



Column Shape Proximity Sensor  
Detects Ferrous and Non-Ferrous  
Metal Objects

- Long sensing distance of 100 mm for both iron and aluminum targets
- Choose voltage or current output models
- Rugged diecast aluminum case with epoxy sensing face
- Submersible IP67 rated version available



## Ordering Information

Type	Sensing distance	Output type	Enclosure	Part number
Unshielded 	100 mm (3.94 in) 	12 VDC, NPN	IP66	<b>TL-L100</b>
		12 VDC, NPN	IP67	<b>TL-L100-2</b>
		200 mA, NPN	IP66	<b>TL-L100-7</b>

## Specifications

### ■ RATINGS/CHARACTERISTICS

Part number	TL-L100	TL-L100-2	TL-L100-7
Sensor type	Inductive		
Body	Size	98 mm (3.86 in) dia. column	
	Type	Unshielded	
Supply voltage	12 VDC $\pm$ 10%, ripple (p-p) 10% max		10 to 30 VDC, ripple (p-p) 10% max
Current consumption	40 mA max.		40 mA (DC) max.
Sensing target	Ferrous and non-ferrous metals		
Sensing distance	100 mm $\pm$ 10% (3.94 in)		
Setting distance (with standard sensing object)	0 to 80 mm (0 to 3.15 in) with 200 x 200 x 1 mm iron		
Differential travel	15% max. of sensing distance		
Control output	12 VDC with output resistance of 4.7 k $\Omega$ , NPN		200 mA max. NPN

(This table continues on the next page.)

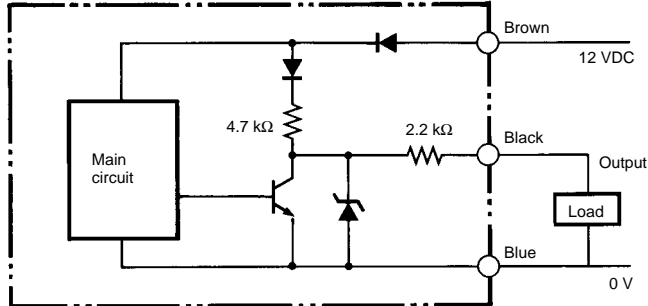
Specifications Table – continued from previous page

Part number		TL-L100	TL-L100-2	TL-L100-7
Operating mode		Output signal high		Load ON
Temperature influence		30% max. of sensing distance at 20°C (68°F) in the temperature range of –10°C and 40°C (–14°F to 104°F)		
Voltage influence		±5% max. of sensing distance at a voltage between 90% and 110% of the rated power supply voltage		
Response time		100 ms max. (10 Hz)		
Circuit protection		Reversed connection and surge absorption		
Indicators		None		
Materials	Housing	Diecast aluminum		
	Sensing surface	Epoxy resin		
	Cable	Vinyl		
Connections	Pre-wired	2 m (6.56 ft) cable, 3 conductors		
Weight (with 1-m cable)		Approx. 1,500 g (52.9 oz)		
Enclosure rating	IEC60529	IP66	IP67	IP66
Ambient temperature	Operating	–25°C to 55°C (–13°F to 131°F) with no icing		
Ambient humidity	Operating	35% to 95%		
Vibration resistance		10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z axes		
Shock resistance		200 m/s <sup>2</sup> (656.2 ft/sec <sup>2</sup> ) approx. 20G 10 times each in X, Y, and Z axes		
Insulation resistance		5 MΩ min. at 500 VDC between current carry parts and case		
Dielectric strength		500 V (50/60 Hz) for 1 min between current carry parts and case		

