

# E2E (E2E-X□D□-U/E2E-X□D□S/E2E-X□Y□/E2E-X□T□)

DC 2-Wire (PUR Cable/Self-diagnosis Output), AC 2-Wire and AC/DC 2-Wire


CSM\_E2E\_DS\_E\_13\_6

## Models with DC 2-Wire (Self-diagnosis Output) and AC 2-Wire added to the lineup

- Detecting ferrous metals.
- Models with different frequencies are also available to prevent mutual interference.
- Superior environment resistance with standard cable made of oil-resistant PVC and sensing surface made of material that resists cutting oil.
- Useful to help prevent disconnection. Cable protector provided as a standard feature.

CE    
 (Standards do not apply to all models.)



 Be sure to read *Safety Precautions* on page 16.

For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

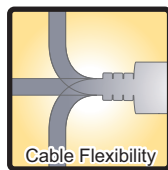
## Features

### DC 2-Wire

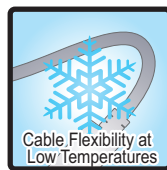
#### Pre-wired models with oil-resistant reinforced PUR Cable added to the lineup



Oil Resistance (Insulation service life):  
twice or three times  
that of oil-resistant vinyl chloride



Cable Flexibility:  
approximately twice  
that of vinyl chloride cables



More Flexibility at -40°C

## E2E Model Number Legend

E2E- 1 2 3 4 5 6 7 - 8 9 - 10 - 11 12





No.	Classification	Code	Meaning	Remarks
1	Appearance	X	Cylindrical (threaded)	
2	Sensing distance	Number	Sensing distance (Unit: mm)	Example: 1R5: 1.5 mm
		R	Indication of decimal point	
3	Shielding	Blank	Shielded Model	
		M	Unshielded Model	
4	Power supply and output specifications	D	DC 2-wire polarity/no polarity	Whether D models have polarity is defined by number 10.
		T	AC/DC 2-wire	
		Y	AC 2-wire	
5	Form of output switching element	1	Normally open (NO)	
		2	Normally closed (NC)	
6	Oscillation frequency type	Blank	Standard frequency	Used to prevent mutual interference.
		5	Different frequency	
7	Self-diagnosis	Blank	No	
		S	Yes	
8	Connection method	Blank	Pre-wired	
		M1	M12-size metal connector	
9	Connector specifications	Blank	Connector Model AC 2-wire, DC 2-wire with self-diagnosis output, DC 2-wire with old pin arrangement	
		J	Pre-wired Connector Model AC 2-wire, DC 2-wire with old pin arrangement	
		GJ	Pre-wired Connector Model DC 2-wire with IEC pin arrangement	
		TJ	Pre-wired Smartclick Connector Model DC 2-wire	
		TGJ	Pre-wired Smartclick Connector Model DC 2-wire with IEC pin arrangement	
10	DC 2-wire polarity	Blank	Polarity	
		T	No polarity	
11	Cable specifications	Blank	Standard PVC cable (oil resistant)	
		R	Flexible PVC cable (oil resistant)	
		U	Polyurethane cable (oil resistant and reinforced)	
12	Cable length	Letter M	Cable length (Unit: m) (Applicable to Pre-wired Models and Pre-wired Connector Models.)	Example: 2M 0.3M

Note: The purpose of this model number legend is to provide understanding of the meaning of specifications from the model number. Models are not available for all combinations of code numbers.

## Ordering Information

DC 2-Wire (No Self-diagnosis Output, PUR Cable models) [Refer to *Dimensions* on page 18.]

Shielded Models 

Appearance	Sensing distance			Connection method	Cable specifications	Polarity	Operation mode	Pin arrangement	Model
M8		2 mm		Pre-wired Models (2 m)	PUR	Yes	NO	---	E2E-X2D1-U 2M
							NC		E2E-X2D2-U 2M
				M12 Pre-wired Smartclick Connector Models (0.3 m)	PUR		NO	1: +V, 4: 0 V	E2E-X2D1-M1TGJ-U 0.3M
							NC	1: +V, 2: 0 V	E2E-X2D2-M1TGJ-U 0.3M
M12		3 mm		Pre-wired Models (2 m)	PUR	Yes	NO	---	E2E-X3D1-U 2M
							NC		E2E-X3D2-U 2M
				M12 Pre-wired Smartclick Connector Models (0.3 m)	PUR		NO	1: +V, 4: 0 V	E2E-X3D1-M1TGJ-U 0.3M
							NC	1: +V, 2: 0 V	E2E-X3D2-M1TGJ-U 0.3M
M18		7 mm		Pre-wired Models (2 m)	PUR	Yes	NO	---	E2E-X7D1-U 2M
							NC		E2E-X7D2-U 2M
				M12 Pre-wired Smartclick Connector Models (0.3 m)	PUR		NO	1: +V, 4: 0 V	E2E-X7D1-M1TGJ-U 0.3M
							NC	1: +V, 2: 0 V	E2E-X7D2-M1TGJ-U 0.3M
M30		10 mm		Pre-wired Models (2 m)	PUR	Yes	NO	---	E2E-X10D1-U 2M
							NC		E2E-X10D2-U 2M
				M12 Pre-wired Smartclick Connector Models (0.3 m)	PUR		NO	1: +V, 4: 0 V	E2E-X10D1-M1TGJ-U 0.3M
							NC	1: +V, 2: 0 V	E2E-X10D2-M1TGJ-U 0.3M

**DC 2-Wire (Self-diagnosis Output models) [Refer to Dimensions on page 19.]**

**Shielded Models** 

Appearance	Sensing distance	Connection method	Cable specifications	Polarity	Operation mode	Pin arrangement	Model
M12	3 mm	Pre-wired Models (2 m)	PVC (oil-resistant)	Yes	NO	---	E2E-X3D1S 2M *1
		M12 Connector Models	---			2: +V and diagnostic output 3: 0 V 4: +V and control output	E2E-X3D1S-M1
M18	7 mm	Pre-wired Models (2 m)	PVC (oil-resistant)			---	E2E-X7D1S 2M *1
		M12 Connector Models	---			2: +V and diagnostic output 3: 0 V 4: +V and control output	E2E-X7D1S-M1
M30	10 mm	Pre-wired Models (2 m)	PVC (oil-resistant)			---	E2E-X10D1S 2M *1
		M12 Connector Models	---			2: +V and diagnostic output 3: 0 V 4: +V and control output	E2E-X10D1S-M1

\*1. Models with different frequencies are also available. The model number is E2E-X □D15S (example: E2E-X3D15S 2M).

**Unshielded Models** 

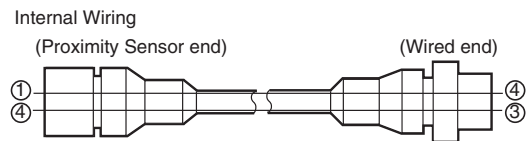
Appearance	Sensing distance	Connection method	Cable specifications	Polarity	Operation mode	Pin arrangement	Model
M12	8 mm	Pre-wired Models (2 m)	PVC (oil-resistant)	Yes	NO	---	E2E-X8MD1S 2M *1
		M12 Connector Models	---			2: +V and diagnostic output 3: 0 V 4: +V and control output	E2E-X8MD1S-M1
M18	14 mm	Pre-wired Models (2 m)	PVC (oil-resistant)			---	E2E-X14MD1S 2M *1
		M12 Connector Models	---			2: +V and diagnostic output 3: 0 V 4: +V and control output	E2E-X14MD1S-M1
M30	20 mm	Pre-wired Models (2 m)	PVC (oil-resistant)			---	E2E-X20MD1S 2M *1
		M12 Connector Models	---			2: +V and diagnostic output 3: 0 V 4: +V and control output	E2E-X20MD1S-M1

\*1. Models with different frequencies are also available. The model number is E2E-X □MD15S (example: E2E-X8MD15S 2M).

**Connector Pin Assignments of DC 2-Wire Models**

- The connector pin assignments of each New E2E DC 2-Wire Model conform to IEC 947-5-2 Table III. (Only DC 2-Wire Models have been changed in comparison to the previous models.)
- The following models with conventional connector pin assignments are available as well. (Only NO Models can be used.)  
The cable at the right should also be used if the XW3D-P□55-G11/XW3B-P□55-G11 Connector Junction Box is already being used.

Cable length	Model
500 mm	<b>XS2W-D421-BY1</b>



## AC 2-Wire [Refer to Dimensions on page 21.]

Shielded Models 

Appearance	Sensing distance	Connection method	Cable specifications	Operation mode	Pin arrangement	Model
M8	1.5 mm	Pre-wired Models (2 m)	PVC (oil-resistant)	NO	---	E2E-X1R5Y1 2M *2
				NC		E2E-X1R5Y2 2M *2
M12	2 mm	Pre-wired Models (2 m)	PVC (oil-resistant)	NO	---	E2E-X2Y1 2M *1, *3
				NC		E2E-X2Y2 2M
		M12 Connector Models	---	NO	(3, 4): (AC, AC)	E2E-X2Y1-M1 *4
				NC	(1, 2): (AC, AC)	E2E-X2Y2-M1
M18	5 mm	Pre-wired Models (2 m)	PVC (oil-resistant)	NO	---	E2E-X5Y1 2M *1, *3
				NC		E2E-X5Y2 2M *3
		M12 Connector Models	---	NO	(3, 4): (AC, AC)	E2E-X5Y1-M1 *4
				NC	(1, 2): (AC, AC)	E2E-X5Y2-M1
M30	10 mm	Pre-wired Models (2 m)	PVC (oil-resistant)	NO	---	E2E-X10Y1 2M *1, *3
				NC		E2E-X10Y2 2M
		M12 Connector Models	---	NO	(3, 4): (AC, AC)	E2E-X10Y1-M1
				NC	(1, 2): (AC, AC)	E2E-X10Y2-M1

\*1. Models with different frequencies are also available. The model number is E2E-X□Y□5 (example: E2E-X5Y15 2M).

