LASER SENSORS

PHOTOELECTRIC SENSORS MICRO PHOTOELECTRIC SENSORS AREA SENSORS SAFETY LIGHT

PRESSURE / FLOW SENSORS

USE SENSORS SENSOR OPTIONS SIMPLE WIRE-SAVING UNITS WIRE-SAVING SYSTEMS

MEASUREMENT SENSORS

STATIC CONTROL

LASER MARKERS

HUMAN MACHINE INTERFACES

FA COMPONENTS

MACHINE VISION SYSTEMS

UV CURING SYSTEMS

Selection Guide

Amplifier Built-in

Amplifierseparated Other

Products

GXL

GL

GX

GX-M GX-U/GX-FU/ GX-N

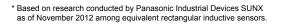
PLC

ENERGY MANAGEMENT

Rectangular-shaped Inductive Proximity Sensor Amplifier Built-in SERIES

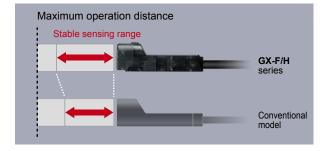


Industry No. 1* in stable sensing



Can be installed with ample space

This sensor has the longest stable sensing range among the same level of rectangular inductive proximity sensors in the industry. It is easy to install the sensor.



Variation at the maximum operation distance is within ±8 %

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 is much easier.



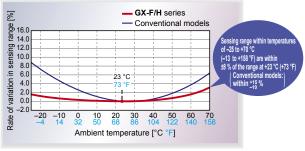
* Not including temperature characteristic	s.
--	----

	Maximum	Stable sen	sing range
Туре	operation distance	GX-F/H series	Conventional model
GX-□6	1.6 mm 0.063 in	0 to 1.3 mm 0.051 in	0 to 1.2 mm 0.047 in
GX-□8	2.5 mm 0.098 in	0 to 2.1 mm 0.083 in	0 to 1.8 mm 0.709 in
GX-⊔12	4.0 mm 0.157 in	0 to 3.3 mm 0.130 in	0 to 3.0 mm 0.118 in
GX-⊔15	5.0 mm 0.197 in	0 to 4.2 mm 0.165 in	0 to 4.0 mm 0.157 in
Long sensing range	8.0 mm 0.315 in	0 to 6.7 mm 0.264 in	0 to 6.4 mm 0.252 in

* With standard sensing object

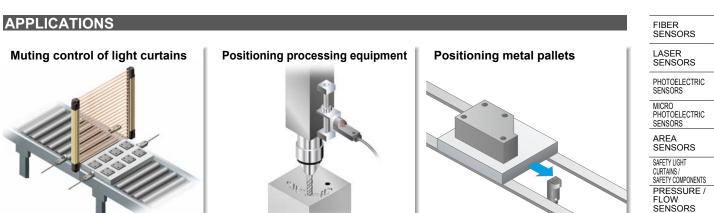
Temperature characteristics vary within ±8 %

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 day or the yearly season.



* Typical

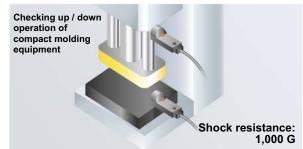
Downloaded from Arrow.com.



ENVIRONMENTAL RESISTANCE

10 times the durability! (Compared to conventional models)

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 clears durability tests of between 10 and 500 Hz (3 mm 0.118 in double amplitude in X, Y and Z directions for 2 hours each). In addition, resistance to impulse noise is approx. three times greater than for conventional models.



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 getting inside.

* For details, refer to the "SPECIFICATIONS (p.790~)".



Vibration resistance: 500 Hz **FUNCTIONS**

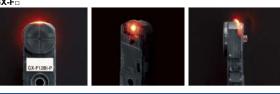
Sensing presence of metallic

objects on a part feeder

Indicators are easy to see over a wide field of view

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



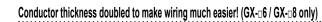


MOUNTING

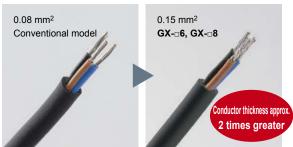
Tightening strength increased with no damage! (excluding GX-D6)

A metal sleeve has been inserted. It prevents the sensor from being damaged by tightening too much.





The conductor's thickness was doubled for the GX-□6 / 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.



SENSORS

PARTICULAR USE SENSORS

SENSOR OPTIONS SIMPLE WIRE-SAVING UNITS WIRE-SAVING

SYSTEMS MEASUREMENT SENSORS

STATIC CONTROL DEVICES

LASER MARKERS

PLC

HUMAN MACHINE ENERGY MANAGEMENT SOLUTIONS

FA COMPONENTS

MACHINE VISION SYSTEMS

UV CURING SYSTEMS

Selection Guide Amplifie Built-in Amplifier-Other Products

GX-F/H	
GXL	
GL	
GX-M	
GX-U/GX-FU/ GX-N	
GX	

LASER MARKERS

PLC HUMAN MACHINE

ORDER GUIDE

LASER SENSORS	GX	-6 t	уре				
PHOTO- ELECTRIC SENSORS MICRO	Ту	ре	Appearance (mm in)	Sensing range (Note 1)	Model No. (Note 2)	Output	Output operation
MICRO PHOTO- ELECTRIC SENSORS		бĽ	~/7		GX-F6A		Newsellesener
AREA		Front sensing			GX-F6AI		Normally open
SAFETYLIGHT	Ŧ	ont s	6 0.236 24.5 0.965		GX-F6B		Normally closed
CURTAINS / SAFETY COMPONENTS	output	ц	6 0.236		GX-F6BI	NPN open-collector	Normally closed
PRESSURE / FLOW SENSORS	NPN	þ	\sim		GX-H6A	transistor	Normally open
	2	sensing		Maximum	GX-H6AI		
INDUCTIVE PROXIMITY SENSORS		Top s(6 0.236	operation distance	GX-H6B	_	Normally closed
PARTICULAR USE SENSORS		-	6 0.236	1.6 mm 0.063 in	GX-H6BI		Normany closed
		bu	$\sim /$	(0 to 1.3 mm 0 to 0.051 in)	GX-F6A-P	_	Normally open
SENSOR OPTIONS		sensi	6 0.236		GX-F6AI-P	_	
SIMPLE WIRE-SAVING UNITS	ŧ	Front sensing	24.5	Stable sensing range	GX-F6B-P		Normally closed
	outpi	Ē	6 0.236		GX-F6BI-P	PNP open-collector	
WIRE-SAVING SYSTEMS	PNP output	p	~ 7		GX-H6A-P	transistor	Normally open
MEASURE- MENT SENSORS	ц	sensing			GX-H6AI-P		
STATIC		Top s(6 0.236		GX-H6B-P		Normally closed
CONTROL DEVICES		μ.	6 0.236		GX-H6BI-P		Normany Closed