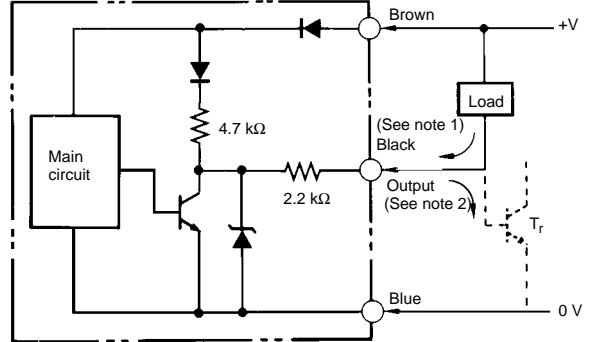
# Operation

## OUTPUT CIRCUITS

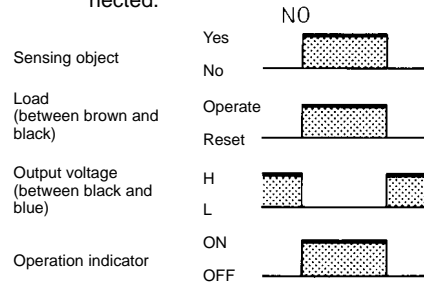
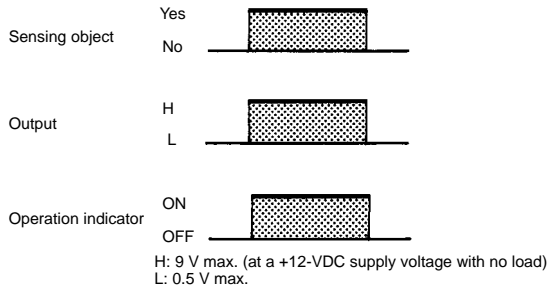
TL-L100



TL-L100-7

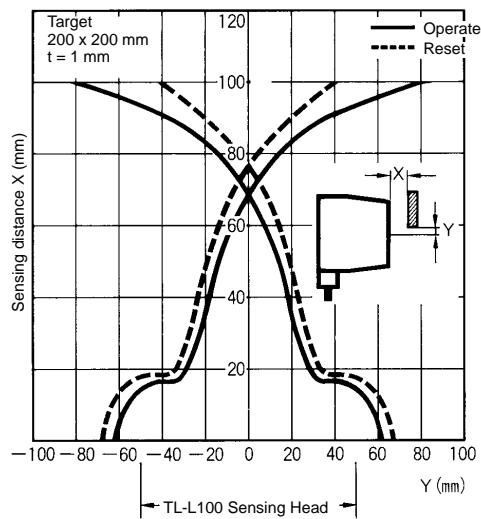


- Note: 1. 200 mA max. (load current)  
 2. Required when a transistor circuit is connected.