\*2. Discontinued at the end of March 2022.

\*3. UL certification models are also available. The model number is E2E-X□Y□-US (example: E2E-X5Y1-US 2M).

\*4. M4 Connector Models are also available. The model number is E2E-X□Y□-M4 (example: E2E-X5Y1-M4). Not sold within Japan.

Unshielded Models 

Appearance	Sensing distance	Connection method	Cable specifications	Operation mode	Pin arrangement	Model
M8	2 mm	Pre-wired Models (2 m)	PVC (oil-resistant)	NO	---	E2E-X2MY1 2M *2
				NC		E2E-X2MY2 2M *2
M12	5 mm	Pre-wired Models (2 m)	PVC (oil-resistant)	NO	---	E2E-X5MY1 2M *1, *3
				NC		E2E-X5MY2 2M
		M12 Connector Models	---	NO	(3, 4): (AC, AC)	E2E-X5MY1-M1
				NC	(1, 2): (AC, AC)	E2E-X5MY2-M1
M18	10 mm	Pre-wired Models (2 m)	PVC (oil-resistant)	NO	---	E2E-X10MY1 2M *1, *3
				NC		E2E-X10MY2 2M *3
		M12 Connector Models	---	NO	(3, 4): (AC, AC)	E2E-X10MY1-M1
				NC	(1, 2): (AC, AC)	E2E-X10MY2-M1
M30	18 mm	Pre-wired Models (2 m)	PVC (oil-resistant)	NO	---	E2E-X18MY1 2M *1, *3
				NC		E2E-X18MY2 2M
		M12 Connector Models	---	NO	(3, 4): (AC, AC)	E2E-X18MY1-M1
				NC	(1, 2): (AC, AC)	E2E-X18MY2-M1

\*1. Models with different frequencies are also available. The model number is E2E-X□MY□5 (example: E2E-X5MY15 2M).

\*2. Discontinued at the end of March 2022.

\*3. UL certification models are also available. The model number is E2E-X□MY□-US (example: E2E-X5MY1-US 2M).

## AC/DC 2-Wire [Refer to Dimensions on page 23.]

Shielded Models 

Appearance	Sensing distance	Connection method	Cable specifications	Operation mode	Pin arrangement	Applicable connector code	Model
M12	3 mm	Pre-wired Models (2 m)	PVC (oil-resistant)	NO	---	---	E2E-X3T1 2M
M18	7 mm	Pre-wired Models (2 m)	PVC (oil-resistant)		---	---	E2E-X7T1 2M
M30	10 mm	Pre-wired Models (2 m)	PVC (oil-resistant)		---	---	E2E-X10T1 2M



Note: There are no unshielded models.

## Accessories (Sold Separately)



### Sensor I/O Connectors

A Sensor I/O Connector is not provided with the Sensor. It must be ordered separately as required.

#### Round Water-resistant Connectors XS5 Series

Appearance	Cable Specification	Type	Cable diameter (mm)	Cable Connection Direction	Cable length (m)	Sensor I/O Connector model number	Applicable Proximity Sensor model number
M12 Smartclick Connector  Straight type    Right-angle type  	Oil-resistant polyurethane cable	Sockets on One Cable End	6 dia.	Straight	2 m	XS5F-D421-D80-P	E2E-X□D□-M1TGJ-U
					5 m	XS5F-D421-G80-P	
				Right-angle	2 m	XS5F-D422-D80-P	
					5 m	XS5F-D422-G80-P	
		Straight (Socket)/ Straight (Plug)		2 m	XS5W-D421-D81-P		
				5 m	XS5W-D421-G81-P		

#### Round Water-resistant Connectors XS2 Series

Appearance	Cable Specification	Type	Cable diameter (mm)	Cable Connection Direction	Cable length (m)	Sensor I/O Connector model number	Applicable Proximity Sensor model number	
M12 Screw Connector  Straight type    Right-angle type  	Fire-retardant, PVC Robot Cable	Sockets on One Cable End	6 dia.	Straight	2 m	XS2F-D421-D80-F	E2E-X□D□S-M1	
					5 m	XS2F-D421-G80-F		
		Right-angle		2 m	XS2F-D422-D80-F			
				5 m	XS2F-D422-G80-F			
	Fire-retardant, PVC Robot Cable	Socket and Plug on Cable Ends		Sockets on One Cable End	Straight (Socket)/ Straight (Plug)	2 m	XS2W-D421-D81-F	E2E-X□Y1-M1
						5 m	XS2W-D421-G81-F	
		Straight			2 m	XS2F-A421-DB0-F		
					5 m	XS2F-A421-GB0-F		
Right-angle	2 m	XS2F-A422-DB0-F						
	5 m	XS2F-A422-GB0-F						
Fire-retardant, PVC Robot Cable	Sockets on One Cable End	Sockets on One Cable End	6 dia.	Straight	2 m	XS2F-A421-D90-F	E2E-X□Y2-M1	
					5 m	XS2F-A421-G90-F		

Note: For details, refer to *Sensor I/O Connectors/Sensor Controllers* on your OMRON website.

## Ratings and Specifications

### DC 2-Wire (E2E-X□D□)

Item	Size Shielded Model	M8		M12		M18		M30	
		Shielded	Shielded	Shielded	Unshielded	Shielded	Unshielded	Shielded	Unshielded
		E2E-X2D□	E2E-X3D□	E2E-X8MD□	E2E-X7D□	E2E-X14MD□	E2E-X10D□	E2E-X20MD□	
<b>Sensing distance</b>		2 mm ±10%	3 mm ±10%	8 mm ±10%	7 mm ±10%	14 mm ±10%	10 mm ±10%	20 mm ±10%	
<b>Set distance *1</b>		0 to 1.6 mm	0 to 2.4 mm	0 to 6.4 mm	0 to 5.6 mm	0 to 11.2 mm	0 to 8 mm	0 to 16 mm	
<b>Differential travel</b>		15% max. of sensing distance	10% max. of sensing distance						
<b>Detectable object</b>		Ferrous metal (The sensing distance decreases with non-ferrous metal. Refer to <i>Engineering Data</i> on pages 10 and 11.							
<b>Standard sensing object</b>		Iron, 8 × 8 × 1 mm	Iron, 12 × 12 × 1 mm	Iron, 30 × 30 × 1 mm	Iron, 18 × 18 × 1 mm	Iron, 30 × 30 × 1 mm		Iron, 54 × 54 × 1 mm	
<b>Response frequency *2</b>		1.5 kHz	1 kHz	0.8 kHz	0.5 kHz	0.4 kHz		0.1 kHz	
<b>Power supply voltage (operating voltage range)</b>		12 to 24 VDC, ripple (p-p): 10% max. (10 to 30 VDC)							
<b>Leakage current</b>		0.8 mA max.							
<b>Control output</b>	<b>Load current</b>	3 to 100 mA, Diagnostic output: 50 mA for -D1(5)S Models							
	<b>Residual voltage</b>	3 V max. (Load current: 100 mA, Cable length: 2 m)							
<b>Indicators</b>		D1 Models: Operation indicator (red) and setting indicator (green) D2 Models: Operation indicator (red)							
<b>Operation mode (with sensing object approaching)</b>		D1 Models: NO      Refer to the timing charts under <i>I/O Circuit Diagrams</i> on page 13 for details. D2 Models: NC							
<b>Diagnostic output delay</b>		0.3 to 1 s							
<b>Protection circuits</b>		Surge suppressor, Load short-circuit protection (for control and diagnostic output)							
<b>Ambient temperature range</b>		Operating: -25 to 70°C, Storage: -40 to 85°C (with no icing or condensation)							
<b>Ambient humidity range</b>		Operating/storage: 35% to 95% (with no condensation)							
<b>Temperature influence</b>		±15% 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 -25 to 70°C					
<b>Voltage influence</b>		±1% max. of sensing distance at rated voltage in the rated voltage ±15% range							
<b>Insulation resistance</b>		50 MΩ min. (at 500 VDC) between current-carrying parts and case							
<b>Dielectric strength</b>		1000 VAC, 50/60 Hz for 1 minute between current carry 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		Destruction: 1,000 m/s <sup>2</sup> 10 times each in X, Y, and Z directions					
<b>Degree of protection</b>		Pre-wired Models: IEC 60529 IP67, in-house standards: oil-resistant Connector Models: IEC 60529 IP67							
<b>Connection method</b>		Pre-wired Models (Standard cable length: 2 m), Connector Models, or Pre-wired Connector Models (Standard cable length: 0.3 m)							
<b>Weight (packed state)</b>	<b>Pre-wired Models</b>	Approx. 60 g	Approx. 70 g		Approx. 130 g		Approx. 175 g		
	<b>Pre-wired Connector Models</b>	---	Approx. 40 g (Shielded Models only)		---		---		
	<b>Connector Models</b>	Approx. 15 g	Approx. 25 g		Approx. 40 g		Approx. 90 g		
<b>Materials</b>	<b>Case</b>	Stainless steel (SUS303)		Nickel-plated brass					
	<b>Sensing surface</b>	PBT							
	<b>Clamping nuts</b>	Nickel-plated brass							
	<b>Toothed washer</b>	Zinc-plated iron							
<b>Accessories</b>		Instruction manual							

\*1. Use the E2E within the range in which the setting indicator (green LED) is ON (except D2 Models).

\*2. 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.