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-8 type

ENERGY	GX	-8 ty	/pe				
ENERGY MANAGEMENT SOLUTIONS FA COMPONENTS	Ту	ре	Appearance (mm in)	Sensing range (Note 1)	Model No. (Note 2)	Output	Output operation
MACHINE		g	~		GX-F8A		
VISION		ensir	7.4 0.291		GX-F8AI		Normally open
UV CURING SYSTEMS	Ţ	Front sensing	8 0.315		GX-F8B		
	utpu	Ъг	0.000		GX-F8BI	NPN open-collector	Normally closed
	NPN output	6			GX-H8A	transistor	Nervell
	z	sensing		Maximum	GX-H8AI		Normally open
Selection Guide		Top se	8.2 0.323	operation distance	GX-H8B		No
Amplifier Built-in		Ĕ	8 0.315	2.5 mm 0.098 in	GX-H8BI		Normally closed
Amplifier- separated		b	- 4	0 to 2.1 mm 0 to 0.083 in)	GX-F8A-P		Nerrelle en er
Other Products		sensing	7.4 0.291	Γ N I	GX-F8AI-P		Normally open
	÷	Front s	8 0.315	Stable sensing range	GX-F8B-P		Nemellessed
GX-F/H	outpu	ц			GX-F8BI-P	PNP open-collector	Normally closed
GXL GL	PNP output	g	. ^		GX-H8A-P	transistor	Nerrelle en er
GX-M	٩	sensing			GX-H8AI-P		Normally open
GX-U/GX-FU/		Top se	8.2 0.323		GX-H8B-P		Normally alogod
GX-N GX		Ţ	8 0.315		GX-H8BI-P		Normally closed

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					LASER SENSORS		
Ту	/pe	Appearance (mm in)	Sensing range (Note 1)	Model No. (Note 2)	Output	Output operation	PHOTO- ELECTRIC SENSORS MICRO		
	p			GX-F12A		Namally and	MICRO PHOTO- ELECTRIC SENSORS		
	sensing	7.1 0.280		GX-F12AI		Normally open	AREA SENSORS		
Ŧ	Front s	12 27.8		GX-F12B		Normally closed	SAFETY LIGHT		
outpu	ц	0.472		GX-F12BI	NPN open-collector	Normally closed	SAFETY COMPONENTS		
NPN output	g			GX-H12A	transistor	transistor	transistor	Normally open	PRESSURE / FLOW
z	sensing	12 0.472	Maximum	GX-H12AI			SENSORS		
	Top se	27.4	operation distance	GX-H12B	Normally alaged	INDUCTIVE PROXIMITY SENSORS			
	-	12 0.472	4.0 mm 0.157 in	GX-H12BI		Normally closed	PARTICULAR		
	βĹ		(0 to 3.3 mm 0 to 0.130 in)	to 0.130 in) GX-F12A-P	Normally anon	- SENSORS			
	sensing	7.1 0.280	Γ N I	GX-F12AI-P		Normally open	SENSOR OPTIONS		
Ŧ	Front s	27.8	Stable sensing range GX-F12B-P	Stable sensing range		Nerrolly sleeped	SIMPLE WIRE-SAVING		
output	ц Ц	0.472		GX-F12BI-P PNP open-collector	PNP open-collector	Normally closed	UNITS		
PNP 0	5			GX-H12A-P	transistor		 WIRE-SAVING SYSTEMS 		
۵.	sensing	nsinç				Normally open	MEASURE- MENT SENSORS		
		27.4		GX-H12B-P		No House d			
	Top	12 0.472		GX-H12BI-P		Normally closed	STATIC CONTROL DEVICES		

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-15 type

GX	-15 1	ype					ENERGY MANAGEMENT SOLUTIONS
Ту	ре	Appearance (mm in)	Sensing range (Note 1)	Model No. (Note 2)	Output	Output operation	FA COMPONENTS
	p			GX-F15A		Normally open	MACHINE
	ensir	8 0.315		GX-F15AI			VISION SYSTEMS
¥	ront sensing	31.5		GX-F15B		Normally algood	UV CURING SYSTEMS
outpr	ш	15 0.591		GX-F15BI	NPN open-collector	Normally closed	
NPN output	5		Maximum operation distance 29.5 GX-H15A GX-H15A GX-H15B	transistor	Normally open		
z	sensing	16.5 0.650		GX-H15AI		Normally open	
	Top se			GX-H15B		Normaliy alogged	Normally algood
	Ĕ	15 0.591 1.161	5.Ó mm 0.197 in	5.0 mm 0.197 in GX-H15BI	Normally closed	Amplifier Built-in	
	бL		(0 to 4.2 mm 0 to 0.165 in)	GX-F15A-P		Normally open	Amplifier- separated
	sensing	8 0.315		GX-F15AI-P		Normally open	Other Products
Ŧ	Front s	31.5	Stable sensing range	GX-F15B-P		Normally closed	OV FUL
outpr	Ē	15 0.591		GX-F15BI-P	PNP open-collector	Normally closed	GX-F/H GXL
PNP output	b			GX-H15A-P	transistor	Normally open	GL
۵.	sensing	16.5 0.650		GX-H15AI-P		Normally open	GX-M
	Top se	29.5		GX-H15B-P		Normally alogged	GX-U/GX-FU/
	μ	15 0.591 1.161		GX-H15BI-P		Normally closed	GX-N GX

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.

FIBER SENSORS

LASER MARKERS

HUMAN MACHINE INTERFACES

PLC

ORDER GUIDE

GX-15 (Long sensing range) type

Ту	pe	Appearance (mm in)	Sensing range (Note 1)	Model No. (Note 2)	Output	Output operation
	p			GX-FL15A		Namally and
	sensing	8 0.315		GX-FL15AI		Normally open
ŧ	Front s	31.5		GX-FL15B		Normally alogad
NPN output	Ĕ	15 0.591		GX-FL15BI	NPN open-collector	Normally closed
PN	D			GX-HL15A	transistor	Normally open
z	sensing	16.5 0.650	Maximum	GX-HL15AI		
	Top se	29.5	operation distance	GX-HL15B		
	μĔ	15 0.591 1.161	15 0.591 1.161 8.0 mm 0.315 in GX-HL15BI		Normally closed	
	gu	8 0.315	(0 to 6.7 mm 0 to 0.264 in)	GX-FL15A-P		Normally open
	Front sensing			GX-FL15AI-P		Normally open
ŧ	onts	31.5	Stable sensing range	GX-FL15B-P		Normally closed
output	Ē	15 0.591		GX-FL15BI-P	PNP open-collector	Normally closed
PNP 0	p			GX-HL15A-P	transistor	Normally open
α.	sensing	16.5 0.650		GX-HL15AI-P		
	Top s€	29.5		GX-HL15B-P		Normally closed
	Ĕ	15 0.591 1.161		GX-HL15BI-P		INORMAILY CIOSED

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.

