

GX SERIES

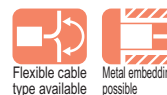
Related Information

■ General terms and conditions..... F-17

■ Sensor selection guide P.757~

■ Glossary of terms..... P.1386~

■ General precautions P.1405


panasonic-electric-works.net/sunx


Robust enclosure and flexible cable types are also available

VARIETIES

Miniature

GX-3S□

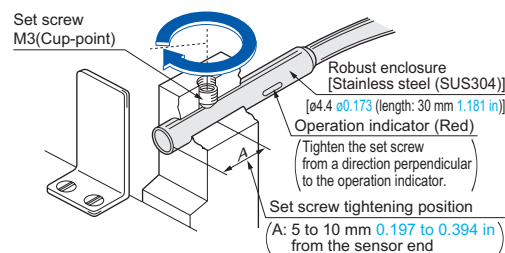
GX-3S□ is an amplifier built-in inductive proximity sensor having a diameter of just $\varnothing 3.8$ mm $\varnothing 0.150$ in.



Robust housing

GX-4S□

The **GX-4S□** uses a robust stainless steel enclosure. The tightening torque can be 0.58 N·m or less. (2 times compared with conventional models)

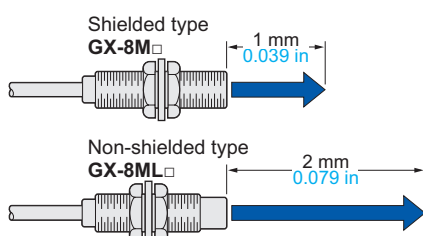
Tightening torque: **0.58 N·m or less**

BASIC PERFORMANCE

Long sensing range

GX-8ML□

The non-shielded type (**GX-8ML□**) has twice the sensing range of the shielded type (**GX-8M□**), although having the same size. Hence, it allows margin against sensing distance variations.

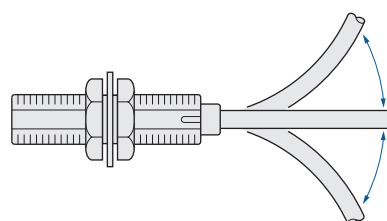


ENVIRONMENTAL RESISTANCE

Ten times greater bending durability (Compared with conventional models)

GX-□-R

The bending durability of the cable to repeated bending has been increased tenfold by using special alloy cores for the cable.



Selection Guide

Amplifier Built-in

Amplifier-separated

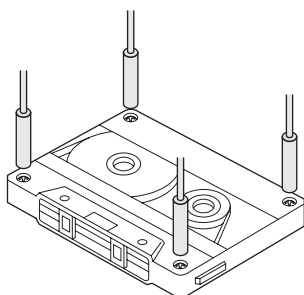
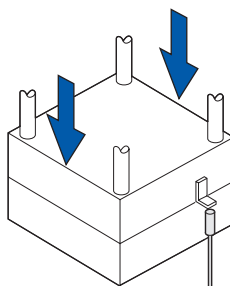
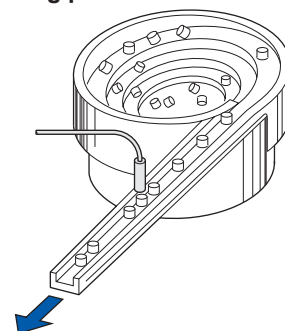
GX-F/H

GXL

GL

GX-U/GX-FU/GX-N

GX

APPLICATIONS**Sensing screws on cassette****Sensing the punch of a die****Counting parts****ORDER GUIDE**

Type	Appearance (mm in)	Sensing range (Note)	Model No.	Supply voltage	Output	Output operation	
Shielded type	Non-threaded type	Maximum operation distance 0.8 mm 0.031 in (0 to 0.6 mm 0 to 0.024 in) Stable sensing range	GX-3S	12 to 24 V DC ±10 %	NPN open-collector transistor	Normally open	
		GX-3SB	Normally closed				
		GX-4S	Normally open				
		GX-4SB	Normally closed				
		Threaded type	1 mm 0.039 in (0 to 0.8 mm 0 to 0.031 in)	GX-5S		10 to 30 V DC	Normally open
				GX-5SB			Normally closed
	0.8 mm 0.031 in (0 to 0.6 mm 0 to 0.024 in)		GX-5M	12 to 24 V DC ±10 %		Normally open	
			GX-5MB			Normally closed	
			1 mm 0.039 in (0 to 0.8 mm 0 to 0.031 in)	GX-8M		10 to 30 V DC	Normally open
				GX-8MB			Normally closed
	2 mm 0.079 in (0 to 1.6 mm 0 to 0.063 in)	GX-8ML		Normally open			
		GX-8MLB		Normally closed			

Note: 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.