## AC 2-Wire (E2E-X□Y□)

Item	Size		M8		M12		M18		M30		
	Shielded Model	Unshielded Model	Shielded	Unshielded	Shielded	Unshielded	Shielded	Unshielded	Shielded	Unshielded	
			E2E-X1R5Y□	E2E-X2MY□	E2E-X2Y□	E2E-X5MY□	E2E-X5Y□	E2E-X10MY□	E2E-X10Y□	E2E-X18MY□	
<b>Sensing distance</b>	1.5 mm ±10%		2 mm ±10%		5 mm ±10%		10 mm ±10%		18 mm ±10%		
<b>Set distance</b>	0 to 1.2 mm		0 to 1.6 mm		0 to 4 mm		0 to 8 mm		0 to 14 mm		
<b>Differential travel</b>	10% max. of sensing distance										
<b>Detectable object</b>	Ferrous metal (The sensing distance decreases with non-ferrous metal. Refer to <i>Engineering Data</i> on page 11.)										
<b>Standard sensing object</b>	Iron, 8 × 8 × 1 mm		Iron, 12 × 12 × 1 mm			Iron, 15 × 15 × 1 mm		Iron, 18 × 18 × 1 mm		Iron, 30 × 30 × 1 mm	
<b>Response frequency</b>	25 Hz										
<b>Power supply voltage (operating voltage range)<sup>*1</sup></b>	24 to 240 VAC (20 to 264 VAC), 50/60 Hz										
<b>Leakage current</b>	1.7 mA max.										
<b>Control output</b>	<b>Load current<sup>*2</sup></b>	5 to 100 mA			5 to 200 mA			5 to 300 mA			
	<b>Residual voltage</b>	Refer to <i>Engineering Data</i> on page 12.									
<b>Indicators</b>	Operation indicator (red)										
<b>Operation mode (with sensing object approaching)</b>	Y1 Models: NO    Y2 Models: NC    Refer to the timing charts under <i>I/O Circuit Diagrams</i> on page 14 for details.										
<b>Protection circuits</b>	Surge suppressor										
<b>Ambient temperature range<sup>*1*2</sup></b>	Operating/Storage: -25 to 70°C (with no icing or condensation)				Operating/Storage: -40 to 85°C (with no icing or condensation)						
<b>Ambient humidity range</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				±15% max. of sensing distance at 23°C in the temperature range of -40 to 85°C, ±10% max. of sensing distance at 23°C in the temperature range of -25 to 70°C						
<b>Voltage influence</b>	±1% max. of sensing distance at rated voltage in the rated voltage ±15% range										
<b>Insulation resistance</b>	50 MΩ min. (at 500 VDC) between current-carrying parts and case										
<b>Dielectric strength</b>	4,000 VAC (M8 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				Destruction: 1,000 m/s <sup>2</sup> 10 times each in X, Y, and Z directions						
<b>Degree of protection</b>	Pre-wired Models: IEC 60529 IP67, in-house standards: oil-resistant Connector Models: IEC 60529 IP67										
<b>Connection method</b>	Pre-wired Models (Standard cable length: 2 m) and Connector Models										
<b>Weight (packed state)</b>	<b>Pre-wired Models Model</b>	Approx. 60 g			Approx. 70 g			Approx. 130 g		Approx. 175 g	
	<b>Connector Models</b>	Approx. 15 g			Approx. 25 g			Approx. 40 g		Approx. 90 g	
<b>Materials</b>	<b>Case</b>	Stainless steel (SUS303)			Nickel-plated brass						
	<b>Sensing surface</b>	PBT									
	<b>Clamping nuts</b>	Nickel-plated brass									
	<b>Toothed washer</b>	Zinc-plated iron									
<b>Accessories</b>	Instruction manual										

\*1. When supplying 24 VAC to any of the above models, make sure that the operating ambient temperature range is at least -25°C.

\*2. When using an M18 or M30 Connector Model at an ambient temperature between 70 and 85°C, make sure that the Sensor has a control output (load current) of 5 to 200 mA max.



## AC/DC 2-Wire (E2E-X□T1)

Item	Size Shielded Model	M12	M18	M30
		Shielded		
		E2E-X3T1	E2E-X7T1	E2E-X10T1
Sensing distance		3 mm ±10%	7 mm ±10%	10 mm ±10%
Set distance		0 to 2.4 mm	0 to 5.6 mm	0 to 8 mm
Differential travel		10% max. of sensing distance		
Detectable object		Ferrous metal (The sensing distance decreases with non-ferrous metal. Refer to <i>Engineering Data</i> on page 10.)		
Standard sensing object		Iron, 12 × 12 × 1 mm	Iron, 18 × 18 × 1 mm	Iron, 30 × 30 × 1 mm
Response frequency *1	DC	1 kHz	0.5 kHz	0.4 kHz
	AC	25 Hz		
Power supply voltage (operating voltage range) *2		24 to 240 VDC (20 to 264 VDC) 48 to 240 VAC (40 to 264 VAC)		
Leakage current		DC: 1 mA max. AC: 2 mA max.		
Control output	Load current	5 to 100 mA		
	Residual voltage	DC: 6 V max. (Load current: 100 mA, Cable length: 2 m) AC: 10 V max. (Load current: 5 mA, Cable length: 2 m)		
Indicators		Operation indicator (red), Setting indicator (green)		
Operation mode (with sensing object approaching)		NO (Refer to the timing charts under <i>I/O Circuit Diagrams</i> on page 14 for details.)		
Protection circuits		Load short-circuit protection (20 to 40 VDC only), Surge suppressor		
Ambient temperature range		Operating: -25 to 70°C, Storage: -40 to 85°C (with no icing or condensation)		
Ambient humidity range		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		±1% 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		4,000 VAC, 50/60 Hz for 1 minute 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: 1,000 m/s <sup>2</sup> 10 times each in X, Y, and Z directions		
Degree of protection		IEC 60529 IP67, in-house standards: oil-resistant		
Connection method		Pre-wired Models (Standard cable length: 2 m)		
Weight (packed state)		Approx. 80 g	Approx. 140 g	Approx. 190 g
Materials	Case	Nickel-plated brass		
	Sensing surface	PBT		
	Clamping nuts	Nickel-plated brass		
	Toothed washer	Zinc-plated iron		
Accessories		Instruction manual		

\*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. Power Supply Voltage Waveform:

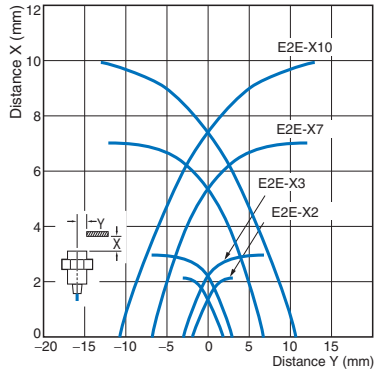
Use a sine wave for the power supply. Using a rectangular AC power supply may result in faulty reset.

