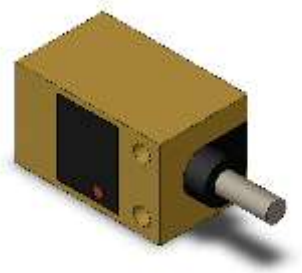
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Rectangular Standard Proximity Sensor

TL-Q5MC2 2M



Image

Unshielded, Square type, DC Three-wires models, Sensing distance 5 mm ±10%, NC, NPN open collector, Pre-wired models

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 ±10%
Setting distance	0 to 4 mm
Operation mode	NC

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 ±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)	NPN 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	NC
Protective circuit	Reverse polarity protection Surge suppressor
Ambient temperature (Operating)	-25 to 70 °C

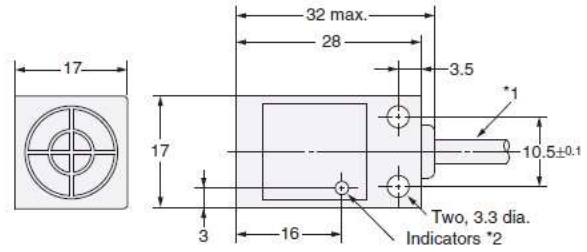
Ambient temperature (Storage)	-25 to 70 ℃
Ambient humidity (Operating)	35 to 95% RH
Ambient humidity (Storage)	35 to 95% RH
Temperature influence	±20% max. of sensing distance at 23 ℃ in the temperature range of −25 to 70 ℃
Voltage influence	±2.5% max. of sensing distance at rated voltage in the rated 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



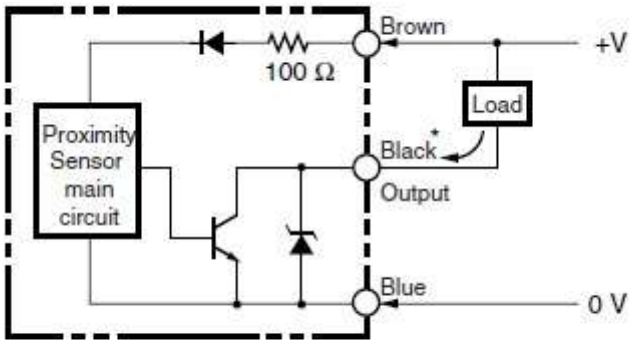
*1. B/C Models: 4-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.2 mm^2, Insulator diameter: 1.2 mm), Standard length: 2 m
D Models: 4-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm^2, Insulator diameter: 1.3 mm), Standard length: 2 m
*2. B/C Models: Detection indicator (red)
D Models: Operation indicator (red), Setting indicator (green)

As of July 16, 2020

Output circuit

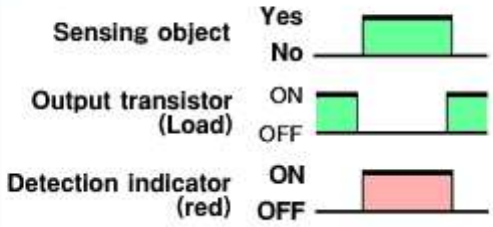
As of July 16, 2020

Output circuit



* Load current: 100 mA max., TL-Q2MC1
Load current: 50 mA max., TL-Q5MC1

Timing chart

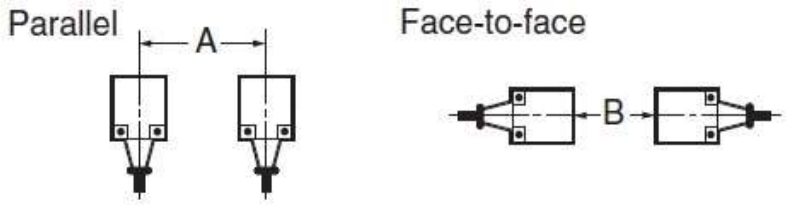
Operation mode	Timing Chart
NC	

As of July 16, 2020

Mutual interference

As of July 16, 2020

Mutual interference



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

Different frequency

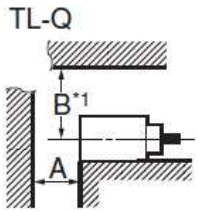
A: 17 mm min., B: 60 mm min.

As of July 16, 2020

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.

