OMRON

Long-distance Proximity Sensor

TL-L

Proximity Sensor with a Sensing Distance of 100 mm Detects Ferrous and Non-ferrous Objects

ISO9001 and 14001 Approved
OMRON Corporation, Ayabe Factory, Sensing Components and Systems

Ordering Information

Shape	Sensing distance	Model
Column type	100 mm	TL-L100

Note: 1. The TL-L100-2 submersible model satisfying IEC IP67 requirements is also available.
2. The TL-L100-7 current output model operating at 24 VDC is also available. Refer to page 2.

Specifications

■ Ratings/Characteristics

Sensing distance		100 mm ±10%
Supply voltage		12 VDC ±10%, ripple (p-p) 10% max.
Current consumption		40 mA max.
Sensing object		Ferrous and non-ferrous metals
Setting distance (with standard sensing object)		0 to 80 mm (200 x 200 x 1 mm iron)
Differential travel		15% max. of sensing distance
Response time		100 ms max.
Operating mode (at sensing distance)		Output signal H
Control output (switching capacity)		12 VDC with output resistance of 4.7 kΩ, NPN
Circuit protection		Reversed connection and surge absorption
Ambient temperature		Operating: –25°C to 55°C (with no icing)
Ambient humidity		Operating: 35% to 95%
Temperature influence		30% max. of sensing distance at 20°C in the temperature range of –10°C and 40°C
Voltage influence		±5% max. of sensing distance at a voltage between 90% and 110% of the rated power supply voltage
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
Vibration resistance		Destruction: 10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions
Shock resistance		Destruction: 200 m/s^2 (approx. 20G) 10 times each in X, Y, and Z directions.
Degree of protection		IEC60529 IP66
Weight (with 1-m-long cord)		Approx. 1,500 g
Material	**Case**	Die-cast aluminum
	Sensing surface	Epoxy resin

TL-L100-7 (24-VDC Model)

The TL-L100 Series includes the TL-L100-7 current output model operating at 10 to 30 VDC, which is an ideal input device for Programmable Controllers.

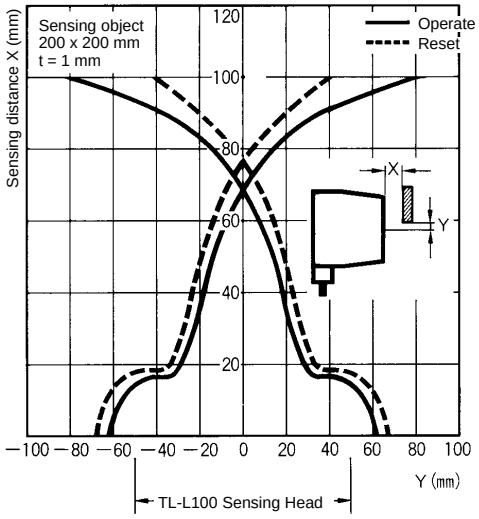
Main Specifications

Supply voltage	10 to 30 VDC, ripple (p-p) 10% max.
Current consumption	40 mA (DC) max.
Sensing object	Ferrous and non-ferrous metals
Sensing distance	100 mm ±10%
Setting distance	0 to 80 mm (200 x 200 x 1t iron)
Differential travel	15% max. of sensing distance
Operating mode (at sensing distance)	Load ON
Control output	NPN, 200 mA max.
Ambient temperature	Operating: –25°C to 55°C
Cord	Vinyl-insulated round cord, 6 dia., 3 cores (0.18 dia. x 12); standard length: 2 m

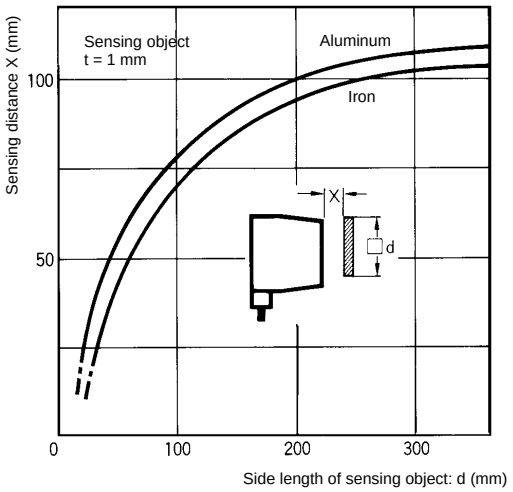
Note: There is no difference in size between TL-L100-7 and TL-L100.

Engineering Data

Sensing Range (Typical)



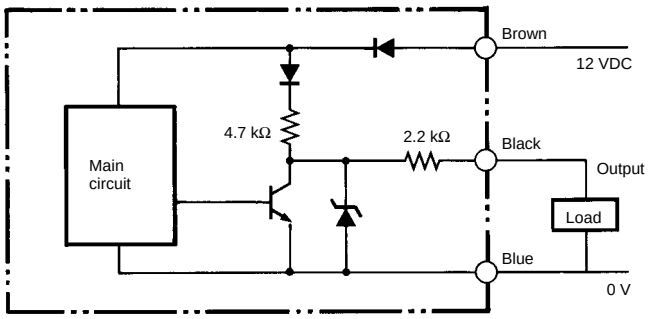
Sensing Object Size and Material vs. Sensing Distance (Typical)