# Engineering Data (Reference Value)

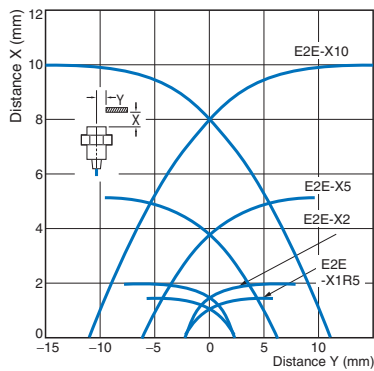
## Sensing Area

### Shielded Models

#### E2E-X□D□/-X□T1

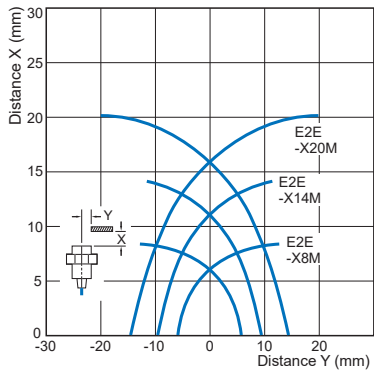


#### E2E-X□Y□

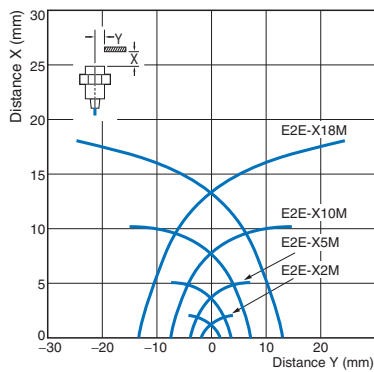


### Unshielded Models

#### E2E-X□MD□

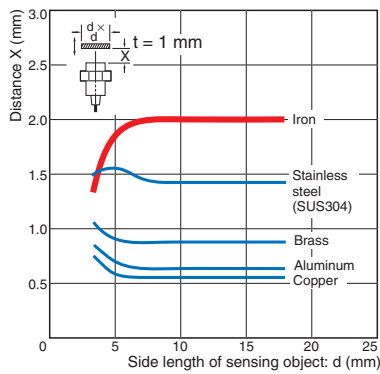


#### E2E-X□MY□

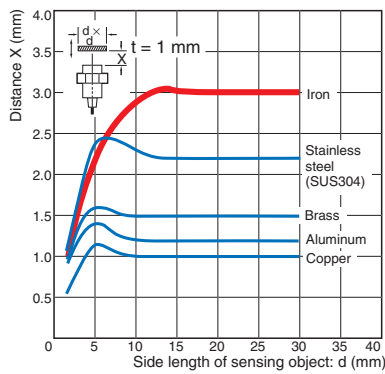


## Influence of Sensing Object Size and Material

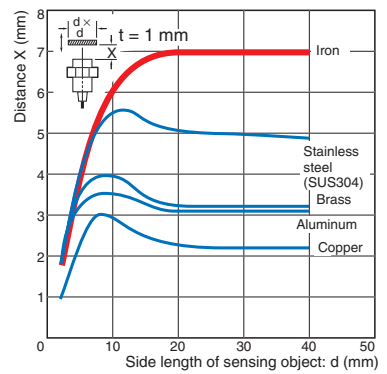
#### E2E-X2D□



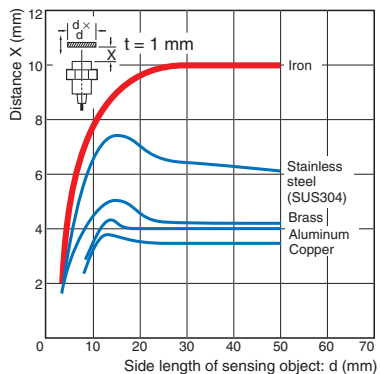
#### E2E-X3D□/-X3T1



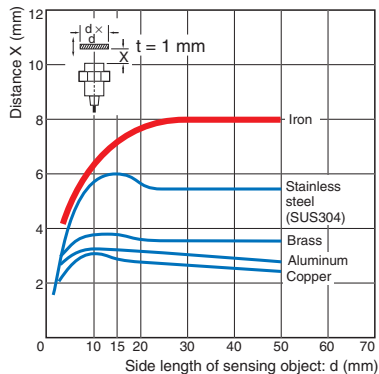
#### E2E-X7D□/-X7T1



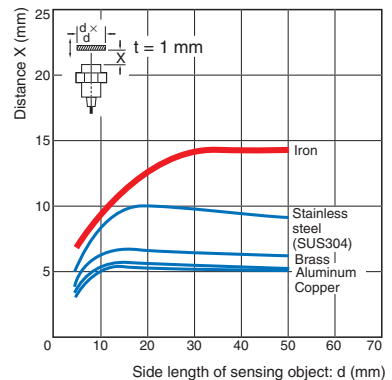
#### E2E-X10D□/-X10T1



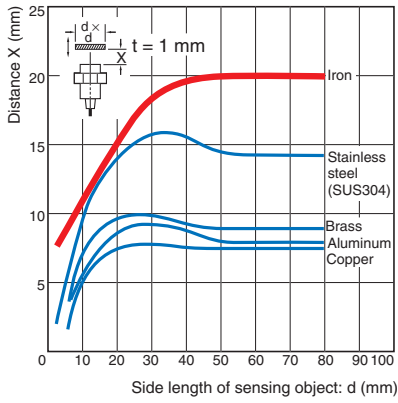
#### E2E-X8MD□



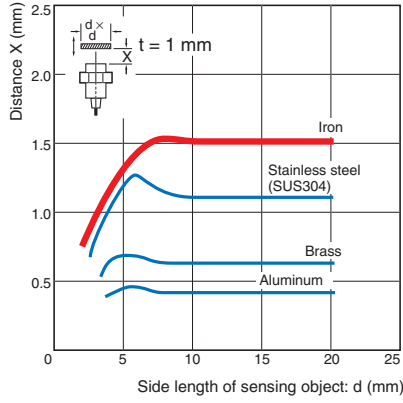
#### E2E-X14MD□



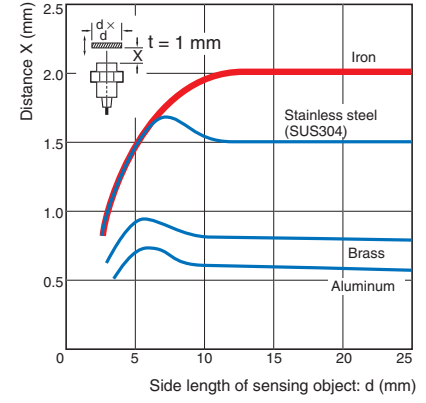
**E2E-X20MD**



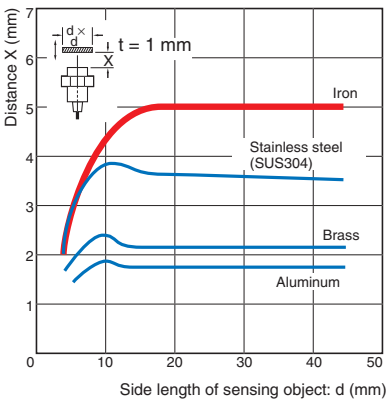
**E2E-X1R5Y**



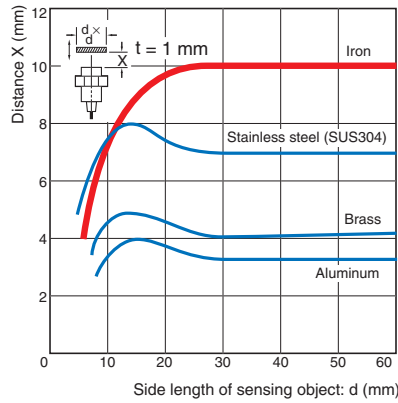
**E2E-X2Y**



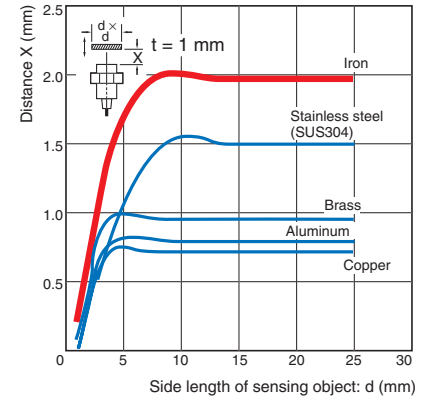
**E2E-X5Y**



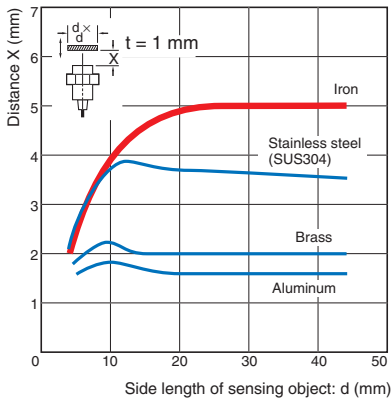
**E2E-X10Y**



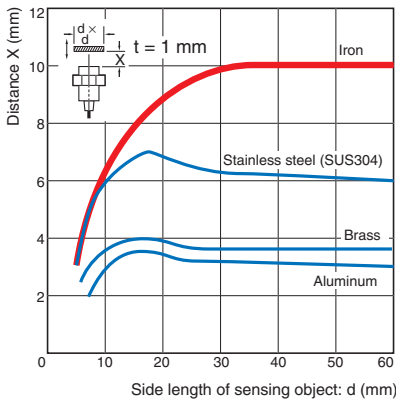
**E2E-X2MY**



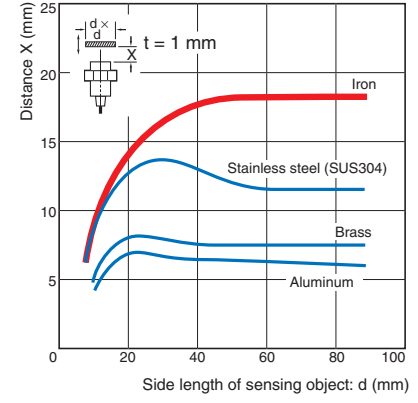
**E2E-X5MY**



**E2E-X10MY**

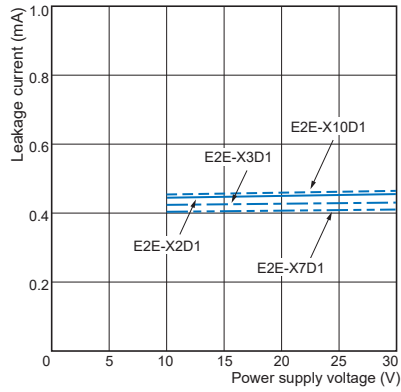


**E2E-X18MY**

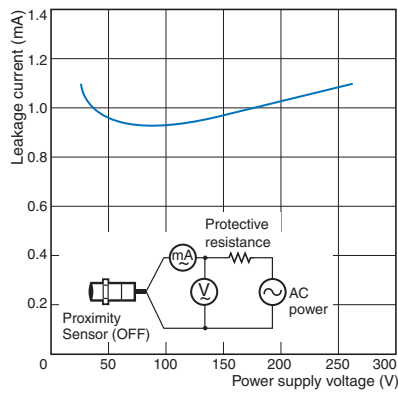


Leakage Current

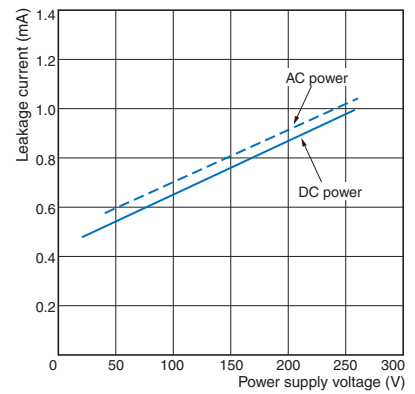
E2E-X□D□



E2E-X□Y□

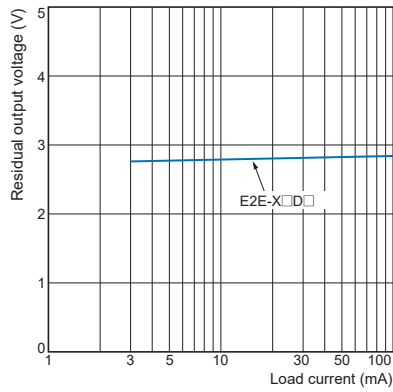


E2E-X□T1

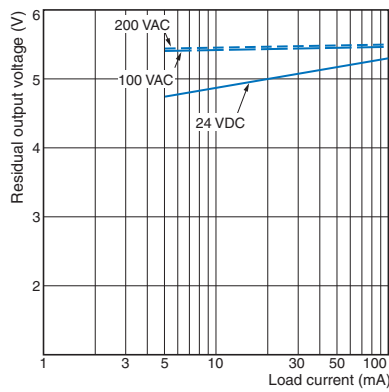


Residual Output Voltage

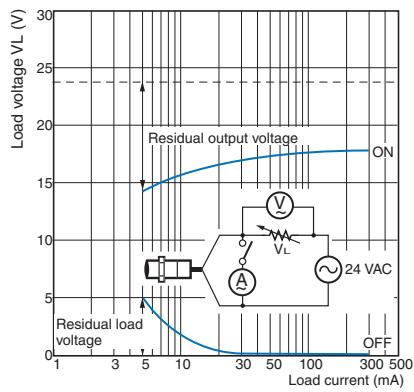
E2E-X□D□



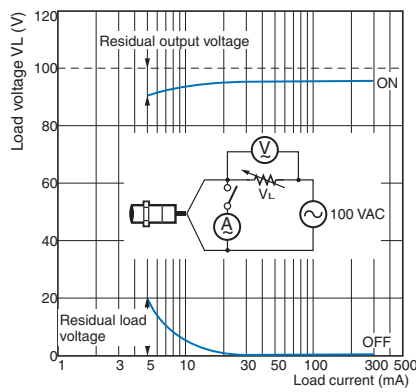
E2E-X□T1



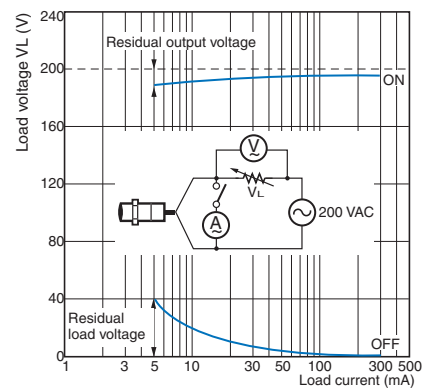
E2E-X□Y□ at 24 VAC



E2E-X□Y□ at 100 VAC



E2E-X□Y□ at 200 VAC



# I/O Circuit Diagrams

## DC 2-Wire

Operation mode	Model	Timing Chart	Output circuit
<p><b>Without self-diagnostic output: NO</b></p>	<p>E2E-X□D1(-M1TGJ)-U</p>		<p>Note: The load can be connected to either the +V or 0 V side.</p>
<p><b>Without self-diagnostic output: NC</b></p>	<p>E2E-X□D2(-M1TGJ)-U</p>		<p>Note: The load can be connected to either the +V or 0 V side.</p>
<p><b>With self-diagnostic output: NO</b></p>	<p>E2E-X□D1S E2E-X□D1S-M1</p>	<p>* The diagnostic output is ON when there is a coil burnout or the sensing object is located in the unstable sensing area for 0.3 s or longer.</p>	<p>Note: Connect both the loads to the +V side of the control output and diagnostic output.</p>

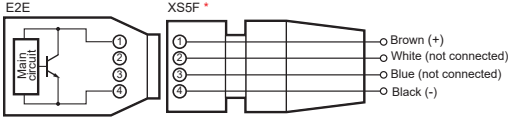
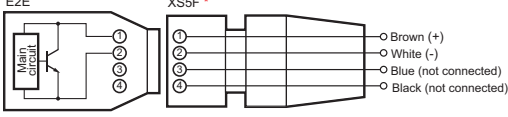
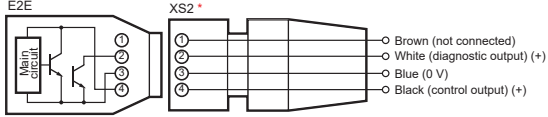
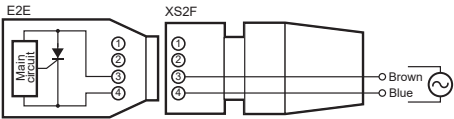
AC 2-Wire

Operation mode	Model	Timing Chart	Output circuit
NO	E2E-X□Y□ E2E-X□Y□-M1		<p>Note: For Connector Models, the connection between pins 3 and 4 uses an NO contact, and the connection between pins 1 and 2 uses an NC contact.</p>
NC			
NO	E2E-X□Y□-M4		
NC			

AC/DC 2-Wire

Operation mode	Model	Timing Chart	Output circuit
NO	E2E-X□T1		<p>Note: The load can be connected to either the +V or 0 V side. There is no need to be concerned about the polarity (brown/blue) of the Proximity Sensor.</p>

## Connections for Sensor I/O Connectors

Proximity Sensor				Sensor I/O Connector Model	Connections
Type	Polarity	Operation mode	Model		
DC 2-Wire (M12 Smartclick Connector)	Yes	NO	E2E-X□D1-M1TGJ-U	XS5F-D421-□80-P XS5F-D422-□80-P XS5W-D421-□81-P	
	Yes	NC	E2E-X□D2-M1TGJ-U		
DC 2-Wire (M12 Screw Connector)	Yes	NO	E2E-X□D1S-M1	XS2F-D421-□80-F XS2F-D422-□80-F XS2W-D421-□81-F	
AC 2-Wire (M12 Screw Connector)	---	NO	E2E-X□Y1-M1	XS2F-A421-□B0-F XS2F-A422-□B0-F	
	---	NC	E2E-X□Y2-M1		XS2F-A421-□90-F

\* Different from Proximity Sensor wire colors.

Note: For details, refer to Sensor I/O Connectors/Sensor Controllers on your OMRON website.