5 m 16.404 ft cable length type, bending-resistant cable type

5 m 16.404 ft cable length type (standard: 1 m 3.281 ft) and bending-resistant cable (excluding 5 m 16.404 ft cable length type) are available. However, long sensing range type is not available. When ordering 5 m 16.404 ft cable length type, suffix "-C5" to the model No. When ordering bending-resistant cable type, suffix "-R" to the model No.

(e.g.) 5 m 16.404 ft cable length type of GX-F15AI-P is "GX-F15AI-P-C5". Bending-resistant cable type of GX-F15AI-P is "GX-F15AI-P-R".

OPTIONS

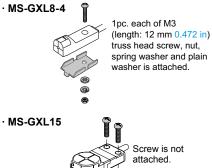
YSTEMS	Designation Model No. Description			ription	
Selection Guide Amplifier Built-in Amplifier- separated Other Products		MS-GX6-1	Mounting bracket for GX-6 typ Sensors can be mounted close		
	Sensor	MS-GL6-1	Mounting brackets for GX-6 ty		
	mounting bracket	MS-GL6-2	Sensor mounting brackets for GL-6 can be used. Interch possible.		
		MS-GXL8-4	Mounting bracket for GX-8 type	9	
		MS-GXL15	Mounting bracket for GX-15 typ	be	
-F/H	Aluminum	MS-A15F	For GX-FL15 □(- P)	Mounting example when mounted onto a steel or	
GXL	sheet	MS-A15H	For GX-HL15□(-P)	stainless steel plate	
GL X-M GX-FU/ GX-N GX	Mounting sleeve	MS-GX8-1×10 10 pcs. per set	Mounting sleeve for GX-8 type Screw, nut, bracket of GXL-8 series can be used by inserting the bracket into the mounting hole of GX-8 type when replacing 3-wire type GXL-8 series (discontinued model) with GX-8 type.		

nsor mounting bracket S-GX6-1 Screw is not



S-GL6-2

S-GXL8-4



attached.

attached.

Screw is not

Screw is not attached.



· MS-A15F

· MS-A15H

Aluminum sheet

SPECIFICATIONS

GX-6 type

	Тур	NPN	output	PNP	output		
	Ž C Front sensin	GX-F6A(I)	GX-F6B(I)	GX-F6A(I)-P	GX-F6B(I)-P		
Item	Front sensin	GX-H6A(I)	GX-H6B(I)	GX-H6A(I)-P	GX-H6B(I)-P		
CE m	arking directive complianc		EMC Directive,	RoHS Directive			
Max.	operation distance (Note 3)	1.6 mm 0.0	063 in ± 8 %			
Stabl	e sensing range (Note 3)		0 to 1.3 mm	0 to 0.051 in			
Stand	lard sensing object		Iron sheet 12 × 12 × t 1 mr	n 0.472 × 0.472 × t 0.039 in			
lyste	eresis		20 % or less of operation distant	ce (with standard sensing object))		
Repe	atability	Alon	g sensing axis, perpendicular to	sensing axis: 0.04 mm 0.002 in c	or less		
Supp	ly voltage		12 to 24 V DC ⁺¹⁰ 15 %	Ripple P-P 10 % or less			
Curre	ent consumption		15 mA	or less			
Dutp	ut	NPN open-collector transistor • Maximum sink current: 100 • Applied voltage: 30 V DC o • Residual voltage: 2 V or le	or less (between output and 0 V)				
	Utilization category	DC-12 or DC-13					
-	Output operation	Normally open	Normally closed	Normally open	Normally closed		
lax.	response frequency	400 Hz					
Dper	ation indicator		Orange LED (lights up	when the output is ON)			
	Pollution degree	3 (Industrial environment)					
Environmental resistance	Protection		IP68 (IEC), IP68G (Note 4, 5)				
SIST	Ambient temperature	-2	–25 to +70 °C –13 to +158 °F, Storage: –40 to +85 °C –40 to +185 °F				
a Le	Ambient humidity		35 to 85 % RH, Sto	rage: 35 to 95 % RH			
men	Voltage withstandability	1,000 V AC	for one min. between all supply	terminals connected together an	nd enclosure		
VILON	Insulation resistance	50 MΩ, or more, wi	th 500 V DC megger between al	I supply terminals connected tog	ether and enclosure		
Ē	Vibration resistance	10 to 500 Hz frequency	3 mm 0.118 in double amplitude	e (Max. 20 G) in X, Y and Z direc	ctions for two hours each		
	Shock resistance	10,000 m	/s ² acceleration (1,000 G approx	.) in X, Y and Z directions three t	imes each		
Sens ange		Over ambient temperat	ure range –25 to +70 °C –13 to -		range at +23 °C +73 °F		
variation Voltage characteristics		5	Within ± 2 % for $^{+10}_{-15}$ % fluct	uation of the supply voltage			
Aate	rial		Enclosure: PBT, Ind	icator part: Polyester			
Cable	9	0.15	mm ² 3-core oil, heat and cold res	sistant cabtyre cable, 1 m 3.281	ft long		
Cable	extension	Extens	ion up to total 100 m 328.084 ft i	s possible with 0.3 mm ² , or more	e, cable.		
let v	veight		15 g a	ipprox.			

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) Panasonic Industrial Devices 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 be deteriorated due to added substances in the oil.

Please check the resistivity of the sensor against the cutting oil you are using beforehand.

