LASER SENSORS

PHOTOELECTRIC SENSORS PHOTOELECTRIC SENSORS AREA SENSORS SAFETY COMPONENTS PRESSURE / FLOW SENSORS

PARTICULAR USE SENSORS

SENSOR OPTIONS SIMPLE WIRE-SAVING UNITS WIRE-SAVING SYSTEMS

MEASUREMENT SENSORS

> STATIC CONTROL DEVICES LASER MARKERS

> > PLC

ENERGY MANAGEMENT SOLUTIONS

HUMAN MACHINE INTERFACES

FA COMPONENTS

MACHINE VISION SYSTEMS

UV CURING SYSTEMS

DC 2-wire type Micro-size Inductive Proximity Sensor Amplifier Built-in GXL SERIES



High performance in micro-size design

BASIC PERFORMANCE

Versatile mounting

Since the sensor is fingertip size, it can be mounted in a tight space.





GX-F/H

GXL

GL

GX

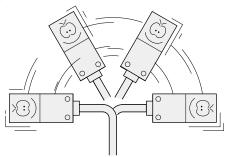
GX-M

GX-U/GX-FU/ GX-N

ENVIRONMENTAL RESISTANCE

Bending-resistant cable type

The bending durability of its cable is ten times that of the conventional model. The sensor can be mounted on a moving table or a robot arm.



Reduced wiring operation

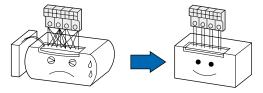
The wiring cost of the DC 2-wire type is 2/3 that of a conventional model.

Besides, the possibility of miswiring is reduced.

Particularly convenient when many sensors are used.

Wiring of the 3-wire type is cumbersome.

Wiring of the 2-wire type is simple and neat.



Others

Cost performance

Achieve high performance at an affordable price.

802

SENSOR OPTIONS

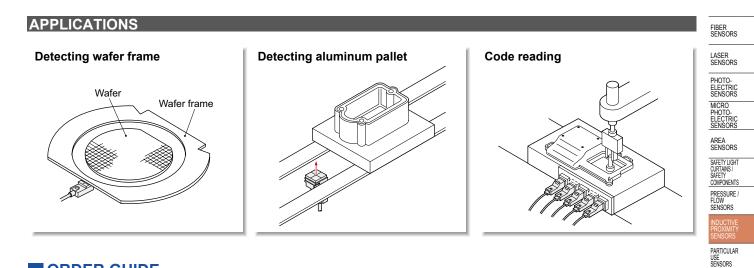
SIMPLE WIRE-SAVING UNITS

FA COMPONENTS

MACHINE VISION SYSTEMS

UV CURING SYSTEMS

GX



ORDER GUIDE

GXL-8 type

							UNITS
T	/pe	Appearance (mm in)	Sensing range (Note 1)	Model No. (Note 2)	Output	Output operation	WIRE-SAVING SYSTEMS
	ng			GXL-8FU		Normally open	MEASURE- MENT SENSORS
	sensing	7.4	Maximum	GXL-8FUI			STATIC
	Front s	20	operation distance	GXL-8FUB			CONTROL DEVICES
2-wire	Fre	0.315	2.5 mm 0.098 in	GXL-8FUIB	New contract DO 2 using trace	Normally closed	LASER MARKERS
DC 2	b		(0 to 1.8 mm) (0 to 0.071 in)	GXL-8HU	Non-contact DC 2- wire type	Normally open	PLC
	sensing	0.315		GXL-8HUI		Normany open	HUMAN
	Top se	23	Stable sensing range	GXL-8HUB			HUMAN MACHINE INTERFACES
	ц Ц	0.315 0.906		GXL-8HUIB		Normally closed	ENERGY MANAGEMENT SOLUTIONS

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.

