

Micro-size Inductive Proximity Sensor

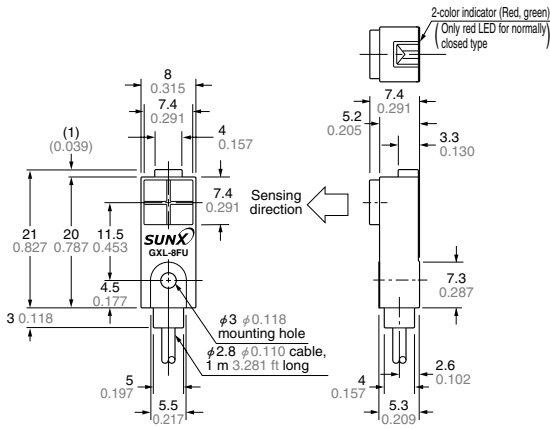
The GXL series of inductive proximity sensors consists of several models from extremely compact types to long-range types. Also, front and top sensing options are provided. This allows the GXL series to be used in a variety of applications. The sensor is available in 2 and 3 wire versions with wiring that has a bend durability that is ten times that of a conventional model. This allows for the sensor to be mounted to a moving object, such as a robotic arm.

Model Name	Type	Max Operating Distance (mm)	Stable Sensing Range (mm)	Output Configuration	Output Operation	Shielded/non-shielded
Sort ▲ ▼	Sort ▲ ▼	Sort ▲ ▼	Sort ▲ ▼	Sort ▲ ▼	Sort ▲ ▼	Sort ▲ ▼
GXL-N12F	DC 3-Wire, Front Sensing, Cable Type	3	2	NPN	Normally Open	Shielded

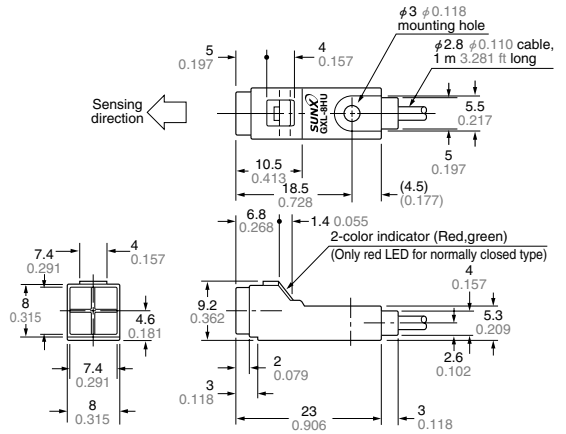
GXL

DIMENSIONS (Unit: mm in)

