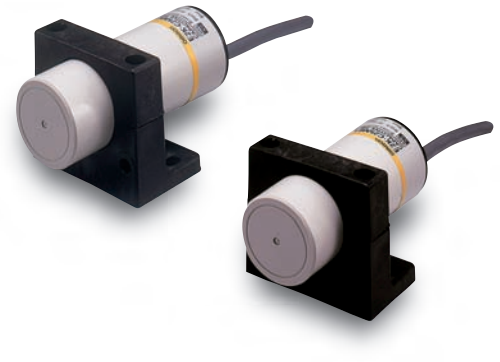
Long-distance type

E2K-C

CSM_E2K-C_DS_E_6_5

Long-distance Capacitive Sensor with Adjustable Sensitivity

- CE Marking for DC 3-wire models and AC/DC 2-wire models.
- Noise-resistant models are also available for environments with strong noise.



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 7.

Ordering Information

Sensors [Refer to *Dimensions* on page 8.]

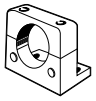
Appearance		Sensing distance (Adjustable range)	Model		
			Output configuration	Operation mode	
				NO	NC
Standard Models	Unshielded 34 dia.	25 mm (3 to 25 mm)	DC 3-wire, NPN	**E2K-C25ME1 2M**	**E2K-C25ME2 2M**
			DC 3-wire, PNP	**E2K-C25MF1 2M**	**E2K-C25MF2 2M**
			AC 2-wire	**E2K-C25MY1 2M** *1	**E2K-C25MY2 2M**
Noise-resistant Models		20 mm (3 to 20 mm)	DC 3-wire, NPN	**E2K-C20MC1 2M**	**E2K-C20MC2 2M**
			AC/DC 2-wire	**E2K-C20MT1 2M**	**E2K-C20MT2 2M**

*1. UL certification models are also available. The model number is E2K-C25MY1-US.

Accessories (Order Separately)

Mounting Brackets

[Refer to *Dimensions* on page 8.]

Appearance	Model	Quantity	Remarks
	**Y92E-A34**	1	Provided with the product.

Sensitivity adjustment driver

Model	Quantity	Remarks
Y92E-KC25	1	Provided with the product.

Ratings and Specifications

Standard Models

Item / Model		E2K-C25M□1	E2K-C25M□2	E2K-C25MY1	E2K-C25MY2
Sensing distance *		25 mm			
Sensing distance adjustable range		3 to 25 mm			
Detectable object		Conductors and dielectrics			
Standard sensing object		Grounded metal plate: 50 × 50 × 1 mm			
Differential travel		15% max. of sensing sensing distance (when adjusted to 25 mm ±10% with standard sensing object)			
Response frequency		70 Hz		10 Hz	
Power supply voltage (operating voltage range)		12 to 24 VDC (10 to 30 VDC), ripple (p-p): 10% max.		100 to 220 VAC (90 to 250 VAC), 50/60 Hz	
Current consumption		E and F Models: 10 mA max. at 12 VDC, 16 mA max. at 24 VDC			
Leakage current		Y Models: 1 mA max. at 100 VAC (50/60 Hz) with output turned OFF, 2 mA max. at 200 VAC (50/60 Hz) with output turned OFF			
Control output	Load current	200 mA max.		5 to 200 mA (resistive load)	
	Residual voltage	2 V max. (Load current: 200 mA, Cable length: 2 m)		Refer to *Engineering Data* on page 4.	
Indicators		Detection indicator (red)		Operation indicator (red)	
Operation mode (with sensing object approaching)		E1, F1, and Y1 Models: NO E2, F2, and Y2 Models: NC Refer to the timing charts under *I/O Circuit Diagrams* on page 5 for details.			
Protection circuits		Reverse polarity protection, Surge suppressor		Surge suppressor	
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		±15% max. of sensing distance at 23°C in the temperature range of –10 to 55°C ±25% max. of sensing distance at 23°C in the temperature range of –25 to 70°C			
Voltage influence		±2% max. of sensing distance at the rated voltage in rated voltage ±15% range		±2% max. of sensing distance at the rated voltage in rated voltage +20%, –10% range at 100 VAC, ±20% range at 200 VAC	
Insulation resistance		50 MΩ min. (at 500 VDC) between current-carrying parts and case			
Dielectric strength		1,000 VAC, 50/60 Hz for 1 min between current-carrying parts and case		1,500 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^2 10 times each in X, Y, and Z directions			
Degree of protection		IEC 60529 IP66			
Connection method		Pre-wired Models (Standard cable length: 2 m)			
Weight (packed state)		Approx. 200 g			
Materials	Case	Heat-resistant ABS			
	Sensing surface				
Accessories		Mounting Bracket, Sensitivity adjustment driver, M4 screws, Instruction manual			

* The set distances are sensing distances applicable to standard sensing objects. Refer to *Engineering Data* on page 4 for other materials.

