

# E2K-F




## Saves Installation Space with a Thickness of Only 10 mm

- Flat, Built-in Amplifier Models offer excellent space efficiency and provide a 10-mm sensing distance.
- Detects both metallic and nonmetallic objects (water, oil, glass, plastic, etc.).
- Direct mounting onto a metallic surface is possible.



 Be sure to read *Safety Precautions* on page 3.

## Ordering Information

Appearance	Sensing distance	Output configuration	Model/Operation mode	
			NO	NC
Flat Unshielded 	 10 mm	DC 3-wire NPN	E2K-F10MC1	E2K-F10MC2
	 4 to 10 mm		E2K-F10MC1-A	E2K-F10MC2-A

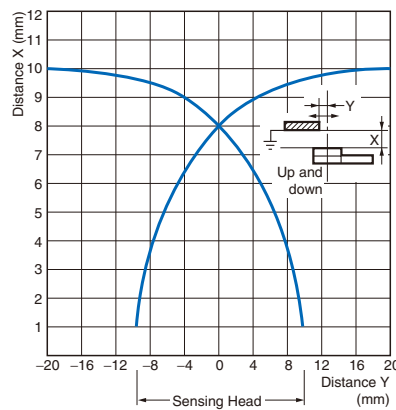
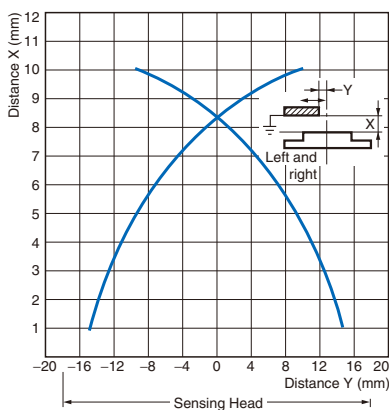
## Ratings and Specifications

Item	Model	E2K-F10MC□-A	E2K-F10MC□
Sensing distance		4 to 10 mm (adjustable with 12-turn adjuster)	10 mm ±10%
Set distance		0 to 7.5 mm *	
Differential travel		15% max. of sensing distance	
Detectable object		Conductors and dielectrics	
Standard sensing object		Grounded metal plate: 50 × 50 × 1 mm	
Response frequency		100 Hz	
Power supply voltage (operating voltage range)		12 to 24 VDC (10 to 30 VDC), ripple (p-p): 10% max.	
Current consumption		10 mA max. at 24 VDC	
Control output	Load current	NPN open collector, 100 mA max. (at 30 VDC)	
	Residual voltage	1.5 V max. (Load current: 100 mA, Cable length: 2 m)	
Indicators		Detection indicator (red)	
Operation mode (with sensing object approaching)		NO (Refer to the timing charts under <i>I/O Circuit Diagrams</i> on page 3 for details.)	
Protection circuits		Reverse polarity protection, Surge suppressor	
Ambient temperature range		Operating/Storage: -10 to 55°C (with no icing or condensation)	
Ambient humidity range		Operating/Storage: 35% to 95%	Operating/Storage: 35% to 95%
Temperature influence		±15% max. of sensing distance at 23°C in the temperature range of -10 to 55°C	
Voltage influence		±2.5% max. of sensing distance at rated voltage at rated voltage ±10%	
Insulation resistance		50 MΩ min. (at 500 VDC) between current-carrying parts and case	
Dielectric strength		500 VAC, 50/60 Hz for 1 min between current-carrying parts and case	
Vibration resistance		Destruction: 10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions	
Shock resistance		Destruction: 500 m/s <sup>2</sup> 3 times each in X, Y, and Z directions	
Degree of protection		IP64 (IEC)	IP66 (IEC)
Connection method		Pre-wired Models (Standard cable length: 2 m)	
Weight (packed state)		Approx. 35 g	
Materials	Case	Heat-resistant ABS	
	Sensing surface		
Accessories		Instruction manual	

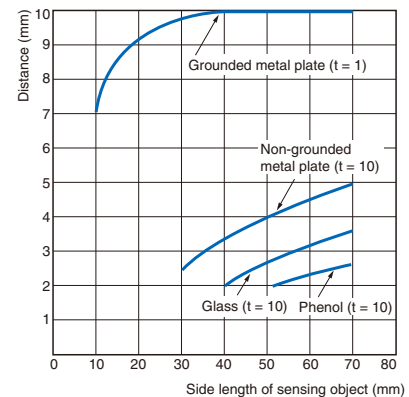
\* The value for the E2K-F10MC□-A is when it is adjusted to 10 mm.

## Engineering Data (Typical)

### Sensing Area (Grounded Metal Plate)

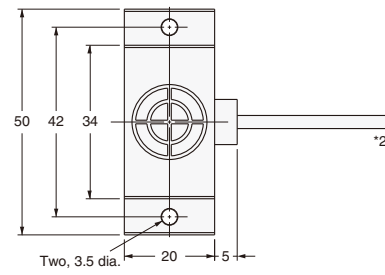
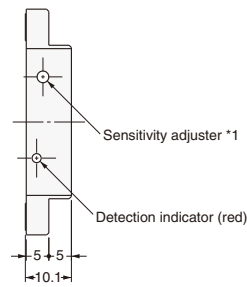
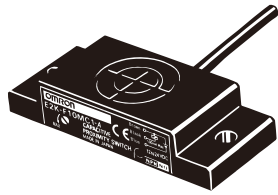


### Influence of Sensing Object Size and Material

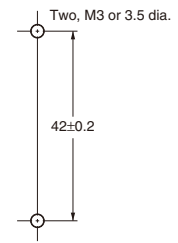


## Dimensions

### E2K-F



### Mounting Hole Dimensions



\*1. Only the E2K-F10MC□-A has a sensitivity adjuster.

\*2. 2.9-dia. vinyl-insulated round cable  
(Conductor cross section: 0.14 mm<sup>2</sup>,  
Insulator diameter: 0.9 mm), Standard length: 2 m.