

# TL-N/TL-Q/TL-G

## A Wealth of Models for All Types of Applications

- Easy installation, high-speed pulse generator, high-speed rotation control, and more.
- Direct mounted to metal (-N Models).
- A wealth of models ideal for limit control, counting control, and other applications (-N Models).



Proximity Sensors

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Be sure to read *Safety Precautions* on page 832.

Cylindrical Models

## Ordering Information

### Sensors

#### DC 2-Wire Models

Appearance	Sensing distance	Model		
		Operation mode		
		NO	NC	
Unshielded 	17 × 17	5 mm	TL-Q5MD1	TL-Q5MD2
	25 × 25	7 mm	TL-N7MD1	TL-N7MD2
	30 × 30	12 mm	TL-N12MD1	TL-N12MD2
	40 × 40	20 mm	TL-N20MD1	TL-N20MD2

Note: Models with a different frequency are available to prevent mutual interference. The model numbers are TL-N□MD□5 and TL-Q5MD□5 (e.g., TL-N7MD15).

#### DC 3-Wire and AC 2-Wire Models

Appearance	Sensing distance	Output configuration	Model		
			Operation mode		
			NO	NC	
Unshielded 	8 × 9	DC 3-wire, NPN	TL-Q2MC1		
	17 × 17		TL-Q5MC1 *2	TL-Q5MC2	
	25 × 25	5 mm	DC 3-wire, NPN	TL-N5ME1 *1 *2	TL-N5ME2 *1
			AC 2-wire	TL-N5MY1	TL-N5MY2
	30 × 30	10 mm	DC 3-wire, NPN	TL-N10ME1 *1 *2	TL-N10ME2 *1
			AC 2-wire	TL-N10MY1	TL-N10MY2
	40 × 40	20 mm	DC 3-wire, NPN	TL-N20ME1 *1 *2	TL-N20ME2
			AC 2-wire	TL-N20MY1	TL-N20MY2
Grooved	7.5 mm	DC 3-wire, NPN	TL-G3D-3		

Note: Models with a different frequency are available to prevent mutual interference. Models numbers for Sensors with different frequencies are TL-□□M□□5 (example: TL-N5ME15).

\*1. Models are also available with 5-m cables. Add the cable length to the model number (example: TL-N5ME1 5M).

\*2. Models with robotics cables are also available. Add -R to the end of the model number (example: TL-N5ME1-R).

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Accessories (Order Separately)

Mounting Brackets

Type	Model	Applicable Sensors	
		Provided with these Sensors	Order separately
Mounting Brackets	Y92E-C5	TL-N5ME□, TL-N7MD□	TL-N5MY□
	Y92E-C10	TL-N10ME□, TL-N12MD□	TL-N10MY□
	Y92E-C20	TL-N20ME□, TL-N20MD□	TL-N20MY□
Mounting Brackets for Conduits	Y92E-N5C15	---	TL-N5ME□, TL-N5MY□
	Y92E-N10C15	---	TL-N10ME□, TL-N10MY□

Ratings and Specifications

DC 2-Wire Models

Item	Model	TL-Q5MD□	TL-N7MD□	TL-N12MD□	TL-N20MD□
Sensing distance		5 mm ±10%	7 mm ±10%	12 mm ±10%	20 mm ±10%
Set distance		0 to 4 mm	0 to 5.6 mm	0 to 9.6 mm	0 to 16 mm
Differential travel		10% max. of sensing distance			
Sensing object		Ferrous metal (The sensing distance decreases with non-ferrous metal. Refer to <i>Engineering Data</i> on page 828.)			
Standard sensing object		Iron, 18 × 18 × 1 mm	Iron, 30 × 30 × 1 mm	Iron, 40 × 40 × 1 mm	Iron, 50 × 50 × 1 mm
Response frequency *		500 Hz			300 Hz
Power supply voltage (operating voltage range)		12 to 24 VDC (10 to 30 VDC), ripple (p-p): 10% max.			
Leakage current		0.8 mA max.			
Control output	Load current	3 to 100 mA			
	Residual voltage	3.3 V max. (Load current: 100 mA, Cable length: 2 m)			
Indicators		D1 Models: Operation indicator (red), Setting indicator (green) D2 Models: Operation indicator (red)			
Operation mode (with sensing object approaching)		D1 Models: NO Refer to the timing charts under <i>I/O Circuit Diagrams</i> on page 830 for details. D2 Models: NC			
Protection circuits		Load short-circuit protection, Surge suppressor			
Ambient temperature		Operating/Storage: -25 to 70°C (with no icing or condensation)			
Ambient humidity		Operating/Storage: 35% to 95% (with no condensation)			
Temperature influence		±10% 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 ±15% range			
Insulation resistance		50 MΩ min. (at 500 VDC) between current-carrying parts and case			
Dielectric strength		1,000 VAC 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: 500 m/s <sup>2</sup> 3 times each in X, Y, and Z directions	Destruction: 1,000 m/s <sup>2</sup> 10 times each in X, Y, and Z directions		
Degree of protection		IEC 60529 IP67			
Connection method		Pre-wired Models (Standard cable length: 2 m)			
Weight (packed state)		Approx. 45 g	Approx. 145 g	Approx. 170 g	Approx. 240 g
Materials	Case	Heat-resistant ABS			
	Sensing surface				
Accessories		Instruction manual	Mounting Bracket, Instruction manual		

\* The response frequency is an average value.  
Measurement conditions are as follows: standard sensing object, a distance of twice the standard sensing object, and a set distance of half the sensing distance.

