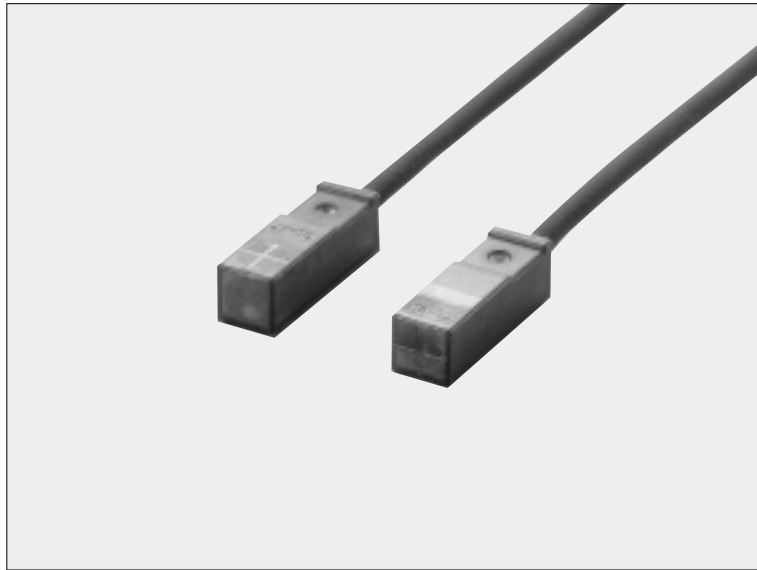


GL-6 SERIES

Miniature Inductive Proximity Sensor **Amplifier Built-in**

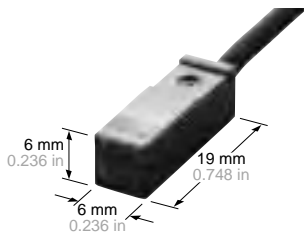


High performance in surprisingly small body at low cost



Extremely small

Mountable in a tight space as the sensor is just 6 × 6 × 19 mm 0.236 × 0.236 × 0.748 in in volume. It is optimum for use as a component in an equipment.

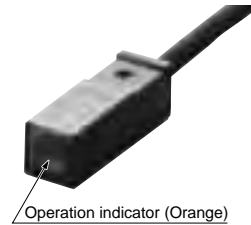


Low price

The **GL-6** is available at a surprisingly low price.

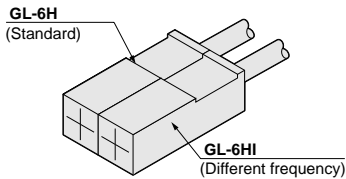
Operation indicator

Despite its compactness, **GL-6** incorporates an operation indicator (orange) for operation check.



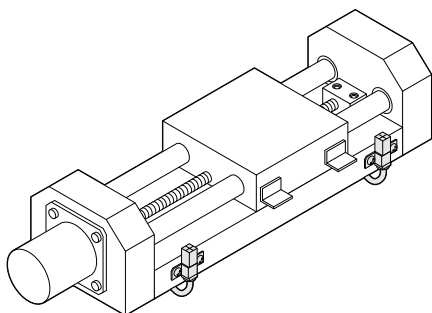
Close mounting

Two sensors can be mounted close together because different frequency type are available.

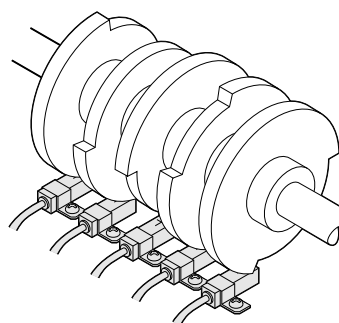


APPLICATIONS

Observing table over-run



Sensing cam positions



ORDER GUIDE

Type	Appearance (mm in)	Sensing range (Note 1)	Model No. (Note 2)	Output	Output operation
Front sensing			GL-6F	NPN open-collector transistor	Normally open
			GL-6FI		Normally closed
			GL-6FB		Normally open
			GL-6FIB		Normally closed
Top sensing			GL-6H		Normally open
			GL-6HI		Normally closed
			GL-6HB		Normally open
			GL-6HIB		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.

5 m 16.404 ft cable length type

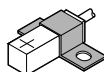
5 m 16.404 ft cable length type (standard: 1m 3.281 ft) is also available.

• Table of Model Nos.