FIBER
SENSORSLASER
SENSORSPHOTO-
ELECTRIC
SENSORSMICRO
PHOTO-
ELECTRIC
SENSORSAREA
SENSORSLIGHT
CURTAINSPRESSURE /
FLOW
SENSORSINDUCTIVE
PROXIMITY
SENSORSPARTICULAR
USE
SENSORSSENSOR
OPTIONSSIMPLE
WIRE-SAVING
UNITSWIRE-SAVING
SYSTEMSMEASURE-
MENT
SENSORSSTATIC
CONTROL
DEVICES

ENDOSCOPE

LASER
MARKERSPLC /
TERMINALSHUMAN
MACHINE
INTERFACESENERGY
CONSUMPTION
VISUALIZATION
COMPONENTSFA
COMPONENTSMACHINE
VISION
SYSTEMSUV
CURING
SYSTEMSSelection
GuideAmplifier
Built-inAmplifier-
separated**GX-F/H****GXL****GL**GX-U/GX-FU/
GX-N**GX**

FIBER
SENSORSLASER
SENSORSPHOTO-
ELECTRIC
SENSORSMICRO
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GuideAmplifier
Built-inAmplifier-
separated

GX-F/H

GXL

GL

GX-4/GX-FU/
GX-N

GX

ORDER GUIDE

Flexible cable type

Flexible cable type is also available for shielded type.
When ordering this type, suffix “-R” to the model No.
(e.g.) Flexible cable type of **GX-3S** is “**GX-3S-R**”.

5 m 16.404 ft cable length type

5 m 16.404 ft cable length type (standard: 3 m 9.843 ft) is also available. (excluding **GX-4SB**)
When ordering this type, suffix “-C5” to the model No.
(e.g.) 5 m 16.404 ft cable length type of **GX-3S** is “**GX-3S-C5**”.

Refer to table below for 5 m 16.404 ft cable length type of flexible cable type sensor.

• Table of model Nos.

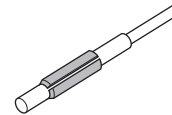
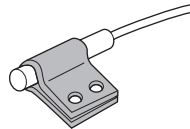
Type		Standard	Flexible cable of 5 m 16.404 ft cable length type
Shielded type	Non-threaded type	GX-3S	GX-3S-R-C5
		GX-3SB	GX-3SB-R-C5
		GX-4S	GX-4S-R-C5
		GX-4SB	—
		GX-5S	GX-5S-R-C5
		GX-5SB	—
	Threaded type	GX-5M	GX-5M-R-C5
		GX-5MB	—
		GX-8M	GX-8M-R-C5
		GX-8MB	GX-8MB-R-C5

Accessories

- **MS-SS3** (Sensor mounting bracket for **GX-3S** type)
- **MS-SS3-2** (C bracket for **GX-3S** type)
- **MS-SS5** (Sensor mounting bracket for **GX-5S** type)

- **MS-SS3**
- **MS-SS5**

- **MS-SS3-2**



By using the C bracket, the applicable tightening force can be doubled.