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# TL-N/TL-Q/TL-G

## DC 3-Wire Models

Item	Model	TL-Q2MC1	TL-Q5MC□	TL-G3D-3
<b>Sensing distance</b>		2 mm ±15%	5 mm ±10%	7.5±0.5mm
<b>Set distance</b>		0 to 1.5 mm	0 to 4 mm	10 mm
<b>Differential travel</b>		10% max. of sensing distance		
<b>Sensing object</b>		Ferrous metal (The sensing distance decreases with non-ferrous metal. Refer to <i>Engineering Data</i> on page 829.)		
<b>Standard sensing object</b>		Iron, 8 × 8 × 1 mm	Iron, 15 × 15 × 1 mm	Iron, 10 × 5 × 0.5mm
<b>Response time</b>		---	2 ms max.	1 ms max.
<b>Response frequency *</b>		500 Hz		
<b>Power supply voltage (operating voltage range)</b>		12 to 24 VDC (10 to 30 VDC), ripple (p-p): 10% max.		12 to 24 VDC, ripple (p-p): 5% max.
<b>Current consumption</b>		15 mA max. at 24 VDC (no-load)	10 mA max. at 24 VDC	2 mA max. at 24 VDC (no-load)
<b>Control output</b>	<b>Load current</b>	NPN open collector 100 mA max. at 30 VDC max.	NPN open collector 50 mA max. at 30 VDC max.	NPN transistor output 20 mA max.
	<b>Residual voltage</b>	1 V max. (under load current of 100 mA with cable length of 2 m)	1 V max. (under load current of 50 mA with cable length of 2 m)	---
<b>Indicators</b>		Detection indicator (red)		---
<b>Operation mode (with sensing object approaching)</b>		NO	C1 Models: NO C2 Models: NC	NO
		Refer to the timing charts under <i>I/O Circuit Diagrams</i> on page 830 for details.		
<b>Protection circuits</b>		Reverse polarity protection, Surge suppressor		Surge suppressor
<b>Ambient temperature</b>		Operating/Storage: -10 to 60°C (with no icing or condensation)	Operating/Storage: -25 to 70°C (with no icing or condensation)	
<b>Ambient humidity</b>		Operating/Storage: 35% to 95% (with no condensation)		
<b>Temperature influence</b>		±10% max. of sensing distance at 23°C in the temperature range of -10 to 60°C	±20% max. of sensing distance at 23°C in the temperature range of -25 to 70°C	±10% max. of sensing distance at 23°C in the temperature range of -10 to 55°C
<b>Voltage influence</b>		±2.5% max. of sensing distance at rated voltage in rated voltage ±10% range		
<b>Insulation resistance</b>		50 MΩ min. (at 500 VDC) between current-carrying parts and case	5 MΩ min. (at 500 VDC) between current-carrying parts and case	
<b>Dielectric strength</b>		1,000 VAC for 1 min between current-carrying parts and case	500 VAC, 50/60 Hz for 1 min between current-carrying parts and case	
<b>Vibration resistance</b>		Destruction: 10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions		
<b>Shock resistance</b>		Destruction: 1,000 m/s <sup>2</sup> 10 times each in X, Y, and Z directions	Destruction: 200 m/s <sup>2</sup> 10 times each in X, Y, and Z directions	
<b>Degree of protection</b>		IEC 60529 IP67	IEC 60529 IP67	IEC 60529 IP67
<b>Connection method</b>		Pre-wired Models (Standard cable length: 2 m)		
<b>Weight (packed state)</b>		Approx. 30 g	Approx. 60 g	Approx. 30 g
<b>Materials</b>	<b>Case</b>	Heat-resistant ABS		PPO
	<b>Sensing surface</b>			
<b>Accessories</b>		Instruction manual		---

\* The response frequency is an average value. Measurement conditions are as follows: standard sensing object, a distance of twice the standard sensing object, and a set distance of half the sensing distance.

