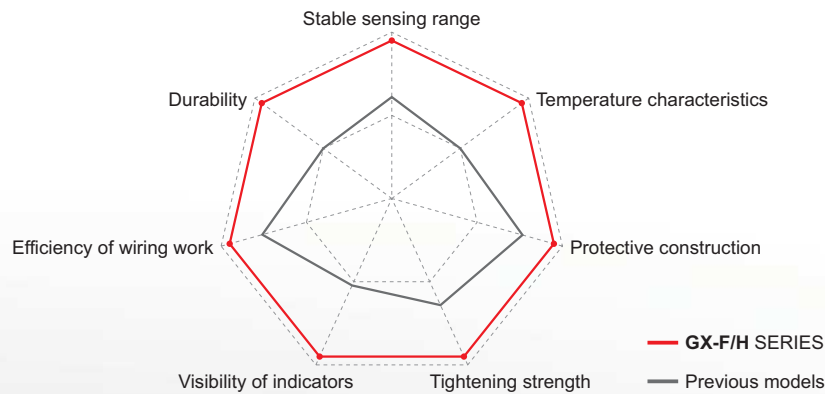
Use with confidence at any time and anywhere

Have you ever thought that sensing was simple, but then when you tried to use an rectangular inductive proximity sensor, the sensing was not stable?
It is because SUNX is the leading manufacturer of inductive proximity sensors that we have been able to accumulate our sensor technology to develop high-precision inductive proximity sensors that can be used at any time and anywhere.
The requirements of our customers have been accommodated by basic performance which is not to be found with other manufacturers.

GX-H8□

GX-F8□

GX-H12□

GX-F12□

The industry No. 1* in accommodating to customer requirements in basic performance

Customer requirements

Answer of GX-F/H series

1 We're frustrated because sensing results weren't stable. And the screw mounting method makes it difficult to adjust the sensor position.	>> **Industry No. 1 in stable sensing** — P.3
2 When the sensing position changes because of temperature variations during the morning, afternoon and nighttime, fine adjustments become very difficult to make.	>> **Industry No. 1 in temperature characteristics** — P.4
3 We want sensors that are good at withstanding vibration and shocks!	>> **Industry No. 1 in durability** — P.5
4 Are the sensors really safe to be used in places where water or oil will get on them?	>> **Industry No. 1 in protective construction** — P.5
5 We'd really like to have sensors that let you see the operating status at a glance.	>> **Bright and easy-to-see indicators** — P.5
6 If you tighten the screws too tightly, it will damage the sensors.	>> **Improved tightening strength** — P.6
7 There are too many thin wires which are very difficult to work with!	>> **Greater efficiency in wiring work** — P.6

Maximum operation distance variation: 0.4 mm 0.016 in or less

Maximum operation distance: 2.5 mm 0.098 in ± 8 % (2.3 to 2.7 mm 0.091 to 0.106 in)

23 °C 73 °F

Ambient temperature [°C °F]
0 / 32   10 / 50   20 / 68   30 / 86   40 / 104   50 / 122

SUNX GX-F12A

SUNX GX-F12A

We're frustrated because sensing results weren't stable.
And the screw mounting method makes it difficult to adjust the sensor position.

<Have you ever had this experience?>

◎The positions of rectangular inductive proximity sensors which are installed using screws cannot be adjusted, and so they have been designed with as short sensing ranges as possible to minimize variations caused by the sensing range.

◎The sensor used as a replacement for maintenance has a longer sensing range, so that not only the dog but also the base was detected, meaning that position adjustment is necessary.
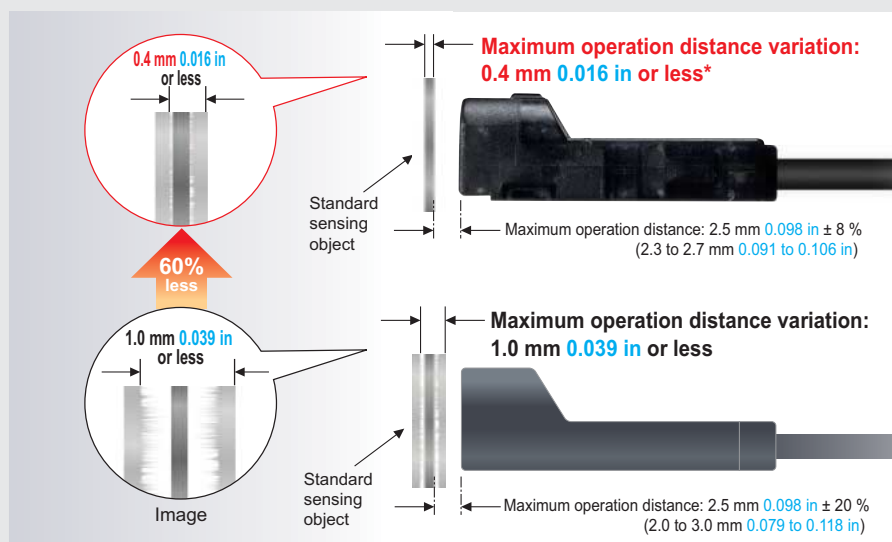
Identifying type of workpiece by palette dogs

Operating error

Dogs
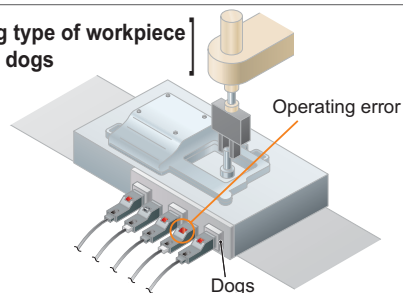
Answer of GX-F/H series

Industry No.1

Stable sensing! Variation at the maximum operation distance is within ±8 %

0.4 mm 0.016 in or less

Standard sensing object

**Maximum operation distance variation:
0.4 mm 0.016 in or less***

Maximum operation distance: 2.5 mm 0.098 in ± 8 %
(2.3 to 2.7 mm 0.091 to 0.106 in)

For the **GX-□8**

60% less

1.0 mm 0.039 in or less

Image

Standard sensing object

**Maximum operation distance variation:
1.0 mm 0.039 in or less**

Maximum operation distance: 2.5 mm 0.098 in ± 20 %
(2.0 to 3.0 mm 0.079 to 0.118 in)

Previous model

Thorough adjustment and control of sensing sensitivity greatly reduces individual sensor differences and variations.
The work of adjusting sensor positions when using multiple sensors and when sensors have been replaced has become much easier.