Noise-resistant Models

Item \ Model		E2K-C20MC1	E2K-C20MC2	E2K-C20MT1	E2K-C20MT2
Sensing distance *1		20 mm			
Sensing distance adjustable range		3 to 20 mm			
Detectable object		Conductors and dielectrics			
Standard sensing object		Grounded metal plate: 50 × 50 × 1 mm			
Differential travel		15% max. of sensing distance (when adjusted to 20 mm ±10% with standard sensing object)			
Response frequency *2		40 Hz		AC power: 25 Hz, DC power: 40 Hz	
Power supply voltage (operating voltage range)		12 to 24 VDC (10 to 30 VDC), ripple (p-p): 10% max.		24 to 240 VAC (20 to 250 VAC), 50/60 Hz; 24 to 240 VDC (20 to 250 VDC)	
Current consumption		13 mA max. at 24 VDC		---	
Leakage current		---		1.5 mA max. at 24 VDC, 1.7 mA max. at 110 VAC (50/60 Hz), 2.5 mA max. at 250 VAC (50/60 Hz) Refer to *Engineering Data* on page 4.	
Control output	Load current	250 mA max.		5 to 200 mA (resistive load)	
	Residual voltage	2.5 V max. (Load current: 250 mA, Cable length: 2 m)		AC power: 10 V max., DC power: 8 V max. Refer to *Engineering Data* on page 4.	
Indicators		Operation indicator (yellow)			
Operation mode (with sensing object approaching)		C1/T1 Models: NO C2/T2 Models: NC Refer to the timing charts under *I/O Circuit Diagrams* on page 5 for details.			
Protection circuits		Reverse polarity protection, 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		±15% max. of sensing distance at 23°C in the temperature range of –10 to 55°C ±25% max. of sensing distance at 23°C in the temperature range of –25 to 70°C			
Voltage influence		±2% max. of sensing distance at the rated voltage in 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 min between current-carrying parts and case		1,500 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^2 10 times each in X, Y, and Z directions			
Degree of protection		IEC 60529 IP65			
Connection method *3		Pre-wired Models (Standard cable length: 2 m)			
Weight (packed state)		Approx. 240 g			
Materials	Case	PBT			
	Sensing surface				
Accessories		Mounting Bracket, M4 screws, Instruction manual			

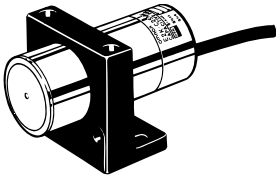
*1. The set distances are sensing distances applicable to standard sensing objects. Refer to *Engineering Data* on page 4 for other materials.
*2. The response frequency is an average value.
*3. Only 2-m cables are available. Use a cable with a conductor cross section of 0.5 mm^2 or greater to extend the cable.

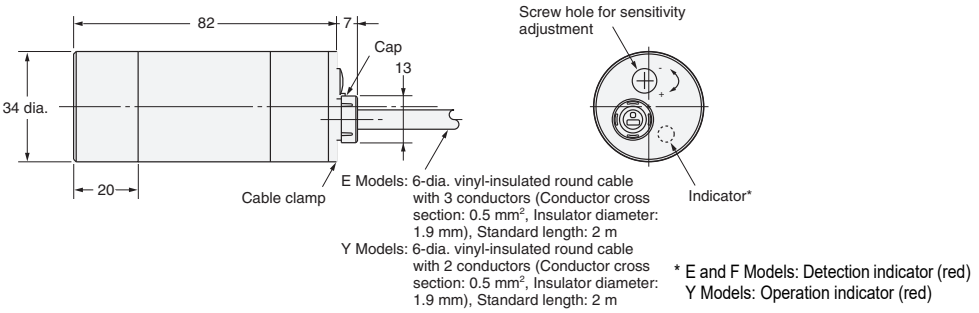
Dimensions

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

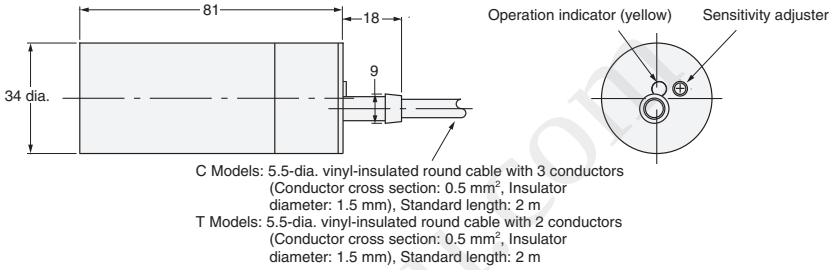
Sensors

E2K-C25M□□



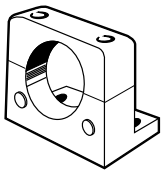


E2K-C20M□□

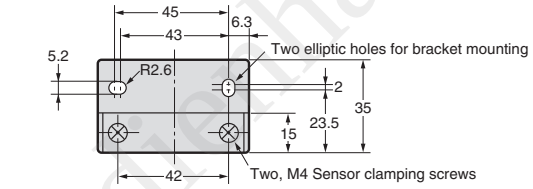


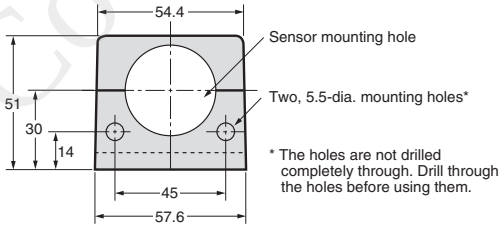
Accessories (Order Separately)

Mounting Bracket (Accessory)
Y92E-A34

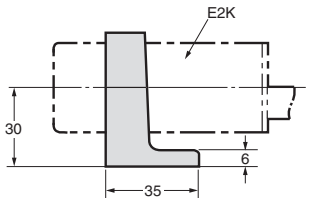


Material: Polyacetal





With Mounting Bracket Attached



Note: Provided with the product.