Type	Standard	5 m 16.404 ft cable length type
Front sensing	GL-6F	GL-6F-C5
	GL-6FI	GL-6FI-C5
	GL-6FB	GL-6FB-C5
	GL-6FIB	_____
Top sensing	GL-6H	GL-6H-C5
	GL-6HI	GL-6HI-C5
	GL-6HB	GL-6HB-C5
	GL-6HIB	_____

Accessory

- **MS-GL6-1** (Sensor mounting bracket)

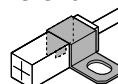


OPTION

Designation	Model No.	Description
Sensor mounting bracket	MS-GL6-2	The brackets are useful to mount sensors side by side.

Sensor mounting bracket

- **MS-GL6-2**



Screw, nut or washer are not attached.

GL-6

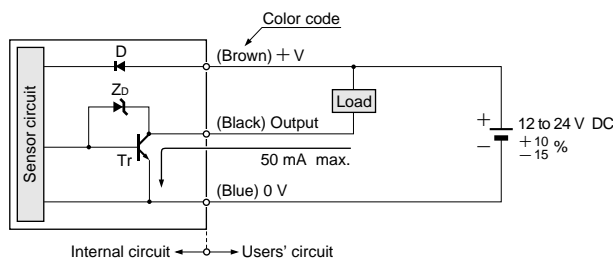
SPECIFICATIONS

Type		Miniature							
		Front sensing				Top sensing			
Item	Model No.	Different frequency		Different frequency		Different frequency		Different frequency	
		GL-6F	GL-6FI	GL-6FB	GL-6FIB	GL-6H	GL-6HI	GL-6HB	GL-6HIB
Max. operation distance (Note)		1.6 mm 0.063 in ± 15 %							
Stable sensing range (Note)		0 to 1.2 mm 0 to 0.047 in							
Standard sensing object		Iron sheet 12 × 12 × t 1 mm 0.472 × 0.472 × t 0.039 in							
Hysteresis		15 % or less of operation distance							
Supply voltage		12 to 24 V DC $\pm 10\%$ Ripple P-P10 % 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: 1 V or less (at 50 mA sink current) 0.4 V or less (at 16 mA sink current)							
	Utilization category	DC-12 or DC-13							
	Output operation	Normally open	Normally closed	Normally open	Normally open	Normally open	Normally open	Normally closed	Normally closed
Max. response frequency		400 Hz							
Operation indicator		Orange LED (lights up when the output is ON)							
Environmental resistance	Pollution degree	3 (Industrial environment)							
	Protection	IP67 (IEC), IP67g (JEM)							
	Ambient temperature	- 10 to + 55 °C + 14 to + 131 °F, Storage: - 30 to + 80 °C - 22 to + 176 °F							
	Ambient humidity	45 to 85 % RH, Storage: 35 to 95 % RH							
	EMC	EN 50081-2, EN 50082-2, EN 60947-5-2							
	Voltage withstandability	1,000 V AC for one min. between all supply terminals connected together and enclosure							
	Insulation resistance	50 MΩ, or more, with 250 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	1,000 m/s ² acceleration (100 G approx.) in X, Y and Z directions for three times each							
Sensing range variation	Temperature characteristics	Over ambient temperature range - 10 to + 55 °C + 14 to + 131 °F: within ± 10 % of sensing range at 20 °C + 68 °F							
	Voltage characteristics	Within ± 2 % for ± 10 % fluctuation of the supply voltage							
Material		Enclosure: Polyallylate							
Cable		0.08 mm ² 3-core oil, heat and cold resistant cabtyre cable, 1 m 3.281 ft long							
Cable extension		Extension up to total 100 m 328.084 ft is possible with 0.3 mm ² , or more, cable.							
Weight		10 g approx.							
Accessory		MS-GL6-1 (Sensor mounting bracket): 1 pc.							

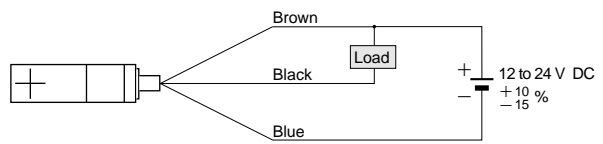
Note: The maximum operation distance stands for the maximum distance for which the sensor can detect the standard sensing object.
 The stable sensing range stands for the sensing range for which the sensor can stably detect the standard sensing object even if there is an ambient temperature drift and/or supply voltage fluctuation.

