TL-L

CSM_TL-L_DS_E_4_3

Detection Distance of 100 mm for Both Ferrous and Non-ferrous Substances.

- Ultra long-distance detection of 100 mm for both ferrous and non-ferrous substances.
- Models also available for use under water.



Be sure to read *Safety Precautions* on page 4.

Ordering Information

Appearance	Sensing distance	Output configuration	Model
Cylindrical (flat surface installation)	100 mm	Current output	**TL-L100-7 1M**

Note: The TL-L100-10 is also available for use under water (JIS0920: Withstand pressure of 0.39 MPa).

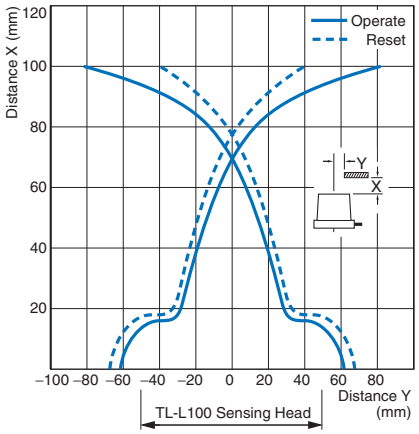
Ratings and Specifications

Output specifications / Item	Current output TL-L100-7
Sensing distance	100 mm ±10%
Set distance	0 to 80 mm
Differential travel	15% max. of sensing distance
Detectable object	Ferrous metal and non-ferrous metal
Standard sensing object	Iron, 200 × 200 × 1 mm
Response time	100 ms max.
Power supply voltage (operating voltage range)	10 to 30 VDC including 10% ripple (p-p)
Current consumption	40 mA DC max.
Control output	200 mA DC max. (residual voltage: 1 V max.)
Indicators	Operation indicator (red)
Operation mode (with sensing object approaching)	NO; For details, refer to the timing charts under *I/O Circuit Diagrams* on page 3.
Protection circuits	Reverse polarity protection, Surge suppressor
Ambient temperature range	Operating/Storage: –25 to 55°C (with no icing or condensation)
Ambient humidity range	Operating/Storage: 35% to 95% (with no condensation)
Temperature influence	±30% max. of sensing distance at 20°C in the temperature range of –10 to 40°C
Voltage influence	±5% max. of sensing distance at rated voltage in rated voltage ±10% range
Insulation resistance	5 MΩ min. (at 500 VDC) between current-carrying parts and case
Dielectric strength	500 VAC, 50/60 Hz for 1 min between current-carrying 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 10 times each in X, Y, and Z directions
Degree of protection	IP66 (IEC)
Connection method	Pre-wired Models (Standard cable length: 1m)
Weight (packed state)	Approx. 1.5 kg
Materials	Case: Aluminum die-cast, Sensing surface: Epoxy resin
Accessories	Instruction manual

Engineering Data (Reference Value)

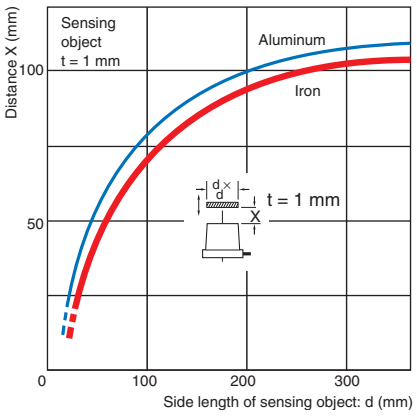
Sensing Area

TL-L100-7

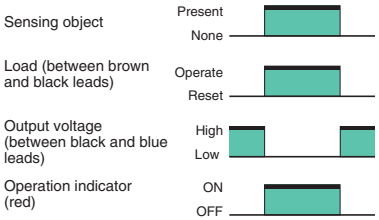
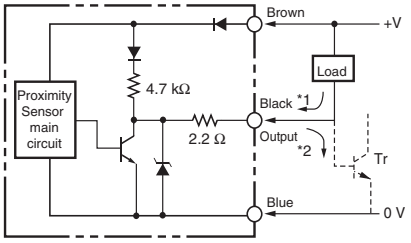


