### $\blacksquare$ (E2E-X\(\text{D}\(\text{C}\)-U/E2E-X\(\text{D}\(\text{S}\)/E2E-X\(\text{T}\(\text{D}\))

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

CSM\_E2E\_DS\_E\_13\_2

(Standards do not apply to all models.)

#### **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 oilresistant PVC and sensing surface made of material that resists cutting oil.
- Useful to help prevent disconnection. Cable protector provided as a standard feature.



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



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

#### **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	Remarks		
1	Appearance	Х	Cylindrical (threaded)	
2	Sensing distance	Number	Sensing distance (Unit: mm)	Example:
2	Serising distance	R	Indication of decimal point	1R5: 1.5 mm
3	Shielding	Blank	Shielded Model	
3	Sillelding	М	Unshielded Model	
	Device comply and	D	DC 2-wire polarity/no polarity	Whether D models have
4	Power supply and output specifications	Т	AC/DC 2-wire	polarity is defined
	output opcomoduorie	Υ	AC 2-wire	by number 10.
5	Form of output switching element	1	Normally open (NO)	
3	Torm of output switching element	2	Normally closed (NC)	
6	Oscillation frequency type	Blank	Standard frequency	Used to prevent mutual
U	Oscillation frequency type	5	Different frequency	interference.
7	Self-diagnosis	Blank	No	
'	Gen-diagnosis	S	Yes	
8	Connection method	Blank	Pre-wired	
O	Connection method	M1	M12-size metal connector	
		Blank	Connector Model AC 2-wire, DC 2-wire with self-diagnosis output, DC 2-wire with old pin arrangement	)*
9	Connector specifications	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	
10	DC 2-wire polarity	T	No polarity	
		Blank	Standard PVC cable (oil resistant)	
11	Cable specifications	R	Flexible PVC cable (oil resistant)	
		U	Polyurethane cable (oil resistant and reinforced)	
12	Cable length	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		nsing dis	tance	Connection method	Cable specifications	Polarity	Operation mode	Pin arrangement	Model
				Pre-wired Models	PUR		NO		E2E-X2D1-U 2M
M8	0			(2 m)	PUR	Yes	NC		E2E-X2D2-U 2M
IVIO	2 mm		M12 Pre-wired Smartclick Connector	PUR	162	NO	1: +V, 4: 0 V	E2E-X2D1-M1TGJ-U 0.3M	
				Models (0.3 m)			NC	1: +V, 2: 0 V	E2E-X2D2-M1TGJ-U 0.3M
				Pre-wired Models	PUR		NO		E2E-X3D1-U 2M
M12	2 mn			(2 m)	FUR	Yes	NC		E2E-X3D2-U 2M
IVI I Z	3 mn			M12 Pre-wired Smartclick Connector Models (0.3 m)	PUR	165	NO	1: +V, 4: 0 V	E2E-X3D1-M1TGJ-U 0.3M
					FUR		NC	1: +V, 2: 0 V	E2E-X3D2-M1TGJ-U 0.3M
				Pre-wired Models (2 m)	PUR	Yes	NO		E2E-X7D1-U 2M
M18	7				FUR		NC		E2E-X7D2-U 2M
IVI IO	/	mm		M12 Pre-wired Smartclick Connector	PUR		NO	1: +V, 4: 0 V	E2E-X7D1-M1TGJ-U 0.3M
				Models (0.3 m)	FOR		NC	1: +V, 2: 0 V	E2E-X7D2-M1TGJ-U 0.3M
	130			Pre-wired Models	PUR		NO		E2E-X10D1-U 2M
M30		10		(2 m)	FUR	Yes	NC		E2E-X10D2-U 2M
IVIOU		10 mm		M12 Pre-wired Smartclick Connector	PUR	res	NO	1: +V, 4: 0 V	E2E-X10D1-M1TGJ-U 0.3M
				Models (0.3 m)	FUR	4	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 dista	nnce Conne		Cable specifications	Polarity	Operation mode	Pin arrangement	Model
		Pre-wire (2 m)	d Models	PVC (oil-resistant)				E2E-X3D1S 2M *1
M12	3 mm	M12 Cor Models	nector			NO	2: +V and diagnostic output 3: 0 V 4: +V and control output	E2E-X3D1S-M1
		Pre-wire (2 m)	d Models	PVC (oil-resistant)				E2E-X7D1S 2M *1
M18	7 mm	M12 Cor Models	nector		Yes		2: +V and diagnostic output 3: 0 V 4: +V and control output	E2E-X7D1S-M1
		Pre-wire (2 m)	d Models	PVC (oil-resistant)				E2E-X10D1S 2M *1
M30	10 mm	M12 Cor Models	nector				2: +V and diagnostic output 3: 0 V 4: +V and control output	E2E-X10D1S-M1

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

## Unshielded Models



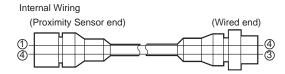
Appearance	Sensing distance		Connection method	Cable specifications	Polarity	Operation mode	Pin arrangement	Model	
				Pre-wired Models (2 m)	PVC (oil-resistant)				E2E-X8MD1S 2M *1
M12	8	mm		M12 Connector Models				2: +V and diagnostic output 3: 0 V 4: +V and control output	E2E-X8MD1S-M1
				Pre-wired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

<sup>\*1.</sup> Models with different frequencies are also available. The model number is E2E-X \(\sum MD15S\) (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 $\square$ 55-G11/ XW3B-P□55-G11 Connector Junction Box is already being used.