SPECIFICATIONS**Non-threaded type**

Type		Shielded type													
		Flexible cable				Flexible cable				Flexible cable					
Item	Model No.	GX-3S	GX-3SB	GX-3S-R	GX-3SB-R	GX-4S	GX-4SB	GX-4S-R	GX-4SB-R	GX-5S	GX-5SB	GX-5S-R	GX-5SB-R		
Max. operation distance (Note 2)		0.8 mm 0.031 in ±15 %								1 mm 0.039 in ±15 %					
Stable sensing range (Note 2)		0 to 0.6 mm 0 to 0.024 in								0 to 0.8 mm 0 to 0.031 in					
Standard sensing object		Iron sheet 5 × 5 × t 1 mm 0.197 × 0.197 × t 0.039 in								Iron sheet 6 × 6 × t 1 mm 0.236 × 0.236 × t 0.039 in					
Hysteresis		15 % or less of operation distance (with standard sensing object)													
Repeatability		20 μm 0.787 mil or less								8 μm 0.315 mil or less					
Supply voltage		12 to 24 V DC ±10 % Ripple P-P 10 % or less								10 to 30 V DC Ripple P-P 10 % or less					
Current consumption		15 mA or less													
Output		NPN open-collector transistor - Maximum sink current: 50 mA - Applied voltage: 30 V DC or less (between output and 0 V) - Residual voltage: 0.4 V or less (at 50 mA sink current)								NPN open-collector transistor - Maximum sink current: 200 mA (Note 3) - Applied voltage: 30 V DC or less (between output and 0 V) - Residual voltage: 1.5 V or less (at 200 mA sink current) 0.4 V or less (at 50 mA sink current)					
		Utilization category		DC-12 or DC-13											
		Output operation		Normally open	Normally closed	Normally open	Normally closed	Normally open	Normally closed	Normally open	Normally closed	Normally open	Normally closed	Normally open	Normally closed
		Short-circuit protection		—————								Incorporated			
Max. response frequency		1 kHz								1.5 kHz					
Operation indicator		Red LED (lights up when the output is ON)													
Environmental resistance	Pollution degree		3 (Industrial environment)												
	Protection		IP67 (IEC)												
	Ambient temperature		−25 to + 70 °C −13 to +158 °F , Storage: −25 to +80 °C −13 to +176 °F												
	Ambient humidity		35 to 95 % RH, Storage: 35 to 95 % RH								35 to 85 % RH, Storage: 35 to 95 % RH				
	EMC		EN 60947-5-2												
	Voltage withstandability		500 V AC for one min. between all supply terminals connected together and enclosure												
	Insulation resistance		5 MΩ, or more, with 250 V DC megger between all supply terminals connected together and enclosure								50 MΩ, or more, with 500 V DC megger between all supply terminals connected together and enclosure				
	Vibration resistance		10 to 55 Hz frequency, 1.5 mm 0.059 in amplitude in X, Y and Z directions for two hours each												
	Shock resistance		200 m/s ² acceleration (20 G approx.) in X, Y and Z directions for ten times each								300 m/s ² acceleration (30 G approx.) in X, Y and Z directions for ten times each				
Sensing range variation	Temperature characteristics	Over ambient temperature range −25 to +70 °C −13 to +158 °F : Within ±20 % of sensing range at +20 °C +68 °F								Over ambient temperature range −25 to +70 °C −13 to +158 °F : Within ±15 % of sensing range at +20 °C +68 °F					
	Voltage characteristics	Within ±2 % for ±10 % fluctuation of the supply voltage								Within ±2.5 % for ±15 % fluctuation of the supply voltage					
Material		Enclosure: Stainless steel (SUS304), Resin part: TPX								Enclosure: Brass (Nickel plated) Resin part: ABS					
Cable		0.08 mm ² 3-core oil, heat and cold resistant cabtyre cable, 3 m 9.843 ft long	0.1 mm ² 3-core flexible, oil and heat resistant cabtyre cable, 3 m 9.843 ft long	0.08 mm ² 3-core oil, heat and cold resistant cabtyre cable, 3 m 9.843 ft long	0.1 mm ² 3-core flexible, oil and heat resistant cabtyre cable, 3 m 9.843 ft long	0.08 mm ² 3-core oil, heat and cold resistant cabtyre cable, 3 m 9.843 ft long	0.1 mm ² 3-core flexible, oil and heat resistant cabtyre cable, 3 m 9.843 ft long	0.08 mm ² 3-core oil, heat and cold resistant cabtyre cable, 3 m 9.843 ft long	0.1 mm ² 3-core flexible, oil and heat resistant cabtyre cable, 3 m 9.843 ft long	0.14 mm ² 3-core oil, heat and cold resistant cabtyre cable, 3 m 9.843 ft long	0.15 mm ² 3-core flexible, oil and heat resistant cabtyre cable, 3 m 9.843 ft long				
Cable extension		Extension up to total 100 m 328.084 ft is possible with 0.3 mm ² , or more, cable.													
Weight		Net weight: 30 g approx.								Net weight: 55 g approx.					
Accessories		MS-SS3 (Sensor mounting bracket): 1 pc. MS-SS3-2 (C bracket): 1 pc.				—————				MS-SS5 (Sensor mounting bracket): 1 pc.					

Notes: 1) Where measurement conditions have not been specified precisely, the conditions used were an ambient temperature of +23 °C **+73.4 °F**.

2) 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.

3) The maximum sink current varies depending on the ambient temperature. Refer to **"I/O CIRCUIT AND WIRING DIAGRAMS"** for details.

FIBER
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SYSTEMSSelection
GuideAmplifier
Built-inAmplifier-
separated**GX-F/H****GXL****GL****GX-U/GX-FU/
GX-N****GX**