* Not including temperature characteristics.
GX-□12 has a variation of 0.64 mm 0.025 in or less for a maximum operation distance of 4 mm 0.157 in

Answer of GX-F/H series

The longest stable sensing range in the industry gives you much greater flexibility.
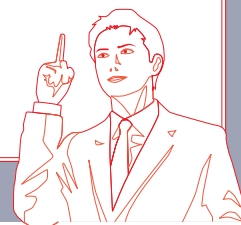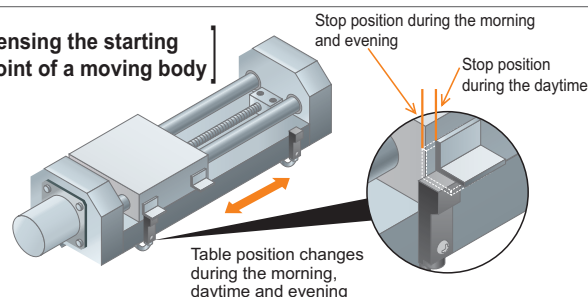
When the sensing position changes because of temperature variations during the morning, afternoon and nighttime, fine adjustments become very difficult to make.

<Have you ever had this experience?>

◎Temperature differences between morning and nighttime or as a result of seasonal changes cause slight shifts in the sensing position.

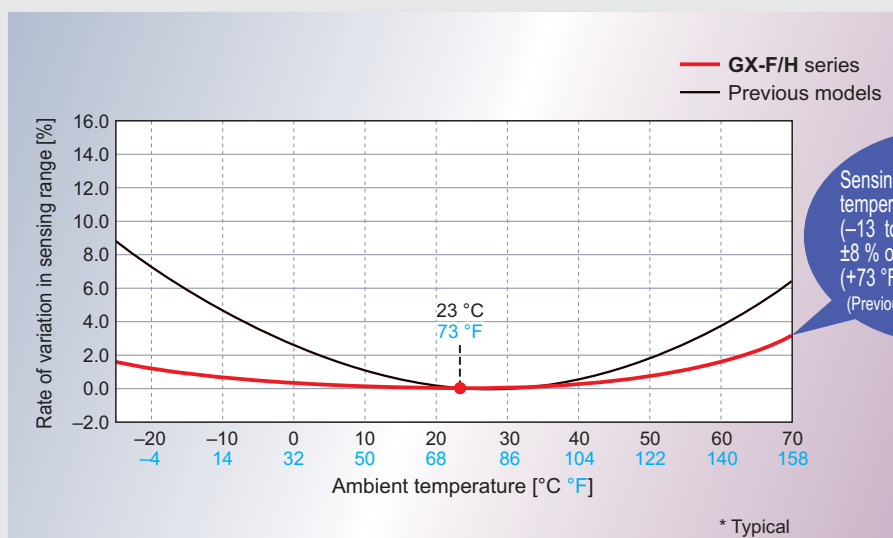◎Every time when the equipment is moved to a place with different weather conditions, readjustments are necessary.

Sensing the starting point of a moving body

Stop position during the morning and evening

Stop position during the daytime

Table position changes during the morning, daytime and evening

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Answer of GX-F/H series

Industry No.1

Stable sensing! Temperature characteristics vary within ±8 %

GX-F/H series
Previous models

Rate of variation in sensing range [%]

23 °C
73 °F

Sensing range within temperatures of –25 to +70 °C (–13 to +158 °F) are within ±8 % of the range at +23 °C (+73 °F)
(Previous models: within $^{+15}_{-10}$%)

| –20 | –10 | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 |
| –4 | 14 | 32 | 50 | 68 | 86 | 104 | 122 | 140 | 158 |

Ambient temperature [°C °F]

* Typical

Components such as the sensor coil and core and product design have been totally revised to provide excellent temperature characteristics.
Stable sensing can be obtained regardless of the time of the day or the yearly seasons.

GX-☐8: 2.1 mm 0.083 in
(Maximum operation distance: 2.5 mm 0.098 in)

Stable sensing range

| 2.5 mm 0.098 in | 2.1 to 0 mm 0.083 to 0 in | GX-☐8 |

| 2.5 mm 0.098 in | 1.8 to 0 mm 0.071 to 0 in | Previous model |

GX-☐12: 3.3 mm 0.130 in
(Maximum operation distance: 4.0 mm 0.157 in)

Stable sensing range

| 4.0 mm 0.157 in | 3.3 to 0 mm 0.130 to 0 in | GX-☐12 |

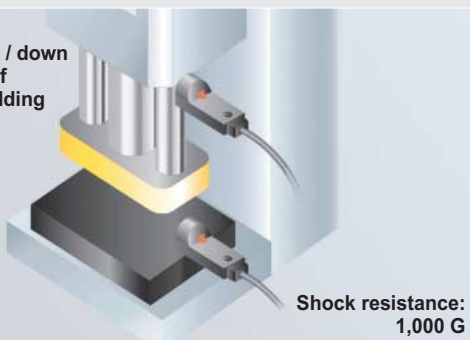| 4.0 mm 0.157 in | 3.0 to 0 mm 0.118 to 0 in | Previous model |

③ Customer requirements

We want sensors that are good at withstanding vibration and shocks!