Cable length	Model
500 mm	XS2W-D421-BY1



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

### Shielded Models

Appearance	Sensing distance	Connection method	Cable specifications	Operation mode	Pin arrangement	Model
M8	4.5	Dro wired Medala (2 m)	DVC (ail registent)	NO		E2E-X1R5Y1 2M *2
IVIO	1.5 mm	Pre-wired Models (2 m)	PVC (oil-resistant)	NC		E2E-X1R5Y2 2M *2
		Dro wired Medala (2 m)	DVC (ail registent)	NO		E2E-X2Y1 2M *1
M10		Pre-wired Models (2 m)	PVC (oil-resistant)	NC		E2E-X2Y2 2M
M12	2 mm	M12 Connector Models		NO	(3, 4): (AC, AC)	E2E-X2Y1-M1
		W12 Connector Wodels		NC	(1, 2): (AC, AC)	E2E-X2Y2-M1
		Dro wired Medala (2 m)	DVC (ail registent)	NO		E2E-X5Y1 2M *1
M18		Pre-wired Models (2 m)	PVC (oil-resistant)	NC		E2E-X5Y2 2M
IVI IO	5 mm	M12 Connector Models		NO	(3, 4): (AC, AC)	E2E-X5Y1-M1
		W12 Connector Wodels		NC	(1, 2): (AC, AC)	E2E-X5Y2-M1
		Dro wired Medala (2 m)	DVC (ail registent)	NO		E2E-X10Y1 2M *1
Mao	40	Pre-wired Models (2 m)	PVC (oil-resistant)	NC		E2E-X10Y2 2M
M30	10 mm	M12 Connector Modele		NO	(3, 4): (AC, AC)	E2E-X10Y1-M1
		M12 Connector Models		NC	(1, 2): (AC, AC)	E2E-X10Y2-M1

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

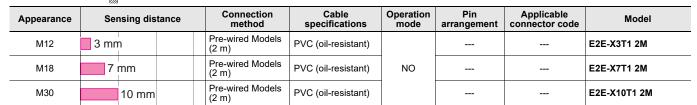
### Unshielded Models

Appearance	Appearance Sensing distance		Connection method	Cable specifications	Operation mode	Pin arrangement	Model			
M8				Pre-wired Models (2 m)	PVC (oil-resistant)	NO		E2E-X2MY1 2M *2		
IVIO	2 mm	2 mm		Fre-wired Models (2 III)	PVC (Oil-resistant)	NC		E2E-X2MY2 2M *2		
				Dra wired Madala (2 m)	PVC (oil-resistant)	NO		E2E-X5MY1 2M *1		
M12	E mn	<b>~</b>		Pre-wired Models (2 m)	PVC (oil-resistant)	NC		E2E-X5MY2 2M		
IVI 12	5 mm	3 111111	11		M12 Connector Models		NO	(3, 4): (AC, AC)	E2E-X5MY1 2M	
				W12 Connector Wodels		NC	(1, 2): (AC, AC)	E2E-X5MY2-M1		
						Pre-wired Models (2 m)	PVC (oil-resistant)	NO		E2E-X10MY1 2M *1
M18		10		Fre-wired Models (2 III)	PVC (OII-resistant)	NC		E2E-X10MY2 2M		
IVI I O		10 mm		M12 Connector Models	Y	NO	(3, 4): (AC, AC)	E2E-X10MY1-M1		
				W12 Connector Woders		NC	(1, 2): (AC, AC)	E2E-X10MY2-M1		
				Dro wined Madala (2 m)	DVC (ail registent)	NO		E2E-X18MY1 2M *1		
Mao		1	9 mm	, , ,	PVC (oil-resistant)	NC		E2E-X18MY2 2M		
M30			8 mm	M12 Connector Models		NO	(3, 4): (AC, AC)	E2E-X18MY1-M1		
				W12 Connector Wodels		NC	(1, 2): (AC, AC)	E2E-X18MY2-M1		

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

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

#### Shielded Models



Note: There are no unshielded models.

<sup>\*2.</sup> Discontinued at the end of March 2022.

<sup>\*2.</sup> Discontinued at the end of March 2022.

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

#### **Round Water-resistant Connectors XS2 Series**

Appearance	Cable Specification	Туре	Cable diameter (mm)	Cable Connection Direction	Cable length (m)	Sensor I/O Connector model number	Applicable Proximity Sensor model number
				Straight	2 m	XS2F-D421-D80-F	
M12		Sockets on One		Straight	5 m	XS2F-D421-G80-F	
Screw Connector	Fire-retardant,	Cable End	C dia	Dight angle	2 m	XS2F-D422-D80-F	
Straight type	PVC Robot Cable		6 dia.	Right-angle	5 m	XS2F-D422-G80-F	E2E-X□D□S-M1  E2E-X□Y1-M1
Straight type		Socket and Plug		Straight (Socket)/ Straight (Plug)	2 m	XS2W-D421-D81-F	
1		on Cable Ends			5 m	XS2W-D421-G81-F	
				Straight	2 m	XS2F-A421-DB0-F	
Right-angle type	Fire-retardant,	Sockets on One	0 -1:-		5 m	XS2F-A421-GB0-F	
3 3 71	PVC Robot Cable	Cable End	6 dia.	Divide an als	2 m	XS2F-A422-DB0-F	
B. C.				Right-angle	5 m	XS2F-A422-GB0-F	
	Fire-retardant,	Sockets on One			2 m	XS2F-A421-D90-F	505 V (C) 111
	PVC Robot Cable	Cable End	6 dia.	Straight	5 m	XS2F-A421-G90-F	E2E-X□Y2-M1