## 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.



### ⚠ CAUTION

- Do not short the load. Explosion or burning may result.
- Do not supply power to the Sensor with no load, otherwise Sensor may be damaged.



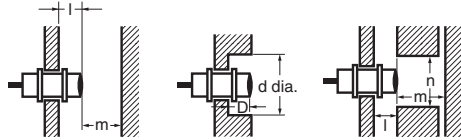
### Precautions for Correct Use

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.



#### Influence of Surrounding Metal

(Unit: mm)

Model		Item	M8	M12	M18	M30
DC 2-wire E2E-X□D□	Shielded	l	0			
		d	8	12	18	30
		D	0			
		m	4.5	8	20	40
		n	12	18	27	45
AC/DC 2-wire E2E-X□T1	Unshielded	l	15			
		d	40			
		D	---	15	22	30
		m	20			
		n	40			
AC 2-wire E2E-X□Y□	Shielded	l	0			
		d	8	12	18	30
		D	0			
		m	4.5	8	20	40
		n	12	18	27	45
	Unshielded	l	6	15	22	30
		d	24	40	55	90
		D	6	15	22	30
		m	8	20	40	70
		n	24	36	54	90

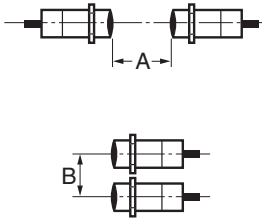
#### Relationship between Sizes and Models

Model		Model
M8	Shielded	E2E-X2D□ E2E-X1R5Y□
	Unshielded	E2E-X2MY□
M12	Shielded	E2E-X3D□ E2E-X2Y□ E2E-X3T1
	Unshielded	E2E-X8MD□ E2E-X5MY□
M18	Shielded	E2E-X7D□ E2E-X5Y□ E2E-X7T1
	Unshielded	E2E-X14MD□ E2E-X10MY□
M30	Shielded	E2E-X10D□ E2E-X10Y□ E2E-X10T1
	Unshielded	E2E-X20MD□ E2E-X18MY□



**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	Item	M8	M12	M18	M30	
DC 2-wire E2E-X□D□	Shielded	A	20	30 (20)	50 (30)	100 (50)
		B	15	20 (12) *	35 (18) *	70 (35)
AC/DC 2-wire E2E-X□T1	Unshielded	A	80	120 (60)	200 (100)	300 (100)
		B	60	100 (50)	110 (60)	200 (100)
AC 2-wire E2E-X□Y□	Shielded	A	20	30 (20)	50 (30)	100 (50)
		B	15	20 (12) *	35 (18) *	70 (35)
	Unshielded	A	80	120 (60)	200 (100)	300 (100)
		B	60	100 (50)	110 (60)	200 (100)

Note: Values in parentheses apply to Sensors operating at different frequencies.  
 \* Mutual interference will not occur for close-proximity mounting if models with different frequencies are used together.

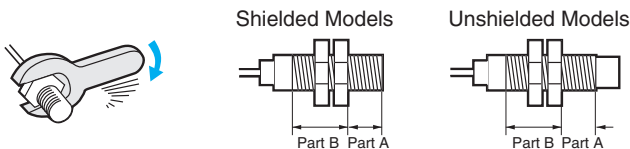
**Loads with Large Surge Currents (E2E-X□T□)**

If a load with a large surge current is connected, such as a relay, lamp, or motor, the surge current may cause the load short-circuit protection circuit to operate, resulting in operating errors.

**● Mounting**

**Tightening Force**

Do not tighten the nut with excessive force. A washer must be used with the nut.



Note: 1. The allowable tightening strength depends on the distance from the edge of the head, as shown in the following table. (A is the distance from the edge of the head. B includes the nut on the head side. If the edge of the nut is in part A, the tightening torque for part A applies instead.)  
 2. The following strengths assume washers are being used.

Model		Part A		Part B
		Dimension	Torque	Torque
M8	Shielded	9	9 N·m	12 N·m
	Unshielded	3		
M12			30 N·m	
M18			70 N·m	
M30			180 N·m	

**Connecting a DC 2-Wire Proximity Sensor to a PLC (Programmable Controller)**

**Required Conditions**

Connection to a PLC is possible if the specifications of the PLC and the Proximity Sensor satisfy the following conditions. (The meanings of the symbols are given at the right.)

- The ON voltage of the PLC and the residual voltage of the Proximity Sensor must satisfy the following.  
 $V_{ON} \leq V_{CC} - V_R$
- The OFF current of the PLC and the leakage current of the Proximity Sensor must satisfy the following.  
 $I_{OFF} \geq I_{leak}$   
 (If the OFF current is not listed in the PLC's input specifications, take it to be 1.3 mA.)
- The ON current of the PLC and the control output of the Proximity Sensor must satisfy the following.  
 $I_{OUT} (min.) \leq I_{ON} \leq I_{OUT} (max.)$

The ON current of the PLC will vary, however, with the power supply voltage and the input impedance, as shown in the following equation.

$$I_{ON} = (V_{CC} - V_R - \underline{V_{PC}}) / R_{IN}$$

**Example**

In this example, the above conditions are checked when the Proximity Sensor is the E2E-X7D1-U and the power supply voltage is 24 V.