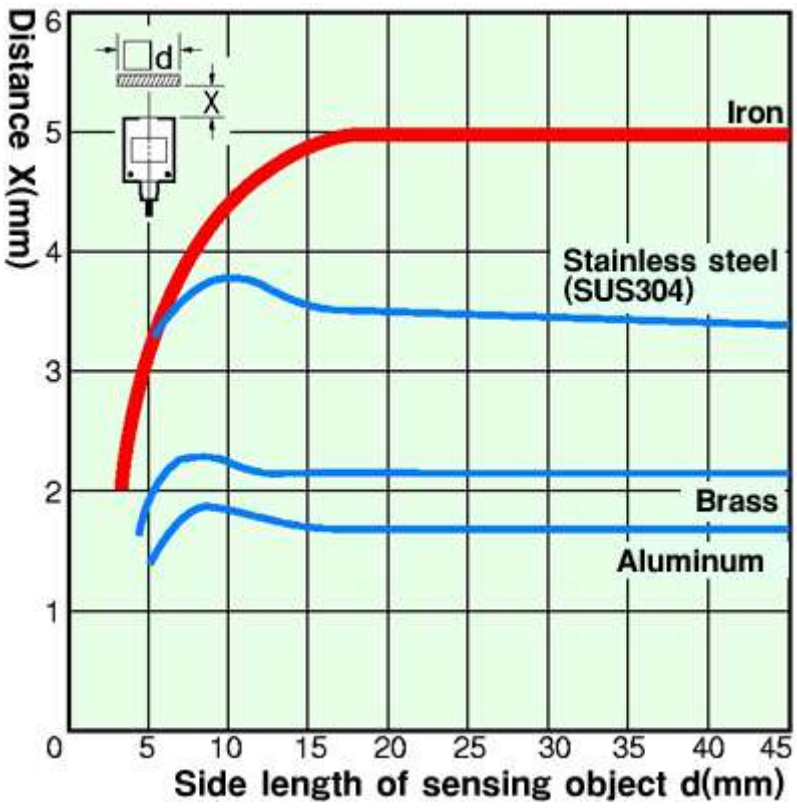
A: 20 mm min., B: 20 mm min.

As of July 16, 2020

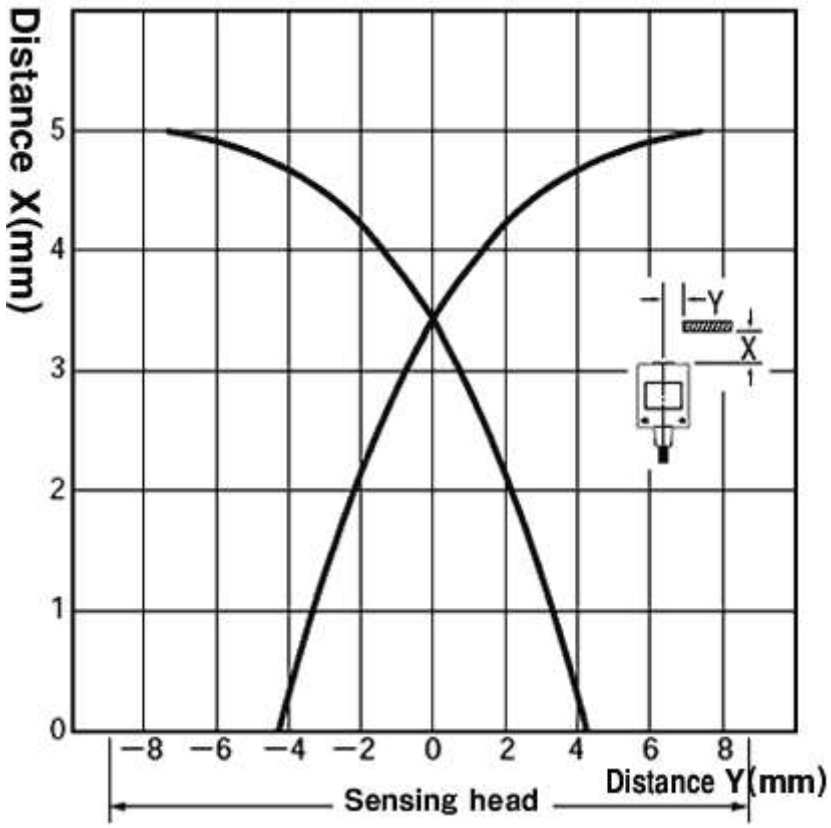
Characteristic chart

As of July 16, 2020

Sensing distance vs. size and material of sensing object



Sensing range



As of July 16, 2020