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

### **Ratings and Specifications**

#### DC 2-Wire (E2E-X D)

	Size	M8	M	12	M	18	N	130				
	Shielded	Shielded	Shielded	Unshielded	Shielded	Unshielded	Shielded	Unshielded				
Item	Model	E2E-X2D□	E2E-X3D□	E2E-X8MD□	E2E-X7D□	E2E-X14MD□	E2E-X10D□	E2E-X20MD□				
Sensing dis	stance	2 mm ±10%	3 mm ±10%	8 mm ±10%	7 mm ±10%	14 mm ±10%	10 mm ±10%	20 mm ±10%				
Set distanc	ce *1	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				
Differential	l travel	15% max. of sensing distance 10% max. of sensing distance										
Detectable	object	Ferrous metal (The sensing distance decreases with non-ferrous metal. Refer to Engineering Data on pages 10 and 11.										
Standard s	ensing object	Iron, 8 × 8 × 1 mm	Iron, 12 × 12 × 1 mm	Iron, $30 \times 30 \times 1 \text{ mm}$	Iron, 18 × 18 × 1 mm	Iron, 30 × 30 × 1	mm	Iron, 54 × 54 × 1 mm				
Response f	frequency *2	1.5 kHz	1 kHz	0.8 kHz	0.5 kHz	0.4 kHz		0.1 kHz				
	ply voltage voltage range)	12 to 24 VDC, ripple (μ	o-p): 10% max. (1	0 to 30 VDC)								
Leakage cu	urrent	0.8 mA max.										
	Load current	3 to 100 mA, Diagnost	ic output: 50 mA f	for -D1(5)S Models	3							
Control out	Residual voltage	3 V max. (Load curren	t: 100 mA, Cable	length: 2 m)								
Indicators		D1 Models: Operation D2 Models: Operation		d setting indicator	(green)	4						
Operation robject appr	mode (with sensing roaching)	D1 Models: NO D2 Models: NC Refer to the timing charts under <i>I/O Circuit Diagrams</i> on page 13 for details.										
Diagnostic	output delay	0.3 to 1 s										
Protection	circuits	Surge suppressor, Load short-circuit protection (for control and diagnostic output)										
Ambient te	mperature range	Operating: –25 to 70°C, Storage: –40 to 85°C (with no icing or condensation)										
Ambient hu	umidity range	Operating/storage: 35% to 95% (with no condensation)										
Temperatu	re influence	±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										
Voltage inf	luence	±1% max. of sensing distance at rated voltage in the rated voltage ±15% range										
Insulation i	resistance	50 M $\Omega$ min. (at 500 VDC) between current-carrying parts and case										
Dielectric s	strength	1000 VAC, 50/60 Hz for 1 minute between current carry parts and case										
Vibration re	esistance	Destruction: 10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions										
Shock resis	stance	Destruction: 500 m/s <sup>2</sup>   10 times each in X, Y, and Z directions and Z directions										
Degree of p	protection	Pre-wired Models: IEC 60529 IP67, in-house standards: oil-resistant Connector Models: IEC 60529 IP67										
Connection	n method	Pre-wired Models (Sta	ndard cable lengtl	h: 2 m), Connector	Models, or Pre-w	ired Connector Mo	odels (Standard ca	able length: 0.3 m)				
	Pre-wired Models	Approx. 60 g	Approx. 70 g		Approx. 130 g		Approx. 175 g					
Weight (packed state)	Pre-wired Connector Models		Approx. 40 g (Shielded Model	s only)	-							
J,	Connector Models	Approx. 15 g	Approx. 25 g		Approx. 40 g		Approx. 90 g					
	Case	Stainless steel (SUS303)	Nickel-plated bra	ass			ı					
Materials	Sensing surface	PBT										
	Clamping nuts	Nickel-plated brass										
	Toothed washer	Zinc-plated iron										
Accessorie	ne -	Instruction manual										

<sup>\*1.</sup> 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\(\time\)Y\(\time\)