Selection Guide Amplifier Built-in Amplifierseparated Other Products

 GX-F/H

 GXL

 GL

 GX-M

 GX-U/GX-FU/ GX-M

 GX

FIBER SENSORS

LASER SENSORS

PHOTO-ELECTRIC SENSORS

MICRO PHOTO-ELECTRIC SENSORS

AREA SENSORS

SAFETY LIGHT CURTAINS / SAFETY COMPONENTS

PRESSURE / FLOW SENSORS

PARTICULAR USE SENSORS

SENSOR OPTIONS

SIMPLE WIRE-SAVING UNITS

WIRE-SAVING SYSTEMS MEASURE-MENT SENSORS

STATIC CONTROL DEVICES

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HUMAN MACHINE INTERFACES

ENERGY MANAGEMENT SOLUTIONS

FA COMPONENTS MACHINE VISION SYSTEMS UV CURING SYSTEMS

PLC

LASER SENSORS

SPECIFICATIONS

GX-8 type

021100110	OA-	o typ	•					
PHOTO- ELECTRIC SENSORS	\sim		Туре	NPN	output	PNP	output	
MICRO			Eront sensing	GX-F8A(I)	GX-F8B(I)	GX-F8A(I)-P	GX-F8B(I)-P	
PHOTO- ELECTRIC SENSORS	Iten	ı 🔪	Top sensing	GX-H8A(I)	GX-H8B(I)	GX-H8A(I)-P	GX-H8B(I)-P	
AREA SENSORS	CE r	narking	directive compliance		EMC Directive,	RoHS Directive		
SAFETY LIGHT CURTAINS / SAFETY	Max	operat	tion distance (Note 3)		2.5 mm 0.0	98 in ± 8 %		
COMPONENTS	Stat	le sens	sing range (Note 3)		0 to 2.1 mm	0 to 0.083 in		
PRESSURE / FLOW SENSORS	Star	idard s	ensing object		Iron sheet 15 × 15 × t 1 mr	n 0.591 × 0.591 × t 0.039 in		
	Hys	eresis			20 % or less of operation distant	ce (with standard sensing object))	
INDUCTIVE PROXIMITY SENSORS	Rep	eatabili	ity	Along	sensing axis, perpendicular to	sensing axis: 0.04 mm 0.002 in o	r less	
PARTICULAR USE SENSORS	Sup	ply volt	age		12 to 24 V DC ⁺¹⁰ 15%	Ripple P-P 10 % or less		
	Curr	ent cor	nsumption		15 mA	or less		
SENSOR OPTIONS SIMPLE WIRE-SAVING UNITS	Out	Output			r less (between output and 0 V)		or less (between output and +V)	
WIRE-SAVING SYSTEMS				Residual voltage: 2 V or lease	ss (at 100 mA sink current)	Residual voltage: 2 V or le	ss (at 100 mA source current)	
MEASURE-		Utiliza	ation category		DC-12 o	or DC-13	I	
MENT SENSORS		Outpu	ut operation	Normally open	Normally closed	Normally open	Normally closed	
STATIC CONTROL DEVICES	Max	. respo	nse frequency		500) Hz		
LASER MARKERS	Ope	ration i	ndicator	Orange LED (lights up when the output is ON)				
MARKERS		Pollut	ion degree		3 (Industrial environment)			
PLC	ance	Prote	ction		IP68 (IEC), IP6	68G (Note 4, 5)		
HUMAN	esista	Ambie	ent temperature	-2	5 to +70 °C –13 to +158 °F, Stor	rage: -40 to +85 °C -40 to +185	°F	
MACHINE	tal re	Ambie	ent humidity		35 to 85 % RH, Sto	rage: 35 to 95 % RH		
ENERGY MANAGEMENT SOLUTIONS	Environmental resistance	Voltag	ge withstandability	1,000 V AC	for one min. between all supply	terminals connected together an	d enclosure	
FA	viror	Insula	ation resistance	50 MΩ, or more, wit	th 500 V DC megger between al	I supply terminals connected tog	ether and enclosure	
COMPONENTS	ш	Vibrat	tion resistance	10 to 500 Hz frequency,	3 mm 0.118 in double amplitude	e (Max. 20 G) in X, Y and Z direc	tions for two hours each	
MACHINE VISION SYSTEMS		Shock	<pre>< resistance</pre>	10,000 m/	s ² acceleration (1,000 G approx	.) in X, Y and Z directions three ti	imes each	
	Sen rang		Temperature characteristics	Over ambient temperate		+158 °F: Within ± 8 % of sensing	range at +23 °C +73 °F	
UV CURING SYSTEMS	varia		Voltage characteristics		Within ± 2 % for $^{+10}_{-15}$ % fluct	uation of the supply voltage		
	Mat	erial			Enclosure: PBT, Ind	icator part: Polyester		
	Cab	le		0.15 ו	mm ² 3-core oil, heat and cold res	sistant cabtyre cable, 1 m 3.281 f	ft long	
Selection	Cab	le exter	nsion	Extensi	on up to total 100 m 328.084 ft i	s possible with 0.3 mm ² , or more	, cable.	
Guide Amplifier Built-in	Net	weight			Front sensing type: 15 g approx.	, Top sensing type: 20 g approx.		
Built-IN	Note	s [.] 1) W	here measurement o	conditions have not been specifie	d precisely, the conditions used	were an ambient temperature of	+23 °C +73 °E	

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) Panasonic Industrial Devices 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. $\widecheck{2}$ 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 be deteriorated due to added substances in the oil.

Please check the resistivity of the sensor against the cutting oil you are using beforehand.

GXL GL GX-M GX-U/GX-FU/ GX-N GΧ

Amplifier-separated

Other Products

SPECIFICATIONS

GX-12 type

\sim	Туре	NPN	output	PNP	output		
	28 Front sensing		GX-F12B(I)	GX-F12A(I)-P	GX-F12B(I)-P		
Item	Top sensing	GX-H12A(I)	GX-H12B(I)	GX-H12A(I)-P	GX-H12B(I)-P		
CE ma	arking directive compliance		EMC Directive,	RoHS Directive			
Max. c	operation distance (Note 3	1	4.0 mm 0.1	57 in ± 8 %			
Stable	e sensing range (Note 3)		0 to 3.3 mm	0 to 0.130 in			
Stand	ard sensing object		Iron sheet 20 × 20 × t 1 mr	n 0.787 × 0.787 × t 0.039 in			
Hyste	resis		20 % or less of operation distant	ce (with standard sensing object)		
Repea	atability	Alon	g sensing axis, perpendicular to		or less		
Suppl	y voltage		12 to 24 V DC ⁺¹⁰ %	Ripple P-P 10 % or less			
Curre	nt consumption		15 mA	or less			
Outpu	ıt	NPN open-collector transistor • Maximum sink current: 10 • Applied voltage: 30 V DC	0 mA or less (between output and 0 V)	PNP open-collector transistor • Maximum source current: • Applied voltage: 30 V DC	100 mA or less (between output and +V)		
Г		Residual voltage: 2 V or le	ess (at 100 mA sink current)		ess (at 100 mA source current)		
l	Utilization category		DC-12 c	or DC-13			
(Output operation	Normally open	Normally closed	Normally open	Normally closed		
Max. r	response frequency	500 Hz					
<u> </u>	ation indicator	Orange LED (lights up when the output is ON)					
-	Pollution degree	3 (Industrial environment)					
ance	Protection	IP68 (IEC), IP68G (Note 4, 5)					
esist	Ambient temperature		–25 to +70 °C –13 to +158 °F, Storage: –40 to +85 °C –40 to +185 °F				
tal r	Ambient humidity		35 to 85 % RH, Storage: 35 to 95 % RH				
) mer	Voltage withstandability	· · · · · · · · · · · · · · · · · · ·	C for one min. between all supply				
- <u>k</u>	Insulation resistance	· · · ·	ith 500 V DC megger between al				
Ľ Ľ	Vibration resistance		v, 3 mm 0.118 in double amplitude				
	Shock resistance	10,000 m	n/s ² acceleration (1,000 G approx	.) in X, Y and Z directions three t	imes each		
Sensii range	•	Over ambient tempera	ture range –25 to +70 °C –13 to	-	range at +23 °C +73 °F		
variati				uation of the supply voltage			
Mater	ial		Enclosure: PBT, Ind	icator part: Polyester			
Cable		0.15	mm ² 3-core oil, heat and cold res	sistant cabtyre cable, 1 m 3.281	ft long		
Cable	extension	Extens	sion up to total 100 m 328.084 ft i	s possible with 0.3 mm ² , or more	e, cable.		
Net w	eight		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) Panasonic Industrial Devices 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. Regard the heat shock test in ① as one cycle and perform 20 cycles.
 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 be deteriorated due to added substances in the oil.