Item	Model	TL-N5ME□, TL-N5MY□	TL-N10ME□, TL-N10MY□	TL-N20ME□, TL-N20MY□
<b>Sensing distance</b>		5 mm ±10%	10 mm ±10%	20 mm ±10%
<b>Set distance</b>		0 to 4 mm	0 to 8 mm	0 to 16 mm
<b>Differential travel</b>		15% max. of sensing distance		
<b>Sensing object</b>		Ferrous metal (The sensing distance decreases with non-ferrous metal. Refer to <i>Engineering Data</i> on pages 829 and 830.)		
<b>Standard sensing object</b>		Iron, 30 × 30 × 1 mm	Iron, 40 × 40 × 1 mm	Iron, 50 × 50 × 1 mm
<b>Response frequency *1</b>		E Models: 500 Hz Y Models: 10 Hz		E Models: 40 Hz Y Models: 10 Hz
<b>Power supply voltage *2 (operating voltage range)</b>		E Models: 12 to 24 VDC (10 to 30 VDC), ripple (p-p): 10% max. Y Models: 100 to 220 VAC (90 to 250 VAC), 50/60 Hz		
<b>Current consumption</b>		E Models: 8 mA max. at 12 VDC, 15 mA max. at 24 VDC		
<b>Leakage current</b>		Y Models: Refer to <i>Engineering Data</i> on page 828.		
<b>Control output</b>	<b>Load current</b>	E Models: 100 mA max. at 12 VDC, 200 mA max. at 24 VDC Y Models: 10 to 200 mA		
	<b>Residual voltage</b>	E Models: 1 V max. (load current: 200 mA) Y Models: Refer to <i>Engineering Data</i> on page 828.		
<b>Indicators</b>		E Models: Detection indicator (red) Y Models: Operation indicator (red)		
<b>Operation mode (with sensing object approaching)</b>		E1/Y1 Models: NO E2/Y2 Models: NC  Refer to the timing charts under <i>I/O Circuit Diagrams</i> on page 831 for details.		
<b>Protection circuits</b>		E Models: Reverse polarity protection, Surge suppressor Y Models: Surge suppressor		
<b>Ambient temperature</b>		Operating/Storage: -25 to 70°C (with no icing or condensation)		
<b>Ambient humidity</b>		Operating/Storage: 35% to 95% (with no condensation)		
<b>Temperature influence</b>		±10% max. of sensing distance at 23°C in the temperature range of -25 to 70°C		
<b>Voltage influence</b>		E Models: ±2.5% max. of sensing distance at rated voltage in rated voltage ±10% range Y Models: ±1% max. of sensing distance at rated voltage in rated voltage ±10% range		
<b>Insulation resistance</b>		50 MΩ min. (at 500 VDC) between current-carrying parts and case		
<b>Dielectric strength</b>		E Models: 1,000 VAC, 50/60 Hz for 1 min between current-carrying parts and case Y Models: 2,000 VAC, 50/60 Hz for 1 min between current-carrying parts and case		
<b>Vibration resistance</b>		Destruction: 10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions		
<b>Shock resistance</b>		Destruction: 500 m/s <sup>2</sup> 10 times each in X, Y, and Z directions		
<b>Degree of protection</b>		IEC 60529 IP67		
<b>Connection method</b>		Pre-wired Models (Standard cable length: 2 m)		
<b>Weight (packed state)</b>		Approx. 145 g	Approx. 170 g	Approx. 240 g
<b>Materials</b>	<b>Case</b>	Heat-resistant ABS		
	<b>Sensing surface</b>			
<b>Accessories</b>		E Models: Mounting Bracket, Instruction manual Y Models: Instruction manual		

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\*1. The response frequency is an average value. Measurement conditions are as follows: standard sensing object, a distance of twice the standard sensing object, and a set distance of half the sensing distance.

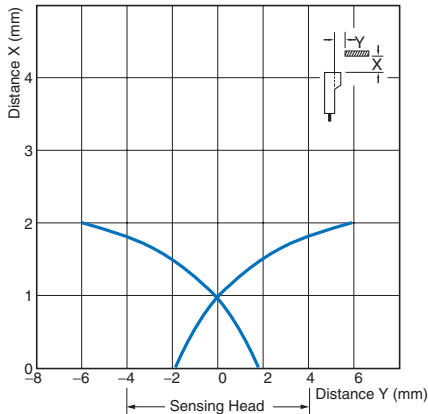
\*2. E Models: A full-wave rectification power supply of 24 VDC ±10% (average value) can be used.

# TL-N/TL-Q/TL-G

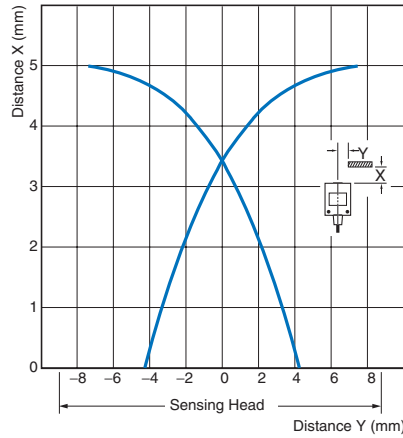
## Engineering Data (Typical)

### Sensing Area

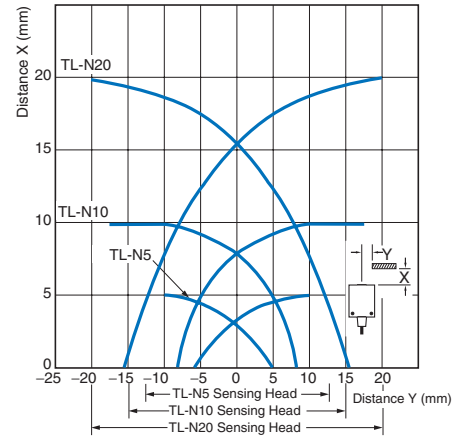
TL-Q2MC1



TL-Q5M□□



TL-N□ME□  
TL-N□MY□



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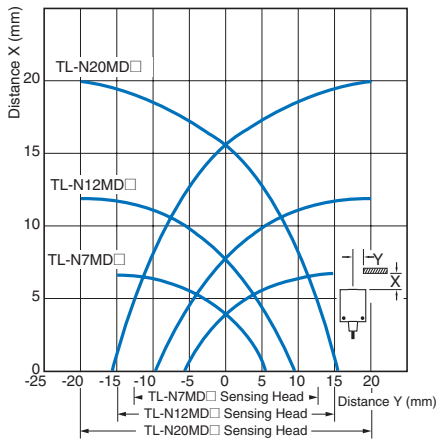
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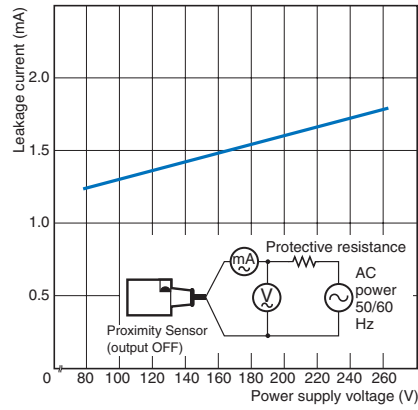
General Information