	Size	M8		N	M12		M18		M30				
	Shielded	Shielded	Unshielded	Shielded	Unshielded	Shielded	Unshielded	Shielded	Unshielded				
Item	Model	E2E-X1R5Y	E2E-X2MY□	E2E-X2Y	E2E-X5MY	E2E-X5Y	E2E-X10MY	E2E-X10Y	E2E-X18MY				
Sensing di	istance	1.5 mm ±10%	2 mm ±10%	1	5 mm ±10%	II.	10 mm ±10%	I	18 mm ±10%				
Set distand	ce	0 to 1.2 mm	0 to 1.6 mm		0 to 4 mm	0 to 4 mm 0 to 8 mm			0 to 14 mm				
Differentia	l travel	10% max. of sensing distance											
Detectable	object	Ferrous metal (The sensing distance decreases with non-ferrous metal. Refer to Engineering Data on page 11.)											
Standard s object	sensing	Iron, 8 × 8 × 1 mm	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$										
Response	frequency	25 Hz											
Power supply voltage (operating voltage range)"		24 to 240 VAC (20 to 264 VAC), 50/60 Hz											
Leakage cı	urrent	1.7 mA max.											
Control	Load current *2	5 to 100 mA		5 to 200 mA		5 to 300 mA							
	Residual voltage	Refer to Engine	er to <i>Engineering Data</i> on page 12.										
Indicators		Operation indica	ator (red)										
Operation (with sensi approachin	ing object	Y1 Models: NO Y2 Models: NC	Refer to the til	ming charts unde	r I/O Circuit Diagra	ams on page 14 f	or details.						
Protection	circuits	Surge suppressor											
Ambient te range *1*2	emperature	Operating/Stora (with no icing or	age: –25 to 70°C condensation)	Operating/Stora	age: -40 to 85°C (	with no icing or co	ondensation)						
Ambient humidity ra	ange	Operating/stora	ge: 35% to 95% (v	with no condensa	ation)								
Temperatu influence	ire	±10% 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 ±10% max. of sensing distance at 23°C in the temperature range of –25 to 70°C											
Voltage inf	fluence	±1% max. of sensing distance at rated voltage in the rated voltage ±15% range											
Insulation	resistance	50 M $\Omega$ min. (at 500 VDC) between current-carrying parts and case											
Dielectric s	strength	4,000 VAC (M8 Models: 2,000 VAC), 50/60 Hz for 1 min between current-carrying parts and case											
Vibration r	esistance	Destruction: 10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions											
Shock resi	istance	Destruction: 500 10 times each in Z directions		Destruction: 1,0	000 m/s² 10 times	each in X, Y, and	Z directions						
Degree of	protection		els: IEC 60529 IP6 els: IEC 60529 IP		dards: oil-resistant								
Connection	n method	Pre-wired Mode	els (Standard cable	e length: 2 m) an	d Connector Mode	ls							
Weight (packed	Pre- wired Models Model	Approx. 60 g	<b>10</b>	Approx. 70 g		Approx. 130 g		Approx. 175 g					
state)	Connector Models	Approx. 15 g		Approx. 25 g		Approx. 40 g		Approx. 90 g					
	Case	Stainless steel	(SUS303)	Nickel-plated b	rass	ılı .		L					
	Sensing surface	РВТ		•									
Materials	Clamp- ing nuts	Nickel-plated br	rass										
	Toothed washer	Zinc-plated iron											
Accessorie	es	Instruction man	ual										

<sup>\*1.</sup> 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\(\sigma\)T1)

	Size	M12	M18	M30					
	Shielded		Shielded						
Item	Model	E2E-X3T1	E2E-X7T1	E2E-X10T1					
Sensing dista	nce	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 tra	avel	10% max. of sensing distance							
Detectable ob	ject	Ferrous metal (The sensing distance	decreases with non-ferrous met	tal. Refer to <i>Engineering Data</i> on page 10.)					
Standard sen	sing object	Iron, 12 × 12 × 1 mm	Iron, 18 × 18 × 1 mm	Iron, $30 \times 30 \times 1$ mm					
Response	DC	1 kHz	0.5 kHz	0.4 kHz					
frequency *1	AC	25 Hz		·					
Power supply (operating vo	voltage tage range) *2	24 to 240 VDC (20 to 264 VDC) 48 to 240 VAC (40 to 264 VAC)							
Leakage curre	ent	DC: 1 mA max. AC: 2 mA max.							
Control	Load current	5 to 100 mA							
output	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 ind	icator (green)						
Operation mode (with sensing object approaching)		NO (Refer to the timing charts under	I/O Circuit Diagrams on page 14 for	r details.)					
Protection cir	cuits	Load short-circuit protection (20 to 40 VDC only), Surge suppressor							
Ambient temp	erature range	Operating: -25 to 70°C, Storage: -40 to 85°C (with no icing or condensation)							
Ambient hum	idity 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 influe	nce	±1% max. of sensing distance at rated voltage in the rated voltage ±15% range							
Insulation res	istance	50 MΩ min. (at 500 VDC) between current-carrying parts and case							
Dielectric stre	ength	4,000 VAC, 50/60 Hz for 1 minute be	etween current-carrying parts and	d case					
Vibration resi	stance	Destruction: 10 to 55 Hz, 1.5-mm do	uble amplitude for 2 hours each	in X, Y, and Z directions					
Shock resista	nce	Destruction: 1,000 m/s <sup>2</sup> 10 times each	ch in X, Y, and Z directions						
Degree of pro	tection	IEC 60529 IP67, in-house standards	: oil-resistant						
Connection m	ethod	Pre-wired Models (Standard cable le	ngth: 2 m)						
Weight (packe	ed state)	Approx. 80 g	Approx. 140 g	Approx. 190 g					
	Case	Nickel-plated brass							
	Sensing surface	PBT							
Materials	Clamping nuts	Nickel-plated brass							
	Toothed washer	Zinc-plated iron							
Accessories	4	Instruction manual							

<sup>\*1.</sup> 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:

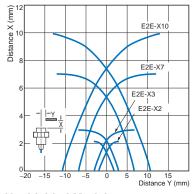
Use a sine wave for the power supply. Using a rectangular AC power supply may result in faulty reset.