GXL-15 (Standard) type

Ту	/pe	Appearance (mm in)	Sensing range (Note 1)	Model No. (Note 2)	Output	Output operation	Selection Guide
	ing			GXL-15FU		Normally open	Amplifier Built-in
	sensing	0.315	Maximum	GXL-15FUI			Amplifier- separated
	Front s		operation distance	GXL-15FUB		No U I	Other Products
2-wire	Ч	15 0.591 1.260	5 mm 0.197 in	GXL-15FUIB		Normally closed	
DC 2	6		(0 to 4 mm) (0 to 0.157 in)	GXL-15HU	Non-contact DC 2- wire type		GX-F/H
	sensing	15		GXL-15HUI		Normally open	GXL
	p se	30	Stable sensing range	GXL-15HUB			GX-M
	Top	15 0.591 1.181		GXL-15HUIB		Normally closed	GX-U/GX-FU/ GX-N

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.

LASER SENSORS

SENSOR OPTIONS

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 CURING SYSTEMS

Selection Guide Amplifie Built-ir Amplifier-separated Other Products

GX-F/H

GL GX-M GX-U/GX-FU/ GX-N GΧ

ORDER GUIDE

GXL-15 (Long sensing range) type ... For mounting on non-magnetic material (Note 3)

PHOTO- ELECTRIC SENSORS MICRO	Ту	ре	Appearance (mm in)	Sensing range (Note 1)	Model No. (Note 2)	Output	Output operation
MICRO PHOTO- ELECTRIC SENSORS		b	\sim		GXL-15FLU		Normally open
AREA SENSORS		sensing	0.315	Maximum operation	GXL-15FLUI		
SAFETY LIGHT CURTAINS / SAFETY		Front s	15 32	distance	GXL-15FLUB		Normally closed
COMPONENTS	-wire	ш	0.591	8 mm 0.315 in	GXL-15FLUIB	Non-contact DC 2- wire type	
PRESSURE / FLOW SENSORS	DC 2	ğ	Nor Cord	(0 to 6.4 mm) (0 to 0.252 in)	GXL-15HLU	Non contact Do 2 wire type	Normally open
INDUCTIVE PROXIMITY SENSORS		sensing	0.591	Stable sensing range	GXL-15HLUI		
PARTICULAR		Top s	15 0.591 30 1.181		GXL-15HLUB		Normally closed
USE SENSORS			0.001		GXL-15HLUIB		

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.

3) To mount the long sensing range GXL-15 type on a magnetic body, such as iron, the enclosed aluminum sheet, or any other aluminum sheet having a minimum size of 30 × 39.5 × t 0.3 mm 1.181 × 1.555 × t 0.012 in (GXL-15HLU type: 30 × 30 × t 0.3 mm 1.181 × 1.181 × t 0.012 in), should be inserted between the sensor and the magnetic body.

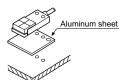
However, it is not necessary to use the aluminum sheet when mounting on a non-magnetic body, such as, aluminum or an insulator.

Bending-resistant cable type and 5 m 16.404 ft cable length type

Bending-resistant cable type and 5 m 16.404 ft cable length type (standard: 1 m 3.281 ft) are also available.

• Table of Model Nos.