Influence of Sensing Object Size and Material

TL-L100-7



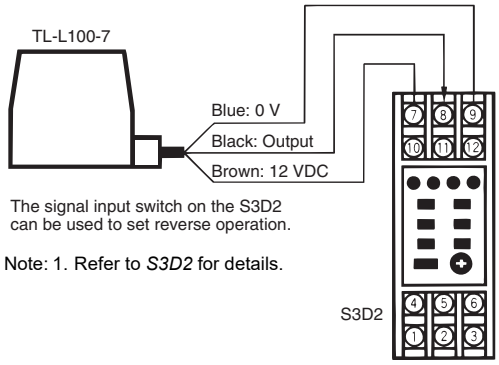
I/O Circuit Diagrams

Output configuration	Model	Timing chart	Output circuit
Current output NO	TL-L100-7		

*1. Load current: 200 mA max.
*2. When a transistor is connected.

Connections

Connection to the S3D2 Sensor Controller



The signal input switch on the S3D2 can be used to set reverse operation.

Note: 1. Refer to *S3D2* for details.

Safety Precautions

Refer to *Warranty and Limitations of Liability*.

⚠ WARNING

This product is not designed or rated for ensuring safety of persons either directly or indirectly. Do not use it for such purposes.



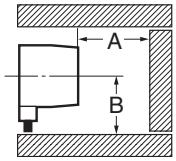
Precautions for Correct Use

Do not use this product under ambient conditions that exceed the ratings.

● **Design**

Influence of Surrounding Metal

Separate the Sensor from surrounding metal as shown below.

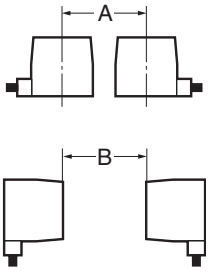


Influence of Surrounding Metal

Item	Dimension (mm)
A	250
B	

Mutual Interference

When mounting more than one Sensor face-to-face or side-by-side, separate them as shown below.



Mutual Interference

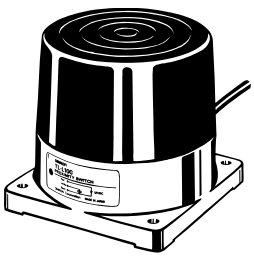
Item	Dimension (mm)
A	300
B	

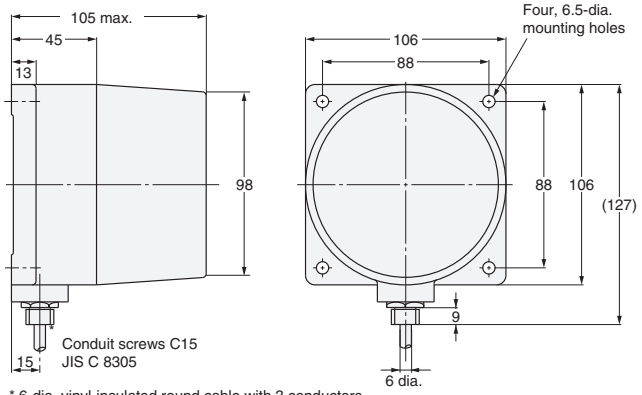
Dimensions

(Unit: mm)

Tolerance class IT16 applies to dimensions in this data sheet unless otherwise specified.

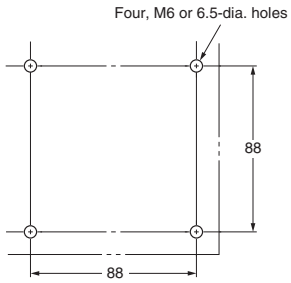
TL-L100-7





* 6-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.3 mm^2, Insulator diameter: 1.85 mm), Standard length: 1 m

Mounting Hole Dimensions



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