

Applicable to a Wide Range of Pipe Diameters.

Capacitive Sensors unaffected by liquid color.

- Mount to bypass pipes.
- Fit a wide range of pipe diameters: 8 to 11 mm or 12 to 26 mm
- Built-in Amplifiers to save space.





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



CE

Ordering Information

Sensing method	Applicable pipe diameters	Appearance	Output configuration/Operation mode		Model
Capacitive	8 to 11 mm		NPN open-collector output	NO	E2K-L13MC1 2M
	12 to 26 mm				E2K-L26MC1 2M

Ratings and Specifications

Item	Model		E2K-L13MC1	E2K-L26MC1
Applicable pipes	Materials		Non-metal	
	Size	Diameter	8 to 11 mm	12 to 26 mm
		Thickness	1 mm max.	1.5 mm max.
Detectable object			Liquid *	
Repeat accuracy			±0.2 mm max.	
Differential travel (Reference value, varies with pipe size and liquid.)			0.6 to 5 mm	0.3 to 3 mm
Power supply voltage (operating voltage range)			12 to 24 VDC (10.8 to 30 VDC), ripple (p-p): 10% max.	
Current consumption			12 mA max.	
Control output	Load current		100 mA max.	
	Residual voltage		1 V max. (Load current: 100 mA, Cable length: 2 m)	
Sensing liquid position			Indented mark position (For details, refer to <i>Technical Guide (Operational version)</i> .)	
Indicators			Detection indicator (orange)	
Ambient temperature range			Operating: 0 to 55°C (with no icing or condensation), Storage: –10 to 65°C (with no icing or condensation)	
Ambient humidity range			Operating/Storage: 25% to 85% (with no condensation)	
Temperature influence			±4 mm of detection level at 23°C in the temperature range of 0 to 55°C (with pure water or 20% saline solution) (±6 mm for E2K-L13MC1 with pure water and a pipe diameter of 8 mm)	
Voltage influence			±0.5 mm of detection level at the rated voltage in rated voltage ±10% range	
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/s² 3 times each in X, Y, and Z directions	
Degree of protection			IP66 (IEC)	
Connection method			Pre-wired Models (Standard cable length: 2 m)	
Weight (packed state)			Approx. 70 g	
Materials	Case, Cover		Heat-resistant ABS	
	Cable clamp		NBR	
Accessories			Two bands, Four slip-proof tubes, Instruction manual	

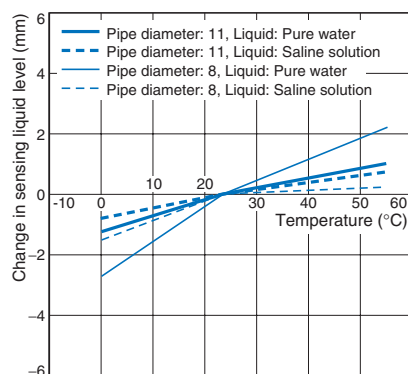
* Stable detection will not be possible in the following cases. Confirm detection capability with the Sensor installed before actual application.

1. If the specific inductive capacity or the specific electric conductivity of the liquid is too low, the liquid position may not be detected since this sensor is a capacitive sensor.
2. If the quantity of liquid is too low or the change in quantity is too low in comparison to the change in liquid level because the pipe is too thin or the walls of the pipe are too thick
3. If there is a viscous film on the inner pipe wall, large quantities of foam or air bubbles, or excessive buildup of dirt on the inner pipe wall

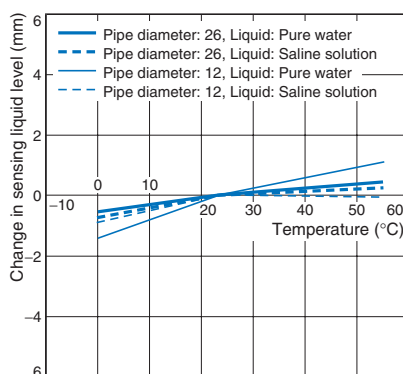
Engineering Data (Typical)

Influence of Temperature and Sensing Liquid Level

E2K-L13MC1



E2K-L26MC1



I/O Circuit Diagrams

Operation mode	Model	Timing chart	Output circuit
NO	E2K-L13MC1 E2K-L26MC1	<p>Liquid level</p> <p>Present </p> <p>None </p> <p>Load (between brown and black leads)</p> <p>Operate </p> <p>Reset </p> <p>Detection indicator (orange)</p> <p>ON </p> <p>OFF </p>	

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.



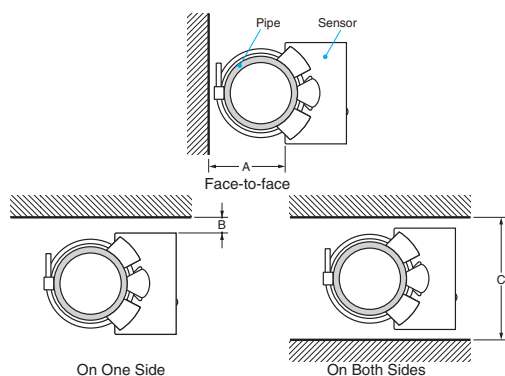
Precautions for Correct Use

Do not use this product under ambient conditions that exceed the ratings.

● Design

Influence of Surrounding Objects

When mounting the Sensor, maintain at least the distances in the following diagrams from surrounding metal objects or other conductors to prevent the Sensor from being affected by objects other than the sensing object.