Тур	e	Standard	Bending-resistant cable type	5 m 16.404 ft cable length type	Bending-resistant cable of 5 m 16.404 ft cable length type
	B	GXL-8FU	GXL-8FU-R	GXL-8FU-C5	GXL-8FU-R-C5
	sensing	GXL-8FUI	GXL-8FUI-R	GXL-8FUI-C5	GXL-8FUI-R-C5
·	luts	GXL-8FUB	GXL-8FUB-R	GXL-8FUB-C5	GXL-8FUB-R-C5
1	Front	GXL-8FUIB	GXL-8FUIB-R	GXL-8FUIB-C5	GXL-8FUIB-R-C5
Γ.	ng	GXL-8HU	GXL-8HU-R	GXL-8HU-C5	GXL-8HU-R-C5
	ensing	GXL-8HUI	GXL-8HUI-R	GXL-8HUI-C5	GXL-8HUI-R-C5
	S	GXL-8HUB	GXL-8HUB-R	GXL-8HUB-C5	GXL-8HUB-R-C5
	д Ц	GXL-8HUIB	GXL-8HUIB-R	GXL-8HUIB-C5	GXL-8HUIB-R-C5
Γ.	sensing	GXL-15FU	GXL-15FU-R	GXL-15FU-C5	GXL-15FU-R-C5
	ens	GXL-15FUI	GXL-15FUI-R	GXL-15FUI-C5	GXL-15FUI-R-C5
<u>ه</u> ا] ut	GXL-15FUB	GXL-15FUB-R	GXL-15FUB-C5	GXL-15FUB-R-C5
	Front	GXL-15FUIB	GXL-15FUIB-R	GXL-15FUIB-C5	GXL-15FUIB-R-C5
22	bu	GXL-15HU	GXL-15HU-R	GXL-15HU-C5	GXL-15HU-R-C5
۵ľ	sensing	GXL-15HUI	GXL-15HUI-R	GXL-15HUI-C5	GXL-15HUI-R-C5
	b S	GXL-15HUB	GXL-15HUB-R	GXL-15HUB-C5	GXL-15HUB-R-C5
	Top	GXL-15HUIB	GXL-15HUIB-R	GXL-15HUIB-C5	GXL-15HUIB-R-C5
Γ.	g	GXL-15FLU	GXL-15FLU-R	GXL-15FLU-C5	GXL-15FLU-R-C5
	sensing	GXL-15FLUI	GXL-15FLUI-R	GXL-15FLUI-C5	GXL-15FLUI-R-C5
·	nts	GXL-15FLUB	GXL-15FLUB-R	GXL-15FLUB-C5	GXL-15FLUB-R-C5
1	Front	GXL-15FLUIB	GXL-15FLUIB-R	GXL-15FLUIB-C5	GXL-15FLUIB-R-C5
	gu	GXL-15HLU	GXL-15HLU-R	GXL-15HLU-C5	GXL-15HLU-R-C5
	sensing	GXL-15HLUI	GXL-15HLUI-R	GXL-15HLUI-C5	GXL-15HLUI-R-C5
	b S	GXL-15HLUB	GXL-15HLUB-R	GXL-15HLUB-C5	GXL-15HLUB-R-C5
1	д Цо	GXL-15HLUIB	GXL-15HLUIB-R	GXL-15HLUIB-C5	GXL-15HLUIB-R-C5



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

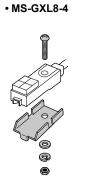
LASER MARKERS

PLC

ORDER GUIDE

Accessories

- MS-GXL8-4 (Sensor mounting bracket for GXL-8FU, GXL-8HU type)
- MS-A15F (Aluminum sheet for GXL-15FLU type)
 MS-A15H (Aluminum sheet for GXL-15HLU type)



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

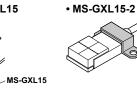
OPTIONS

Designation	Model No.	Description	• MS-GXL15
Sensor mounting	MS-GXL15	Mounting bracket for GXL-15 type	
bracket	MS-GXL15-2	Mounting bracket for GXL-15F type	

unting bracket

• MS-A15F • MS-A15H

9



Screws are not supplied.