Answer of GX-F/H series
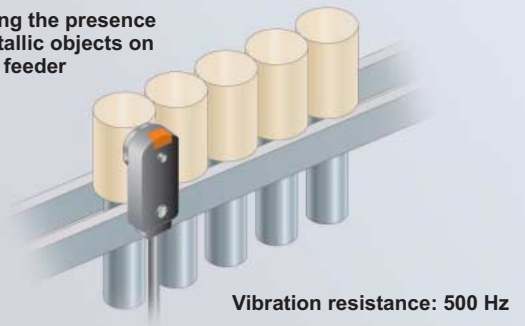
Industry No.1

10 times the durability! (Compared to previous models)

**Checking up / down operations of compact molding equipment**

Shock resistance: 1,000 G

Sensing the presence of metallic objects on a part feeder

Vibration resistance: 500 Hz

The new integrated construction method used provides shock resistance of 10,000 m/s² (approx. 1,000 G in X, Y and Z directions for three times each), and vibration resistance which clears durability tests of between 10 and 500 Hz (3 mm 0.118 in amplitude in X, Y and Z directions for 2 hours each).
In addition, resistance to impulse noize is approx. three times greater than for previous models.

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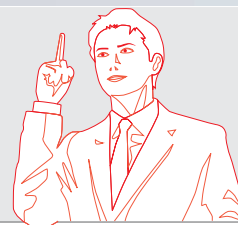
④ Customer requirements

Are the sensors really safe to be used in places where water or oil will get on them?

Answer of GX-F/H series

Industry No.1

Highly resistant to water or oil! IP68g* protective construction

The new integrated construction method used improves environmental resistance performance.
The IP68g prevents damage to the sensor by stopping water and oil from getting inside.

* For details, refer to the "**SPECIFICATIONS**" (p.8~)

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⑤ Customer requirements

We'd really like to have sensors that let you see the operating status at a glance.

Answer of GX-F/H series
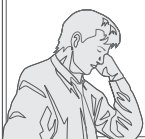
Indicators are easy to see over a wide field of view

GX-H□

GX-F□

A prism with a wide field of view has been developed.
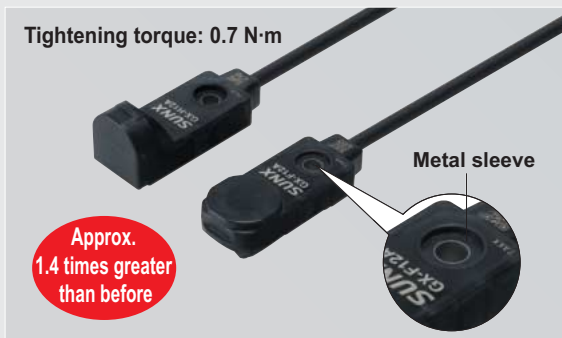This has greatly improved the visibility of the operation indicators.

If you tighten the screws too tightly, it will damage the sensors.

Answer of GX-F/H series

Tightening strength increased with no damage!

Tightening torque: 0.7 N·m

Metal sleeve

Approx. 1.4 times greater than before

A metal sleeve has been inserted! It is possible to tighten up to 0.7 N·m *.

* Maximum tightening torque for M3 screw.

There are too many thin wires which are very difficult to work with!

Answer of GX-F/H series

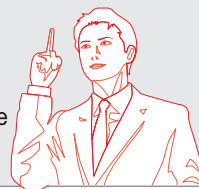# Conductor thickness doubled to make wiring much easier! (GX-☐8 only)

0.08 mm² Previous model

0.15 mm² GX-☐8

Conductor thickness approx. 2 times greater

The conductor's thickness was doubled for the **GX-☐8**. This makes it easier to handle and perform crimping work on the cables. In addition, the tensile strength of the crimping area has become higher.
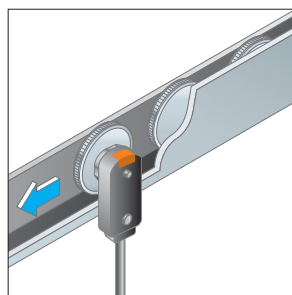

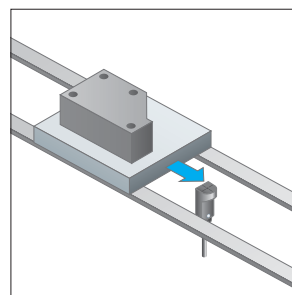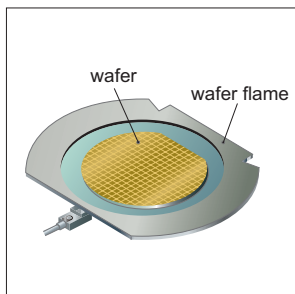## Applications
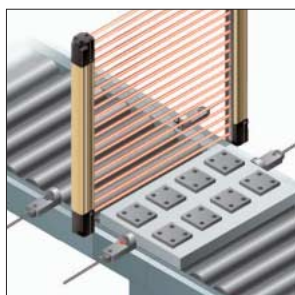
Muting control of light curtains
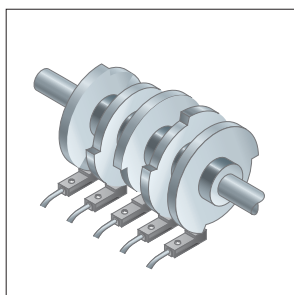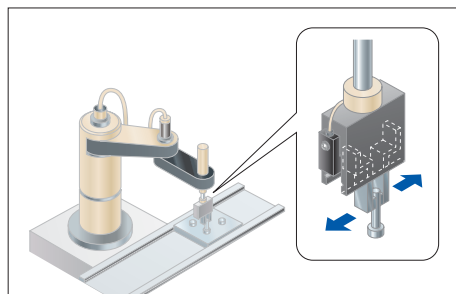
Detecting cam position

Detecting rolling coins

Positioning metal pallets

wafer

wafer flame

Detecting wafer flame
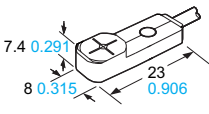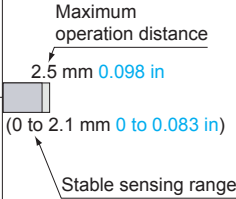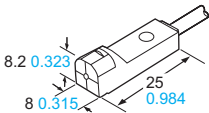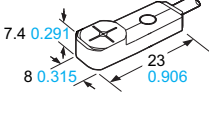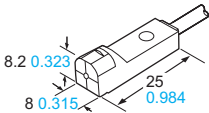
Positioning processing equipment
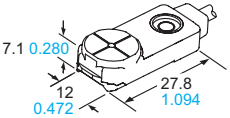
Checking robot finger chucks

