

Ordering Information

Sensors [Refer to *Dimensions* on page 10.]

DC 2-Wire, Pre-wired Models

Size	Sensing distance	Output	Operation mode	Model
 Shielded	M8 1.5 mm	DC 2-Wire (polarity)	NO	E2FM-X1R5D1 2M *
	M12 2 mm			E2FM-X2D1 2M *
	M18 5 mm			E2FM-X5D1 2M *
	M30 10 mm			E2FM-X10D1 2M *

Note: Models with NC operation are also available. Ask your OMRON representative for details.

* Fluororesin-coated models are also available. The model numbers are E2FM-QX□D1. The cable material, however, is vinyl chloride and requires separate protection.

DC 2-wire Pre-wired Smartclick Connector Models (M12)

Size	Sensing distance	Output	Operation mode	Model
 Shielded	M8 1.5 mm	Polarity Pin allocations: 1-4	NO	E2FM-X1R5D1-M1TGJ 0.3M
	M12 2 mm	Polarity Pin allocations: 1-4		E2FM-X2D1-M1TGJ 0.3M
		No polarity Pin allocations: 3-4		E2FM-X2D1-M1TGJ-T 0.3M
	M18 5 mm	Polarity Pin allocations: 1-4		E2FM-X5D1-M1TGJ 0.3M
		No polarity Pin allocations: 3-4		E2FM-X5D1-M1TGJ-T 0.3M
	M30 10 mm	Polarity Pin allocations: 1-4		E2FM-X10D1-M1TGJ 0.3M
		No polarity Pin allocations: 3-4		E2FM-X10D1-M1TGJ-T 0.3M

DC 3-Wire, Pre-wired Models

Size	Sensing distance	Model	
		Output configuration: NPN NO	Output configuration: PNP NO
 Shielded	M8 1.5 mm	E2FM-X1R5C1 2M	E2FM-X1R5B1 2M
	M12 2 mm	E2FM-X2C1 2M	E2FM-X2B1 2M
	M18 5 mm	E2FM-X5C1 2M	E2FM-X5B1 2M
	M30 10 mm	E2FM-X10C1 2M	E2FM-X10B1 2M

Note: Models with NC operation are also available. Ask your OMRON representative for details.

DC 3-Wire, M12 Connector Models

Size	Sensing distance	Model	
		Output configuration: NPN NO	Output configuration: PNP NO
 Shielded	M8 1.5 mm	E2FM-X1R5C1-M1	E2FM-X1R5B1-M1 *
	M12 2 mm	E2FM-X2C1-M1	E2FM-X2B1-M1 *
	M18 5 mm	E2FM-X5C1-M1	E2FM-X5B1-M1 *
	M30 10 mm	E2FM-X10C1-M1	E2FM-X10B1-M1 *

* Fluororesin-coated models are also available. The model numbers are E2FM-QX□B1-M1. The cable material, however, is vinyl chloride and requires separate protection.

Accessories (Order Separately)

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

(Models for Connectors and 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 	2m	XS2F-D421-DC0-F	E2FM-X□C1-M1 E2FM-X□B1-M1
	5m	XS2F-D421-GC0-F	
L-shape 	2m	XS2F-D422-DC0-F	
	5m	XS2F-D422-GC0-F	
Smartclick Connector Relay Models (M12) 	2m	XS5F-D421-D80-F	E2FM-X□D1-M1TGJ E2FM-X□D1-M1TGJ-T
	5m	XS5F-D421-G80-F	

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

Ratings and Specifications

DC 2-Wire (E2FM-X□D□)

Size		M8	M12	M18	M30	M12	M18	M30
Shielded		Shielded						
Item	Model	E2FM-X1R5D1-□	E2FM-X2D1-□	E2FM-X5D1-□	E2FM-X10D1-□	E2FM-X2D1-M1T1GJ-T	E2FM-X5D1-M1T1GJ-T	E2FM-X10D1-M1T1GJ-T
Sensing distance		1.5 mm±10%	2 mm±10%	5 mm±10%	10 mm±10%	2 mm±10%	5 mm±10%	10 mm±10%
Set distance		0 to 1.05 mm	0 to 1.4 mm	0 to 3.5 mm	0 to 7 mm	0 to 1.4 mm	0 to 3.5 mm	0 to 7 mm
Differential travel		15% max. of sensing distance						
Sensing object		Ferrous metal (The sensing distance decreases with non-ferrous metal. Refer to <i>Engineering Data</i> on page 7.)						
Standard sensing object		Iron, 8 × 8 × 1 mm	Iron, 12 × 12 × 1 mm	Iron, 30 × 30 × 1 mm	Iron, 54 × 54 × 1 mm	Iron, 12 × 12 × 1 mm	Iron, 30 × 30 × 1 mm	Iron, 54 × 54 × 1 mm
Response frequency *1		200 Hz	100 Hz	100 Hz	50 Hz	100 Hz	100 Hz	50 Hz
Power supply voltage (operating voltage range)		12 to 24 VDC (10 to 30 VDC), ripple (p-p): 10% max.						
Leakage current		0.8 mA max.						
Output configuration		With polarity				No polarity		
Control output	Switching capacity	3 to 100 mA						
	Residual voltage	3 V max. (Load current: 100 mA max., Cable length: 2 m)				5 V max. (Load current: 100 mA max., Cable length: 2 m)		
Indicators		Operation indicator (red LED), Setting/Operation indicator (green LED)						
Operation mode (with sensing object approaching)		NO *2						
Protection circuits		Surge suppressor, Load short-circuit protection						
Ambient temperature range		Operating/Storage: –25 to 70°C (with no icing or condensation)						
Ambient humidity range		Operating/Storage: 35% to 95% (with no condensation)						
Temperature influence		±20% 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		1,000 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: 500 m/s ² 10 times each in X, Y, and Z directions	Destruction: 1,000 m/s ² 10 times each in X, Y, and Z directions					
Degree of protection		IEC 60529 IP67						
Connection method		Unmarked: Pre-wired Models (Standard cable length: 2 m) Models ending with -M1GJ-□: Pre-wired Connector Models (Standard cable length: 300 mm)						