HUMAN MACHINE INTERFACES ENERGY MANAGEMENT SOLUTIONS Screws are not supplied. FA COMPONENTS MACHINE VISION SYSTEMS

UV CURING SYSTEMS

Selection Guide
Amplifier Built-in
Amplifier- separated
Other Products

SPECIFICATIONS

LASER SENSORS	\sim								
PHOTO- ELECTRIC SENSORS			Туре	GXL-	8 type	Stan		Long sens	
MICRO PHOTO- ELECTRIC	Type			Front sensing	Top sensing	Front sensing	Top sensing	(For mounting on non-r Front sensing	Top sensing
SENSORS	Iten	, \	Model No.	GXL-8FU	GXL-8HU	GXL-15FU	GXL-15HU	GXL-15FLU	GXL-15HLU
AREA SENSORS			directive compliance		GAL-0110	EMC Directive,			GAL-TOTILO
SAFETY LIGHT CURTAINS /			tion distance (Note 3)	2.5 mm 0.0	98 in +20 %	5 mm 0.197 in ±10 %		8 mm 0.31	5 in +10 %
SAFETY LIGHT CURTAINS / SAFETY COMPONENTS		· ·	sing range (Note 3)	0 to 1.8 mm		0 to 4 mm 0		0 to 6.4 mm 0 to 0.252 in	
PRESSURE / FLOW SENSORS	Standard sensing object			Iron sheet 15 0.591 × 0.59	× 15 × t 1 mm	lron sheet 20 × 20 × t 1 mm 0.787 × 0.787 × t 0.039 in		Iron sheet 30 1.181 × 1.18	× 30 × t 1 mm
INDUCTIVE PROXIMITY SENSORS	Hys	eresis			20 % or less of operation distance (with standard sensing object)				
PARTICULAR USE SENSORS		eatabil	ity			xis, perpendicular to s			
		oly volt				2 to 24 V DC ±10 %			
SENSOR OPTIONS		-	nsumption (Note 4)			0.8 mA			
SIMPLE WIRE-SAVING UNITS	Out	out		Non-contact DC 2-w • Load current: 3 to			Non-contact DC 2-v	vire type 3 to 100 mA (Note 5)	
WIRE-SAVING SYSTEMS	Output				: 3 V or less (Note 6)			ge: 3 V or less (Note 6	6)
MEASURE-		Utiliza	ation category	DC-12 or DC-13					
MENT SENSORS		Short	-circuit protection	Incorporated					
STATIC CONTROL DEVICES	Max	. respo	nse frequency	1 kHz					
	Ope	ration i	ndicator	Normally closed type: Red LED (lights up when the output is ON)					
LASER	2-co	lor indi	cator	Normally open type: Lights up in green under stable sensing condition Lights up in red under unstable sensing condition					
PLC		Pollut	tion degree	3 (Industrial environment)					
HUMAN MACHINE INTERFACES	nce	Prote	ction	IP67 (IEC), IP67G (Note 7)					
ENERGY	sista	Ambi	ent temperature	-25 to +70 °C -13 to +158 °F, Storage: -30 to +80 °C -22 to +176 °F					
SOLUTIONS	Environmental resistance	Ambi	ent humidity	45 to 85 % RH, Storage: 35 to 95 % RH					
FA COMPONENTS	ment	Volta	ge withstandability	1	,000 V AC for one mi	n. between all supply	terminals connected	together and enclosur	e
MACHINE	/iron	Insula	ation resistance	50 MΩ, o	r more, with 250 V D	C megger between all	supply terminals con	nected together and e	enclosure
VISION	En	Vibra	tion resistance	10 to 55	5 Hz frequency, 1.5 m	m 0.059 in double am	plitude in X, Y and Z	directions for two hou	irs each
UV CURING SYSTEMS		Shoc	k resistance		1,000 m/s ² accelera	ation (100 G approx.)	in X, Y and Z directio	ns three times each	
	Sen		Temperature characteristics	Over ambien	t temperature range -	-25 to +70 °C -13 to +	-158 °F: Within ⁺¹⁵ %	of sensing range at +	20 °C +68 °F
		ation	Voltage characteristics		Withir	n ±2 % for ±10 % fluct	uation of the supply v	oltage	
Selection Guide	Mate	erial		Enclosure:	PBT, Indicator part: I	Polyarylate	Enclosure: PET Indicator part: Polyarylate	Enclosure: PBT Indicator part: Polyarylate	Enclosure: PET Indicator part: Polyarylate
Amplifier Built-in Amplifier- separated	Cab	le (Not	e 8)	0.15 mm ² 2-core or resistant cable, 1		0.2 mm ² 2-c	ore oil, heat and cold	l resistant cable, 1 m 3	3.281 ft long
Other Products	Cab	le exte	nsion		Extension up to to	otal 50 m 164.042 ft is	possible with 0.3 mn	n ² , or more, cable.	
	Wei	ght		Net weight:	12 g approx.		Net weight:	20 g approx.	
GX-F/H GXL	Acce	essorie	S	MS-GXL8-4 (Sensor mountin	g bracket): 1 set			MS-A15F (Aluminum sheet): 1 pc.	MS-A15H (Aluminum sheet): 1 pc.
		4						· · · · · · · · · · · · · · · · · · ·	

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

2) To mount the long sensing range type on a magnetic body, such as iron, the enclosed aluminum sheet, or any other aluminum sheet having a minimum size of 30 × 39.5 × t 0.3 mm 1.181 × 1.555 × t 0.012 in (GXL-15HLU type: 30 × 30 × t 0.3 mm 1.181 × 1.181 × t 0.012 in), should be inserted between the sensor and the magnetic body.