GX-8 type

Type		Appearance (mm in)	Sensing range (Note 1)	Model No. (Note 2)	Output	Output operation
NPN output	Front sensing	7.4 0.291 / 8 0.315 / 23 0.906		GX-F8A	NPN open-collector transistor	Normally open
				GX-F8AI		
				GX-F8B		Normally closed
				GX-F8BI		
	Top sensing	8.2 0.323 / 8 0.315 / 25 0.984	Maximum operation distance 2.5 mm 0.098 in (0 to 2.1 mm 0 to 0.083 in) Stable sensing range	GX-H8A		Normally open
				GX-H8AI		
				GX-H8B		Normally closed
				GX-H8BI		
PNP output	Front sensing	7.4 0.291 / 8 0.315 / 23 0.906		GX-F8A-P	PNP open-collector transistor	Normally open
				GX-F8AI-P		
				GX-F8B-P		Normally closed
				GX-F8BI-P		
	Top sensing	8.2 0.323 / 8 0.315 / 25 0.984		GX-H8A-P		Normally open
				GX-H8AI-P		
				GX-H8B-P		Normally closed
				GX-H8BI-P		

Notes: 1) The maximum operation distance stands for the maximum distance for which the sensor can detect the standard sensing object.
The stable sensing range stands for the sensing range for which the sensor can stably detect the standard sensing object even if there is an ambient temperature drift and/or supply voltage fluctuation.
2) " I " in the model No. indicates a different frequency type.

GX-12 type

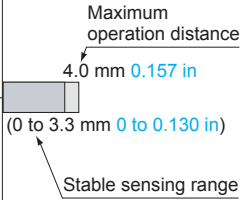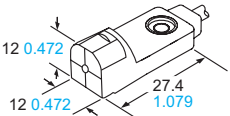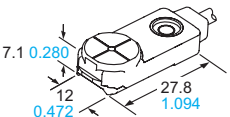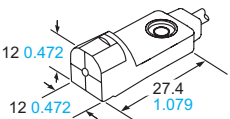| Type		Appearance (mm in)	Sensing range (Note 1)	Model No. (Note 2)	Output	Output operation
NPN output	Front sensing	7.1 0.280 / 12 0.472 / 27.8 1.094		GX-F12A	NPN open-collector transistor	Normally open
				GX-F12AI		
				GX-F12B		Normally closed
				GX-F12BI		
	Top sensing	12 0.472 / 12 0.472 / 27.4 1.079	Maximum operation distance 4.0 mm 0.157 in (0 to 3.3 mm 0 to 0.130 in) Stable sensing range	GX-H12A		Normally open
				GX-H12AI		
				GX-H12B		Normally closed
				GX-H12BI		
PNP output	Front sensing	7.1 0.280 / 12 0.472 / 27.8 1.094		GX-F12A-P	PNP open-collector transistor	Normally open
				GX-F12AI-P		
				GX-F12B-P		Normally closed
				GX-F12BI-P		
	Top sensing	12 0.472 / 12 0.472 / 27.4 1.079		GX-H12A-P		Normally open
				GX-H12AI-P		
				GX-H12B-P		Normally closed
				GX-H12BI-P		

Notes: 1) The maximum operation distance stands for the maximum distance for which the sensor can detect the standard sensing object.
The stable sensing range stands for the sensing range for which the sensor can stably detect the standard sensing object even if there is an ambient temperature drift and/or supply voltage fluctuation.
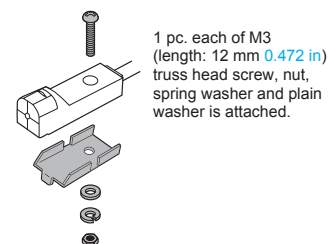2) " I " in the model No. indicates a different frequency type.

OPTIONS

Designation	Model No.	Description
Sensor mounting bracket	**MS-GXL8-4**	Mounting bracket for **GX-8** type

Sensor mounting bracket

• **MS-GXL8-4**

1 pc. each of M3 (length: 12 mm 0.472 in) truss head screw, nut, spring washer and plain washer is attached.

SPECIFICATIONS

GX-8 type

Item	Type		NPN output		PNP output	
	Model No. (Note 2)	Front sensing	**GX-F8A(I)**	**GX-F8B(I)**	**GX-F8A(I)-P**	**GX-F8B(I)-P**
		Top sensing	**GX-H8A(I)**	**GX-H8B(I)**	**GX-H8A(I)-P**	**GX-H8B(I)-P**
Max. operation distance (Note 3)			2.5 mm 0.098 in ± 8 %			
Stable sensing range (Note 3)			0 to 2.1 mm 0 to 0.083 in			
Standard sensing object			Iron sheet 15 × 15 × t 1 mm 0.591 × 0.591 × t 0.039 in			
Hysteresis			20 % or less of operation distance (with standard sensing object)			
Repeatability			Along sensing axis, perpendicular to sensing axis: 0.04 mm 0.0016 in or less			
Supply voltage			12 to 24 V DC $^{+10}_{-15}$ % Ripple P-P 10 % or less			
Current consumption			15 mA or less			
Output			NPN open-collector transistor • Maximum sink current: 100 mA • Applied voltage: 30 V DC or less (between output and 0 V) • Residual voltage: 1 V or less (at 100 mA sink current) 0.4 V or less (at 16 mA sink current)		PNP open-collector transistor • Maximum source current: 100 mA • Applied voltage: 30 V DC or less (between output and +V) • Residual voltage: 1 V or less (at 100 mA source current) 0.4 V or less (at 16 mA source current)	
	Output operation		Normally open	Normally closed	Normally open	Normally closed
Max. response frequency			500 Hz			
Operation indicator			Orange LED (lights up when the output is ON)			
Environmental resistance	Protection		IP68 (IEC), IP68g (JEM) (Note 4, 5)			
	Ambient temperature		–25 to +70 °C –13 to +158 °F, Storage: – 40 to +85 °C – 40 to +185 °F			
	Ambient humidity		45 to 85 % RH, Storage: 35 to 95 % RH			
	Voltage withstandability		1,000 V AC for one min. between all supply terminals connected together and enclosure			
	Insulation resistance		50 MΩ, or more, with 500 V DC megger between all supply terminals connected together and enclosure			
	Vibration resistance		10 to 500 Hz frequency, 3 mm 0.118 in amplitude in X, Y and Z directions for two hours each			
	Shock resistance		10,000 m/s² acceleration (1,000 G approx.) in X, Y and Z directions for three times each			
Sensing range variation	Temperature characteristics		Over ambient temperature range –25 to +70 °C –13 to +158 °F: Within ±8 % of sensing range at +23 °C +73 °F			
	Voltage characteristics		Within ±2 % for $^{+10}_{-15}$ % fluctuation of the supply voltage			
Material			Enclosure: PBT, Indicator part: Polyester			
Cable			0.15 mm² 3-core oil, heat and cold resistant cabtyre cable, 1 m 3.281 ft long			
Cable extension			Extension up to total 100 m 328.084 ft is possible with 0.3 mm², or more, cable.			
Net weight			Front sensing type: 15 g approx., Top sensing type: 20 g approx..			