SPECIFICATIONS

Threaded type

Type		Shielded type								Non-shielded type			
		Flexible cable				Flexible cable							
Item	Model No.	GX-5M	GX-5MB	GX-5M-R	GX-5MB-R	GX-8M	GX-8MB	GX-8M-R	GX-8MB-R	GX-8ML	GX-8MLB		
Max. operation distance (Note 2)		0.8 mm 0.031 in ±15 %				1 mm 0.039 in ±15 %				2 mm 0.079 in ±15 %			
Stable sensing range (Note 2)		0 to 0.6 mm 0 to 0.024 in				0 to 0.8 mm 0 to 0.031 in				0 to 1.6 mm 0 to 0.063 in			
Standard sensing object		Iron sheet 5 × 5 × t 1 mm 0.197 × 0.197 × t 0.039 in				Iron sheet 8 × 8 × t 1 mm 0.315 × 0.315 × t 0.039 in				Iron sheet 12 × 12 × t 1 mm 0.472 × 0.472 × t 0.039 in			
Hysteresis		15 % or less of operation distance (with standard sensing object)				10 % or less of operation distance (with standard sensing object)							
Repeatability		20 μm 0.787 mil or less				8 μm 0.315 mil or less				40 μm 1.575 mil or less			
Supply voltage		12 to 24 V DC ±10 % Ripple P-P 10 % or less				10 to 30 V DC Ripple P-P 10 % or less							
Current consumption		15 mA or less											
Output		NPN open-collector transistor • Maximum sink current: 50 mA • Applied voltage: 30 V DC or less (between output and 0V) • Residual voltage: 0.4 V or less (at 50 mA sink current)				NPN open-collector transistor • Maximum sink current: 200 mA (Note 3) • Applied voltage: 30 V DC or less (between output and 0 V) • Residual voltage: 1.5 V or less (at 200 mA sink current) 0.4 V or less (at 50 mA sink current)							
		Utilization category		DC-12 or DC-13									
		Output operation		Normally open	Normally closed	Normally open	Normally closed	Normally open	Normally closed	Normally open	Normally closed	Normally open	Normally closed
		Short-circuit protection		—————				Incorporated					
Max. response frequency		1 kHz								500 Hz			
Operation indicator		Red LED (lights up when the output is ON)											
Environmental resistance	Pollution degree		3 (Industrial environment)										
	Protection		IP67 (IEC)										
	Ambient temperature		– 25 to +70 °C –13 to +158 °F , Storage: – 25 to +80 °C – 13 to +176 °F										
	Ambient humidity		35 to 95 % RH, Storage: 35 to 95 % RH				35 to 85 % RH, Storage: 35 to 95 % RH						
	EMC		EN 60947-5-2										
	Voltage withstandability		500 V AC for one min. between all supply terminals connected together and enclosure										
	Insulation resistance		5 MΩ, or more, with 250 V DC megger between all supply terminals connected together and enclosure				50 MΩ, or more, with 500 V DC megger between all supply terminals connected together and enclosure						
	Vibration resistance		10 to 55 Hz frequency, 1.5 mm 0.059 in amplitude in X, Y and Z directions for two hours each										
Shock resistance		200 m/s ² acceleration (20 G approx.) in X, Y and Z directions for ten times each				300 m/s ² acceleration (30 G approx.) in X, Y and Z directions for ten times each				300 m/s ² acceleration (30 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 ±20 % of sensing range at +20 °C +68 °F				Over ambient temperature range –25 to +70 °C –13 to +158 °F : Within ⁺¹⁵ _{–10} % of sensing range at +20 °C +68 °F						
	Voltage characteristics		Within ±2 % for ±10 % fluctuation of the supply voltage				Within ±2.5 % for ±15 % fluctuation of the supply voltage						
Material		Enclosure: Brass (Nickel plated) Resin part: TPX				Enclosure: Brass (Nickel plated) Resin part: ABS							
Cable		0.08 mm ² 3-core oil, heat and cold resistant cabtyre cable, 3 m 9.843 ft long		0.1 mm ² 3-core flexible, oil and heat resistant cabtyre cable, 3 m 9.843 ft long		0.14 mm ² 3-core oil, heat and cold resistant cabtyre cable, 3 m 9.843 ft long		0.15 mm ² 3-core flexible, oil and heat resistant cabtyre cable, 3 m 9.843 ft long		0.14 mm ² 3-core, oil, heat and cold resistant cabtyre cable, 3 m 9.843 ft long			
Cable extension		Extension up to total 100 m 328.084 ft is possible with 0.3 mm ² , or more, cable.								Extension up to total 100 m 328.084 ft is possible with 0.14 mm ² , or more, cable.			
Weight (Note 4)		Net weight: 30 g approx.				Net weight: 60 g approx.							
Accessories		Nut: 2 pcs. Toothed lock washer: 1 pc.		Nut: 2 pcs. Toothed lock washer: 2 pcs.		Nut: 2 pcs. Toothed lock washer: 1 pc.		Nut: 2 pcs. Toothed lock washer: 2 pcs.		Nut: 2 pcs. Toothed lock washer: 1 pc.			

Notes: 1) Where measurement conditions have not been specified precisely, the conditions used were an ambient temperature of +23 °C **+73.4 °F**.

2) 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.

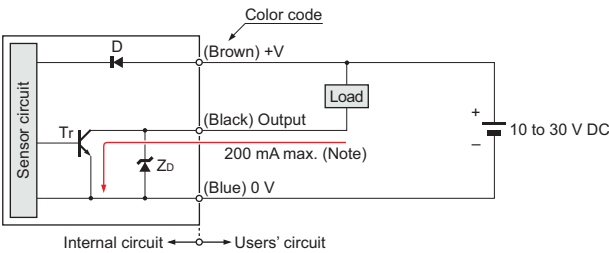
3) The maximum sink current varies depending on the ambient temperature. Refer to **"I/O CIRCUIT AND WIRING DIAGRAMS"** for details.

4) The given weight of the threaded type includes the weight of two nuts and one toothed lock washer.

I/O CIRCUIT AND WIRING DIAGRAMS

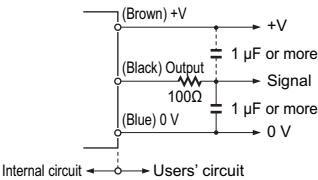
GX-5S□ GX-8M□ GX-8ML□

I/O circuit diagram



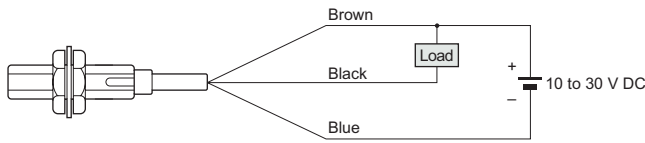
Symbols ... D : Reverse supply polarity protection diode
Zd: Surge absorption zener diode
Tr : NPN output transistor

- If a capacitor of 1 μ F or more is connected between 0 V and output or between +V and output, connect a 100 Ω resistor in series as shown below.

