

Spatter-resistant Fluororesin-coated Proximity Sensor



- Superior spatter resistance.
- Long Sensing-distance Models added for sensing distances up to 15 mm.
- Pre-wired Smartclick Connector Models are also available.



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 6.

Ordering Information

Sensors [Refer to *Dimensions* on page 7.]

Pre-wired Models

Long Sensing-distance Models

Appearance	Sensing distance	Output configuration	Operation mode	Model
Shielded 	M12 4 mm	DC 2-wire (no polarity)	NO	E2EQ-X4X1 2M *1
	M18 8 mm			E2EQ-X8X1 2M *1
	M30 15 mm			E2EQ-X15X1 2M *1

*1. Orders will be accepted until the end of March 2024.

Standard Models

Appearance	Sensing distance	Output configuration	Operation mode	Model
Shielded 	M12 3 mm	DC 2-wire	NO	E2EQ-X3D1 2M
	M18 7 mm			E2EQ-X7D1 2M
	M30 10 mm			E2EQ-X10D1 2M

Pre-wired Smartclick Connector Models (M12)

Long Sensing-distance Models

Appearance	Sensing distance	Output configuration	Operation mode	Model
Shielded 	M12 4 mm	DC 2-wire (no polarity) (3)-(4) pin arrangement	NO	E2EQ-X4X1-M1TJ 0.3M *2
	M18 8 mm			E2EQ-X8X1-M1TJ 0.3M *2
	M30 15 mm			E2EQ-X15X1-M1TJ 0.3M *2

*2. Orders will be accepted until the end of March 2024.

Standard Models

Standard Models	Sensing distance	Output configuration	Operation mode	Model
Shielded 	M12 3 mm	DC 2-wire (1)-(4) pin arrangement	NO	E2EQ-X3D1-M1TGJ 0.3M
	M18 7 mm			E2EQ-X7D1-M1TGJ 0.3M
	M30 10 mm			E2EQ-X10D1-M1TGJ 0.3M

Pre-wired Connector Models (M12)

Long Sensing-distance Models

Appearance	Sensing distance	Output configuration	Operation mode	Model
 Shielded	M12  4 mm	DC 2-wire (without polarity) (3)-(4) pin arrangement	NO	E2EQ-X4X1-M1J 0.3M *1
	M18  8 mm			E2EQ-X8X1-M1J 0.3M *1
	M30  15 mm			E2EQ-X15X1-M1J 0.3M *1

*1. Orders will be accepted until the end of March 2024.

Standard Models

Standard Models	Sensing distance	Output configuration	Operation mode	Model
 Shielded	M12  3 mm	DC 2-wire (1)-(4) pin arrangement	NO	E2EQ-X3D1-M1GJ 0.3M
	M18  7 mm			E2EQ-X7D1-M1GJ 0.3M
	M30  10 mm			E2EQ-X10D1-M1GJ 0.3M

Accessories (Order Separately)

Sensor I/O Connectors (M12, Sockets on One Cable End)

(Models with Pre-wired Connectors: A Connector is not provided with the Sensor. Be sure to order a Connector separately.) [Refer to XS2, XS5.]

Appearance	Cable length	Sensor I/O Connector model number	Applicable Proximity Sensor model number
Straight 	2 m	XS2F-D421-DC0-F	E2EQ-X□X1-M1J
	5 m	XS2F-D421-GC0-F	
L-shape 	2 m	XS2F-D422-DC0-F	
	5 m	XS2F-D422-GC0-F	
Straight 	2 m	XS2F-D421-DA0-F	E2EQ-X□D1-M1GJ
	5 m	XS2F-D421-GA0-F	
L-shape 	2 m	XS2F-D422-DA0-F	
	5 m	XS2F-D422-GA0-F	
Smartclick Connector Straight 	2 m	XS5F-D421-D80-F	E2EQ-X□X1-M1TJ E2EQ-X□D1-M1TGJ
	5 m	XS5F-D421-G80-F	

Note: Refer to Introduction to Sensor I/O Connectors/Sensor Controllers for details.