Please check the resistivity of the sensor against the cutting oil you are using beforehand.

Selection Guide Amplifier-separated Other Product:

FIBER SENSORS

LASER SENSORS

LASER SENSORS

SPECIFICATIONS

GX-15 type

SENSONS	U.		P0								
PHOTO- ELECTRIC SENSORS	Туре		NPN output			PNP		output			
MICRO					Long sens	sing range			Long sens	sing range	
PHOTO- ELECTRIC SENSORS			Front sensing	GX-F15A(I)	GX-F15B(I)	GX-FL15A(I)	GX-FL15B(I)	GX-F15A(I)-P	GX-F15B(I)-P	GX-FL15A(I)-P	GX-FL15B(I)-P
AREA SENSORS	Iten	n \	Top sensing	GX-H15A(I)	GX-H15B(I)	GX-HL15A(I)	GX-HL15B(I)	GX-H15A(I)-P	GX-H15B(I)-P	GX-HL15A(I)-P	GX-HL15B(I)-P
SAFETY LIGHT CURTAINS / SAFETY							EMC Directive,	RoHS Directive			
SAFETY COMPONENTS	Max	. operat	tion distance (Note 3)	5.0 mm 0.197 in ± 8 % 8.0 mm 0.315 in ± 8 % (Note 4)		5.0 mm 0.197 in ± 8 %		8.0 mm 0.315 in ± 8 % (Note 4)			
PRESSURE / FLOW SENSORS	Stat	ole sens	sing range (Note 3)	0 to 4.2 mm	0 to 0.165 in	0 to 6.7 mm 0 to 0.264 in (Note 4)		0 to 4.2 mm 0 to 0.165 in		0 to 6.7 mm 0 to 0.264 in (Note 4)	
INDUCTIVE PROXIMITY SENSORS	Standard sensing object						× 30 × t 1 mm 1 × t 0.039 in				
PARTICULAR USE SENSORS	Hys	teresis				20 % or less of a	peration distance	ce (with standard	sensing object))	
	Rep	eatabili	ity		Along	g sensing axis, p	erpendicular to s	sensing axis: 0.0	4 mm 0.002 in c	or less	
SENSOR	Sup	ply volt	age			12 to 24	4 V DC ⁺¹⁰ ₋₁₅ %	Ripple P-P 10 %	or less		
SIMPLE WIRE-SAVING UNITS	Curr	ent cor	nsumption				15 mA	or less			
WIRE-SAVING SYSTEMS	Out	out		NPN open-collector transistor PNP open-collector transistor • Maximum sink current: 100 mA • Maximum source current: 100 mA							
MEASURE- MENT SENSORS			Applied voltage: 30 V DC or less (between output and 0 V) Residual voltage: 2 V or less (at 100 mA sink current) Residual voltage: 2 V or less (at 100 mA sink current)								
STATIC CONTROL DEVICES		Utiliza	ation category	DC-12 or DC-13							
		Outpu	ut operation	Normally open	Normally closed	Normally open	Normally closed	Normally open	Normally closed	Normally open	Normally closed
LASER MARKERS	Max. response frequency		250) Hz	150 Hz	(Note 5)	250	Hz	150 Hz	(Note 5)	
PLC	Ope	ration i	ndicator	Orange LED (lights up when the output is ON)							
HUMAN		Pollut	ion degree	3 (Industrial environment)							
HUMAN MACHINE INTERFACES	Protection		IP68 (IEC), IP68G (Note 6, 7)								
ENERGY MANAGEMENT	Environmental resistance	Ambie	ent temperature	-25 to +70 °C -13 to +158 °F, Storage: -40 to +85 °C -40 to +185 °F							
SOLUTIONS		Ambie	ent humidity	35 to 85 % RH, Storage: 35 to 95 % RH							
COMPONENTS	men	Volta	ge withstandability	1,000 V AC for one min. between all supply terminals connected together and enclosure							
MACHINE VISION SYSTEMS	Environ	Insula	ation resistance	50 M Ω , or more, with 500 V DC megger between all supply terminals connected together and enclosure					ure		
UV		Vibrat	tion resistance	10 to 500 Hz frequency, 3 mm 0.118 in double amplitude (Max. 20 G) in X, Y and Z directions for two hours e				urs each			
CURING SYSTEMS		Shock	k resistance		10,000 m/	s ² acceleration (1,000 G approx.	.) in X, Y and Z d	irections three t	imes each	
	Sen rang	<u> </u>	Temperature characteristics	Over a	mbient temperati	ure range –25 to	+70 °C -13 to +	+158 °F: Within ±	8 % of sensing	range at +23 °C	+73 °F
		ation	Voltage characteristics			Within ±2 9	6 for ⁺¹⁰ / ₋₁₅ % fluct	uation of the sup	ply voltage		
Selection	Mate	erial		Enclosure: PBT, Indicator part: Polyester							
Guide Amplifier Built-in	Cab	le		0.15 mm ² 3-core oil, heat and cold resistant cabtyre cable, 1 m 3.281 ft long							
Built-in Amplifier- separated	Cab	le exte	nsion	Extension up to total 100 m 328.084 ft is possible with 0.3 mm ² , or more, cable.							
Other	Net	weight		20 g approx.							
Products	Note	s: 1) W	here measurement c	onditions have r	not been specifie	d precisely, the	conditions used	were an ambient	temperature of	+23 °C +73 °F.	

