OMRON

Long-distance Proximity Sensor

TL-LP/TL-LY

Proximity Sensor with a Sensing Distance of 50 mm

Ordering Information

Shape	Sensing distance	Output configuration	Model
Column type (flat-surface mounting)	50 mm	3-wire DC (normally open)	TL-LP50
		2-wire AC (normally open)	TL-LY50

Note: The TL-L□50B, which has a different response frequency, is available.

Specifications

■ Ratings/Characteristics

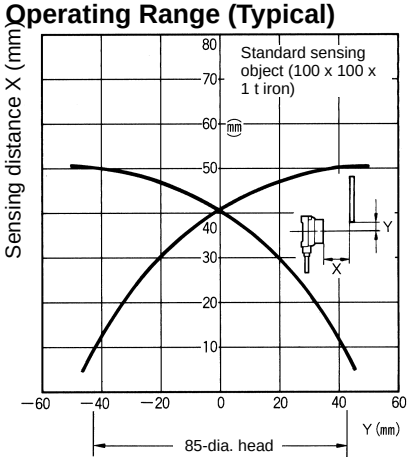
Item \ Model	TL-LP50	TL-LY50
Sensing distance	50 mm ±10%	
Supply voltage (Operating voltage range) (see note)	12 to 24 VDC (10 to 30 VDC), ripple (p-p) 10% max.	100 to 220 VAC (90 to 250 VAC), 50/60 Hz
Current consumption	10 mA max. (with no load)	
Leakage current	Refer to *Engineering Data*.	
Sensing object	Ferrous metals (Refer to *Engineering Data* for non-ferrous metals)	
Setting distance (with standard sensing object)	0 to 40 mm (100 x 100 x 1 mm iron)	
Differential travel	10% max. of sensing distance	
Response time	15 ms max.	25 ms max.
Operating mode (at sensing distance)	Load ON	
Control output (switching capacity)	NPN open collector with a maximum current of 200 mA at 30 VDC	10 to 200 mA
Ambient temperature	Operating: –25°C to 70°C (with no icing)	
Ambient humidity	Operating: 35% to 95%	
Temperature influence	±10% max. of sensing distance at 23°C in the temperature range of –25°C and 70°C	
Voltage influence	±2% max. of sensing distance at a voltage between 90% and 110% of the rated power supply voltage	
Residual voltage	3 V max. under a load current of 200 mA and a cord length of 2 m	Refer to *Engineering Data*.
Insulation resistance	50 MΩ min. (at 500 VDC) between current carry parts and case	
Dielectric strength	500 VAC (50/60 Hz) for 1 min between current carry parts and case	2,000 VAC (50/60 Hz) for 1 min between current carry parts and case

Item	Model	TL-LP50	TL-LY50
Sensing distance		50 mm ±10%	
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: 1,000 m/s^2 (approx. 100G) 10 times each in X, Y, and Z directions.	
Degree of protection		IEC60529 IP67	
Weight (with 1-m-long cord)		Approx. 1,400 g	
Material	Case	Die-cast aluminum	
	Sensing surface	Polyester	

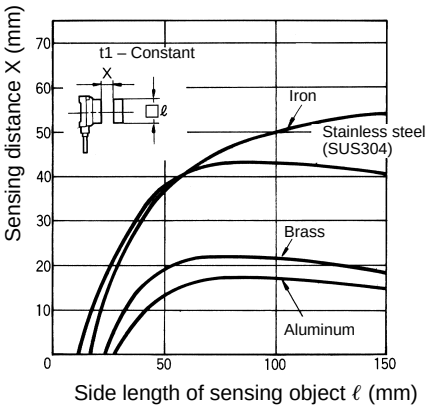
Note: Full-wave rectified power supplies with a mean output value of 24 VDC ±10% are available for the TL-LP50.

