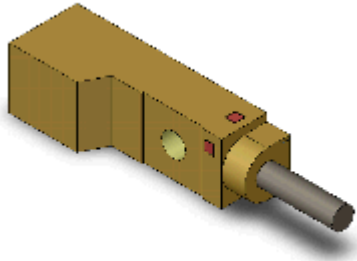


Rectangular Standard Proximity Sensor

TL-Q5MB1 2M

Unshielded, Square type, DC Three-wires models, Sensing distance 5 mm \pm 10%, NO, PNP open collector, Pre-wired models



Image

Sensing head size	17 mm x 17 mm x 28 mm
Type	Square type, Unshielded
Power source	DC Three-wires models
Sensing distance	5 mm \pm 10%
Setting distance	0 to 4 mm
Operation mode	NO

Ratings/Performance

As of July 16, 2020

Sensing head size	17 mm x 17 mm x 28 mm
Type	Square type, Unshielded
Power source	DC Three-wires models
Sensing distance	5 mm \pm 10%
Setting distance	0 to 4 mm
Differential distance	10% max. of sensing distance
Sensing object	Ferrous metal (Sensitivity lowers with non-ferrous metals.)
Standard sensing object	Iron 15 x 15 x 1 mm
Response frequency	500 Hz (Average value)
Response time	2 ms max.
Power supply voltage	12 to 24 VDC ripple (p-p) 10% max.
Operating voltage range	10 to 30 VDC
Current consumption	at 24 VDC: 10 mA max.
Control output (Output type)	PNP open collector
Control output (Switching capacity)	50 mA max. (30 VDC max.)
Control output (Residual voltage)	1 V max. (Load current 50 mA with cable length of 2 m)
Indicator	Detection indicator (red)
Operation mode	NO
Protective circuit	Reverse polarity protection Surge suppressor
Ambient temperature (Operating)	-25 to 70 °C
Ambient temperature (Storage)	-25 to 70 °C

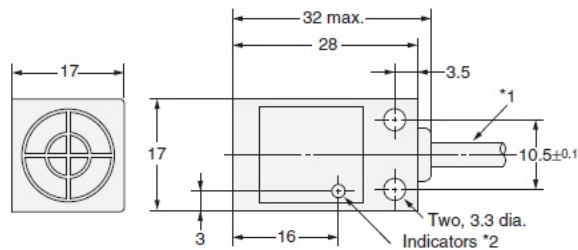
Ambient humidity (Operating)	35 to 95% RH
Ambient humidity (Storage)	35 to 95% RH
Temperature influence	±20% max. of sensing distance at 23 °C in the temperature range of -25 to 70 °C
Voltage influence	±2.5% max. of sensing distance at rated voltage in the rated voltage ±10% range
Insulation resistance	Between charged parts and the case: 5 MΩ min. (at 500 VDC)
Dielectric strength	Between charged parts and the case: 500 VAC 50/60 Hz 1 min
Vibration resistance	Destruction: 10 to 55 Hz, 1.5 mm double amplitude each in X, Y, and Z directions for 2 h
Shock resistance	Destruction: 200 m/s ² 10 times each in X, Y, and Z directions
Degree of protection	IEC: IP67
Connection method	Pre-wired models (2 m)
Weight	Package: Approx. 90 g
Material	Case: Heat-resistant ABS resin Sensing surface: Heat-resistant ABS resin

As of July 16, 2020

Dimensions

As of July 16, 2020

Dimensions



*1. B/C Models: 4-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.2 mm², Insulator diameter: 1.2 mm), Standard length: 2 m

D Models: 4-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm², Insulator diameter: 1.3 mm), Standard length: 2 m

*2. B/C Models: Detection indicator (red)

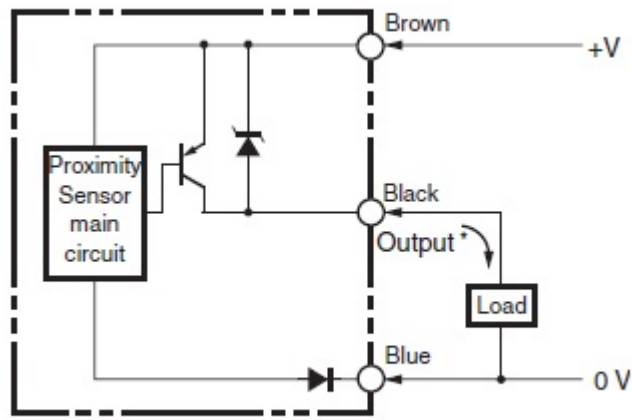
D Models: Operation indicator (red), Setting indicator (green)

As of July 16, 2020

Output circuit

As of July 16, 2020

Output circuit



* Load current: 50 mA max.

Timing chart

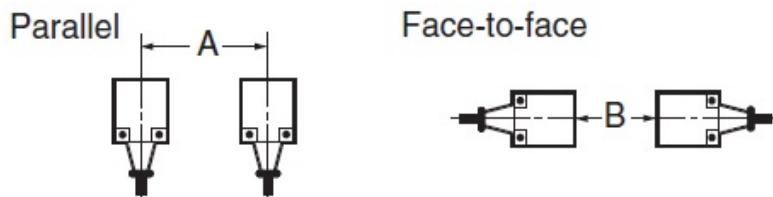
Operation mode	Timing Chart		
NO	Sensing object	Yes	
		No	
	Output transistor (Load)	ON	
		OFF	
	Detection indicator (red)	ON	
		OFF	

As of July 16, 2020

Mutual interference

As of July 16, 2020

Mutual interference



A: 60 mm min., B: 120 mm min.