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) This is the numerical value which the sensor mount onto an insulator. When mounted onto a steel or stainless steel plate, insert the optional aluminum sheet between the sensor and the plate.

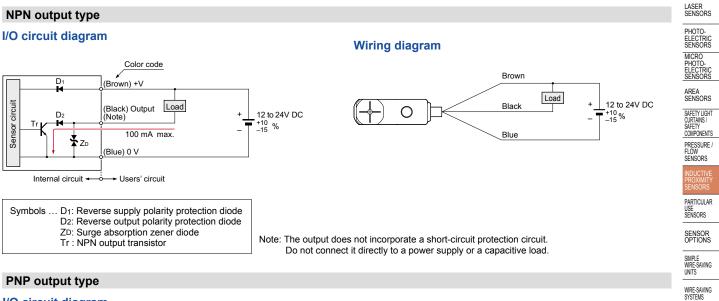
5) This is the numerical value which the sensor mount onto an insulator. When mounted onto a metallic plate, max. response frequency will decrease. 6) Panasonic Industrial Devices SUNX's IP68 test method

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.

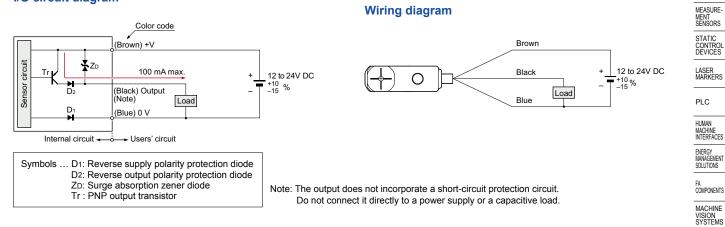
③ Leave in water at a depth of 1 m 3.281 ft in water for 500 hours.

(4) After tests (1) to (3), insulation resistance, voltage withstandability, current consumption, and sensing ranges must meet the standard values.

7) If using the sensor in an environment where cutting oil droplets splatter, the sensor may be deteriorated due to added substances in the oil. Please check the resistivity of the sensor against the cutting oil you are using beforehand.



I/O circuit diagram



FIBER SENSORS

UV CURING SYSTEMS

Selection Guide

Amplifier-separate Other Product:

GXL GL GX-M GX-U/GX-FU/ GX-N GX

LASER SENSORS

SIMPLE WIRE-SAVING UNITS

WIRE-SAVING SYSTEMS

MEASURE-MENT SENSORS

STATIC CONTROL DEVICES

LASER MARKERS

PLC HUMAN

MACHINE

ENERGY MANAGEMENT

SOLUTIONS FA COMPONENTS

MACHINE

VISION SYSTEMS

GXL

GL

GX-N

GX

GX-M GX-U/GX-FU/

SENSING CHARACTERISTICS (TYPICAL)

GX-6 type Sensing field

Correlation between sensing object size and sensing range

Iron

Aluminu

20

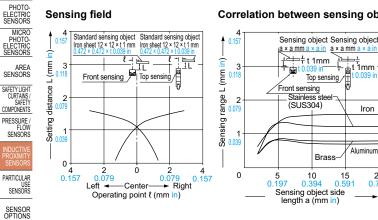
0.78

Correlation between sensing object size and sensing range

Brass

Aluminum

15 0.591



Standard sensing object Iron sheet 15 × 15 × t1 mm 0.591 × 0.591 × t0 039 in

0.591 × 0.591 × 10.000

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

GX-8 type

4 0.157

3 118

GX-12 type

Sensing field

슽

Sensing field

Standard sensing object Iron sheet 15 × 15 × t 1 mm

Front sensing

2ħ

Sensing object <u>a × a mm a × a in</u> <u>+</u> t 1 mm t 0 039 in Sensina object As the sensing object size becomes smaller than a × a mm a × a → + t 1 mm the standard size (iron sheet 15 × 15 × t 1 mm range L (mm in) - $0.591 \times 0.591 \times t \ 0.039$ in), the sensing range ģ. Top sensing 3 shortens as shown in the left figure. /Front sensing Iron 2

Stainless steel (SUS304)

10 0.39

Sensing object side length a (mm in)

5 0.197

0

Brass-

15 0.591

distance L (mm i 2 079 Sensing I Setting 1 0 2 079 4 Ò 2 0.079 4 0.157 0.157 Left -Center-+ Right Operating point *l* (mm in)

Correlation between sensing object size and sensing range

20 0.787

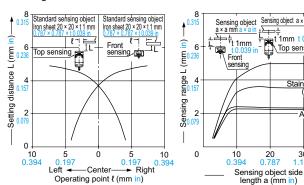
د 10.315€ Standard sensing object Standard sensing object Iron sheet 20 × 20 × t1 mm Iron sheet 20 × 20 × t1 mm CURING Setting distance L (mm in) 6 Top sensing range L (mm 南 Front sensing Selection Guide Sensing 2 079 Amplifier-separated 0↓ 10 35 Other Products 5 197 ò 5 10 0.197 0.394 → Right Left -Center Operating point { (mm in)

Sensing object a × a mm a × a in Sensing object a × a mm a × a in <u>+</u>4 + t 1 mm ŗ, t <u>10.039</u> in t <u>1</u> mm t <u>1</u> mm <u>Top sensing</u> t <u>10.039</u> in <u>t mt</u> <u>1</u> mm Front sensing 6 Iron 4 Stainless stee (SUS304) Brass 2 Aluminum 0 10 20 0.78 30 40 0 1.181 1.575 Sensing object side length a (mm in)

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

GX-15 type

Sensing field



Correlation between sensing object size and sensing range

Sensing object Sensing object a x a mm a x a in a x a mm a x a in the transformed to the Top sensing t 0.0. Front Iron Stainless stee (SUS304) Brass Aluminum 30 1.181 40 1.575 10 20 0.787

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

As the sensing object size becomes smaller than

the standard size (iron sheet 30 × 30 × t 1 mm

 $1.181 \times 1.181 \times t \ 0.039$ in), the sensing range

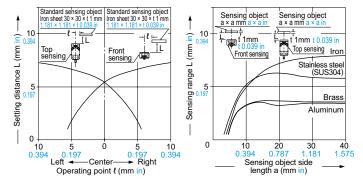
shortens as shown in the left figure.

SENSING CHARACTERISTICS (TYPICAL)

GX-15 (Long sensing range) type

Sensing field

Correlation between sensing object size and sensing range



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.

