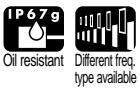


# GL-18H/18HL

Rectangular-shaped Top Sensing Inductive Proximity Sensor **Amplifier Built-in**



High performance  
sensing at a low price



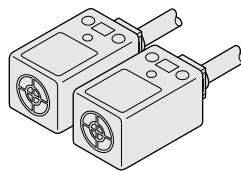
## Low price

It provides high performance at a low price.

## Different frequency type

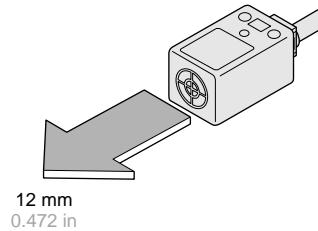
Two sensors can be mounted close together because different frequency types are available.

The long sensing range type, **GL-18HL(B)**, and its different frequency type, **GL-18HLI**, can be mounted 20 mm 0.787 in away from each other.



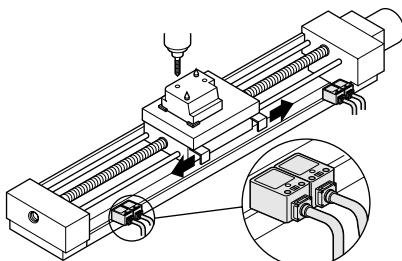
## Long sensing range

**GL-18HL** offers a long sensing range of 12 mm 0.472 in.  
(**GL-18H**: 5 mm 0.197 in)

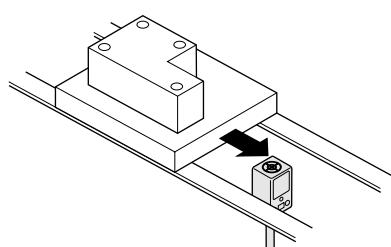


## APPLICATIONS

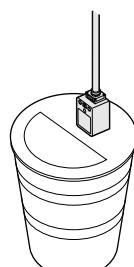
### Detecting over-run of moving table



### Positioning metal pallet



### Detecting aluminum lid

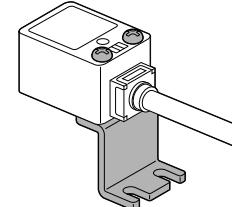


## ORDER GUIDE

Type	Appearance (mm in)	Sensing range (Note)	Model No.	Output	Output operation	Accessory
Standard			GL-18H	NPN open-collector transistor	Normally open	• MS-GL18HL (Sensor mounting bracket)
Different frequency			GL-18HI			
Long sensing range			GL-18HB		Normally closed	
			GL-18HL		Normally open	
Different frequency			GL-18HLI		Normally open	
			GL-18HLB		Normally closed	

Note: The maximum operation distance stands for the maximum distance for which the sensor can detect the standard sensing object.

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



Two M3 (length 25 mm 0.948 in) pan head screws are attached.

## SPECIFICATIONS

Item	Type Model No.	Standard		Long sensing range		Accessory	
		Different frequency GL-18H	GL-18HI	GL-18HB	GL-18HL		
Max. operation distance (Note)	5 mm 0.197 in ± 10 %		12 mm 0.472 in ± 10 %				
Stable sensing range (Note)	0 to 4 mm 0 to 0.157 in		0 to 10 mm 0 to 0.394 in				
Standard sensing object	Iron sheet 25 × 25 × t 1 mm 0.984 × 0.984 × t 0.039 in		Iron sheet 40 × 40 × t 1 mm 1.575 × 1.575 × t 0.039 in				
Hysteresis			15 % or less of operation distance				
Supply voltage	10 to 30 V DC Ripple P-P 10 % or less						
Current consumption			10 mA or less				
Output			NPN open-collector transistor • Maximum sink current: 100 mA • Applied voltage: 30 V DC or less (between output and 0 V) • Residual voltage: 1.5 V or less (at 100 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		
Max. response frequency	1 kHz		500 Hz				
Operation indicator			Red LED (lights up when the output is ON)				
Environmental resistance	Pollution degree	3 (Industrial environment)				Amplifier Built-in	
	Protection	IP67 (IEC), IP67g (JEM)					
	Ambient temperature	−25 to +70 °C −13 to +158 °F, Storage: −25 to +70 °C −13 to +158 °F					
	Ambient humidity	45 to 85 % RH, Storage: 45 to 85 % 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					
Sensing range variation	Shock resistance	1,000 m/s² acceleration (100 G approx.) in X, Y and Z directions for three times each				GL-18H/18HL	
	Temperature characteristics	Over ambient temperature range −25 to +70 °C −13 to +158 °F: within ± 10 % of sensing range at 20 °C + 68 °F					
	Voltage characteristics	Within ± 2 % for ± 10 % fluctuation of the supply voltage					
Material			Enclosure: Polyalylate				
Cable	0.3 mm² 3-core oil 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 mm², or more, cable.						
Weight	45 g approx.						
Accessory			MS-GL18HL (Sensor mounting bracket): 1 set				

Note: The maximum operation distance stands for the maximum distance for which the sensor can detect the standard sensing object.