Notes: 1) Where measurement conditions have not been specified precisely, the conditions used were an ambient temperature of +23 °C +73 °F.
2) " I " in the model No. indicates a different frequency type.
3) The maximum operation distance stands for the maximum distance for which the sensor can detect the standard sensing object.
The stable sensing range stands for the sensing range for which the sensor can stably detect the standard sensing object even if there is an ambient temperature drift and/or supply voltage fluctuation.
4) SUNX's IP68 test method
① Immerse at 0 m below 0 °C +32 °F water surface and leave for 30 min. Then, immerse at 0 m below +70 °C +158 °F water surface and leave for 30 min.
② Regard the heat shock test in ① as one cycle and perform 20 cycles.
③ Leave in water at a depth of 1 m 3.281 ft in water for 500 hours.
④ After tests ① to ③, insulation resistance, voltage withstandability, current consumption, and sensing ranges must meet the standard values.
5) If using the sensor in an environment where cutting oil droplets splatter, the sensor may deteriorate due to added substances in the oil.

■ SPECIFICATIONS

GX-12 type

Item	Type	NPN output		PNP output	
	Front sensing (Model No. Note 2)	**GX-F12A(I)**	**GX-F12B(I)**	**GX-F12A(I)-P**	**GX-F12B(I)-P**
	Top sensing	**GX-H12A(I)**	**GX-H12B(I)**	**GX-H12A(I)-P**	**GX-H12B(I)-P**
Max. operation distance (Note 3)		4.0 mm 0.157 in ± 8 %			
Stable sensing range (Note 3)		0 to 3.3 mm 0 to 0.130 in			
Standard sensing object		Iron sheet 0 × 20 × t 1 mm 0.787 × 0.787 × t 0.039 in			
Hysteresis		20 % or less of operation distance (with standard sensing object)			
Repeatability		Along sensing axis, perpendicular to sensing axis: 0.04 mm 0.0016 in or less			
Supply voltage		12 to 24 V DC $^{+10}_{-15}$ % Ripple P-P 10 % or less			
Current consumption		15 mA or less			
Output		NPN open-collector transistor • Maximum sink current: 100 mA • Applied voltage: 30 V DC or less (between output and 0 V) • Residual voltage: 1 V or less (at 100 mA sink current) 0.4 V or less (at 16 mA sink current)		PNP open-collector transistor • Maximum source current: 100 mA • Applied voltage: 30 V DC or less (between output and +V) • Residual voltage: 1 V or less (at 100 mA source current) 0.4 V or less (at 16 mA source current)	
	Output operation	Normally open	Normally closed	Normally open	Normally closed
Max. response frequency		500 Hz			
Operation indicator		Orange LED (lights up when the output is ON)			
Environmental resistance	Protection	IP68 (IEC), IP68g (JEM) (Note 4, 5)			
	Ambient temperature	–25 to +70 °C –13 to +158 °F, Storage: – 40 to +85 °C – 40 to +185 °F			
	Ambient humidity	45 to 85 % RH, Storage: 35 to 95 % RH			
	Voltage withstandability	1,000 V AC for one min. between all supply terminals connected together and enclosure			
	Insulation resistance	50 MΩ, or more, with 500 V DC megger between all supply terminals connected together and enclosure			
	Vibration resistance	10 to 500 Hz frequency, 3 mm 0.118 in amplitude in X, Y and Z directions for two hours each			
	Shock resistance	10,000 m/s^2 acceleration (1,000 G approx.) in X, Y and Z directions for three times each			
Sensing range variation	Temperature characteristics	Over ambient temperature range –25 to +70 °C –13 to +158 °F: Within ±8 % of sensing range at +23 °C +73 °F			
	Voltage characteristics	Within ±2 % for $^{+10}_{-15}$ % fluctuation of the supply voltage			
Material		Enclosure: PBT, Indicator part: Polyester			
Cable		0.15 mm^2 3-core oil, heat and cold resistant cabtyre cable, 1 m 3.281 ft long			
Cable extension		Extension up to total 100 m 328.084 ft is possible with 0.3 mm^2, or more, cable.			
Net weight		Front sensing type: 20 g approx., Top sensing type: 20 g approx..			

Notes: 1) Where measurement conditions have not been specified precisely, the conditions used were an ambient temperature of +23 °C +73 °F.
  2) " I " in the model No. indicates a different frequency type.
  3) The maximum operation distance stands for the maximum distance for which the sensor can detect the standard sensing object.
   The stable sensing range stands for the sensing range for which the sensor can stably detect the standard sensing object even if there is an ambient temperature drift and/or supply voltage fluctuation.
  4) SUNX's IP68 test method
   ① Immerse at 0 m below 0 °C +32 °F water surface and leave for 30 min. Then, immerse at 0 m below +70 °C +158 °F water surface and leave for 30 min.
   ② Regard the heat shock test in ① as one cycle and perform 20 cycles.
   ③ Leave in water at a depth of 1 m 3.281 ft in water for 500 hours.
   ④ After tests ① to ③, insulation resistance, voltage withstandability, current consumption, and sensing ranges must meet the standard values.
  5) If using the sensor in an environment where cutting oil droplets splatter, the sensor may deteriorate due to added substances in the oil.