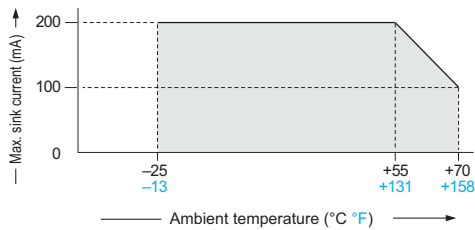


Without the resistor, the short-circuit protection is activated by the charge or discharge current of the capacitor, so that it results in delaying the response whenever the sensor switches. The connected resistor solves this problem.

Wiring diagram

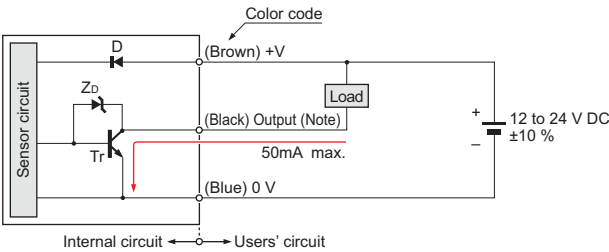


Note: The maximum sink current varies depending on the ambient temperature.



GX-3S□ GX-4S□ GX-5M□

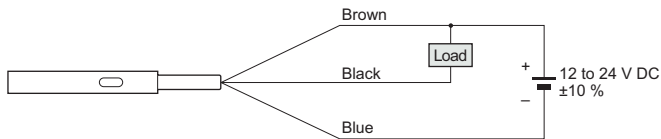
I/O circuit diagram



Note: **GX-3S□**, **GX-4S□** and **GX-5M□** do not incorporate a short-circuit protection circuit at the output. Do not connect them directly to a power supply or a capacitive load.

Symbols ... D : Reverse supply polarity protection diode
Zd: Surge absorption zener diode
Tr : NPN output transistor

Wiring diagram



FIBER SENSORS

LASER SENSORS

PHOTO-ELECTRIC SENSORS

MICRO PHOTO-ELECTRIC SENSORS

AREA SENSORS

LIGHT CURTAINS

PRESSURE / FLOW SENSORS

INDUCTIVE PROXIMITY SENSORS

PARTICULAR USE SENSORS

SENSOR OPTIONS

SIMPLE WIRE-SAVING UNITS

WIRE-SAVING SYSTEMS

MEASURE-MENT SENSORS

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ENDSCOPE

LASER MARKERS

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HUMAN MACHINE INTERFACES

ENERGY CONSUMPTION VISUALIZATION COMPONENTS

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MACHINE VISION SYSTEMS

UV CURING SYSTEMS

Selection Guide

Amplifier Built-in

Amplifier-separated

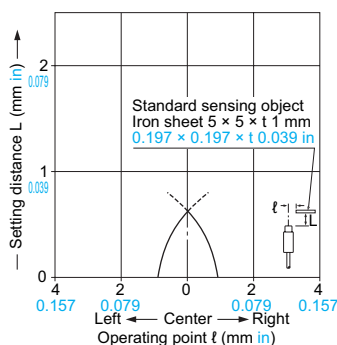
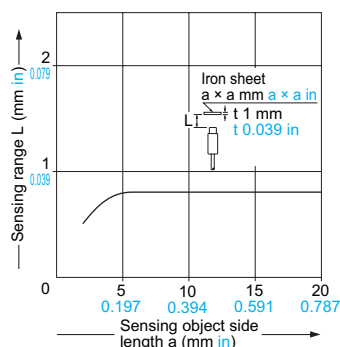
GX-F/H

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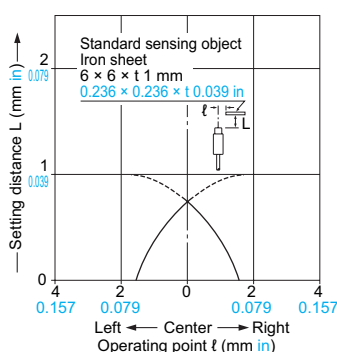
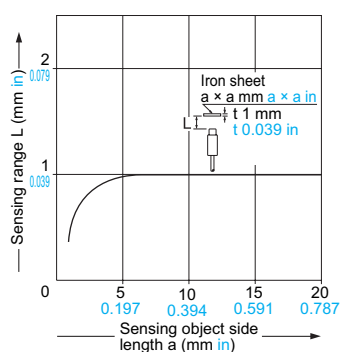
GL