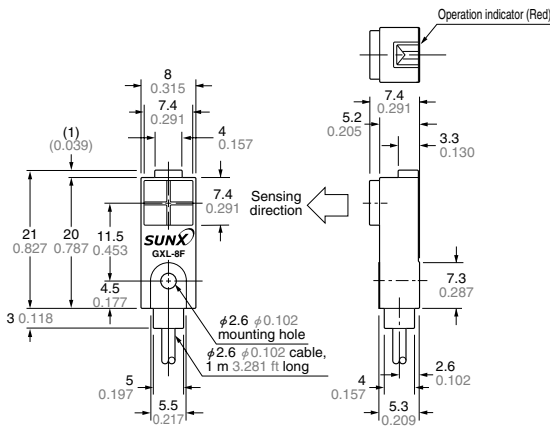
GXL-8FU type Sensor



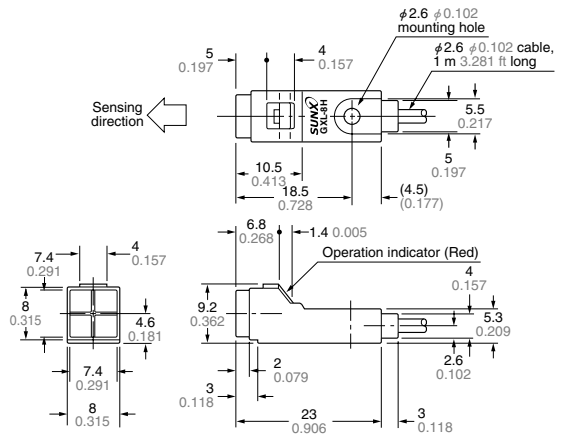
GXL-8HU type Sensor



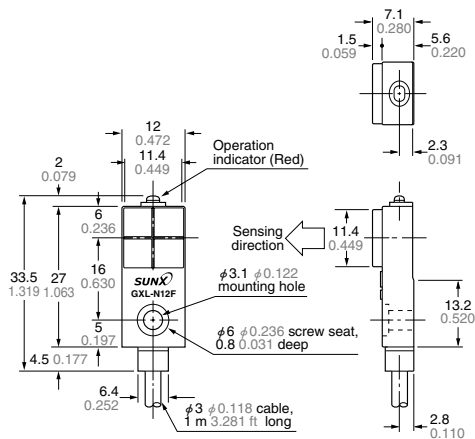
GXL-8F type Sensor



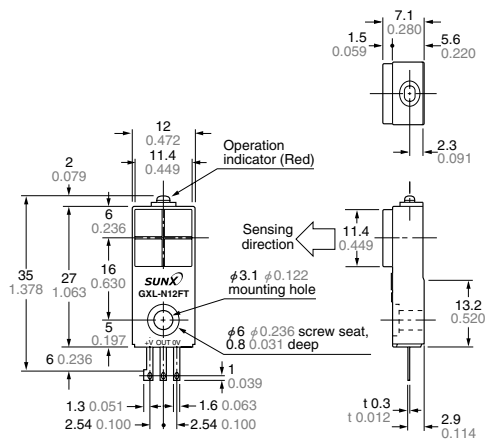
GXL-8H type Sensor



GXL-N12F type Sensor



GXL-N12FT type Sensor



SPECIFICATIONS

NPN and PNP output type

Item	Standard Model No.	NPN output						PNP output					
		GXL-8 type		GXL-N12 type		GXL-15 type		GXL-N12 type		GXL-15 type			
		Cable type	Terminal type	Standard		Long sensing range (For mounting on non-magnetic body (Note 1))	Cable type	Terminal type	Standard				
Front sensing	Top sensing	Front sensing	Top sensing	Front sensing	Top sensing		Top sensing	Front sensing	Front sensing				
		GXL-8F	GXL-8H	GXL-N12F	GXL-N12FT	GXL-15F	GXL-15H	GXL-15HL	GXL-N12F-P	GXL-N12FT-P	GXL-15F-P		
Max. operation distance (Note 2)		2.5 mm	0.098 in ± 20 %	3 mm	0.118 in ± 10 %	5 mm	0.197 in ± 10 %	8 mm	0.315 in ± 10 %	3 mm	0.118 in ± 10 %	5 mm	0.197 in ± 10 %
Stable sensing range (Note 2)		0 to 1.8 mm	0 to 0.071 in	0 to 2 mm	0 to 0.079 in	0 to 4 mm	0 to 0.157 in	0 to 6.4 mm	0 to 0.252 in	0 to 2 mm	0 to 0.079 in	0 to 4 mm	0 to 0.157 in
Standard sensing object		Iron sheet 15 × 15 × t 1 mm 0.591 × 0.591 × t 0.039 in		Iron sheet 20 × 20 × t 1 mm 0.787 × 0.787 × t 0.039 in			Iron sheet 30 × 30 × t 1 mm 1.181 × 1.181 × t 0.039 in		Iron sheet 20 × 20 × t 1 mm 0.787 × 0.787 × t 0.039 in				
Hysteresis		20 % or less of operation distance											
Repeatability		Along sensing axis, perpendicular to sensing axis: 0.04 mm 0.002 in or less					Along sensing axis, perpendicular to sensing axis: 0.06 mm 0.002 in or less		Along sensing axis, perpendicular to sensing axis: 0.04 mm 0.002 in or less				
Supply voltage		12 to 24 V DC ± 10 % Ripple P-P 10 % or less											
Current consumption		15 mA or less											
Output		NPN open-collector transistor <ul style="list-style-type: none"> • Maximum sink current: 100 mA • Applied voltage: 30 V DC or less (between output and 0 V) • Residual voltage: 1 V or less (at 100 mA sink current) 0.4 V or less (at 16 mA sink current) 							PNP open-collector transistor <ul style="list-style-type: none"> • Maximum source current: 100 mA • Applied voltage: 30 V DC or less (between output and + V) • Residual voltage: 1 V or less (at 100 mA source current) 0.4 V or less (at 16 mA source current) 				
Utilization category		DC-12 or DC-13											
Short-circuit protection													
Max. response frequency		500 Hz				250 Hz		500 Hz		250 Hz			
Operation indicator		Red LED (lights up when the output is ON)											
Environmental resistance	Pollution degree	3 (Industrial environment)											
	Protection	IP67 (IEC), IP67 g (JEM) except for the terminal type											
	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 $\pm 15\%$ % of sensing range at + 20 °C + 68 °F											
	Voltage characteristics	Within ± 2 % for ± 10 % fluctuation of the supply voltage											
Material		Enclosure: PBT, Indicator part: Polyallylate				Enclosure: PET (Glass fiber reinforced) Indicator part: Polyallylate		Enclosure: PBT Indicator part: Polyallylate					
Cable (Note 3)		0.08 mm ² 3-core oil, heat and cold resistant cabtyre cable, 1 m 3.281 ft long	0.15 mm ² 3-core oil, heat and cold resistant cabtyre cable, 1 m 3.281 ft long			0.15 mm ² 3-core oil, heat and cold resistant cabtyre cable, 1 m 3.281 ft long					0.15 mm ² 3-core oil, heat and cold resistant cabtyre cable, 1 m 3.281 ft long		
Cable extension		Extension up to total 100 m 328.084 ft is possible with 0.3 mm ² , or more, cable.											
Weight		12 g approx.	20 g approx.	5 g approx.	20 g approx.				5 g approx.	20 g approx.			
Accessories		MS-GXL8 (Sensor mounting bracket): 1 set	MS-GXL12-1 (Sensor mounting bracket): 1 pc. M3 pan head screw, plain washer, spring washer and nut: 1 set MS-R1 (Rubber washer): 1 pc.				MS-A15H (Aluminum sheet): 1 pc.	MS-GXL12-1 (Sensor mounting bracket): 1 pc. M3 pan head screw, plain washer, spring washer and nut: 1 set MS-R1 (Rubber washer): 1 pc.					

- Notes: 1) 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 × 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.
- 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 flexible cable type (model No. with suffix '-R') has a 0.15 mm² (**GXL-8** type: 0.1 mm²) flexible, oil, heat and cold resistant cabtyre cable, 1 m 3.281 ft long.