TL-N□MD□



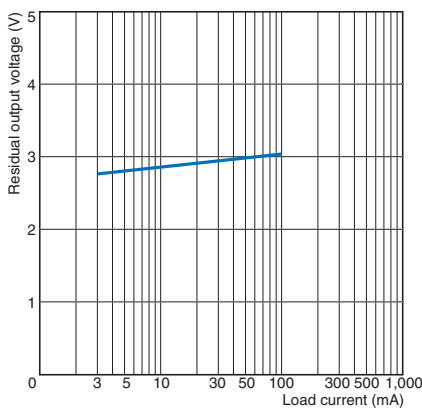
### Leakage Current

TL-N□MY

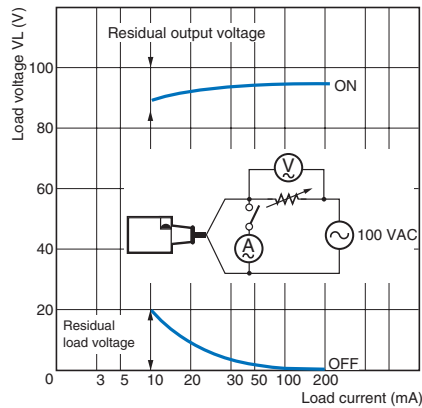


### Residual Output Voltage

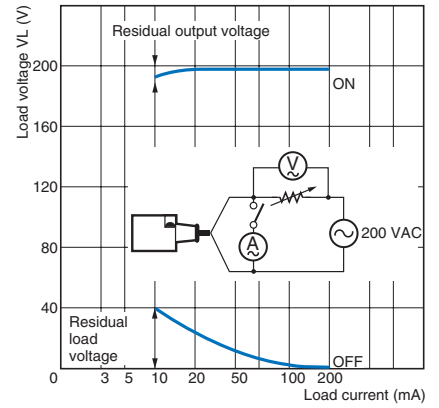
TL-N□MD



TL-N□MY at 100 VAC



TL-N□MY at 200 VAC



E2S

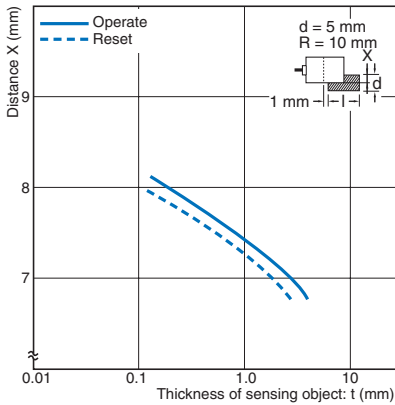
TL-W

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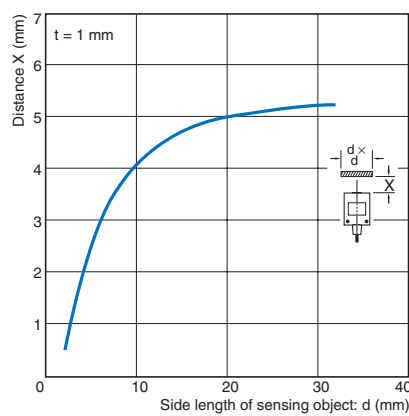
## Thickness of Sensing Object vs. Sensing Distance