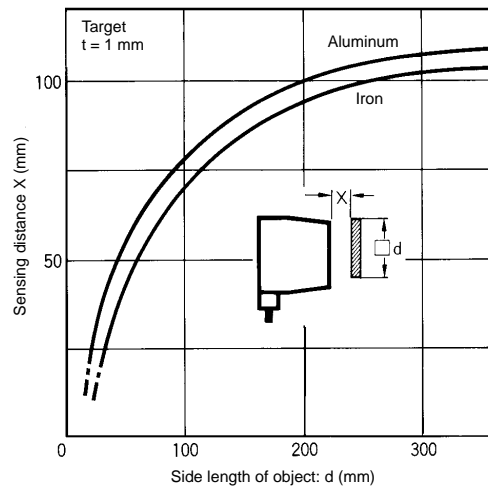


# Engineering Data

## SENSING RANGE (TYPICAL)



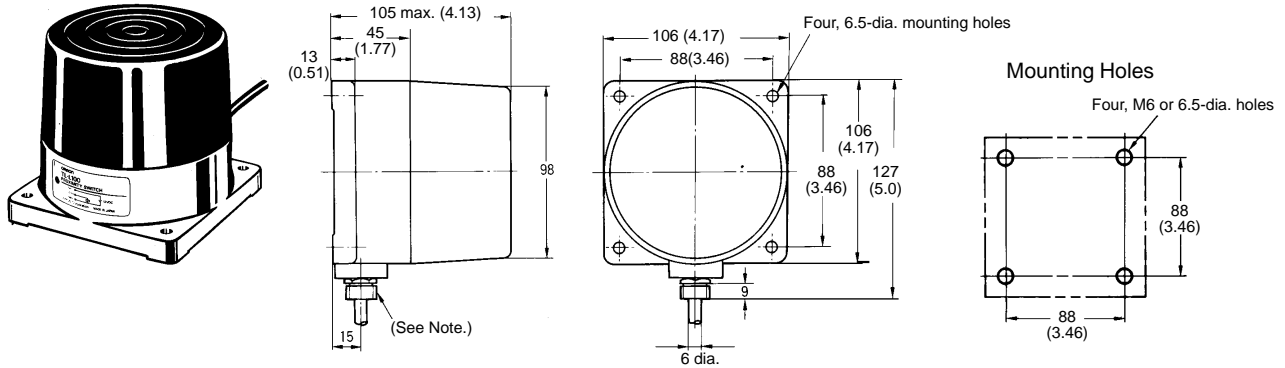
## SENSING OBJECT SIZE AND MATERIAL VS. SENSING DISTANCE (TYPICAL)



# Dimensions

Unit: mm (inch)

## TL-L100



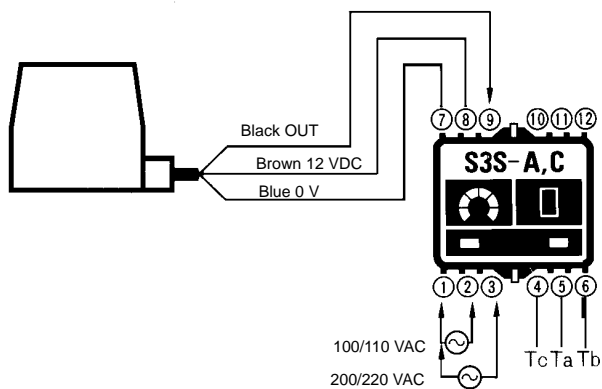
Note: Vinyl-insulated round cable 6 dia., 0.3 mm<sup>2</sup> x 3 cores; standard length: 1 m

# Installation

## CONNECTIONS

### Voltage Output

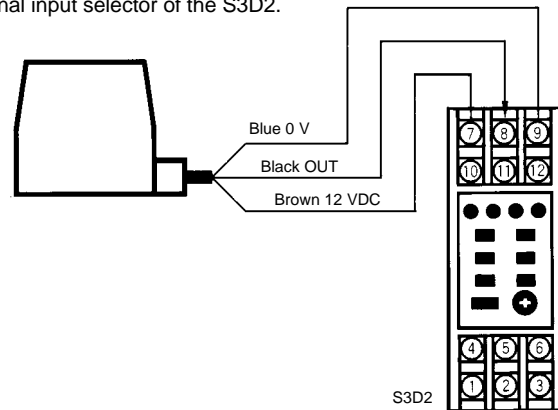
TL-L100



### Current Output

TL-L100-7  
Used with the S3D2

The TL-L100-7 can be in reversed operation with the signal input selector of the S3D2.

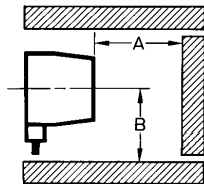


## Precautions

### ■ EFFECT OF SURROUNDING METALS AND MUTUAL INTERFERENCE

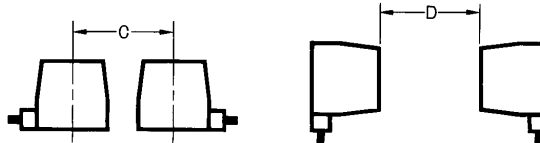
Be sure to keep at least the following distances between the Sensor and the ambient metal objects.

#### Effect of Surrounding Metals



Item	Dimension
A	250 mm (9.84 in)
B	250 mm (9.84 in)

#### Parallel or Face-to-Face Mounting



Item	Dimension
C	300 mm (11.81 in)
D	300 mm (11.81 in)

**NOTE: DIMENSIONS SHOWN ARE IN MILLIMETERS. To convert millimeters to inches divide by 25.4.**

# OMRON®

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