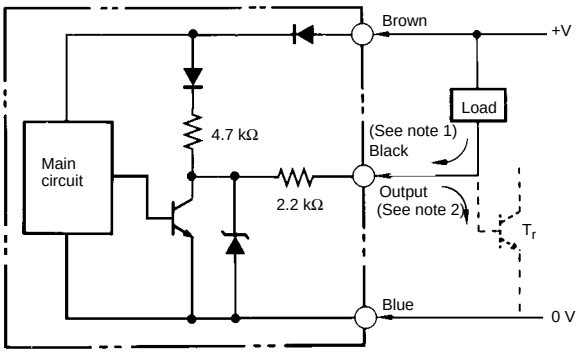
Operation

■ Output Circuits

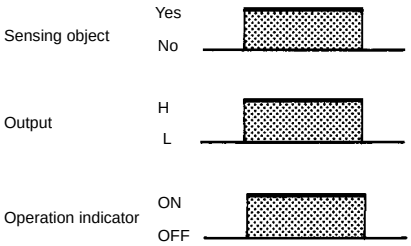
TL-L100



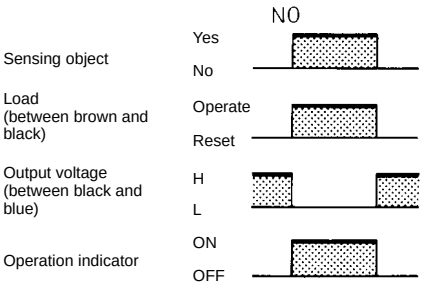
TL-L100-7



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



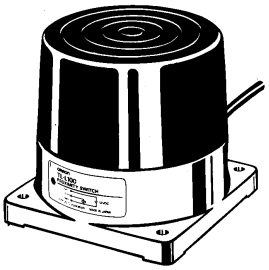
H: 9 V max. (at a +12-VDC supply voltage with no load)
L: 0.5 V max.

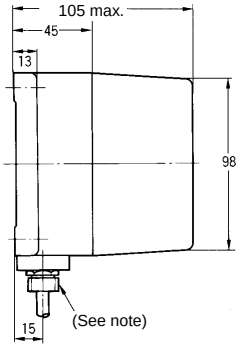


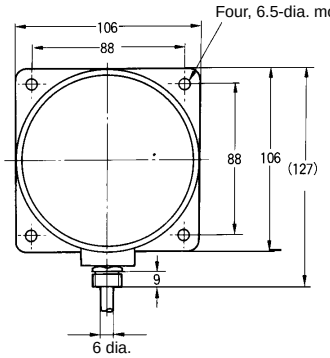
Dimensions

Note: All units are in millimeters unless otherwise indicated.

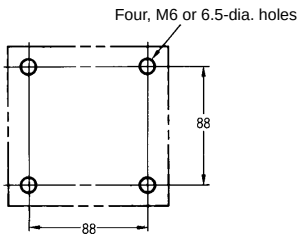
TL-L100







Mounting Holes



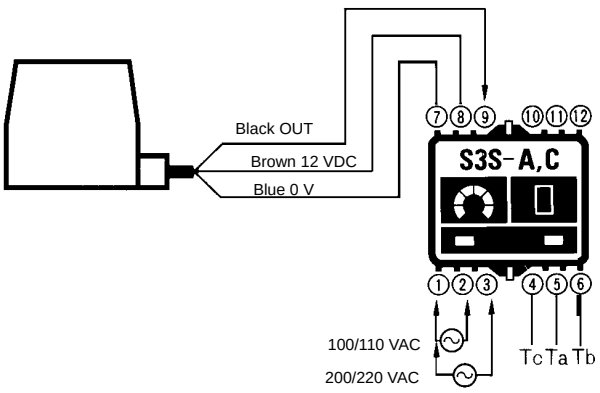
Note: Vinyl-insulated round cord, 6 dia., 0.3 mm^2 x 3 cores; standard length: 1 m

Installation

■ Connections

Voltage Output

TL-L100

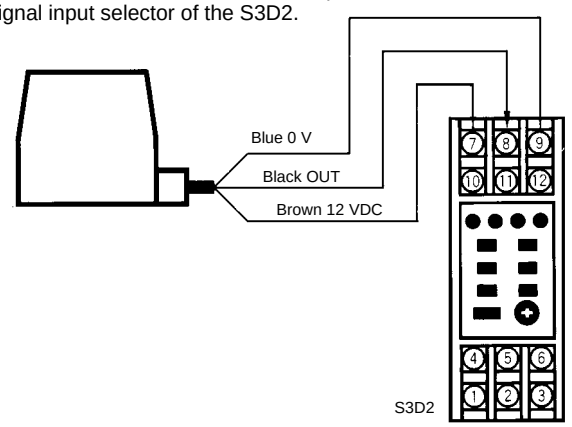


Current Output

TL-L100-7

Used with the S3D2

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



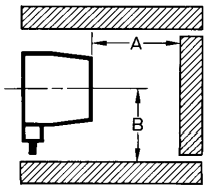
Precautions

■ Correct Use

Effect of Surrounding Metals and Mutual Interference

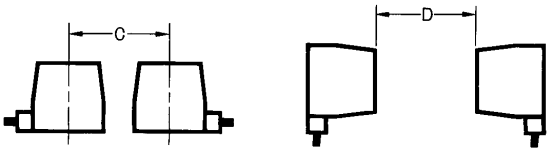
Be sure to keep at least the following distances between the Sensor and the ambient metal objects.

Effect of Surrounding Metals



Item	Dimension (mm)
A	250
B	250

Parallel or Face-to-face Mounting



Item	Dimension (mm)
C	300
D	300

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Cat. No. D75-E1-1 **In the interest of product improvement, specifications are subject to change without notice.**

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