Ratings and Specifications

Long Sensing-distance Models

Item	Model	E2EQ-X4X1 E2EQ-X4X1-M1(T)J	E2EQ-X8X1 E2EQ-X8X1-M1(T)J	E2EQ-X15X1 E2EQ-X15X1-M1(T)J
Sensing distance		4 mm ±10%	8 mm ±10%	15 mm ±10%
Set distance *1		0 to 3.2 mm	0 to 6.4 mm	0 to 12 mm
Differential travel		15% max. of sensing distance		
Standard sensing object		Iron, 12 × 12 × 1 mm	Iron, 18 × 18 × 1 mm	Iron, 30 × 30 × 1 mm
Response frequency *2		1 kHz	0.5 kHz	0.25 kHz
Control output	Load current	3 to 100 mA		
	Residual voltage *3	5 V max. (Load current: 100 mA, Cable length: 2 m)		
Operation mode (with sensing object approaching)		Load ON: NO; For details, refer to the timing charts on page 5.		
Protection circuits		Load short-circuit protection, Surge suppressor		
Ambient temperature range		Operating: -25 to 70°C, Storage: -40 to 85°C, (with no icing or condensation)		
Temperature influence		±15% 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		
Shock resistance		Destruction: 1,000m/s ² 10 times each in X, Y, and Z directions		
Connection method		Pre-wired Models (Standard cable length: 2 m), Pre-wired Connector Models		
Weight (packed state)	Pre-wired Models	Approx. 65 g	Approx. 140 g	Approx. 190 g
	Pre-wired Connector Models	Approx. 20 g	Approx. 40 g	Approx. 90 g

*1. Use the Sensor within the range in which the green indicator is ON.

*2. The response frequency is an average value.

*3. The residual voltage is 5 V. Make sure that the device connected to the Sensor can withstand the residual voltage.

Standard Models

Model		E2EQ-X3D1 E2EQ-X3D1-M1(T)GJ	E2EQ-X7D1 E2EQ-X7D1-M1(T)GJ	E2EQ-X10D1 E2EQ-X10D1-M1(T)GJ
Item				
Sensing distance		3 mm $\pm 10\%$	7 mm $\pm 10\%$	10 mm $\pm 10\%$
Set distance		0 to 2.4 mm	0 to 5.6 mm	0 to 8 mm
Differential travel		10% max. of sensing distance		
Standard sensing object		Iron, 12 $\times$ 12 $\times$ 1 mm	Iron, 18 $\times$ 18 $\times$ 1 mm	Iron, 30 $\times$ 30 $\times$ 1 mm
Response frequency *		1 kHz	500 Hz	400 Hz
Control output	Load current	3 to 100 mA		
	Residual voltage	3 V max. (Load current: 100 mA, Cable length: 2 m)		
Operation mode (with sensing object approaching)		Load ON: NO; For details, refer to the timing charts on page 5.		
Protection circuits		Load short-circuit protection, Surge suppressor		
Ambient temperature range		Operating/Storage: -25 to 70°C (with no icing or condensation)		
Temperature influence		$\pm 10\%$ max. of sensing distance at 23°C in the temperature range of -25 to 70°C		
Voltage influence		$\pm 2.5\%$ max. of sensing distance at rated voltage in the rated voltage $\pm 15\%$ range		
Shock resistance		Destruction: 1,000 m/s ² 10 times each in X, Y, and Z directions		
Connection method		E2EQ-X□D1: Pre-wired Models (Standard cable length: 2 m) E2EQ-X□D1-M1GJ: Pre-wired Connector Models (Standard cable length: 300mm)		
Weight (packed state)	Pre-wired Models	Approx. 120 g	Approx. 160 g	Approx. 220 g
	Pre-wired Connector Models	Approx. 80 g	Approx. 110 g	Approx. 190 g

* 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.

Common Ratings and Performance

Model		E2EQ-X4X1 E2EQ-X4X1-M1(T)J E2EQ-X3D1 E2EQ-X3D1-M1(T)GJ	E2EQ-X8X1 E2EQ-X8X1-M1(T)J E2EQ-X7D1 E2EQ-X7D1-M1(T)GJ	E2EQ-X15X1 E2EQ-X15X1-M1(T)J E2EQ-X10D1 E2EQ-X10D1-M1(T)GJ
Item				
Detectable object		Ferrous metal (The sensing distance decreases with non-ferrous metal. Refer to <i>Engineering Data</i> on page 4.)		
Power supply voltage (operating voltage range)		12 to 24 VDC (10 to 30 VDC), ripple (p-p): 10% max.		
Leakage current		0.8 mA max.		
Indicators		Operation indicator (red), Setting indicator (green)		
Ambient humidity range		Operating/Storage: 35% to 95% (with no condensation)		
Insulation resistance		50 M Ω min. (at 500 VDC) between current-carrying parts and case		
Dielectric strength		1,000 VAC for 1 min between current-carrying parts and case		
Vibration resistance		Destruction: 10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions		
Degree of protection		IEC 60529 IP67, in-house standards: oil-resistant		
Materials	Case	Fluororesin coating (Base material: brass)		
	Sensing surface	Fluororesin		
	Clamping nuts	Fluororesin coating (Base material: brass)		
	Toothed washer	Zinc-plated iron		
Accessories		Instruction manual		