■ I/O CIRCUIT DIAGRAMS

GX-□ NPN output type
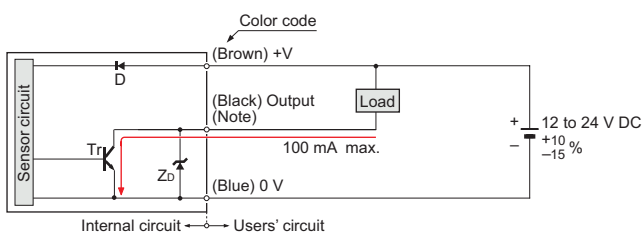
Color code
(Brown) +V
D
(Black) Output (Note)
Load
100 mA max.
Tr
Z$_D$
(Blue) 0 V
Sensor circuit
Internal circuit ← → Users' circuit
+ − 12 to 24 V DC $^{+10}_{-15}$ %

Note: The output does not incorporate a short-circuit protection circuit.
   Do not connect it directly to a power supply or a capacitive load.

Symbols … D : Reverse supply polarity protection diode
   Z$_D$: Surge absorption zener diode
   Tr: NPN output transistor

GX-□-P PNP output type

Color code
(Brown) +V
Tr
Z$_D$
100 mA max.
D
(Black) Output (Note)
Load
(Blue) 0 V
Sensor circuit
Internal circuit ← → Users' circuit
+ − 12 to 24 V DC $^{+10}_{-15}$ %

Note: The output does not incorporate a short-circuit protection circuit.
   Do not connect it directly to a power supply or a capacitive load.

Symbols … D : Reverse supply polarity protection diode
   Z$_D$: Surge absorption zener diode
   Tr: PNP output transistor

SENSING CHARACTERISTICS (TYPICAL)

GX-8 type
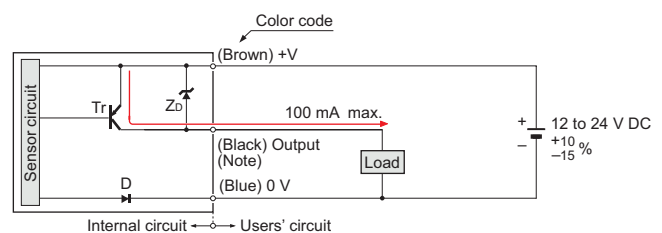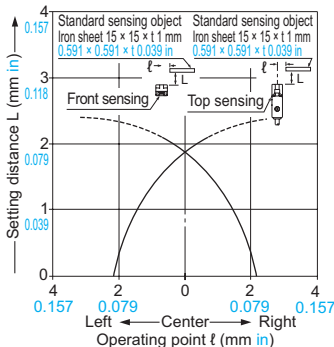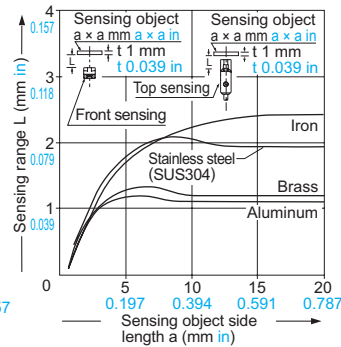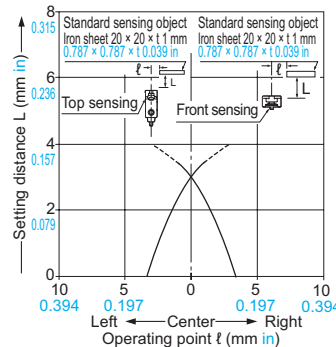
Sensing field

Standard sensing object Iron sheet 15 × 15 × t 1 mm (0.591 × 0.591 × t 0.039 in)
Front sensing / Top sensing

Setting distance L (mm in): 4 / 0.157, 3 / 0.118, 2 / 0.079, 1 / 0.039, 0

Operating point ℓ (mm in): Left ← Center → Right
4 / 0.157, 2 / 0.079, 0, 2 / 0.079, 4 / 0.157

Correlation between sensing object size and sensing range

Sensing object a × a mm a × a in — t 1 mm t 0.039 in — Front sensing / Top sensing

Sensing range L (mm in): 4 / 0.157, 3 / 0.118, 2 / 0.079, 1 / 0.039, 0

Iron / Stainless steel (SUS304) / Brass / Aluminum

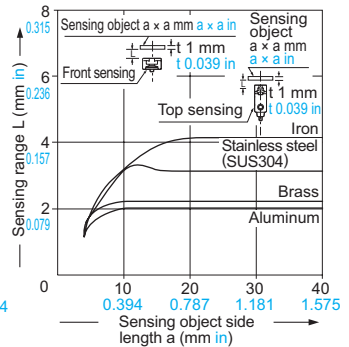Sensing object side length a (mm in): 5 / 0.197, 10 / 0.394, 15 / 0.591, 20 / 0.787

As the sensing object size becomes smaller than the standard size (iron sheet 15 × 15 × t 1 mm 0.591 × 0.591 × t 0.039 in), the sensing range shortens as shown in the left figures.