### **Engineering Data (Reference Value)**

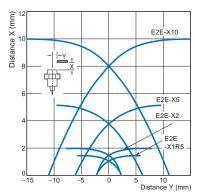
#### **Sensing Area**

#### **Shielded Models**

#### E2E-X D /-X T1

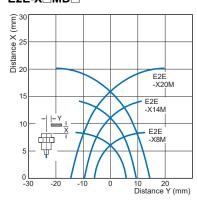


#### E2E-X□Y□

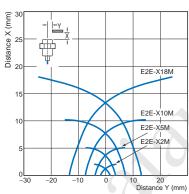


#### **Unshielded Models**

#### E2E-X MD

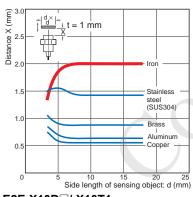




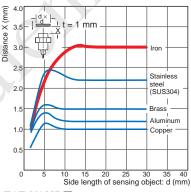


#### **Influence of Sensing Object Size and Material**

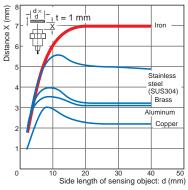
#### E2E-X2D



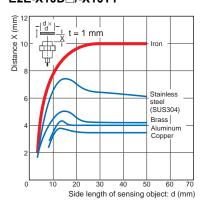
#### E2E-X3D\(\pi/\-X3T1\)



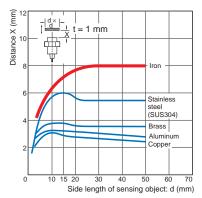
E2E-X7D\(\to\)/-X7T1



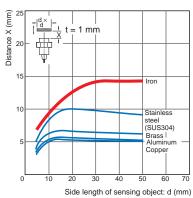
#### E2E-X10D .../-X10T1

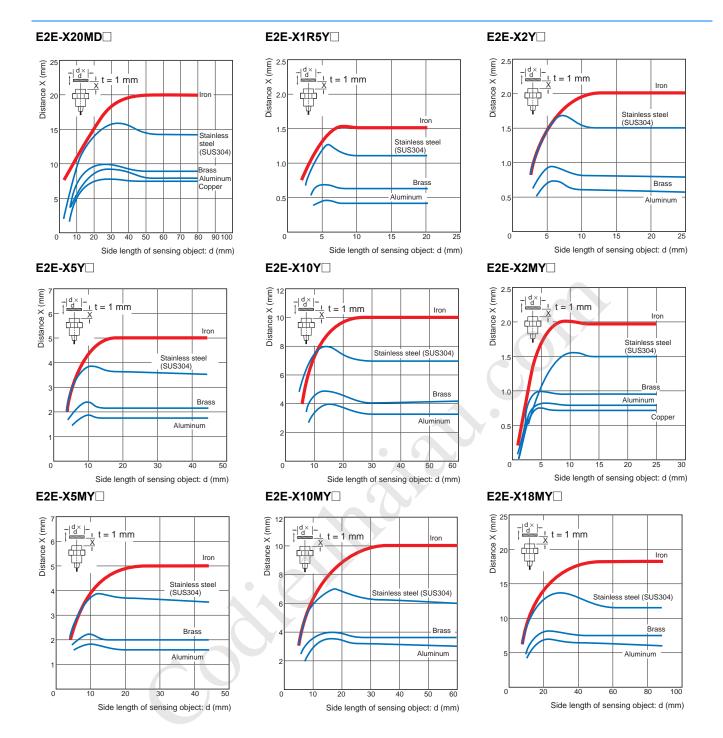


E2E-X8MD



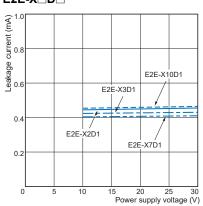
E2E-X14MD

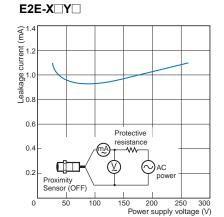


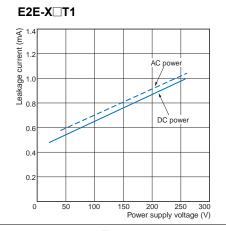


#### **Leakage Current**



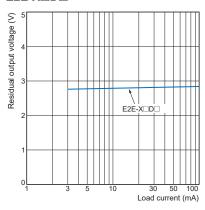




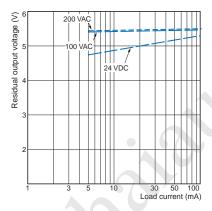


#### **Residual Output Voltage**

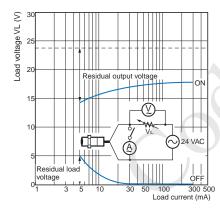
#### $E2E-X\Box D\Box$



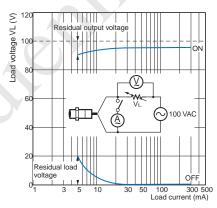




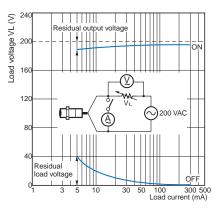
#### E2E-X□Y□ at 24 VAC



E2E-X□Y□ at 100 VAC



#### E2E-X $\square$ Y $\square$ at 200 VAC



### I/O Circuit Diagrams

#### DC 2-Wire

Operation mode	Model	Timing Chart	Output circuit
Without self-diagnostic output: NO	E2E-X□D1(-M1TGJ)-U	Non-sensing area  Unstable sensing Stable sensing area  Sensing object  (%) 100 80 0  Rated sensing distance  ON OFF (green)  ON OPeration indicator (red)  ON Control output	Proximity Sensor Main circuit 4  Note: The load can be connected to either the +V or 0 V side.
Without self-diagnostic output: NC	E2E-X□D2(-M1TGJ)-U	Non-sensing area  Sensing area  Proximity Sensor  Sensing object  (%) 100 0  Rated sensing distance  ON Operation indicator (red) ON OFF Control output	Proximity Sensor main circuit 2  Note: The load can be connected to either the +V or 0 V side.
With self-diagnostic output: NO	E2E-X□D1S E2E-X□D1S-M1	Non-sensing area    Sensing object   Stable sensing area	Prox Load +V Corange (2) (diagnostic output)  Note: Connect both the loads to the +V side of the control output and diagnostic output.