However, it is not necessary to use the aluminum sheet when mounting on a non-magnetic body, such as, aluminum or an insulator.

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) It is the leakage current when the output is in the OFF state.

5) The maximum load current varies with the ambient temperature. Refer to "I/O CIRCUIT AND WIRING DIAGRAMS (p.806)" for more details.

6) When the cable is extended, the residual voltage becomes larger according to the resistance of the cable.

The residual voltage of 5 m 16.404 ft cable length type increases by +0.1 V.

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.

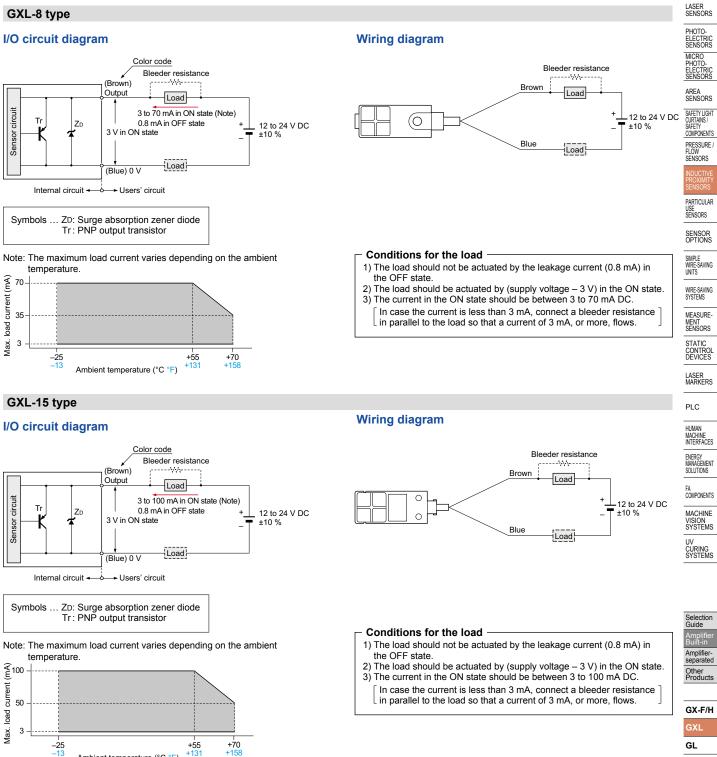
8) The bending-resistant cable type (model No. with suffix "-R") has a 0.15 mm² (GXL-15 type: 0.2 mm²) bending, oil, heat and cold resistant cabtyre cable, 1 m 3.281 ft long.

I/O CIRCUIT AND WIRING DIAGRAMS

+131

Ambient temperature (°C °F)

GXL-8 type

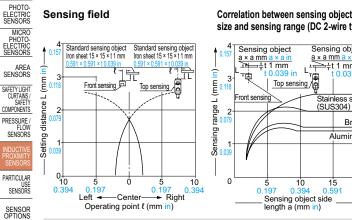


GX-M GX-U/GX-FU/ GX-N GX

LASER SENSORS

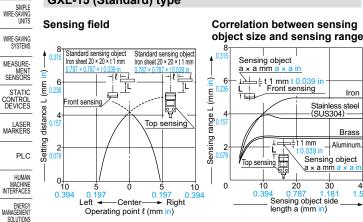
SENSING CHARACTERISTICS (TYPICAL)

GXL-8 type



size and sensing range (DC 2-wire type) Sensing object Sensing object a×amma×air ⊇th==+t1mm <u>a × a mm a × a</u> ± → ≑t 1 mm 0.039 in Top sensing / Iror ront sensi (SUS304) Brass Aluminum 15 0.591 20 0.787 5 0.197 1⁰ 0.394 Sensing object side length a (mm in)

GXL-15 (Standard) type



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 above in the graph on the right.