> Cable Hoo

Groove

É

ø2.4 mm

0.094 in hole

(Depth: 3 mm

0.118 in or more)

Mounting

GX-6 type

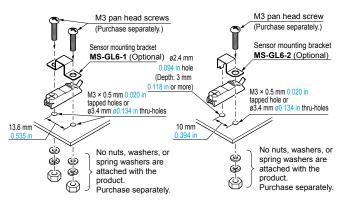
· Use the optional sensor mounting bracket when installing.

<When using MS-GX6-1 (Optional / recommended)>

- · To mount the sensor with a nut, the mounting hole diameter should be ø3.4 mm ø0.134 in.
- ① Insert the sensor into the bracket as shown on the right.
- 2 Push the sensor until the bracket hook is lodged in the groove on the upper portion of the sensor.
- ③ Fix the bracket in place with M3 pan head screw.

<When using MS-GL6-1 (Optional) / MS-GL6-2 (Optional)>

· To mount the sensor with a nut, the mounting hole diameter should be ø3.4 mm ø0.134 in.





<When using MS-GXL8-4 (Optional)>

 Make sure to use a M3 (length: 12 mm 0.472 in or more) truss head screw (accessory for MS-GXL8-4). The tightening torque should be 0.7 N·m or less. Do not use a flat head screw or a pan head screw.

GX-12 type

M3 pan head screw

(Purchase separately.)

Sensor mounting bracket **MS-GX6-1** (Optional)

M3 × 0.5 mm 0.020 in tapped hole (Depth: 8 mm 0.315 in or more) or ø3.4 mm ø0.134 in thru-hole

No nuts, washers, or

spring washers are

product. Purchase separately.

attached with the

22 mm

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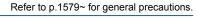
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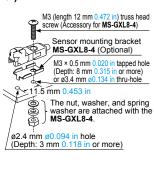
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- The tightening torque should be 0.7 N·m or less.
- · To mount the sensor with a nut, the mounting hole diameter should be ø3.4 mm ø0.134 in. Further, the hole in which the boss is inserted should be ø2.5 mm ø0.098 in and 3 mm 0.118 in, or more, deep.

GX-15 type

- The tightening torgue should be 1 N·m or less.
- To mount the sensor with a nut, the mounting hole diameter should be ø3.4 mm ø0.134 in.
- When installing the long sensing range type on iron or stainless steel plate, put the optional aluminum sheet in between the sensor and the plate.





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

M3 × 0.5 mm 0.020 in tapped hole (Depth: 10 mm 0.394 in or more) or ø3.4 mm ø0.134 in thru-hole

16 mm 0.630 in

No nuts, washers, or spring washers ¢ are attached with the product. Purchase separately. ø2.5 mm ø0.098 in hole (Depth: 3 mm 0.118 in or more)

M3 pan head screws or

Do not use flat head

M3 × 0.5 mm 0.020 ir

tapped holes or ø3.4 mm

134 in thru-holes

truss head screws

screws

XIIII

働

9 mm .

0.354 in

Amplifier Built-in
Amplifier-
separated
separateu
Other
Products
FIDUUCIS

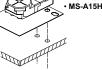
Selection

GXL

GL GX-M GX-U/GX-FU GX-N

GX No nuts, washers, or spring wash are attached with the product. Purchase separately,

(Sensor mounting bracket) Aluminum sheet (Optional) • MS-A15F



MS-GXL15

Downloaded from Arrow.com.

FIBER SENSORS

LASER SENSORS

PHOTO-

ELECTRIC MICRO PHOTO-ELECTRIC SENSORS

AREA SENSORS

SAFETY LIGH

CURTAINS / SAFETY COMPONENTS

PRESSURE FLOW SENSORS

PARTICULAR

USE SENSORS

SENSOR OPTIONS

SIMPLE WIRE-SAVING UNITS

WIRE-SAVING SYSTEMS

MEASURE

MENT SENSORS

STATIC

CONTROL

LASER MARKERS

PLC

HUMAN

MACHINE INTERFACES

ENERGY MANAGEMENT

FA COMPONENTS

MACHINE

VISION SYSTEMS

UV CURING SYSTEMS

SOLUTIONS

LASER SENSORS PHOTO-ELECTRIC SENSORS MICRO PHOTO-ELECTRIC SENSORS

FIBER SENSORS

STATIC

CONTROL DEVICES

LASER MARKERS

MACHINE VISION SYSTEMS

CURING SYSTEMS

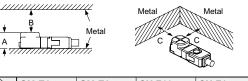
PLC HUMAN MACHINE ENERG SOLUTIONS FA COMPONENTS



Influence of surrounding metal

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

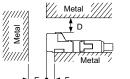
Front sensing type

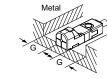


\geq	GX-F6 type	GX-F8 type	GX-F12 type	GX-F15 type	GX-FL15 type
А	6 mm 0.236 in (Note 1)	7.4 mm 0.291 in	7.1 mm 0.280 in	8 mm 0.315 in	8 mm 0.315 in (Note 2)
В	8 mm 0.315 in	8 mm 0.315 in	20 mm 0.787 in	20 mm 0.787 in	30 mm 1.181 in
С	3 mm 0.118 in	3 mm 0.118 in	7 mm 0.276 in	7 mm 0.276 in	10 mm 0.394 in

- Notes: 1) When using MS-GX6-1 (recommended mounting bracket, optional), the distance "A" including the thickness of mounting bracket will be 6.4 mm 0.2
 - 2) The GXL-FL15 type should be mounted on an insulator. To mount it on an iron or stainless steel, use the enclosed aluminum sheet.

Top sensing type





\geq	GX-H6 type	GX-H8 type	GX-H12 type	GX-H15 type	GX-HL15 type
D	3 mm 0.118 in	4 mm 0.157 in	7 mm 0.276 in	6 mm 0.236 in	12 mm 0.472 in
Е	10 mm 0.394 in	10 mm 0.394 in	20 mm 0.787 in	20 mm 0.787 in	30 mm 1.181 in
F	2 mm 0.079 in	3 mm 0.118 in	3 mm 0.118 in	0 mm 0 in	10 mm 0.394 in (Note)
G	2 mm 0.079 in	3 mm 0.118 in	3 mm 0.118 in	3 mm 0.118 in	10 mm 0.394 in

Note: When GX-HL15 type is mounted on an insulator or seated on the enclosed aluminum sheet, the distance "F" can be zero.

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.