### TL-G3D-3

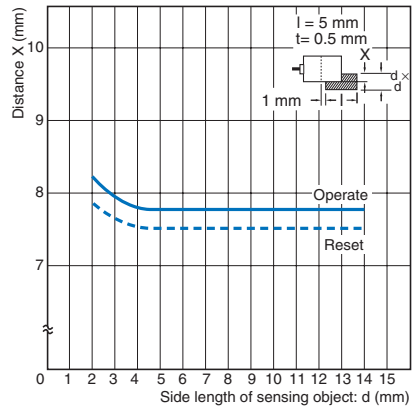


## Sensing Object Size vs. Sensing Distance

### TL-Q5MC

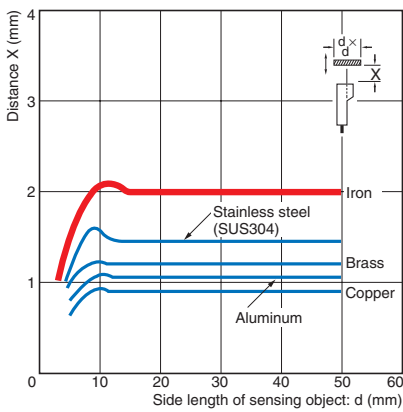


### TL-G3D-3

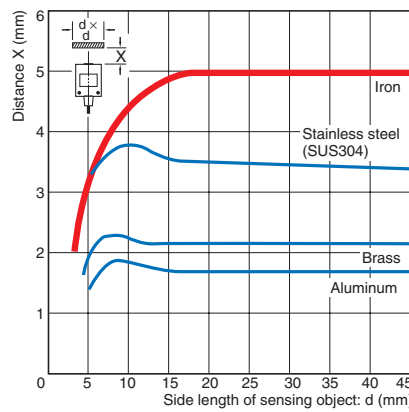


## Influence of Sensing Object Size and Material

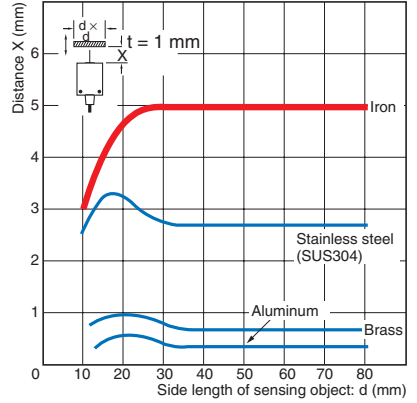
### TL-Q2MC1



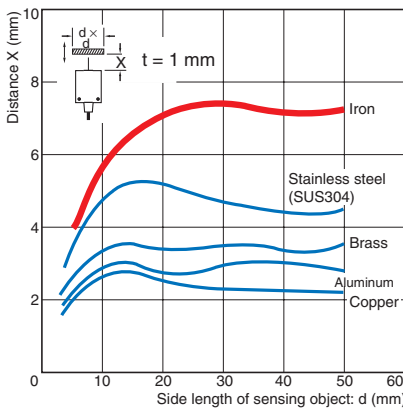
### TL-Q5M



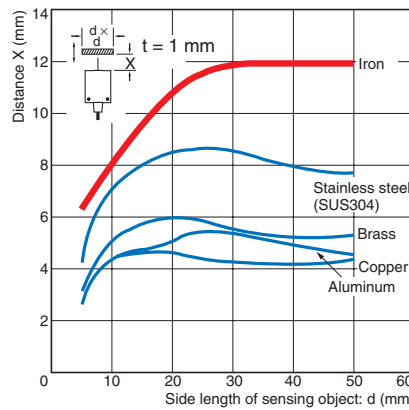
### TL-N5



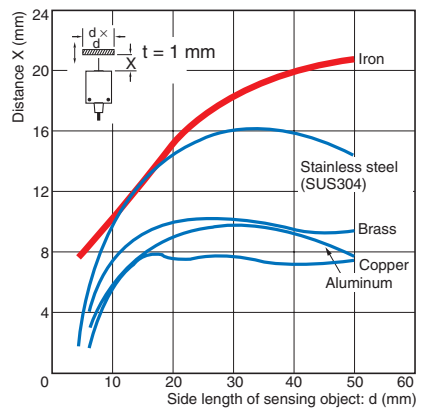
### TL-N7MD



### TL-N12MD



### TL-N20MD



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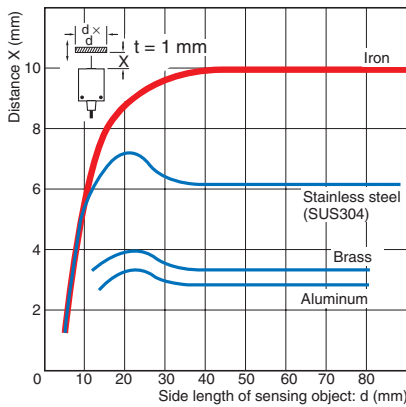
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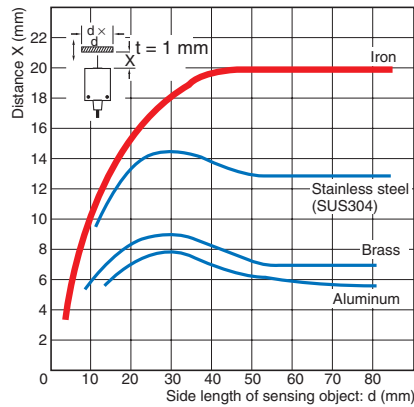
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# TL-N/TL-Q/TL-G

## TL-N10□



## TL-N20□



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## I/O Circuit Diagrams

### DC 2-Wire Models

Operation mode	Model	Timing chart	Output circuit
NO	TL-Q5MD1 TL-N7MD1 TL-N12MD1 TL-N20MD1		
NC	TL-Q5MD2 TL-N7MD2 TL-N12MD2 TL-N20MD2		<p>Note: The load can be connected to either the +V or 0 V side.</p>

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## DC 3-Wire Models

Operation mode	Model	Timing chart	Output circuit
NO	TL-Q2MC1 TL-Q5MC1	<p>Sensing object</p> <p>Present </p> <p>Not present </p> <p>Output transistor (load)</p> <p>ON </p> <p>OFF </p> <p>Detection indicator (red)</p> <p>ON </p> <p>OFF </p>	<p>*1. Load current: 100 mA max., TL-Q2MC1 Load current: 50 mA max., TL-Q5MC1</p>
NC	TL-Q5MC2	<p>Sensing object</p> <p>Present </p> <p>Not present </p> <p>Output transistor (load)</p> <p>ON </p> <p>OFF </p> <p>Detection indicator (red)</p> <p>ON </p> <p>OFF </p>	<p>*1. Load current: 100 mA max., TL-Q2MC1 Load current: 50 mA max., TL-Q5MC1</p>
NO	TL-N5ME1 TL-N10ME1 TL-N20ME1	<p>Sensing object</p> <p>Present </p> <p>Not present </p> <p>Load (between brown and black leads)</p> <p>Operate </p> <p>Reset </p> <p>Output voltage (between black and blue leads)</p> <p>High </p> <p>Low </p> <p>Detection indicator (red)</p> <p>ON </p> <p>OFF </p>	<p>*1. Load current: 200 mA max. *2. When a transistor is connected.</p>
NC	TL-N5ME2 TL-N10ME2 TL-N20ME2	<p>Sensing object</p> <p>Present </p> <p>Not present </p> <p>Load (between brown and black leads)</p> <p>Operate </p> <p>Reset </p> <p>Output voltage (between black and blue leads)</p> <p>High </p> <p>Low </p> <p>Detection indicator (red)</p> <p>ON </p> <p>OFF </p>	<p>*1. Load current: 200 mA max. *2. When a transistor is connected.</p>
Transistor output	TL-G3D-3	<p>Sensing object</p> <p>Present </p> <p>Not present </p> <p>Output transistor (load)</p> <p>ON </p> <p>OFF </p>	<p>* Load current: 20 mA max.</p>