GX-U/GX-FU/GX-N

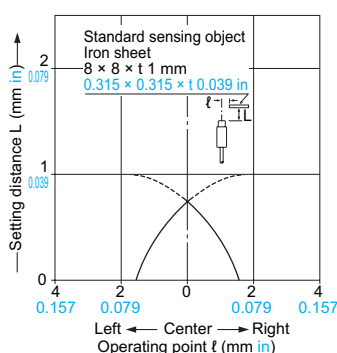
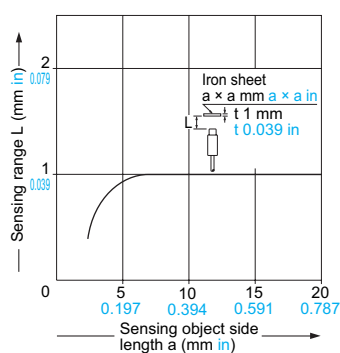
GX

SENSING CHARACTERISTICS (TYPICAL)**GX-3S□ GX-4S□ GX-5M□****Sensing field****Correlation between sensing object size and sensing range**

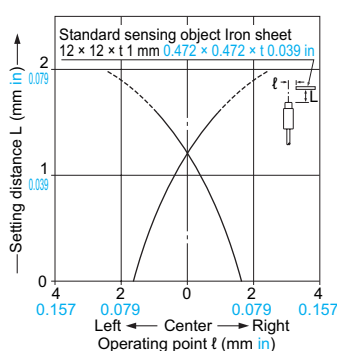
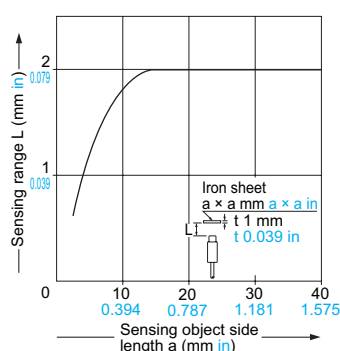
As the sensing object size becomes smaller than the standard size (iron sheet $5 \times 5 \times t \text{ 1 mm } 0.197 \times 0.197 \times t \text{ 0.039 in}$), the sensing range shortens as shown in the left figure.

GX-5S□**Sensing field****Correlation between sensing object size and sensing range**

As the sensing object size becomes smaller than the standard size (iron sheet $6 \times 6 \times t \text{ 1 mm } 0.236 \times 0.236 \times t \text{ 0.039 in}$), the sensing range shortens as shown in the left figure.

GX-8M□**Sensing field****Correlation between sensing object size and sensing range**

As the sensing object size becomes smaller than the standard size (iron sheet $8 \times 8 \times t \text{ 1 mm } 0.315 \times 0.315 \times t \text{ 0.039 in}$), the sensing range shortens as shown in the left figure.

GX-8ML□**Sensing field****Correlation between sensing object size and sensing range**

As the sensing object size becomes smaller than the standard size (iron sheet $12 \times 12 \times t \text{ 1 mm } 0.472 \times 0.472 \times t \text{ 0.039 in}$), the sensing range shortens as shown in the left figure.

PRECAUTIONS FOR PROPER USE

Refer to General precautions.

FIBER
SENSORSLASER
SENSORSPHOTO-
ELECTRIC
SENSORSMICRO
PHOTO-
ELECTRIC
SENSORSAREA
SENSORSLIGHT
CURTAINSPRESSURE /
FLOW
SENSORSINDUCTIVE
PROXIMITY
SENSORSPARTICULAR
USE
SENSORSSENSOR
OPTIONSSIMPLE
WIRE-SAVING
UNITSWIRE-SAVING
SYSTEMSMEASURE-
MENT
SENSORSSTATIC
CONTROL
DEVICES

ENDSCOPE

LASER
MARKERSPLC /
TERMINALSHUMAN
MACHINE
INTERFACESENERGY
CONSUMPTION
VISUALIZATION
COMPONENTSFA
COMPONENTSMACHINE
VISION
SYSTEMSUV
CURING
SYSTEMSSelection
GuideAmplifier
Built-inAmplifier-
separated**GX-F/H****GXL****GL**GX-U/GX-FU/
GX-N**GX**

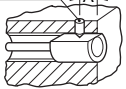
- Never use this product as a sensing device for personnel protection.
- In case of using sensing devices for personnel protection, use products which meet laws and standards, such as OSHA, ANSI or IEC etc., for personnel protection applicable in each region or country.

Mounting

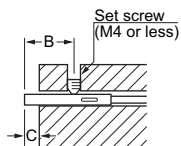
- The tightening torque should be as given below.

Mounting with set screw**<Shielded of threaded type>**

- Tighten the set screw on the flat surface of the sensor without applying excessive force. Make sure to use a set screw with a cup-point end.

Set screw
(M4 or less)
(Note)Note: To fasten **GX-5M□**, use a M3 or less set screw.