PRECAUTIONS FOR PROPER USE



FA COMPONENTS

MACHINE VISION SYSTEMS

CURING

Selection Guide

Amplifier Built-in

Amplifier-separated

Other Products

GL

GX-N

GX

GX-M

GX-U/GX-FU/

ΠV

· 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-F/H

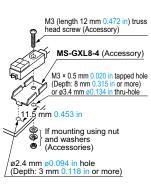
GXL-8 type

- The tightening torque should be 0.5 N·m or less.
- · To mount the sensor with a nut, the thru-hole diameter should be

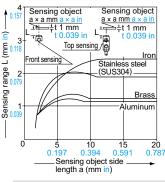
ø3.4 mm ø0.134 in. With the attached mounting screw and nut, take care that the thickness of the mounting plate should be 2.3 mm 0.091 in or less.

· If a screw other than the attached screw is used, make sure to use a M3 truss head screw.

Do not use a flat head screw or a pan head screw.



Correlation between sensing object size and sensing range (NPN output type)



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.

GXL-15 (Long sensing range) type

Sensing field

Iror

Brass

40 1.575

Aluminur

Stainless stee

(SUS304)

Sensing object

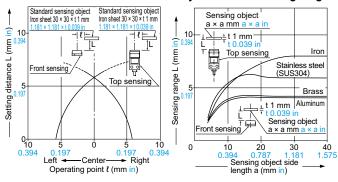
30

a × a mm a :

1 mm

20

Correlation between sensing object size and sensing range

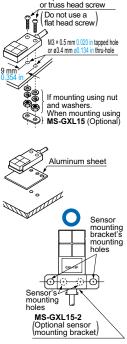


As the sensing object size becomes smaller than the standard size (iron sheet 30 × 30 × t 1 mm 1.181 × 1.181 × t 0.039 in), the sensing range shortens as shown above in the graph on the right.

Refer to p.1579~ for general precautions.

GXL-15 type

- The tightening torque should be 1 N·m or less.
- · To mount the sensor with the optional sensor mounting bracket MS-GXL15, the thru-hole diameter should be ø3.4 mm ø0.134 in.
- Screw, nut or washers are not supplied. Please arrange them separately.
- To mount the long sensing range type on a magnetic body, such as iron, the enclosed aluminum sheet, or any other aluminum sheet having a minimum size of 30 × 39.5 × t 0.3 mm 1.181 × 1.555 × t 0.012 in (GXL-15HLU type: 30 × 30 × t 0.3 mm 1.181 × 1.181 × t 0.012 in), should be inserted between the sensor and the magnetic body. However, it is not necessary to use the aluminum sheet when mounting on a nonmagnetic body, such as, aluminum or an insulator.
- · When mounting the inductive proximity sensor with the optional sensor mounting bracket MS-GXL15-2, if the bracket is mounted close to the sensing part, the bracket itself gets sensed and the operation becomes unstable. Make sure to mount such that the mounting holes of the sensor and



M3 pan head screw

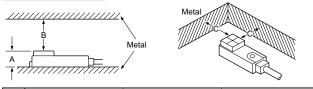
those of the mounting bracket are in one horizontal straight line.

PRECAUTIONS FOR PROPER USE

Influence of surrounding metal

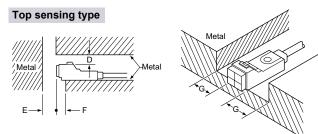
· When there is a metal near the sensor, keep the minimum separation distance specified below.

Front sensing type



\searrow	GXL-8F type	GXL-15FU type	GXL-15FLU type
Α	7 mm 0.276 in	8 mm 0.315 in	8 mm 0.315 in (Note)
В	8 mm 0.315 in	20 mm 0.787 in	30 mm 1.181 in
С	3 mm 0.118 in	7 mm 0.276 in	10 mm 0.394 in

Note: The GXL-15FLU type should be mounted on an insulator or a nonmagnetic body. To mount it on a magnetic body, such as iron, use the enclosed aluminum sheet



\setminus	GXL-8H type	GXL-15HU type	GXL-15HLU type
D	4 mm 0.157 in	6 mm 0.236 in	12 mm 0.472 in
Е	10 mm 0.394 in	20 mm 0.787 in	30 mm 1.181 in
F	3 mm 0.118 in	0 mm 0 in	10 mm 0.394 in (Note)
G	3 mm 0.118 in	3 mm 0.118 in	10 mm 0.394 in

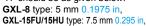
Note: When GXL-15HLU type is mounted on an insulator or a non-magnetic body, or seated on the enclosed aluminum sheet, the distance "F" can be zero.