## AC 2-Wire Models

Operation mode	Model	Timing chart	Output circuit
NO	TL-N5MY1 TL-N10MY1 TL-N20MY1	<p>Sensing object</p> <p>Present </p> <p>Not present </p> <p>Load</p> <p>Operate </p> <p>Reset </p> <p>Operation indicator (red)</p> <p>ON </p> <p>OFF </p>	
NC	TL-N5MY2 TL-N10MY2 TL-N20MY2	<p>Sensing object</p> <p>Present </p> <p>Not present </p> <p>Load</p> <p>Operate </p> <p>Reset </p> <p>Operation indicator (red)</p> <p>ON </p> <p>OFF </p>	

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# TL-N/TL-Q/TL-G

## Safety Precautions

Refer to *Warranty and Limitations of Liability* on page F-2.

### ⚠ WARNING

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



- Do not short-circuit the load, otherwise the Sensor may be damaged.
  - Do not supply power to the Sensor with no load, otherwise the Sensor may be damaged.
- Applicable Models: AC 2-Wire Models



### Precautions for Correct Use

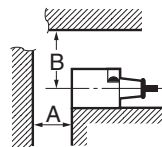
Do not use this product under ambient conditions that exceed the ratings.

#### ● Design

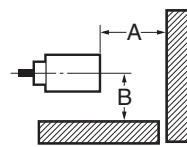
##### Influence of Surrounding Metal

When mounting the Sensor within a metal panel, ensure that the clearances given in the following table are maintained. Failure to maintain these distances may cause deterioration in the performance of the Sensor.

##### Rectangular Models TL-N



##### TL-Q

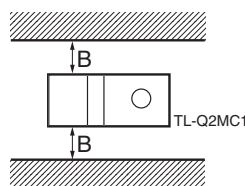
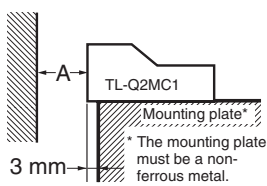


(Unit: mm)

##### Influence of Surrounding Metal

Model	Distance	A *	B *
TL-Q5M□□		20	20
TL-N7MD□		40	35
TL-N12MD□		50	40
TL-N20MD□		70	60
TL-N5ME□, TL-N5MY□		20	23
TL-N10ME□, TL-N10MY□		40	30
TL-N20ME□, TL-N20MY□		80	45

\* The figure is applicable for one metal object. (The figure must be multiplied by the number of metal objects.)

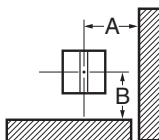


##### Influence of Surrounding Metal

(Unit: mm)

Model	Distance	A	B
TL-Q2MC1		12	3

##### Grooved Model



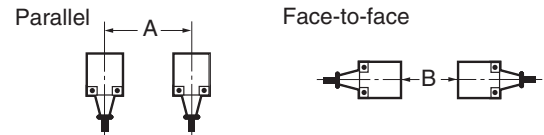
##### Influence of Surrounding Metal

(Unit: mm)

Model	Distance	A	B
TL-G3D-3		11	17

##### Mutual Interference

When installing Sensors face-to-face or side-by-side, ensure that the minimum distances given in the following table are maintained.

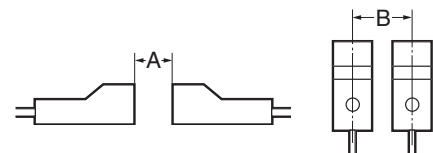


##### Mutual Interference

(Unit: mm)

Model	Distance	A *	B *
TL-Q5MC□		60 (17)	120 (60)
TL-Q5MD□		60 (30)	120 (80)
TL-N7MD□		100 (50)	120 (60)
TL-N12MD□		120 (60)	200 (100)
TL-N20MD□		200 (100)	200 (100)
TL-N5ME□		80 (40)	80 (40)
TL-N5MY□		80 (40)	90 (40)
TL-N10ME□, TL-N10MY□		120 (60)	120 (60)
TL-N20ME□, TL-N20MY□		200 (100)	120 (60)

Note: Values in parentheses apply to Sensors operating at different frequencies.