Engineering Data

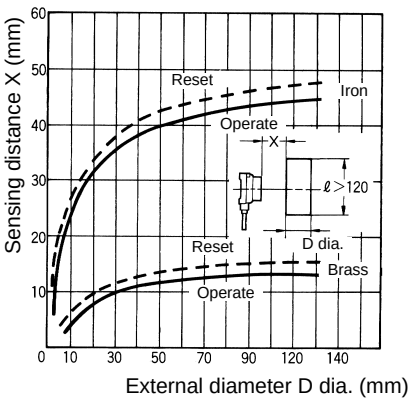
Operating Range (Typical)



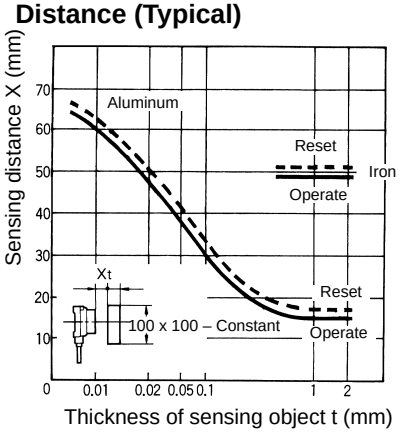
Sensing Object Size and Material vs. Sensing Distance (Typical)



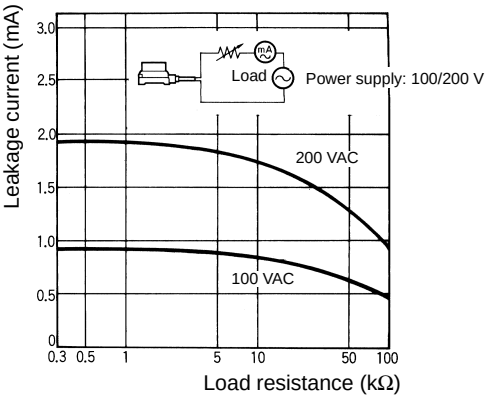
Column-type Sensing Object Diameter and Material vs. Sensing Distance (Typical)