GX-12 type

Sensing field

Standard sensing object Iron sheet 20 × 20 × t 1 mm (0.787 × 0.787 × t 0.039 in)
Top sensing / Front sensing

Setting distance L (mm in): 8 / 0.315, 6 / 0.236, 4 / 0.157, 2 / 0.079, 0

Operating point ℓ (mm in): Left ← Center → Right
10 / 0.394, 5 / 0.197, 0, 5 / 0.197, 10 / 0.394

Correlation between sensing object size and sensing range

Sensing object a × a mm a × a in — Front sensing / Top sensing — t 1 mm t 0.039 in

Sensing range L (mm in): 8 / 0.315, 6 / 0.236, 4 / 0.157, 2 / 0.079, 0

Iron / Stainless steel (SUS304) / Brass / Aluminum

Sensing object side length a (mm in): 10 / 0.394, 20 / 0.787, 30 / 1.181, 40 / 1.575

As the sensing object size becomes smaller than the standard size (iron sheet 20 × 20 × t 1 mm 0.787 × 0.787 × t 0.039 in), the sensing range shortens as shown in the left figure.
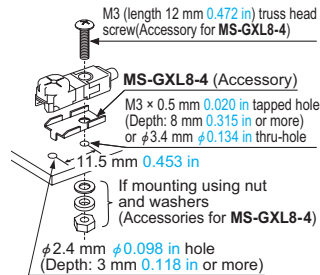
PRECAUTIONS FOR PROPER USE

⚠
- Never use this product as a sensing device for personnel protection.
- In case of using sensing devices for personnel protection, use products which meet laws and standards, such as OSHA, ANSI or IEC etc., for personnel protection applicable in each region or country.
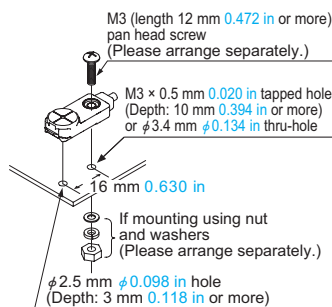
Mounting

GX-8 type

- Make sure to use a M3 (length: 12 mm 0.472 in or more) truss head screw. The tightening torque should be 0.7 N·m or less. (Do not use a flat head screw or a pan head screw.)

M3 (length 12 mm 0.472 in) truss head screw(Accessory for MS-GXL8-4)

MS-GXL8-4 (Accessory)

M3 × 0.5 mm 0.020 in tapped hole (Depth: 8 mm 0.315 in or more) or φ3.4 mm φ0.134 in thru-hole

11.5 mm 0.453 in

If mounting using nut and washers (Accessories for MS-GXL8-4)

φ2.4 mm φ0.098 in hole (Depth: 3 mm 0.118 in or more)
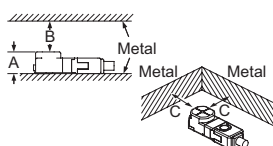
GX-12 type

- The tightening torque should be 0.7 N·m or less.
- To mount the sensor with a nut, the mouting hole diameter should be φ3.4 mm φ0.134 in. Further, the hole in which the boss is inserted should be φ2.5 mm φ0.098 in and 3 mm 0.118 in, or more, deep.

M3 (length 12 mm 0.472 in or more) pan head screw (Please arrange separately.)

M3 × 0.5 mm 0.020 in tapped hole (Depth: 10 mm 0.394 in or more) or φ3.4 mm φ0.134 in thru-hole

16 mm 0.630 in

If mounting using nut and washers (Please arrange separately.)

φ2.5 mm φ0.098 in hole (Depth: 3 mm 0.118 in or more)

Influence of surrounding metal

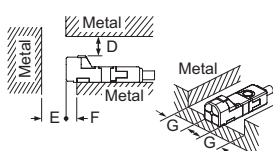- When there is a metal near the sensor, keep the minimum separation distance specified below.

Front sensing type

	GX-F8 type	GX-F12 type
A	7.4 mm 0.291 in	7.1 mm 0.280 in
B	8 mm 0.315 in	20 mm 0.787 in
C	3 mm 0.118 in	7 mm 0.276 in

Top sensing type

|	GX-H8 type	GX-H12 type
D	4 mm 0.157 in	7 mm 0.276 in
E	10 mm 0.394 in	20 mm 0.787 in
F	3 mm 0.118 in	3 mm 0.118 in
G	3 mm 0.118 in	3 mm 0.118 in

Mutual interference prevention

- When two or more sensors are installed in parallel or face to face, keep the minimum separation distance specified below to avoid mutual interference.

|		H	J
GX-F8□ GX-H8□	Between "I" type and non "I" type	0 mm (Note 2)	15 mm 0.591 in
	Between two "I" types or two non "I" types	20 mm 0.787 in	35 mm 1.378 in
GX-F12□ GX-H12□	Between "I" type and non "I" type	0 mm (Note 2)	25 mm 0.984 in
	Between two "I" types or two non "I" types	25 mm 0.984 in	50 mm 1.969 in

Notes: 1) "I" in the model No. specifies the different frequency type.
2) Close mounting is possible for up to two sensors.
When mounting three sensors or more at an equal spacing, align the model with "I" and the model without "I" alternately. The minimum value of dimension "H" should be as given below.
GX-8 type: 6 mm 0.236 in
GX-12 type: 6.5 mm 0.256 in

Front sensing
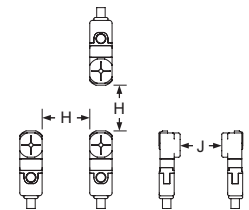
Top sensing
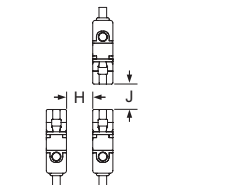
Sensing range

- The sensing range is specified for the standard sensing object. With a non-ferrous metal, the sensing range is obtained by multiplying with the correction coefficient specified below. Further, the sensing range also changes if the sensing object is smaller than the standard sensing object or if the sensing object is plated.

Correction coefficient

Model No. / Metal	GX-8 type	GX-12 type
Iron	1	1
Stainless steel (SUS304)	0.76 approx.	0.79 approx.
Brass	0.50 approx.	0.56 approx.
Aluminum	0.48 approx.	0.53 approx.

Others

- This product has been developed / produced for industrial use only.
- The output does not incorporate a short-circuit protection circuit. Do not connect it directly to a power supply or a capacitive load.
- Do not use during the initial transient time (50 ms) after the power supply is switched on.
- Extension up to total 100 m 328.084 ft is possible with a 0.3 mm^2, or more, cable.