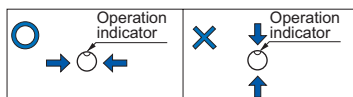
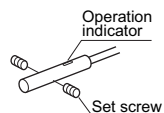
Model No.	Set screw tightening position A (mm in)	Tightening torque
GX-5M□	5 to 10 0.197 to 0.394	0.29 N·m
GX-8M□	8 to 22 0.315 to 0.866	0.29 N·m

<Non-threaded type and non-shielded of threaded type>

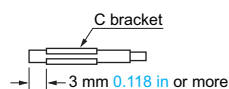
Model No.	B (mm in)	C (mm in)	Tightening torque
GX-3S□	5 to 10 0.197 to 0.394	3 0.118	0.29 N·m
	When using the C bracket		0.58 N·m
GX-4S□	5 to 10 0.197 to 0.394	3 0.118	0.58 N·m
GX-5S□	8 to 20 0.315 to 0.787	5 0.197	0.29 N·m
GX-8ML□	13 to 22 0.517 to 0.866	10 0.394	0.29 N·m

Note: The protrusion should be kept C (mm in) or more to avoid reduction of sensing range.

- To fasten **GX-3S□** and **GX-4S□**, use a M3 or less set screw and tighten it from a direction perpendicular to the operation indicator.



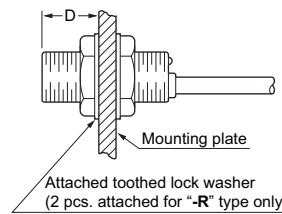
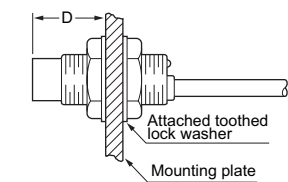
- When using the C bracket, place it on the sensor at a distance of 3 mm 0.118 in or more from the sensor end.



- To fasten the non-shielded threaded type, tighten the set screw on the flat surface of the sensor.

Mounting with nut

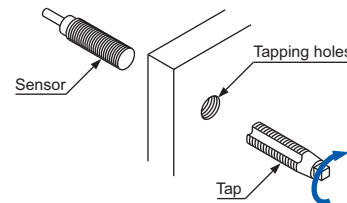
- Note that the maximum tightening torque differs according to the location of the nuts.

<Shielded of threaded type>**<Non-shielded of threaded type>**

Model No.	D (mm in)	Tightening torque
GX-5M□	2 to 3 0.079 to 0.118	0.49 N·m
	3 0.118 or more	1.47 N·m
GX-8M□	3 to 11 0.118 to 0.433	1.47 N·m
	11 0.433 or more	3.43 N·m
GX-8ML□	9 to 11 0.345 to 0.433	0.98 N·m
	11 0.433 or more	3.43 N·m

Note: Mount such that the nuts do not protrude from the threaded portion.

- The root truncation of the threads with **GX-8M□** and **GX-8ML□** is shallow owing to strengthening of the sensors against tightening. When tapping holes on equipment to fix the sensors, the prepared holes must be $\varnothing 7.2$ mm $\varnothing 0.283$ in or more.



PRECAUTIONS FOR PROPER USE

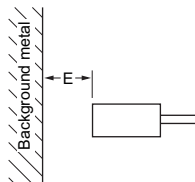
Refer to General precautions.

Distance from surrounding metal

- As metal around the sensor may affect the sensing performance, pay attention to the following points.

Influence of surrounding metal

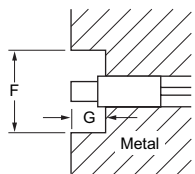
- The surrounding metal will affect the sensing performance. Keep the minimum distance specified in the table below.



Model No.	E (mm in)
GX-3S□	3 0.118
GX-4S□	3 0.118
GX-5S□	4 0.157
GX-5M□	3 0.118
GX-8M□	4 0.157
GX-8ML□	8 0.315

Embedding of the sensor in metal

- Sensing range may decrease if the sensor is completely embedded in metal. Especially for the non-threaded type and the non-shielded type, keep the minimum distance specified in the table below.

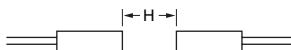


Model No.	F (mm in)	G (mm in)
GX-3S□	ø12 ø0.472	3 0.118
GX-4S□	ø12 ø0.472	3 0.118
GX-5S□	ø15.4 ø0.606	5 0.197
GX-8ML□	ø30 ø1.181	10 0.394

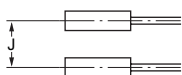
Mutual interference

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

Face to face mounting



Parallel mounting



Model No.	H (mm in)	J (mm in)
GX-3S□	16 0.630	16 0.630
GX-4S□	16 0.630	16 0.630
GX-5S□	20 0.787	15 0.591
GX-5M□	10 0.394	10 0.394
GX-8M□	20 0.787	15 0.591
GX-8ML□	50 1.969	30 1.181

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.	GX-3S□ GX-4S□	GX-5M□	GX-5S□ GX-8M□ GX-8ML□
Metal			
Iron	1	1	1
Stainless steel (SUS304)	0.65 approx.	0.83 approx.	0.7 approx.
Brass	0.36 approx.	0.61 approx.	0.4 approx.
Aluminum	0.30 approx.	0.58 approx.	0.35 approx.

Others

- Do not use during the initial transient time (10 ms) after the power supply is switched on.
- Make sure that stress by forcible bend or pulling is not applied directly to the sensor cable joint.
- GX-3S□**, **GX-4S□** and **GX-5M□** do not incorporate a short-circuit protection circuit at the output. Do not connect them directly to a power supply or a capacitive load.