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

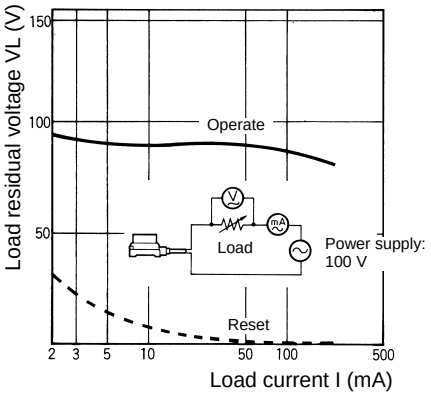


Leakage Current (Typical) TL-LY50

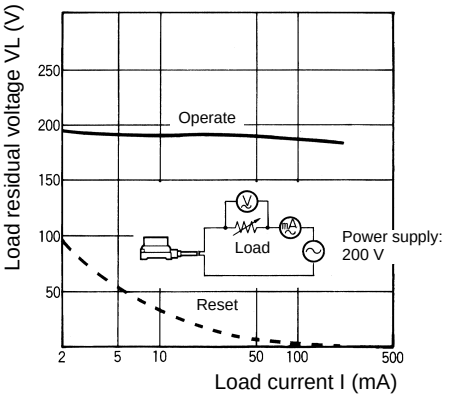


Load Residual Voltage (Typical)
TL-LY50

At 100 VAC

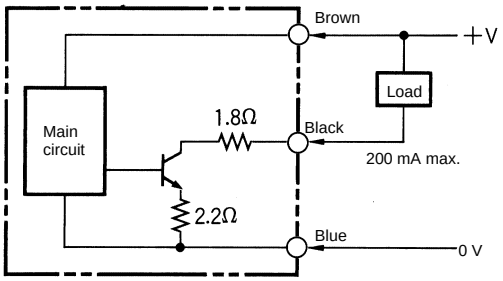


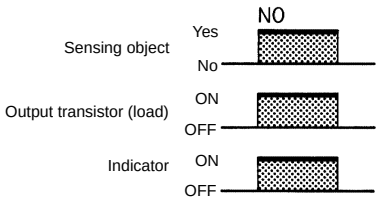
At 200 VAC



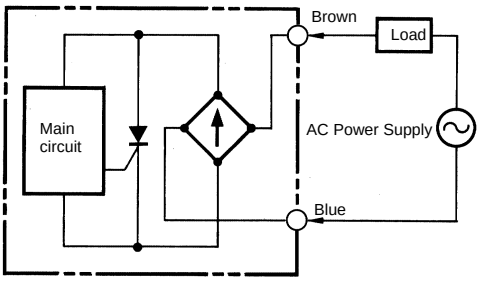
Operation

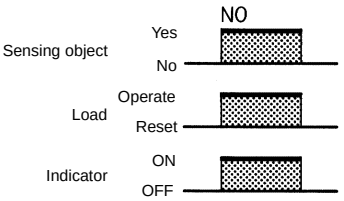
TL-LP50 3-wire DC Model





TL-LY50 2-wire AC Model

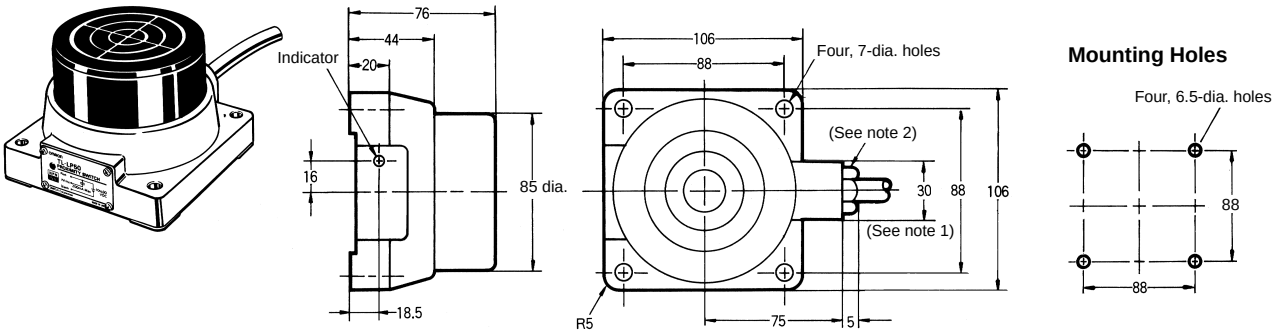




Dimensions

Note: All units are in millimeters unless otherwise indicated.

TL-LP50
TL-LY50



Note: 1. Use a 3-core, 0.8-dia. vinyl cabtire cord with a standard length of 1 m and an external diameter of 9.4 dia. for the TL-LP50 and a 2-core, 0.8-dia. vinyl cabtire cord with a standard length of 1 m and an external diameter of 9 dia. for the TL-LY50.

2. Remove the hexagon nut if a PF1/2 cord protective tube is applied.

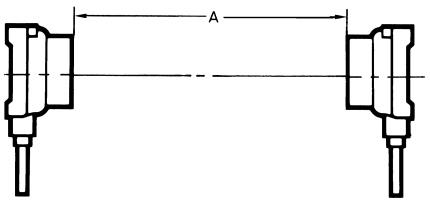
Precautions

■ Correct Use

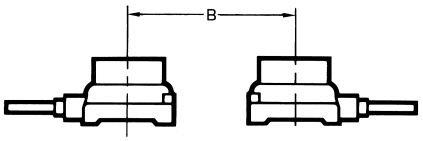
Mutual Interference

If the Units are mounted in parallel or face-to-face, be sure to maintain the space specified in the table between the Sensors.

Face-to-face Mounting



Parallel Mounting



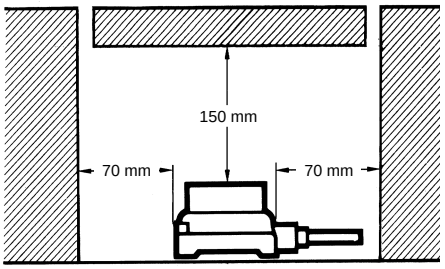
(mm)

Dimension/Model	TL-L□50
A	1,000 (500)
B	700 (176)

Note: Values in parentheses will apply if the Units different to each other in response frequency are used.

Effect of Surrounding Metals

Be sure to separate the Sensor from surrounding metal objects as shown in the following illustration.



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. D67-E1-1 **In the interest of product improvement, specifications are subject to change without notice.**

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