Mutual interference prevention

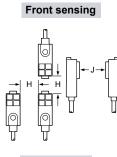
 When two or more sensors are installed in parallel or face to face, keep the minimum separation distance specified below to avoid mutual interference.

		Н	J
Between two "I" types or two non "I" types GXL-15FU Between "I" type and non "I" type		0 mm (Note 2)	15 mm 0.591 in
type	or two non "I" types	18 mm 0.709 in	30 mm 1.181 in
GXL-15FU	or two non "I" types SXL-15FU SXL-15HU Between two "I" type Between two "I" types or two non "I" types SXL-15FLU Between "I" type and non "I" types Difference of the type or two non "I" types Difference of ty		25 mm 0.984 in
type	Between two "I" types or two non "I" types	30 mm 1.181 in	60 mm 2.362 in
GXL-15FLU GXL-15HLU	Between "I" type and non "I" type	0 mm (Note 2)	25 mm 0.984 in
type	Between two "I" types or two non "I" types	75 mm 2.953 in	90 mm 3.543 in

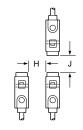
- Notes: 1) "I" in the model No. specifies the different frequency type.
 - 2) Close mounting is possible for up to two sensors. When mounting three sensors or more at an equal spacing, align the model with "I" and the model without "I" alternately. The minimum value of dimension "H" should be as given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



GXL-15FLU/15HLU type: 30 mm 1.181 in



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

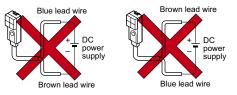
Model No. Metal	GXL-8 type	GXL-15FU type	GXL-15HU GXL-15FLU GXL-15HLU type
Iron	1	1	1
Stainless steel (SUS304)	0.82 approx.	0.74 approx.	0.75 approx.
Brass	0.59 approx.	0.53 approx.	0.53 approx.
Aluminum	0.57 approx.	0.52 approx.	0.51 approx.

Others

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

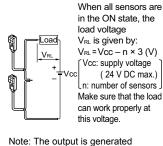
Wiring

. The sensor must be connected to a power supply via a load. If the sensor is connected to a power supply without a load, the short-circuit protection makes the sensor inoperable. (The output stays in the OFF state and the indicator does not light up.) In this case, rectify by connecting the power supply via a load. Now, the sensor becomes operable. Further, take care that if the power supply is connected with reverse polarity without a load, the sensor will get damaged.

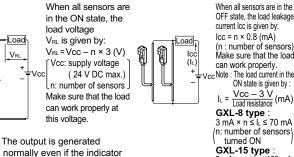


· For series connection (AND circuit) or parallel connection (OR circuit) of sensors, take care of the following.

Series connection (AND circuit) Parallel connection (OR circuit)



does not light up properly.

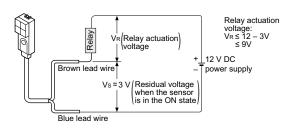


(n : number of sensors) Make sure that the load can work properly. Note : The load current in the ON state is given by : $I_L = \frac{Vcc - 3V}{Load resistance}$ (mA) **GXL-8 type** : 3 mA × n ≤ l_L ≤ 70 mA (n: number of sensors) turned ON

GXL-15 type : 3 mA × n ≤ l_L ≤ 100 mA n: number of sensors turned ON

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

GL



The residual voltage of the sensor is 3 V. Before

voltage. (Some 12 V relays may not be usable.)

connecting a relay at the load, take care of its actuation

FIBER SENSORS LASER SENSORS PHOTO-ELECTRIC SENSORS

MICRO PHOTO-ELECTRIC SENSORS



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

Selectio Guide

Amplifi Built-in

Amplifier-separate

Other Product

GX-F/H

SOLUTIONS

LASER SENSORS

PHOTO-ELECTRIC SENSORS

MICRO PHOTO-ELECTRIC SENSORS

AREA SENSORS

SAFETY LIGHT CURTAINS SAFETY

COMPONENTS PRESSURE / FLOW SENSORS

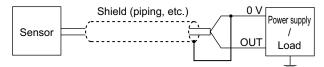
PARTICULAR USE SENSORS

PRECAUTIONS FOR PROPER USE

Use conditions to comply with CE Marking

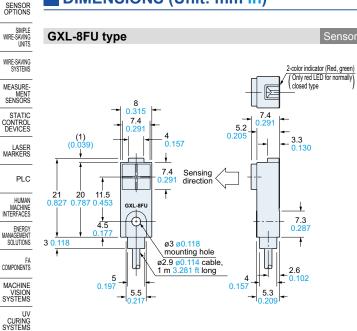
• Following work must be done in case of using this product as a CE Marking (European standard EMC Directive) conforming product.