- $V_{ON} (14.4 V) \leq V_{CC} (20.4 V) - V_R (3 V) = 17.4 V$ : OK
- $I_{OFF} (1.3 mA) \geq I_{leak} (0.8 mA)$ : OK
- $I_{ON} = [V_{CC} (20.4 V) - V_R (3 V) - \underline{V_{PC}} (4 V)] / R_{IN} (3 k\Omega) = \text{Approx. } 4.5 \text{ mA}$   
 Therefore,  $I_{OUT} (min.) (3 mA) \leq I_{ON} (4.5 mA)$ : OK  
 Connection is thus possible.

**Connection Example (Reference)**

<b>PLC</b>	$V_{ON}$ : ON voltage (14.4 V) $I_{ON}$ : ON current (typically 7 mA) $I_{OFF}$ : OFF current (1.3 mA) $R_{IN}$ : Input impedance (3 k $\Omega$ ) $V_{PC}$ : Internal residual voltage (4 V)
<b>Proximity Sensor</b>	$V_R$ : Output residual voltage (3 V) $I_{leak}$ : Leakage current (0.8 mA) $I_{OUT}$ : Control output (3 to 100 mA) $V_{CC}$ : Power supply voltage (PLC: 20.4 to 26.4 V)

Dimensions

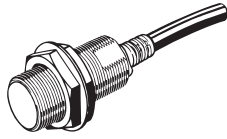
(Unit: mm)  
Tolerance class IT16 applies to dimensions in this data sheet unless otherwise specified.

Sensors

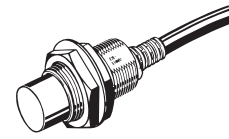
DC 2-Wire

No Self-diagnosis Output, PUR Cable models

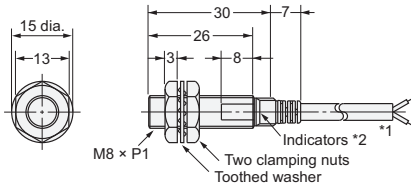
Pre-wired Models (Shielded)



Pre-wired Connector Models (Shielded)

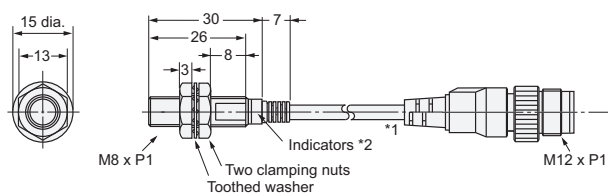


E2E-X2D□-U



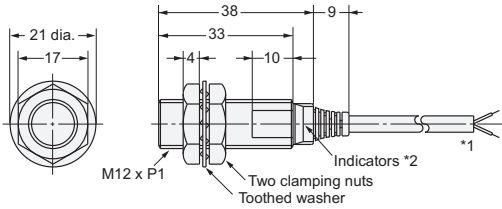
\*1. 4-dia. polyurethane-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm<sup>2</sup>, Insulator diameter: 1.3 mm), Standard length: 2 m  
The cable can be extended up to 200 m (separate metal conduit).  
\*2. D1 Models: Operation indicator (red) and setting indicator (green), D2 Models: Operation indicator (red)

E2E-X2D□-M1TGJ-U



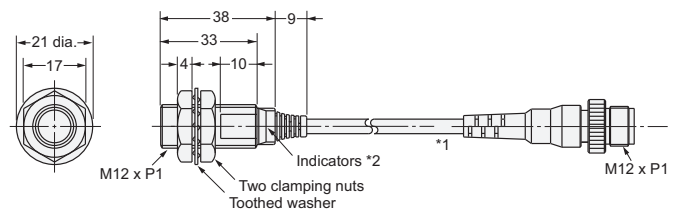
\*1. 4-dia. Polyurethane insulated round cable, Standard length: 0.3 m  
\*2. D1 Models: Operation indicator (red) and Setting indicator (green), D2 Models: Operation indicator (red)

E2E-X3D□-U



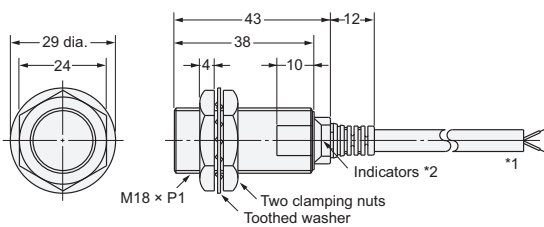
\*1. 4-dia. polyurethane-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm<sup>2</sup>, Insulator diameter: 1.3 mm), Standard length: 2 m  
The cable can be extended (separate metal conduit) up to 200 m for the control output.  
\*2. D1 Models: Operation indicator (red) and setting indicator (green), D2 Models: Operation indicator (red)

E2E-X3D□-M1TGJ-U



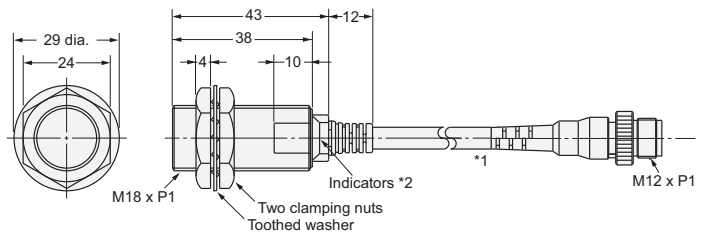
\*1. 4-dia. Polyurethane insulated round cable, Standard length: 0.3 m  
\*2. D1 Models: Operation indicator (red) and Setting indicator (green), D2 Models: Operation indicator (red)

E2E-X7D□-U



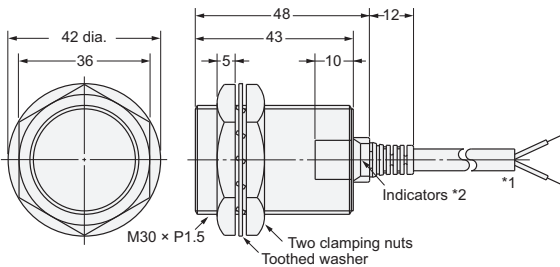
\*1. 6-dia. polyurethane-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm<sup>2</sup>, Insulator diameter: 1.9 mm), Standard length: 2 m  
The cable can be extended (separate metal conduit) up to 200 m for the control output.  
\*2. D1 Models: Operation indicator (red) and setting indicator (green), D2 Models: Operation indicator (red)

E2E-X7D□-M1TGJ-U



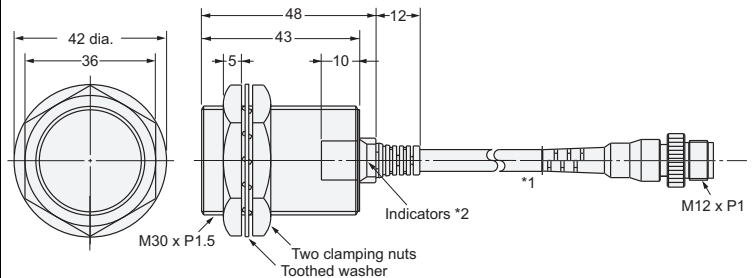
\*1. 6-dia. Polyurethane insulated round cable, Standard length: 0.3 m  
\*2. D1 Models: Operation indicator (red) and Setting indicator (green), D2 Models: Operation indicator (red)

E2E-X10D□-U



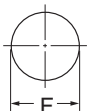
\*1. 6-dia. polyurethane-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm<sup>2</sup>, Insulator diameter: 1.9 mm), Standard length: 2 m  
The cable can be extended (separate metal conduit) up to 200 m for the control output.  
\*2. D1 Models: Operation indicator (red) and setting indicator (green), D2 Models: Operation indicator (red)

E2E-X10D□-M1TGJ-U



\*1. 6-dia. Polyurethane insulated round cable, Standard length: 0.3 m  
\*2. D1 Models: Operation indicator (red) and Setting indicator (green), D2 Models: Operation indicator (red)

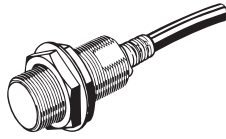
Mounting Hole Dimensions



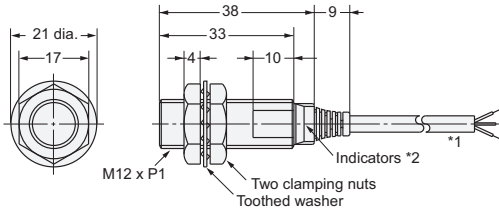
Dimensions	M8	M12	M18	M30
F (mm)	8.5 <sup>+0.5</sup> <sub>0</sub> dia.	12.5 <sup>+0.5</sup> <sub>0</sub> dia.	18.5 <sup>+0.5</sup> <sub>0</sub> dia.	30.5 <sup>+0.5</sup> <sub>0</sub> dia.