#### **AC 2-Wire**

Operation mode	Model	Timing Chart	Output circuit
NO	. E2E-X□Y□	Sensing Present object Not present Operation ON indicator (red) OFF Control output Reset	Proximity Sensor main circuit
NC	E2E-X□Y□-M1	Sensing Present object Not present Operation ON indicator (red) OFF Control Operate output Reset	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.

#### AC/DC 2-Wire

Operation mode	Model	Timing Chart	Output circuit
NO	E2E-X□T1	Non-sensing sensing area  Sensing object  (%) 100 80 0  Rated sensing distance  ON Setting indicator OFF (green)  ON Operation OFF indicator (red)  ON OFF	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.

#### **Connections for Sensor I/O Connectors**

	Proxi	mity Sensor		Sensor I/O	
Туре	Polarity	Operation mode	Model	Connector Model	Connections
DC 2-Wire (M12	Yes	NO	E2E-X□D1 -M1TGJ-U	XS5F-D421-□80-P - XS5F-D422-□80-P	SSSF*  Brown (+)  White (not connected)  Blue (not connected)  Black (-)
Smartclick Connector)	Yes	NC	E2E-X□D2 -M1TGJ-U	XS5W-D421-□81-P	E2E XS5F * O Brown (+) O White (-) O Blue (not connected) O Black (not connected)
	Yes	NO	E2E-X□D1S-M1	XS2F-D421-□80-F XS2F-D422-□80-F XS2W-D421-□81-F	E2E XS2 *  O Brown (not connected) O White (diagnostic output) (+) O Blue (0 V) O Black (control output) (+)
DC 2-Wire (M12 Screw Connector)		NO	E2E-X□Y1-M1	XS2F-A421-□B0-F XS2F-A422-□B0-F	E2E XS2F  O O O O Brown O Blue
		NC	E2E-X□Y2-M1	XS2F-A421-□90-F	E2E XS2F * Brown O White O Blue (not connected) O Black (not connected)

<sup>\*</sup> 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
- 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)

#### Relationship between Sizes and Models

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

Mo	odel	Item	M8	M12	M18	M30
		I		0		
		d	8	12	18	30
	Shielded	D		0		
DC 2-wire		m	4.5	8	20	40
E2E-X□D□		n	12	18	27	45
AC/DC 2-wire		I		15	22	30
E2E-X□T1		d		40	70	90
	Unshielded	D		15	22	30
		m		20	40	70
		n		40	70	90
			0			
		d	8	12	18	30
	Shielded	D		0	1	
		m	4.5	8	20	40
AC 2-wire		n	12	18	27	45
E2E-X□Y□		I	6	15	22	30
		d	24	40	55	90
	Unshielded	D	6	15	22	30
		m	8	20	40	70
		n	24	36	54	90

#### **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)

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

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

#### **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.







**Unshielded Models** 



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		Par	Part B	
		Dimension Torque		Torque
M8	Shielded	9	9 N·m	12 N·m
IVIO	Unshielded	3	9 11.111	12 N·III
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.

 $Von \le Vcc - VR$ 

The OFF current of the PLC and the leakage current of the Proximity Sensor must satisfy the following.

Ioff ≥ Ileak

(If the OFF current is not listed in the PLC's input specifications, take it to be  $1.3\ \text{mA.}$ )

3. The ON current of the PLC and the control output of the Proximity Sensor must satisfy the following.

lout (min.)  $\leq$  lon  $\leq$  lout (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.

$$Ion = (Vcc - V_R - \underline{Vpc}) / Rin$$

#### **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.

- 1. Von  $(14.4 \text{ V}) \le \text{Vcc} (20.4 \text{ V}) \text{Vr} (3 \text{ V}) = 17.4 \text{ V}$ : OK
- 2. Ioff (1.3 mA)  $\geq$  Ileak (0.8 mA): OK
- 3. Ion = [Vcc (20.4 V) Vr (3 V)  $\frac{\text{Vpc (4 V)}}{\text{In (3 k}\Omega)}$  / Rin (3 k $\Omega$ ) = Approx. 4.5 mA

Therefore, lout (min.) (3 mA)  $\leq lon$  (4.5 mA): OK Connection is thus possible.

#### **Connection Example (Reference)**

PLC	Von: ON voltage (14.4 V) lon: ON current (typically 7 mA) lor: OFF current (1.3 mA) Rin: Input impedance (3 kΩ) Vpc: Internal residual voltage (4 V)
Proximity Sensor	VR: Output residual voltage (3 V) Ileak: Leakage current (0.8 mA) IouT: Control output (3 to 100 mA) Vcc: Power supply voltage (PLC: 20.4 to 26.4 V)

<sup>\*</sup> Mutual interference will not occur for close-proximity mounting if models with different frequencies are used together.