I/O CIRCUIT AND WIRING DIAGRAMS

I/O circuit diagram



Wiring diagram

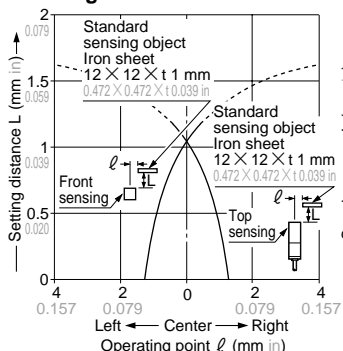


Symbols ... D : Reverse supply polarity protection diode
 Zb: Surge absorption zener diode
 Tr : NPN output transistor

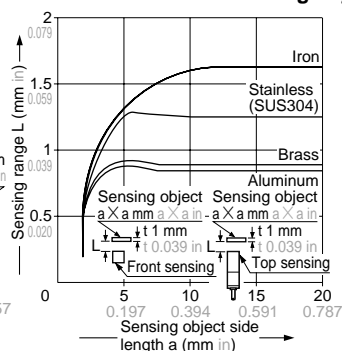
Note: The output does not incorporate a short-circuit protection circuit. Do not connect it directly to a power supply or a capacitive load.

SENSING CHARACTERISTICS (TYPICAL)

Sensing field



Correlation between sensing object size and sensing range



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

PRECAUTIONS FOR PROPER USE

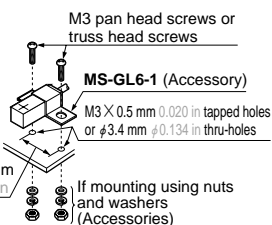
Refer to p.1152~ for general precautions.



This product is not a safety sensor. Its use is not intended or designed to protect life and prevent body injury or property damage from dangerous parts of machinery. It is a normal object detection sensor.

Mounting

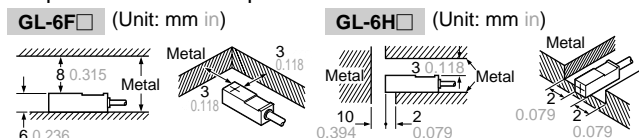
- Mount the sensor with the attached sensor mounting bracket **MS-GL6-1** or the optional sensor mounting bracket **MS-GL6-2**.
- Screws, nuts or washers are not supplied. Please arrange them separately.



- To mount the sensor with a nut, the hole diameter should be $\phi 3.4$ mm $\phi 0.134$ in.

Influence of surrounding metal

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



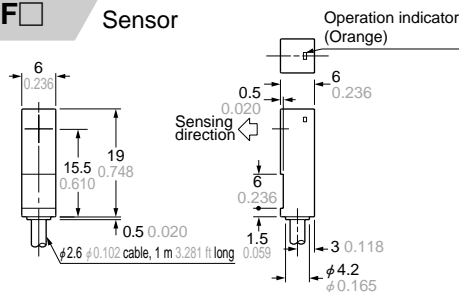
Wiring

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

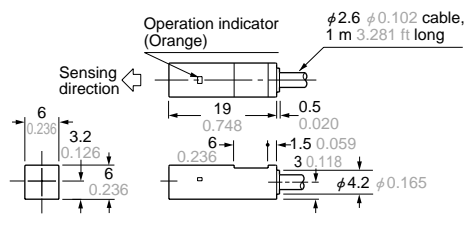
DIMENSIONS (Unit: mm in)

The CAD data in the dimensions can be downloaded from the SUNX website: <http://www.sunx.co.jp/>

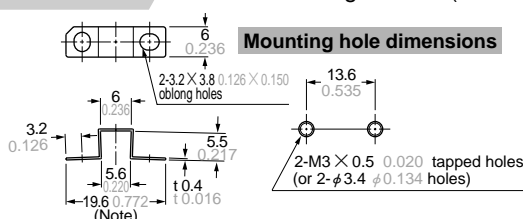
GL-6F Sensor



GL-6H Sensor

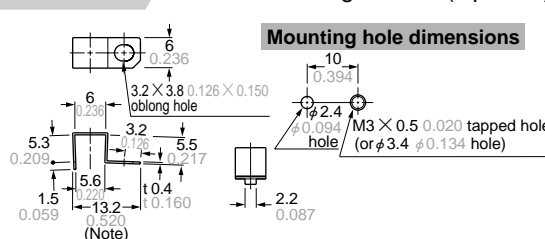


MS-GL6-1 Sensor mounting bracket (Accessory)



Note: 20 mm 0.787 in with the sensor fitted.

MS-GL6-2 Sensor mounting bracket (Optional)



Note: 13.4 mm 0.528 in with the sensor fitted.