**DC 2-Wire  
Self-diagnosis Output models**

**Pre-wired Models  
(Shielded)**

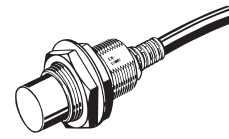


**E2E-X3D1S**

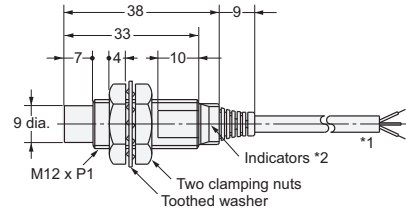


\*1. 4-dia. polyurethane-insulated round cable with 3 conductors (Conductor cross section: 0.3 mm<sup>2</sup>, Insulator diameter: 1.3 mm), Standard length: 2 m  
The cable can be extended (separate metal conduit) up to 200 m for the control output and up to 100 m for the diagnostic output.  
\*2. Operation indicator (red) and setting indicator (green)

**Pre-wired Models  
(Unshielded)**

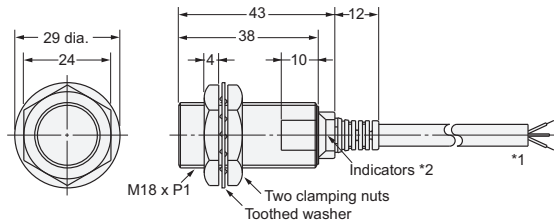


**E2E-X8MD1S**



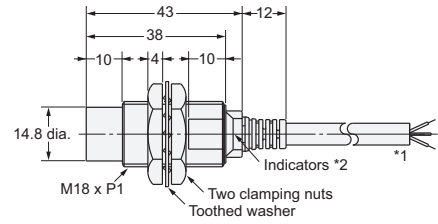
\*1. 4-dia. polyurethane-insulated round cable with 3 conductors (Conductor cross section: 0.3 mm<sup>2</sup>, Insulator diameter: 1.3 mm), Standard length: 2 m  
The cable can be extended (separate metal conduit) up to 200 m for the control output and up to 100 m for the diagnostic output.  
\*2. Operation indicator (red) and setting indicator (green)

**E2E-X7D1S**



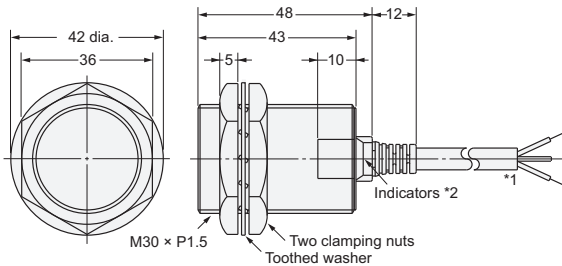
\*1. 6-dia. polyurethane-insulated round cable with 3 conductors (Conductor cross section: 0.5 mm<sup>2</sup>, Insulator diameter: 1.9 mm), Standard length: 2 m  
The cable can be extended (separate metal conduit) up to 200 m for the control output and up to 100 m for the diagnostic output.  
\*2. Operation indicator (red) and setting indicator (green)

**E2E-X14MD1S**



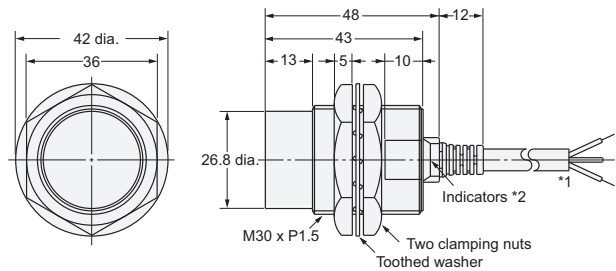
\*1. 6-dia. polyurethane-insulated round cable with 3 conductors (Conductor cross section: 0.5 mm<sup>2</sup>, Insulator diameter: 1.9 mm), Standard length: 2 m  
The cable can be extended (separate metal conduit) up to 200 m for the control output and up to 100 m for the diagnostic output.  
\*2. Operation indicator (red) and setting indicator (green)

**E2E-X10D1S**



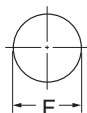
\*1. 6-dia. polyurethane-insulated round cable with 3 conductors (Conductor cross section: 0.5 mm<sup>2</sup>, Insulator diameter: 1.9 mm), Standard length: 2 m  
The cable can be extended (separate metal conduit) up to 200 m for the control output and up to 100 m for the diagnostic output.  
\*2. Operation indicator (red) and setting indicator (green)

**E2E-X20MD1S**



\*1. 6-dia. polyurethane-insulated round cable with 3 conductors (Conductor cross section: 0.5 mm<sup>2</sup>, Insulator diameter: 1.9 mm), Standard length: 2 m  
The cable can be extended (separate metal conduit) up to 200 m for the control output and up to 100 m for the diagnostic output.  
\*2. Operation indicator (red) and setting indicator (green)

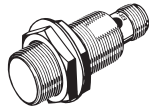
**Mounting Hole Dimensions**



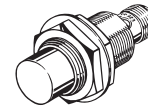
Dimension	M12	M18	M30
F (mm)	12.5 <sup>+0.5</sup> dia.	18.5 <sup>+0.5</sup> dia.	30.5 <sup>+0.5</sup> dia.

**Sensors**  
**DC 2-Wire**  
**Self-diagnosis Output models**

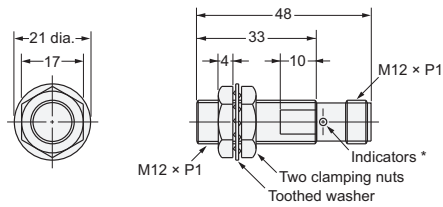
**M12 Connector Models (Shielded)**



**M12 Connector Models (Unshielded)**

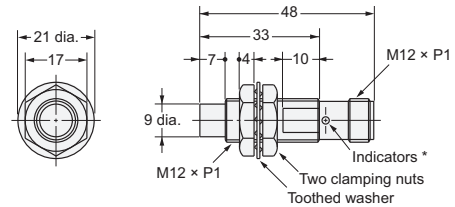


**E2E-X3D1S-M1**



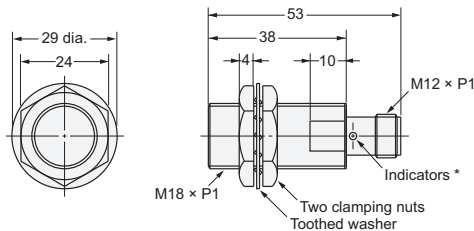
\* Operation indicator (red), Setting indicator (green)

**E2E-X8MD1S-M1**



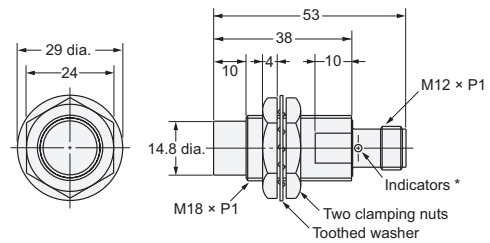
\* Operation indicator (red), Setting indicator (green)

**E2E-X7D1S-M1**



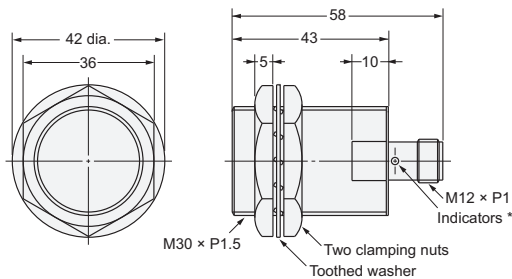
\* Operation indicator (red), Setting indicator (green)

**E2E-X14MD1S-M1**



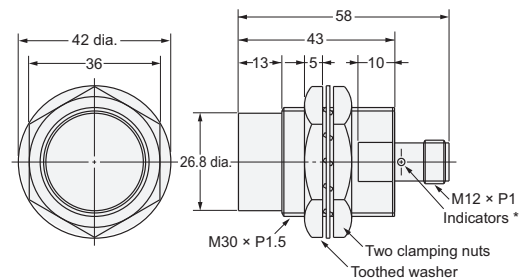
\* Operation indicator (red), Setting indicator (green)

**E2E-X10D1S-M1**



\* Operation indicator (red), Setting indicator (green)

**E2E-X20MD1S-M1**



\* Operation indicator (red), Setting indicator (green)

**Mounting Hole Dimensions**

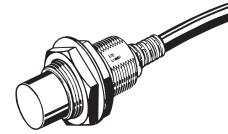


Dimension	M12	M18	M30
F (mm)	12.5 <sup>+0.5</sup> <sub>0</sub> dia.	18.5 <sup>+0.5</sup> <sub>0</sub> dia.	30.5 <sup>+0.5</sup> <sub>0</sub> dia.

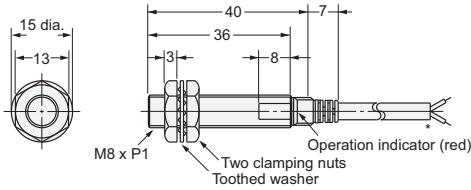
AC 2-Wire

Pre-wired Models  
(Shielded)

Pre-wired Models  
(Unshielded)

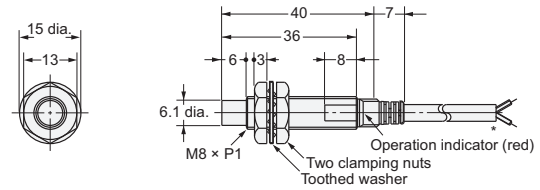


E2E-X1R5Y□



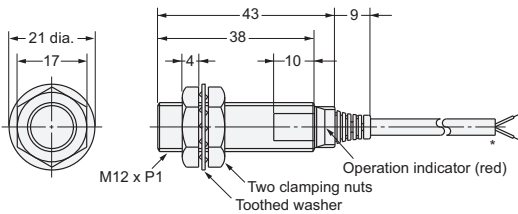
\* 4-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm<sup>2</sup>, Insulator, diameter: 1.3 mm), Standard length: 2 m  
The cable can be extended up to 200 m (separate metal conduit).

E2E-X2MY□



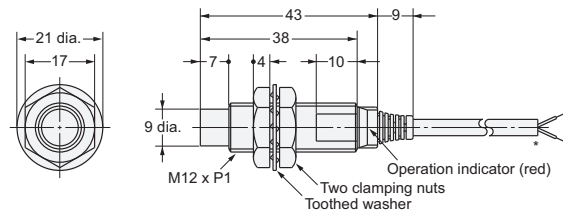
\* 4-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm<sup>2</sup>, Insulator, diameter: 1.3 mm), Standard length: 2 m  
The cable can be extended up to 200 m (separate metal conduit).

E2E-X2Y□



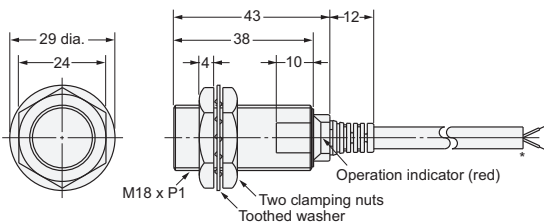
\* 4-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm<sup>2</sup>, Insulator, diameter: 1.3 mm), Standard length: 2 m  
The cable can be extended up to 200 m (separate metal conduit).