#### **Dimensions**

#### **Sensors** DC 2-Wire

#### No Self-diagnosis Output, PUR Cable models

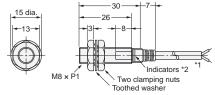
#### **Pre-wired Models** (Shielded)



#### **Pre-wired Connector Models** (Shielded)



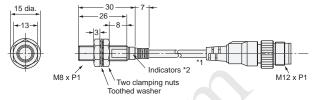
#### E2E-X2D□-U



- \*1. 4-dia. polyurethane-insulated round cable with 2 conductors (Conductor cross section:

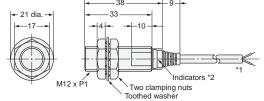
## 0.3 mm², Ínsulator diameter: 1.3 mm), Standard length: 2 m The cable can be extended up to 200 m (separate metal conduit). 2. D1 Models: Operation indicator (red) and setting indicator (green), D2 Models: Operation indicator (red)

#### E2E-X2D□-M1TGJ-U



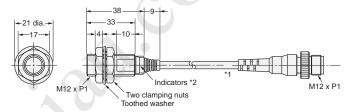
- \*1. 4-dia. Polyurethane insulated round cable, Standard length: 0.3 m
  \*2. D1 Models: Operation indicator (red) and Setting indicator (green), D2 Models: Operation indicator (red)

#### E2E-X3D□-U



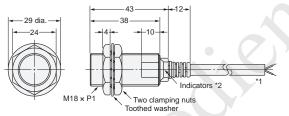
- \*1. 4-dia. polyurethane-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm², Insulator diameter: 1.3 mm), Standard length: 2 m
  The cable can be extended (separate metal conduit) up to 200 m for the control output.
  \*2. D1 Models: Operation indicator (red) and setting indicator (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)

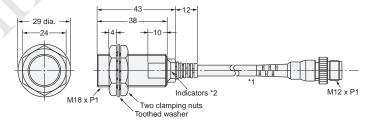
#### E2E-X7D□-U



- \*1. 6-dia. polyurethane-insulated round cable with 2 conductors (Conductor cross section:
- 0.5 mm², 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.

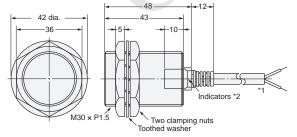
  2. D1 Models: Operation indicator (red) and setting indicator (green),
  D2 Models: Operation indicator (red)

#### 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)

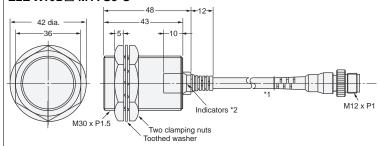
#### E2E-X10D□-U



- \*1. 6-dia. polyurethane-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm², 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)



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

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

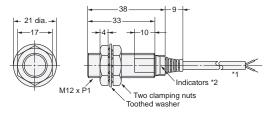
#### **Pre-wired Models** (Shielded)



#### **Pre-wired Models** (Unshielded)

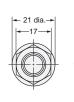


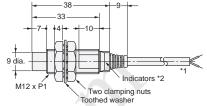
#### **E2E-X3D1S**



- \*1. 4-dia. polyurethane-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm², 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)

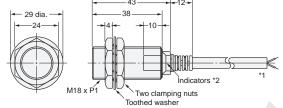
#### E2E-X8MD1S





- \*1. 4-dia. polyurethane-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm², 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)

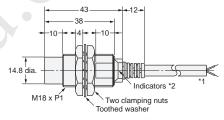
#### E2E-X7D1S



- \*1. 6-dia, polyurethane-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm², 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

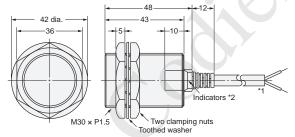




- . 6-dia. polyurethane-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm², Insulator diameter: 1.9 mm), Standard length: 2 m

  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)

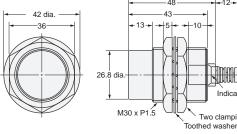
#### **E2E-X10D1S**



- \*1. 6-dia. polyurethane-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm², 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 2 conductors (Conductor cross section: 0.5 mm², 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.

Indicators \*2

Two clamping nuts

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

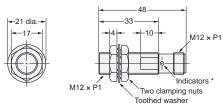
M12 Connector Models (Shielded)



M12 Connector Models (Unshielded)

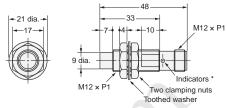


#### E2E-X3D1S-M1



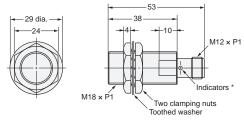
\* Operation indicator (red), Setting indicator (green)

#### E2E-X8MD1S-M1



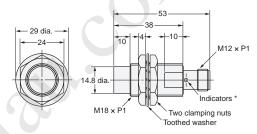
\* Operation indicator (red), Setting indicator (green)

#### E2E-X7D1S-M1



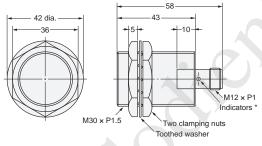
\* Operation indicator (red), Setting indicator (green)

#### E2E-X14MD1S-M1



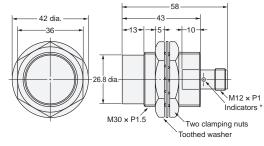
\* Operation indicator (red), Setting indicator (green)

#### E2E-X10D1S-M1



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

#### E2E-X20MD1S-M1



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



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.