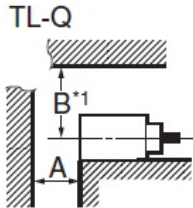
Different frequency

A: 17 mm min., B: 60 mm min.

Effects of surrounding metals

As of July 16, 2020

Effects of surrounding metals



*1. The B dimension applies to the top, right-side, and left-side surfaces.

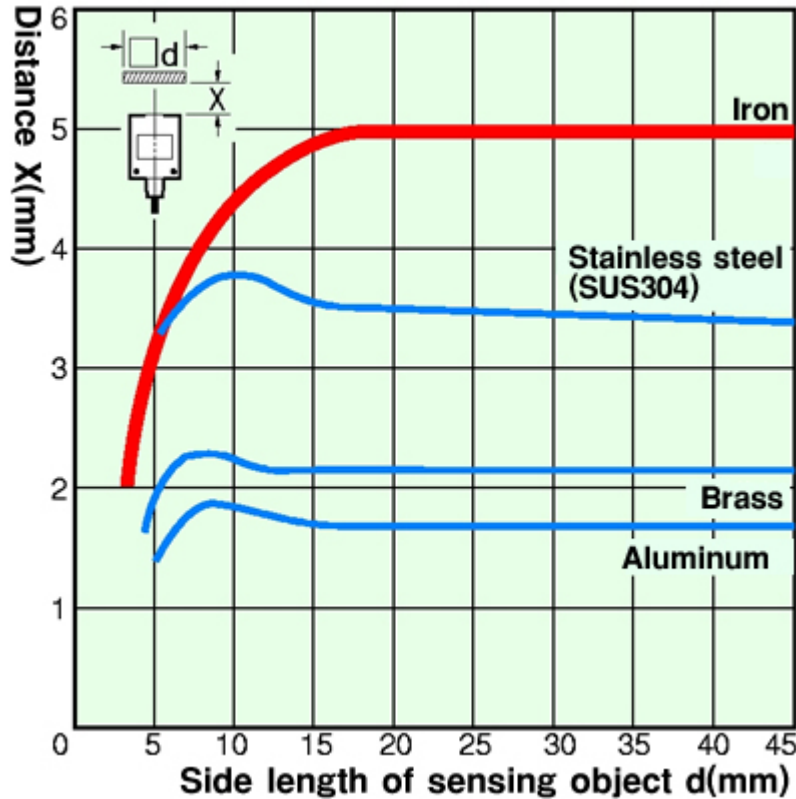
A: 20 mm min., B: 20 mm min.

As of July 16, 2020

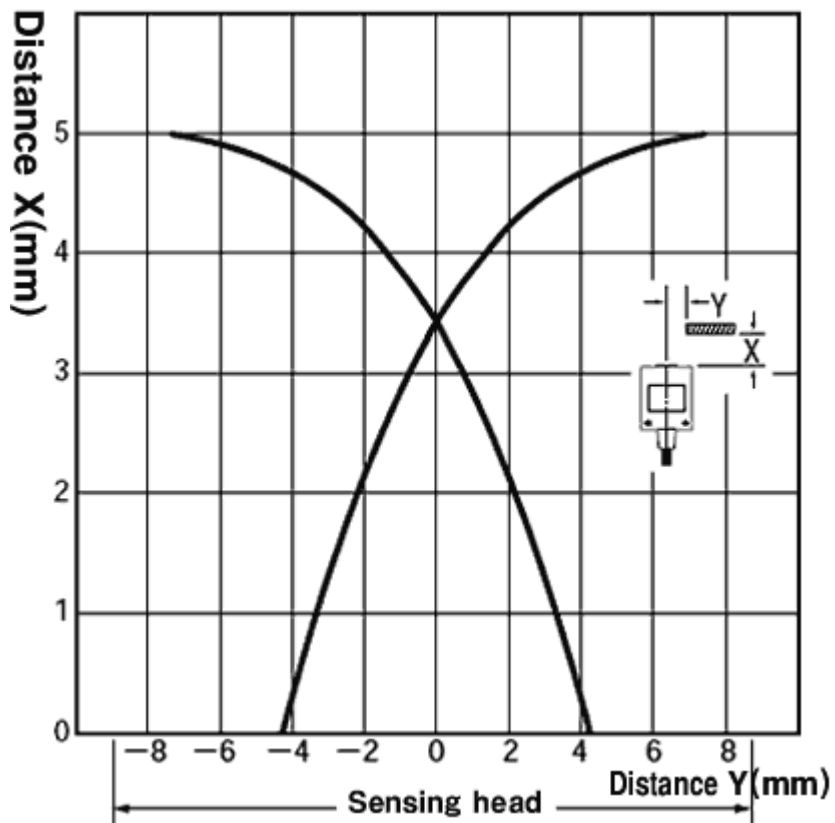
Characteristic chart

As of July 16, 2020

Sensing distance vs. size and material of sensing object



Sensing range



As of July 16, 2020