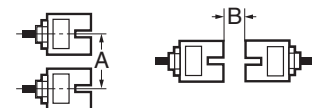


##### Mutual Interference

(Unit: mm)

Model	Distance	A	B
TL-Q2MC1		30 (8)	90 (45)

##### Grooved Model



##### Mutual Interference

(Unit: mm)

Model	Distance	A	B
TL-G3D-3		31	25

Proximity Sensors

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Rectangular Models

Separate Amp/Pre-wired Connector Models

Capacitive Models

Others

Peripheral Devices

General Information

E2S

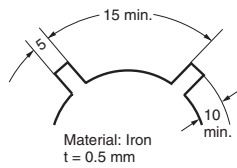
TL-W

TL-N/TL-Q/TL-G

TL-M

## Designing the Sensing Object for TL-G3D-3 Grooved Model

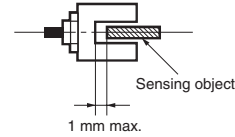
For high-speed response to a toothed metal plate, the sensing objects must be at least the size of the standard sensing object and there must be sufficient distance between sensing objects. The response frequency for a toothed wheel like the one shown at the right is 1 kHz min. The response frequency will be reduced if the wheel is smaller or the width of the teeth or the distance between the teeth is reduced.



### ● Adjustment

#### Sensing Object Passing Position for the TL-G3D-3 Grooved Model

The gap between the sensing object and the bottom of the groove must be 1 mm or less.



### ● Mounting

When tightening the mounting screws, do not exceed the torque in the following table.

Model	Torque
TL-Q2MC1	0.59 N·m
TL-Q5M□□	
TL-N□M□□	0.9 to 1.5 N·m
TL-G3D-3	2 N·m

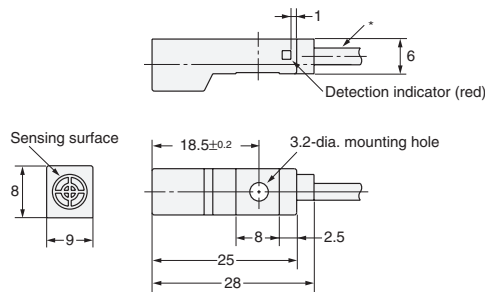
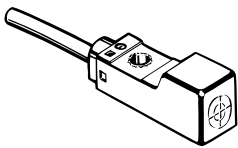
## Dimensions

(Unit: mm)

### Sensors

#### TL-Q2MC1

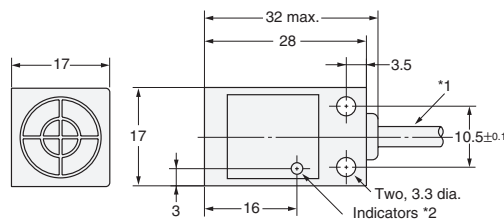
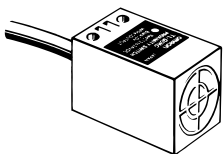
CAD data



\* 2.9-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.15 mm<sup>2</sup>, Insulator diameter: 0.9 mm), Standard length: 2 m

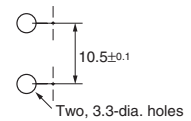
#### TL-Q5M□□

CAD data



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

#### Mounting Hole Dimensions



Proximity Sensors

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E2S

TL-W

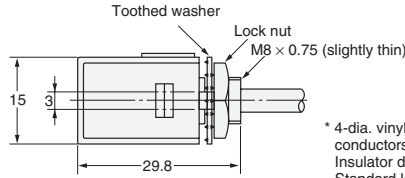
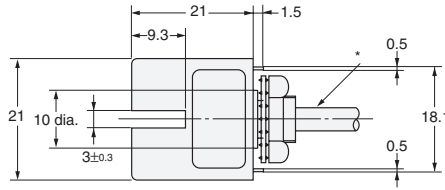
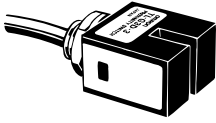
TL-N/TL-Q/TL-G

TL-M

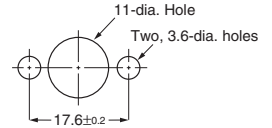
# TL-N/TL-Q/TL-G

## TL-G3D-3

CAD data



### Mounting Hole Dimensions



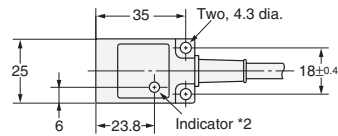
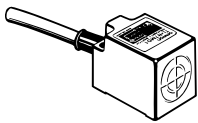
\* 4-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.2 mm<sup>2</sup>, Insulator diameter: 1.2 mm), Standard length: 1 m

Proximity Sensors

## TL-N7MD□, TL-N5ME□

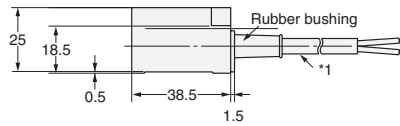
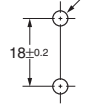
CAD data

Sensing Guide



### Mounting Hole Dimensions

Two, 4.5-dia. or M4 holes



\*1. D Models: 6-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm<sup>2</sup>, Insulator diameter: 1.9 mm), Standard length: 2 m  
 E Models: 6-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.5 mm<sup>2</sup>, Insulator diameter: 1.9 mm), Standard length: 2 m  
 \*2. D1 Models: Operation indicator (red), Setting indicator (green)  
 D2 Models: Operation indicator (red)  
 E Models: Detection indicator (red)

Cylindrical Models

Rectangular Models

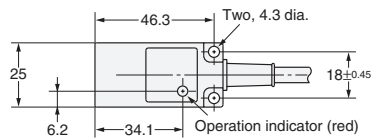
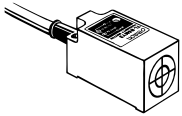
Separate Amp/Pre-wired Connector Models

Capacitive Models

## TL-N5MY□

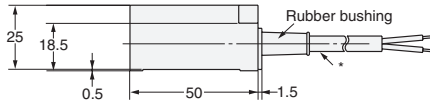
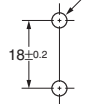
CAD data