Ensure that the shield is connected to 0 V.



Note: The shield (piping, etc.) must be insulated.

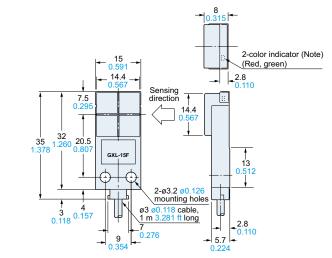
DIMENSIONS (Unit: mm in)

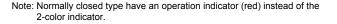


GXL-15F type



GX

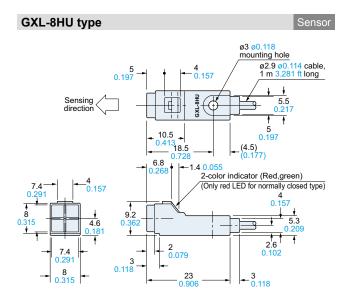




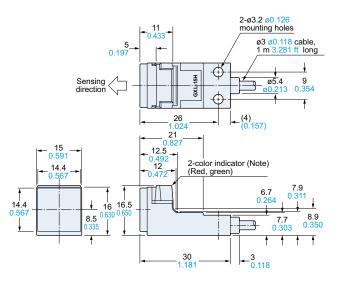
Refer to p.1579~ for general precautions.

The CAD data can be downloaded from our website.

Sensor



GXL-15H type



Note: Normally closed type have an operation indicator (red) instead of the 2-color indicator.

LASER SENSORS

PHOTO-ELECTRIC SENSORS

MICRO PHOTO-ELECTRIC SENSORS

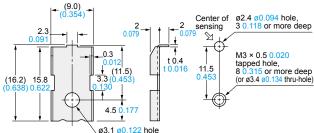
AREA SENSORS

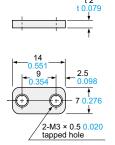
SAFETY LIGHT CURTAINS / SAFETY COMPONENTS

DIMENSIONS (Unit: mm in)

MS-GXL8-4 Sensor mounting bracket for **GXL-8FU** / **GXL-8HU** type (Accessory)

Mounting hole dimensions





(Accessory for GXL-15FLU / GXL-15HLU type)

4 0.157

_1.9 0.075

30 .<mark>18</mark>1

- 9 0.35

21

MS-A15F MS-A15H

2-ø3.2 ø0.126

201

1.9 0.075

2-3.2 × 5.1

oblong holes

SIMPLE WIRE-SAVING UNITS

Aluminum sheet

^{39.5} 1 555(**MS-A15H**: 30 1.181)

t = 0.3 0.012

WIRE-SAVING SYSTEMS

MEASURE-MENT SENSORS STATIC CONTROL DEVICES

LASER MARKERS

PLC HUMAN MACHINE INTERFACES ENERGY MANAGEMENT SOLUTIONS FA COMPONENTS

MACHINE VISION SYSTEMS UV CURING SYSTEMS

Guide
Amplifier Built-in
Amplifier- separated
Other Products

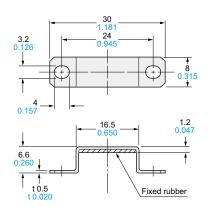
GX-E/H

07-1/11
GXL
GL
GX-M
GX-U/GX-FU/ GX-N
GX



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

MS-GXL15-2 Sensor mounting bracket for **GXL-15F** type (Optional)



Material: Bracket ... Stainless steel (SUS304) Fixed rubber ... FKM (Fluorine rubber)

MS-GXL15 Sensor mounting bracket for **GXL-15** type (Optional)

The CAD data can be downloaded from our website.

Material: Cold rolled carbon steel (SPCC)