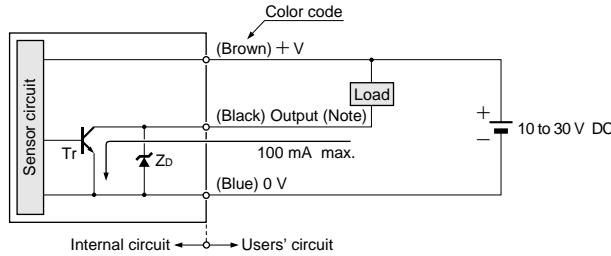
The stable sensing range stands for the sensing range for which the sensor can stably detect the standard sensing object even if there is an ambient temperature drift and/or supply voltage fluctuation.

## GL-18H/18HL

## I/O CIRCUIT AND WIRING DIAGRAMS

GL-18H□  
GL-18HL□

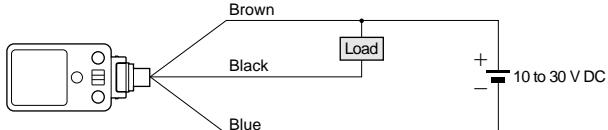
## I/O circuit diagram



Note: Please carry out the wiring carefully since protection circuit against reverse power supply connection is not incorporated. Further, the output is not incorporated with a short-circuit protection circuit. Do not connect it directly to a power supply or a capacitive load.

Symbols ... ZD: Surge absorption zener diode  
Tr : NPN output transistor

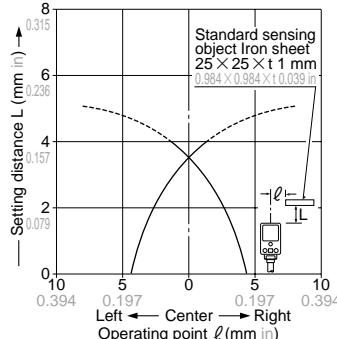
## Wiring diagram



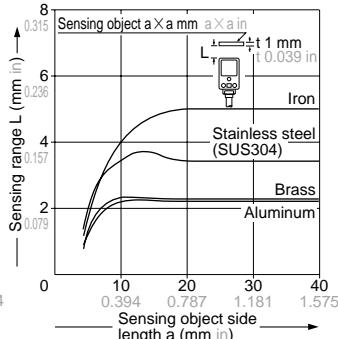
## SENSING CHARACTERISTICS (TYPICAL)

GL-18H□

## Sensing field



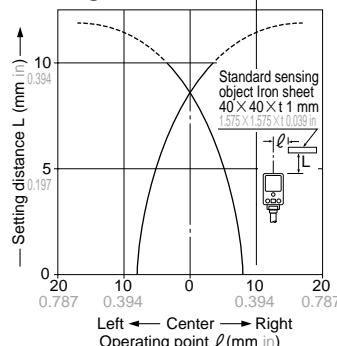
## Correlation between sensing object size and sensing range



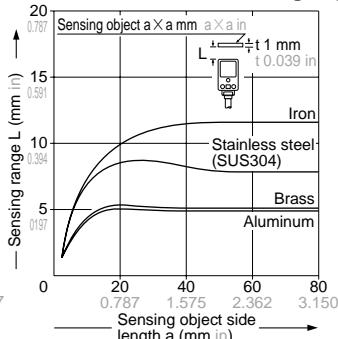
As the sensing object size becomes smaller than the standard size (iron sheet 25×25×t 1 mm 0.984×0.984×t 0.039 in), the sensing range shortens as shown in the left figure.

GL-18HL□

## Sensing field



## Correlation between sensing object size and sensing range



As the sensing object size becomes smaller than the standard size (iron sheet 40×40×t 1 mm 1.575×1.575×t 0.039 in), the sensing range shortens as shown in the left figure.