FIBER SENSORS

LASER SENSORS

PHOTO-ELECTRIC SENSORS

MICRO PHOTO-ELECTRIC SENSORS

AREA SENSORS

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UV CURING SYSTEMS

Selection Guide

Amplifier Built-in

Amplifier-separated

GX-F/H

GXL

GL

GX-4/GX-FU/ GX-N

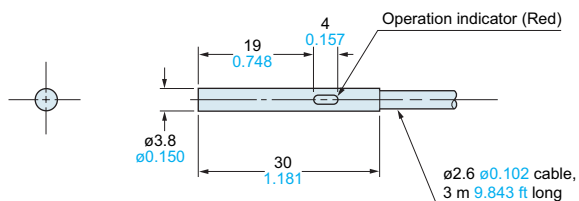
GX

DIMENSIONS (Unit: mm in)

The CAD data in the dimensions can be downloaded from our website.

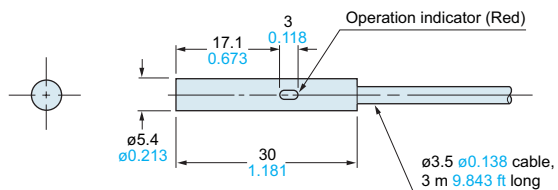
GX-3S□

Sensor



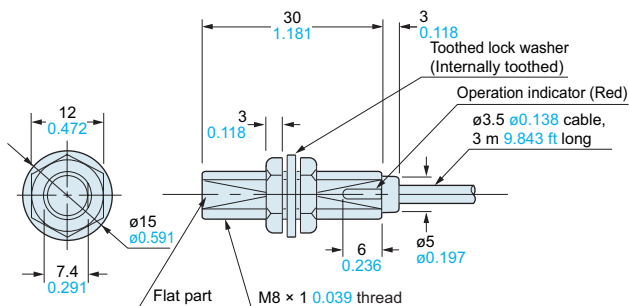
GX-5S□

Sensor



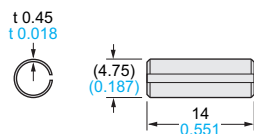
GX-8M□

Sensor



MS-SS3-2

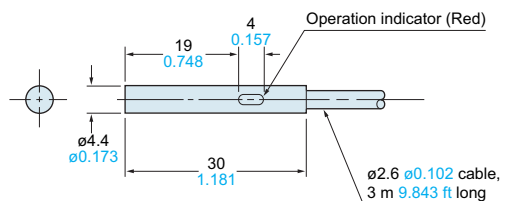
C bracket for GX-3S□ (Accessory for GX-3S□)



Note: By using the C bracket, the applicable tightening force can be doubled.

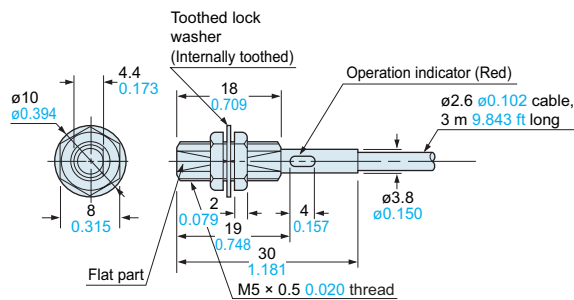
GX-4S□

Sensor



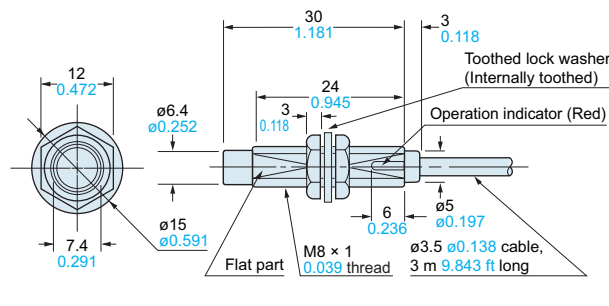
GX-5M□

Sensor



GX-8ML□

Sensor

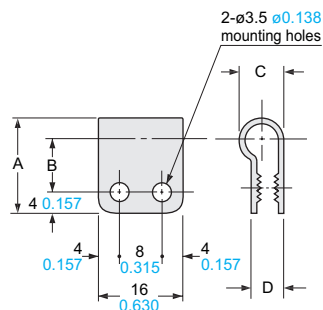


MS-SS3

Sensor mounting bracket for GX-3S□ (Accessory for GX-3S□)

MS-SS5

Sensor mounting bracket for GX-5S□ (Accessory for GX-5S□)



Model No.	MS-SS3	MS-SS5
Symbol		
A	16 0.630	18 0.709
B	9 0.354	10 0.394
C	6.3 0.248	8.3 0.327
D	4.9 0.193	6.1 0.240
Applicable model No.	GX-3S□	GX-5S□

Material: Nylon 66

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AMPLIFIER-SEPARATED

GX-F/H

GXL

GL

GX-UI/GX-FU/GX-N

GX