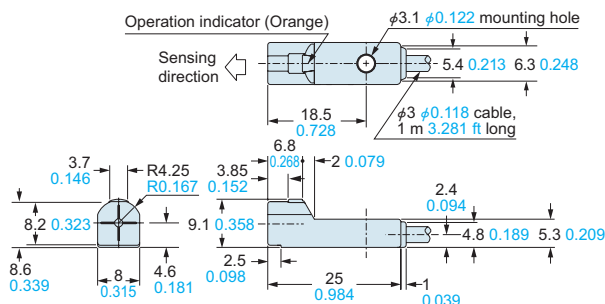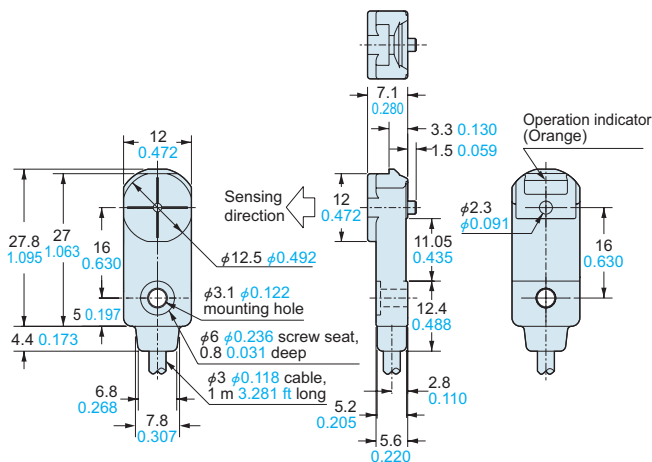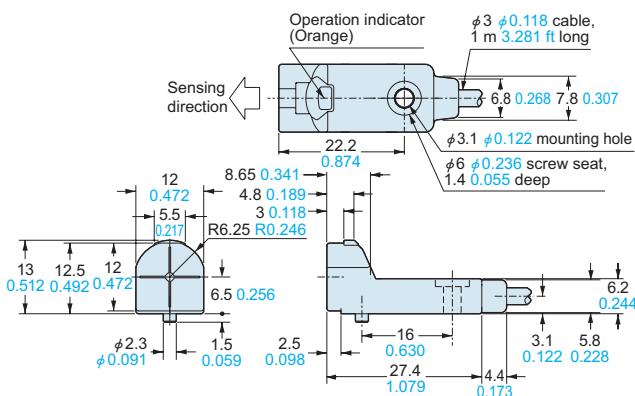# DIMENSIONS (Unit: mm in) The CAD data in the dimensions can be downloaded from the SUNX website: http://www.sunx.com

GX-F8□ — Sensor

Sensing direction

Operation indicator (Orange)

8 0.315
23 0.906
22.5 0.886
11.5 0.453
6.5 0.256
1 0.039
5.4 0.213
6.3 0.248
φ9 φ0.354
φ3.1 φ0.122 mounting hole
φ3 φ0.118 cable, 1 m 3.281 ft long

7.4 0.291
2.95 0.116
8.55 0.337
7.7 0.303
9.75 0.384
5 0.197
2.65 0.104
5.3 0.209

GX-H8□ — Sensor

Operation indicator (Orange)
Sensing direction

φ3.1 φ0.122 mounting hole
5.4 0.213   6.3 0.248
18.5 0.728
6.8 0.268   2 0.079
φ3 φ0.118 cable, 1 m 3.281 ft long

3.7 0.146   R4.25 R0.167   3.85 0.152
8.2 0.323
9.1 0.358
8.6 0.339
8 0.315   4.6 0.181
2.5 0.098
25 0.984
2.4 0.094
4.8 0.189   5.3 0.209
1 0.039

GX-F12□ — Sensor

Sensing direction

Operation indicator (Orange)

12 0.472
27.8 1.095
27 1.063
16 0.630
5 0.197
4.4 0.173
6.8 0.268
7.8 0.307
φ12.5 φ0.492
φ3.1 φ0.122 mounting hole
φ6 φ0.236 screw seat, 0.8 0.031 deep
φ3 φ0.118 cable, 1 m 3.281 ft long

7.1 0.280
3.3 0.130
1.5 0.059
12 0.472
11.05 0.435
12.4 0.488
2.8 0.110
5.2 0.205
5.6 0.220

φ2.3 φ0.091
16 0.630

GX-H12□ — Sensor

Operation indicator (Orange)
φ3 φ0.118 cable, 1 m 3.281 ft long
Sensing direction

6.8 0.268   7.8 0.307
22.2 0.874
φ3.1 φ0.122 mounting hole
φ6 φ0.236 screw seat, 1.4 0.055 deep

12 0.472   8.65 0.341
4.8 0.189
5.5 0.217   3 0.118
R6.25 R0.246
13 0.512   12.5 0.492   12 0.472
6.5 0.256
φ2.3 φ0.091   1.5 0.059
2.5 0.098
16 0.630
27.4 1.079
4.4 0.173
6.2 0.244
3.1 0.122   5.8 0.228

MS-GXL8-4 — Sensor mounting bracket for GX-8 type (optional)

Mounting hole dimensions

Center of sensing
φ2.4 φ0.094 hole, 3 0.118 or more deep
11.5 0.453
M3 × 0.5 0.020 tapped hole, 8 0.315 or more deep

9 0.354
2.3 0.091
0.3 0.012
3.3 0.130
11.5 0.453
(16.2 0.638)
15.8 0.622
4.5 0.177
φ3.1 φ0.122 hole

2 0.079   2 0.079
t 0.4 t 0.016
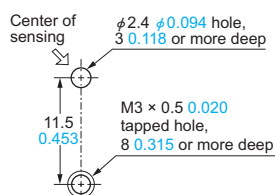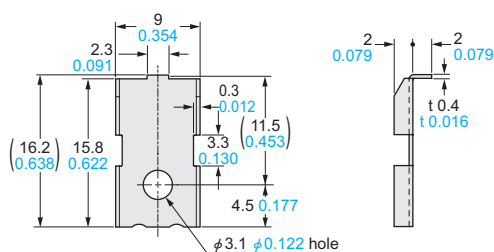
Material: Stainless steel (SUS304)

1 pc. each of M3 (length 12 mm 0.472 in) truss head screw, nut, spring washer and plain washer is attached.

All information is subject to change without prior notice.