Others



### Mounting Hole Dimensions

Two, 4.5-dia. or M4 holes

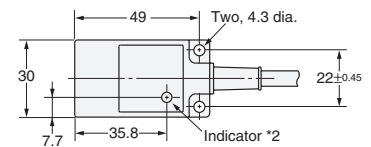
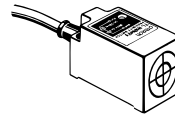


\* 6-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm<sup>2</sup>, Insulator diameter: 1.9 mm), Standard length: 2 m

## TL-N12MD□, TL-N10ME□, TL-N10MY□

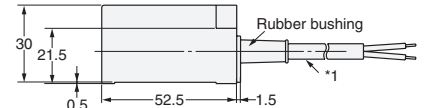
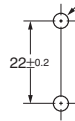
CAD data

Peripheral Devices



### Mounting Hole Dimensions

Two, 4.5-dia. or M4 holes



\*1. D/Y Models: 6-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm<sup>2</sup>, Insulator diameter: 1.9 mm), Standard length: 2 m  
 E Models: 6-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.5 mm<sup>2</sup>, Insulator diameter: 1.9 mm), Standard length: 2 m  
 \*2. D1 Models: Operation indicator (red) and Setting indicator (green)  
 D2 Models: Operation indicator (red)  
 E Models: Detection indicator (red)  
 Y Models: Operation indicator (red)

General Information

E2S

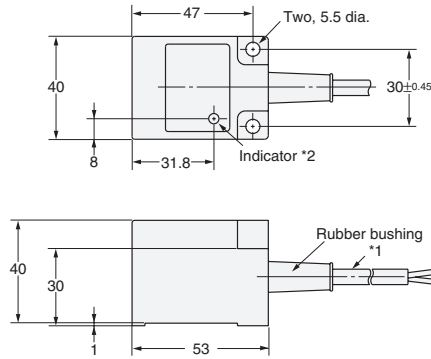
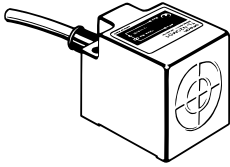
TL-W

TL-N/TL-Q/TL-G

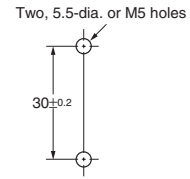
TL-M

TL-N20MD□, TL-N20ME□, TL-N20MY□

CAD data



### Mounting Hole Dimensions

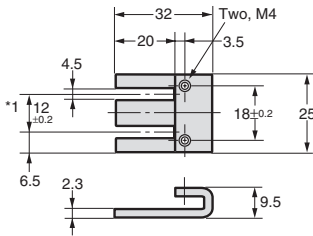


- \*1. D/Y Models: 6-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm<sup>2</sup>, Insulator diameter: 1.9 mm), Standard length: 2 m
- E Models: 6-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.5 mm<sup>2</sup>, Insulator diameter: 1.9 mm), Standard length: 2 m
- \*2. D1 Models: Operation indicator (red) and Setting indicator (green)
- D2 Models: Operation indicator (red)
- E Models: Detection indicator (red)
- Y Models: Operation indicator (red)

## Accessories (Order Separately)

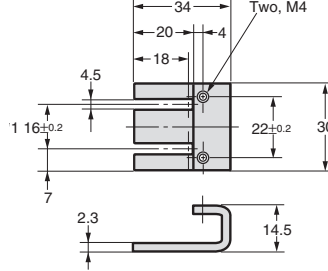
### Mounting Bracket

#### Y92E-C5



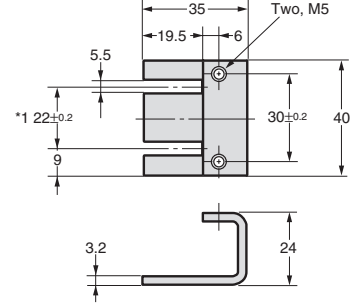
Applicable Models: TL-N5ME□ \*2  
 Applicable Models: TL-N5MY□  
 Applicable Models: TL-N7MD□ \*2

#### Y92E-C10



Applicable Models: TL-N10ME□ \*2  
 Applicable Models: TL-N10MY□  
 Applicable Models: TL-N12MD□ \*2

#### Y92E-C20

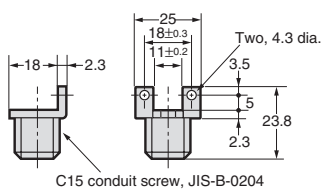


Applicable Models: TL-N20ME□ \*2  
 Applicable Models: TL-N20MY□  
 Applicable Models: TL-N20MD□ \*2

\*1. These are the mounting dimensions of the base of the Mounting Bracket.  
 \*2. Provided with the product.

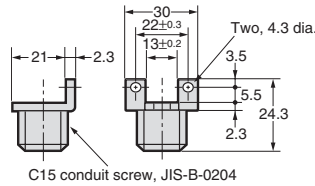
## Mounting Brackets for Wiring Conduit Use (Sold Separately)

#### Y92E-N5C15



C15 conduit screw, JIS-B-0204  
 Applicable Models: TL-N5ME□  
 Applicable Models: TL-N5MY□  
 Applicable Models: TL-N7MD□

#### Y92E-N10C15



C15 conduit screw, JIS-B-0204  
 Applicable Models: TL-N10ME□  
 Applicable Models: TL-N10MY□  
 Applicable Models: TL-N12MD□