E2E-X5MY□



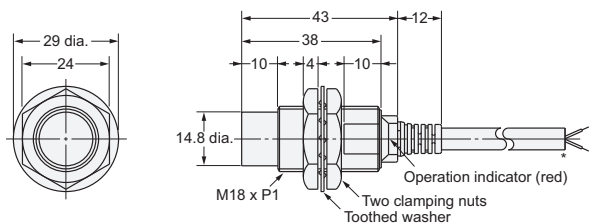
\* 4-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm<sup>2</sup>, Insulator, diameter: 1.3 mm), Standard length: 2 m  
The cable can be extended up to 200 m (separate metal conduit).

E2E-X5Y□



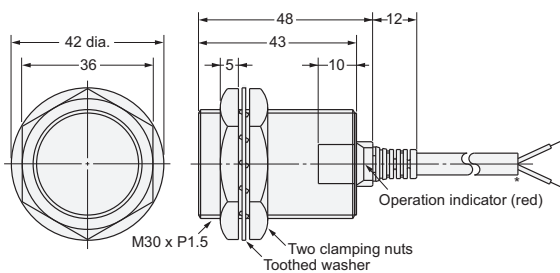
\* 6-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm<sup>2</sup>, Insulator, diameter: 1.9 mm), Standard length: 2 m  
The cable can be extended up to 200 m (separate metal conduit).

E2E-X10MY□



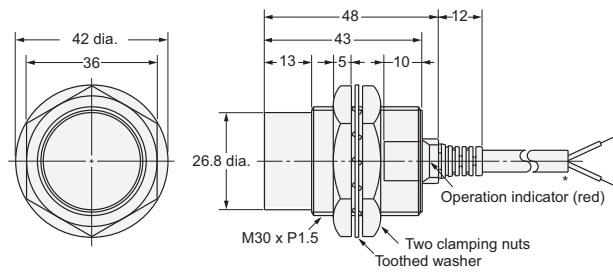
\* 6-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm<sup>2</sup>, Insulator, diameter: 1.9 mm), Standard length: 2 m  
The cable can be extended up to 200 m (separate metal conduit).

E2E-X10Y□



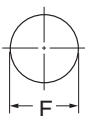
\* 6-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm<sup>2</sup>, Insulator, diameter: 1.9 mm), Standard length: 2 m  
The cable can be extended up to 200 m (separate metal conduit).

E2E-X18MY□



\* 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  
The cable can be extended up to 200 m (separate metal conduit).

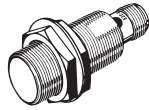
Mounting Hole Dimensions



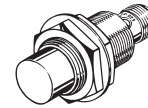
Dimensions	M8	M12	M18	M30
F (mm)	8.5 <sup>+0.5</sup> <sub>0</sub> dia.	12.5 <sup>+0.5</sup> <sub>0</sub> dia.	18.5 <sup>+0.5</sup> <sub>0</sub> dia.	30.5 <sup>+0.5</sup> <sub>0</sub> dia.

**Sensors**  
**AC 2-Wire**

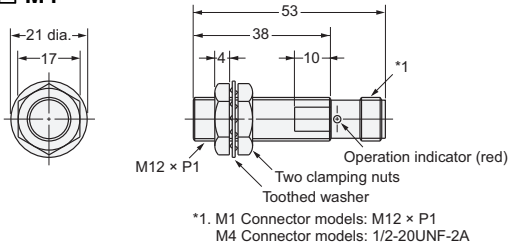
**M12 Connector Models**  
**(Shielded)**



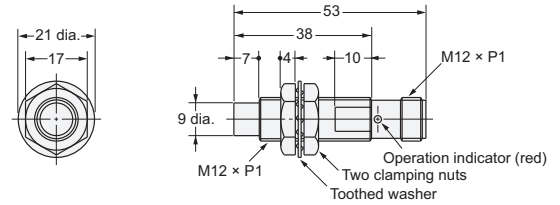
**M12 Connector Models**  
**(Unshielded)**



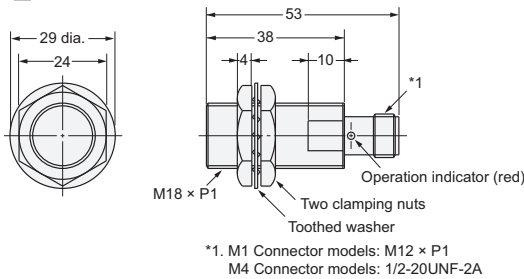
**E2E-X2Y□-M1**  
**E2E-X2Y□-M4**



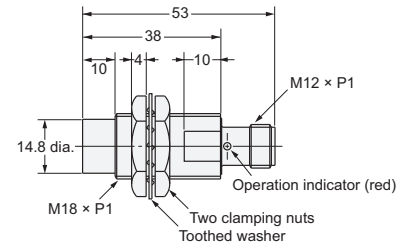
**E2E-X5MY□-M1**



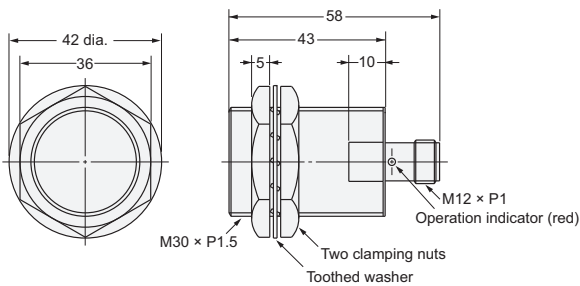
**E2E-X5Y□-M1**  
**E2E-X5Y□-M4**



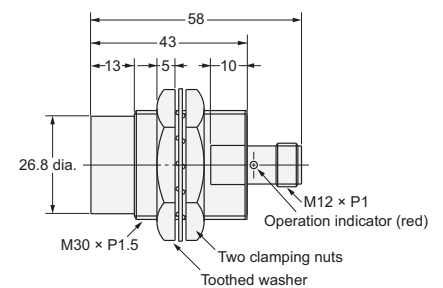
**E2E-X10MY□-M1**



**E2E-X10Y□-M1**



**E2E-X18MY□-M1**



**Mounting Hole Dimensions**



Dimension	M12	M18	M30
F (mm)	12.5 <sup>+0.5</sup> dia.	18.5 <sup>+0.5</sup> dia.	30.5 <sup>+0.5</sup> dia.

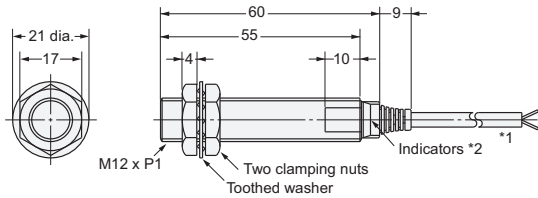
**Connector Pin Arrangement**

M1 Connector model	M4 Connector model

AC/DC 2-Wire

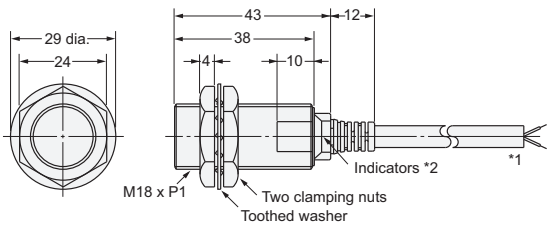
Pre-wired Models  
(Shielded)

E2E-X3T1



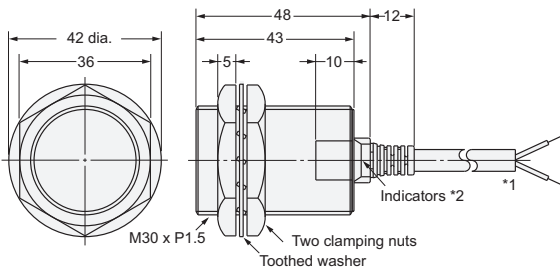
\*1. 4-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm<sup>2</sup>, Insulator diameter: 1.3 mm), Standard length: 2 m  
The cable can be extended up to 200 m (separate metal conduit).  
\*2. Operation indicator (red), Setting indicator (green)

E2E-X7T1



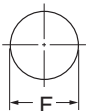
\*1. 6-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm<sup>2</sup>, Insulator diameter: 1.9 mm), Standard length: 2 m  
The cable can be extended (separate metal conduit) up to 200 m for the control output and up to 100 m for the diagnostic output.  
\*2. Operation indicator (red), Setting indicator (green)

E2E-X10T1



\*1. 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  
The cable can be extended (separate metal conduit) up to 200 m for the control output and up to 100 m for the diagnostic output.  
\*2. Operation indicator (red), Setting indicator (green)

Mounting Hole Dimensions



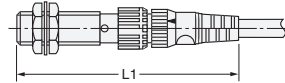
Dimensions	M12	M18	M30
F (mm)	12.5 <sup>+0.5</sup> dia.	18.5 <sup>+0.5</sup> dia.	30.5 <sup>+0.5</sup> dia.

Dimensions for Proximity Sensors with  
Sensor I/O Connectors

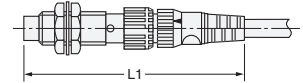
Shielded Models

Unshielded Models

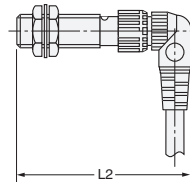
Straight Connectors



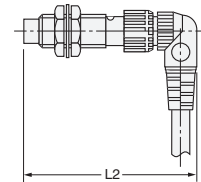
Straight Connectors



L-shape Connectors



L-shape Connectors



Dimensions with the XS2F Connected

(Unit: mm)

Dimension		L1	L2
Sensor diameter			
M8		Approx. 75	Approx. 62
M12*	DC	Approx. 80	Approx. 67
	AC	Approx. 85	Approx. 72
M18		Approx. 85	Approx. 72
M30		Approx. 90	Approx. 77

\* The overall length of the Sensor is different between AC and DC Models for Sensors with diameters of M12. This will change the dimension when the I/O Connector is connected.

Mounting Brackets

Protective Covers

Sputter Protective Covers

Refer to Y92□ for details.

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2024.11

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