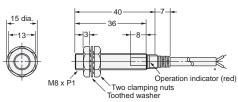
#### AC 2-Wire

### Pre-wired Models (Shielded)

### Pre-wired Models (Unshielded)



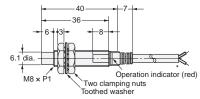
#### E2E-X1R5Y□



\* 4-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm², Insulator, diameter: 1.3 mm), Standard length: 2 m The cable can be extended up to 200 m (separate metal conduit).

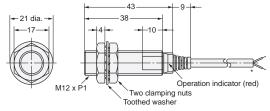
#### E2E-X2MY□





\* 4-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm², Insulator, diameter: 1.3 mm), Standard length: 2 m The cable can be extended up to 200 m (separate metal conduit).

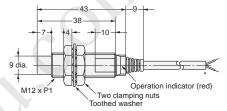
#### E2E-X2Y□



\* 4-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm², Insulator, diameter: 1.3 mm), Standard length: 2 m The cable can be extended up to 200 m (separate metal conduit).

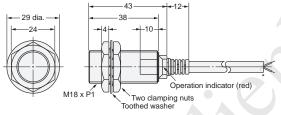
#### E2E-X5MY□





 4-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm², Insulator, diameter: 1.3 mm), Standard length: 2 m The cable can be extended up to 200 m (separate metal conduit).

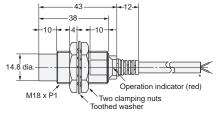
#### E2E-X5Y□



\* 6-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm², Insulator, diameter: 1.9 mm), Standard length: 2 m The cable can be extended up to 200 m (separate metal conduit).

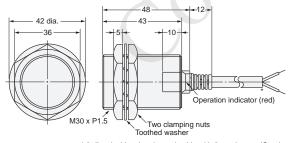
#### E2E-X10MY





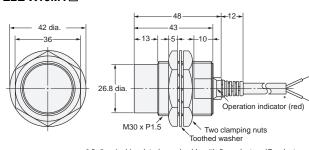
\* 6-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm², Insulator, diameter: 1.9 mm), Standard length: 2 m The cable can be extended up to 200 m (separate metal conduit).

#### E2E-X10Y□



\* 6-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm², 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 mm², Insulator, diameter: 1.9 mm), Standard length: 2 m The cable can be extended up to 200 m (separate metal conduit).



Dimensions	М8	M12	M18	M30
F (mm)	$8.5^{+0.5}_{0}$ dia.	12.5 <sup>+0.5</sup> dia.	18.5 <sup>+0.5</sup> dia.	30.5 <sup>+0.5</sup> dia.

#### Sensors AC 2-Wire

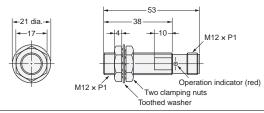
M12 Connector Models (Shielded)



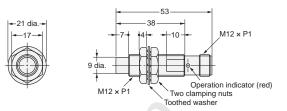
M12 Connector Models (Unshielded)



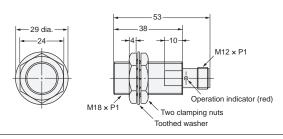
#### E2E-X2Y□-M1



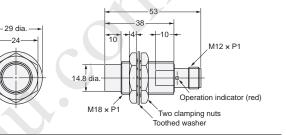
#### E2E-X5MY□-M1



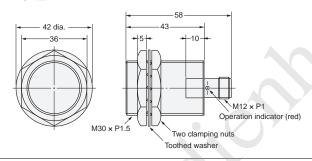
#### E2E-X5Y□-M1



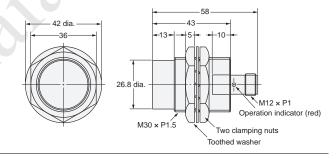
#### E2E-X10MY□-M1



#### E2E-X10Y□-M1



#### E2E-X18MY□-M1



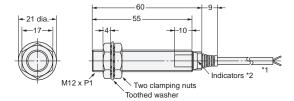


Dimension	M12	M18	M30
F (mm)	12.5 <sup>+0.5</sup> dia.	18.5 <sup>+0.5</sup> dia.	30.5 <sup>+0.5</sup> dia.

#### AC/DC 2-Wire

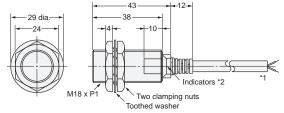
#### **Pre-wired Models** (Shielded)

#### **E2E-X3T1**



- \*1. 4-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm², 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)

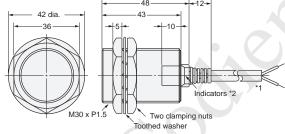
#### E2E-X7T1



- \*1. 6-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm², 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 mm², 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**

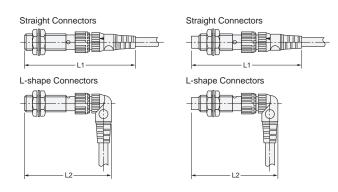


Dimensions	M12	M18	M30
F (mm)	12.5 <sup>+0.5</sup> dia.	18.5 <sup>+0.5</sup> dia.	30.5 <sup>+0.5</sup> dia.

#### **Dimensions for Proximity Sensors with Sensor I/O Connectors**

#### **Shielded Models**

#### **Unshielded Models**



#### **Dimensions with the XS2F Connected**

(Unit: mm)

Dimension Sensor diameter		L1	L2	
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	

<sup>\*</sup> 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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