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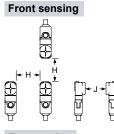
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Selection Guide	
Amplifier Built-in	
Amplifier- separated	
Other Products	
GX-F/H	

GX-F/H
GXL
GL
GX-M
GX-U/GX-FU/

GX-N GX

GX-F6	Between "I" type	0 mm	15 mm			
GX-H6	and non "I" type	(Note 2)	0.591 in			
type	Between two "I" types	13 mm	25 mm			
	or two non "I" types	0.512 in	0.984 in			
GX-F8	Between "I" type	0 mm	15 mm			
GX-H8	and non "I" type	(Note 2)	0.591 in			
type	Between two "I" types	20 mm	35 mm			
	or two non "I" types	0.787 in	1.378 in			
GX-F12	Between "I" type	0 mm	25 mm			
GX-H12	and non "I" type	(Note 2)	0.984 in			
type	Between two "I" types	25 mm	50 mm			
	or two non "I" types	0.984 in	1.969 in			
GX-F15	Between "I" type	0 mm	25 mm			
GX-H15	and non "I" type	(Note 2)	0.984 in			
type	Between two "I" types	45 mm	70 mm			
	or two non "I" types	1.772 in	2.756 in			
GX-FL15	Between "I" type	0 mm	25 mm			
GX-HL15	and non "I" type	(Note 2)	0.984 in			
type	Between two "I" types	110 mm	170 mm			
	or two non "I" types	3.059 in	6.693 in			







Notes: 1) "I" in the model No. specifies the different frequency type.

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-F6/H6 type: 3.5 mm 0.138 in GX-F8/H8 type: 6 mm 0.236 in

GX-F12/H12 type: 6.5 mm 0.256 in

GX-F15/H15 type: 15 mm 0.591 in

GX-FL15/HL15 type: 47.5 mm 1.870 in

Refer to p.1579~ for general precautions.

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

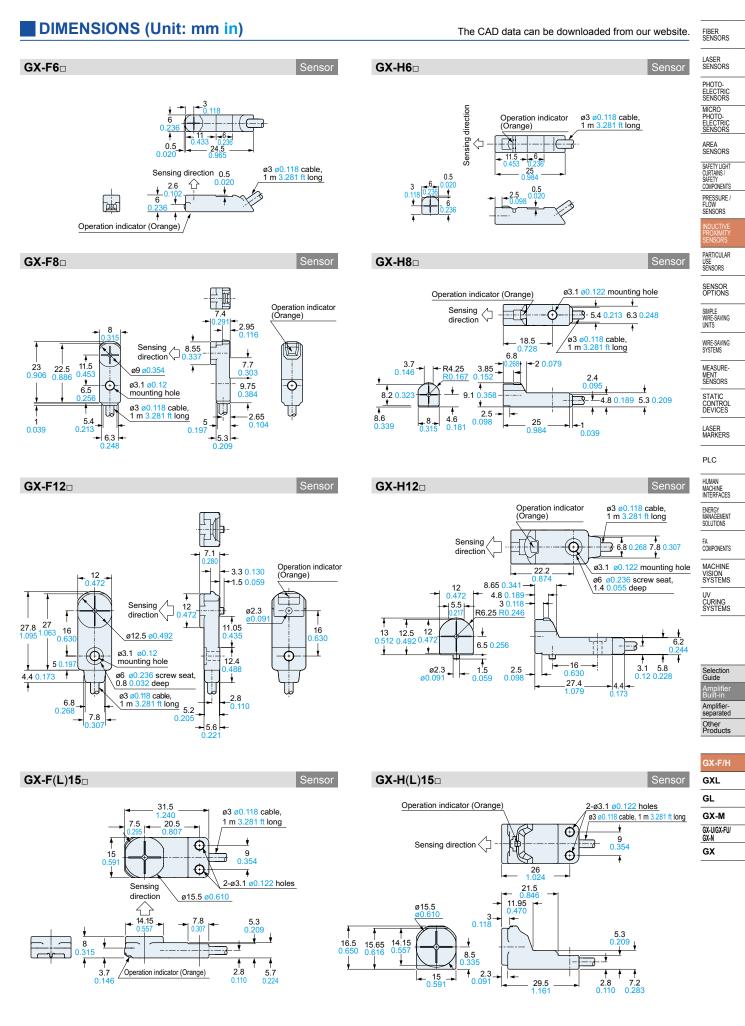
Model No. Metal	GX-F6 GX-H6 type	GX-F8 GX-H8 type	GX-F12 GX-H12 type	GX-F15 GX-H15 type	GX-FL15 type	GX-HL15 type
Iron	1	1	1	1	1	1
Stainless steel (SUS304)	0.76 approx.	0.76 approx.	0.79 approx.	0.68 approx.	0.70 approx.	0.76 approx.
Brass	0.50 approx.	0.50 approx.	0.56 approx.	0.47 approx.	0.45 approx.	0.50 approx.
Aluminum	0.48 approx.	0.48 approx.	0.53 approx.	0.45 approx.	0.43 approx.	0.48 approx.

Wiring

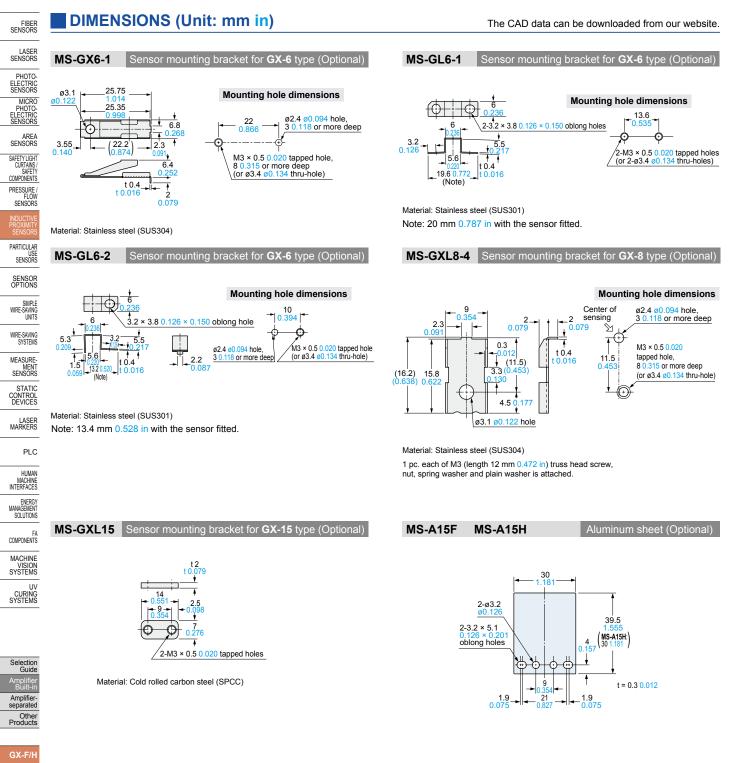
 The output does not incorporate a short-circuit protection circuit. Do not connect it directly to a power supply or a capacitive load.

Others

• Do not use during the initial transient time (50 ms) after the power supply is switched on.



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