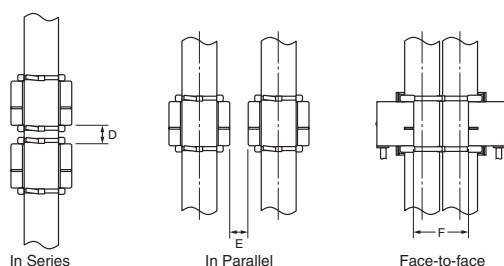


Influence of Surrounding Objects (Unit: mm)

Model	Distance	A	B	C
E2K-L13MC1			5	45
E2K-L26MC1		25	0	40

Mutual Interference

When installing Sensors in series, in parallel, or face-to-face, ensure that the minimum distances given in the following table are maintained.



Mutual Interference

(Unit: mm)

Model	Distance	D *	E	F
E2K-L13MC1		10	10	25
E2K-L26MC1				30

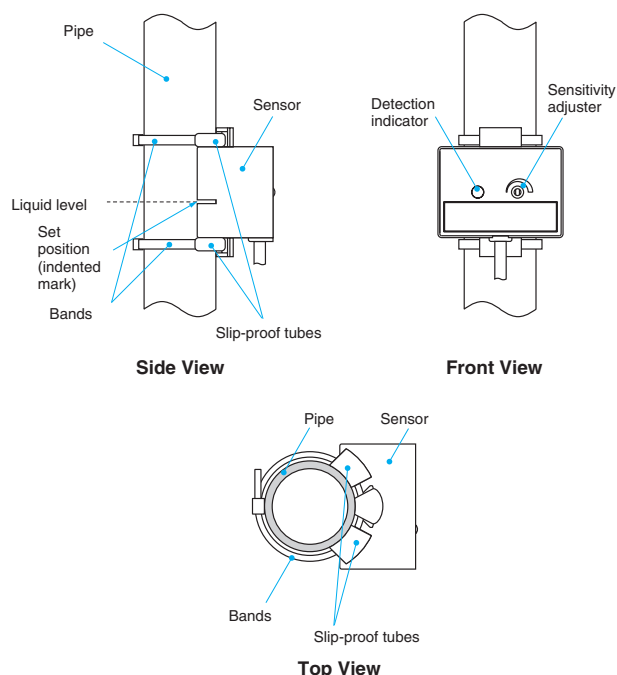
* Also, always adjust the bottom Sensor first because adjusting the bottom Sensor may affect the detection level of the top Sensor.

● Mounting

Mounting

Mount the Sensor securely to the pipe using the enclosed two bands and four slip-proof tubes (two tubes used for each band) as shown in the following diagram.

When mounting the Sensor, be sure the entire Sensor is tight against the pipe along the sensing surface.



● **Wiring**

Power Supply

- If the load and Sensor are connected to different power supplies, always turn ON the Sensor power first.
- Switching noise can cause operating mistakes if a commercial switching regulator is used. When using a switching regulator, always ground the frame ground terminal and the ground terminal.

● **Operating Environment**

Ambient Atmosphere

- Although the Sensor is water resistance, it is a capacitive sensor and should not be used where it will come into direct contact with liquids, such as water or cutting oil.
- The life of the Sensor will be shortened by rapid changes in temperature even within the ambient operating temperature range. Do not use the Sensor in locations subject to rapid temperature changes.

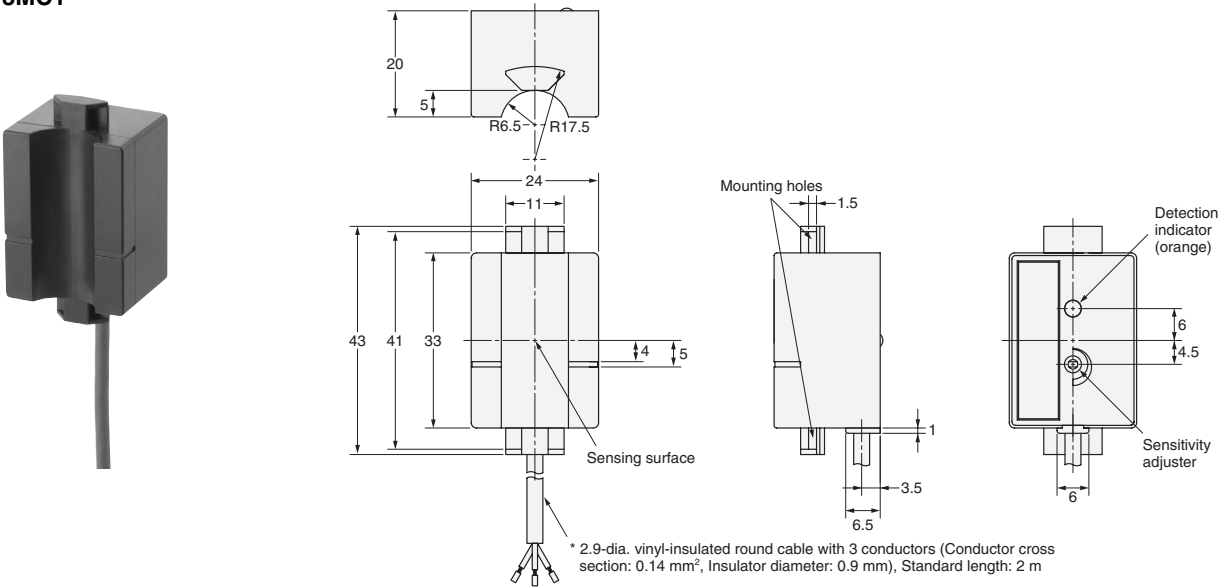
● **Miscellaneous**

Drift will occur when the power supply is turned ON. If the specific inductive capacity of the sensing liquid is low, the detection level may increase by 2 to 3 mm during the 20 minutes required from the time the power supply is turned ON until operation stabilizes.

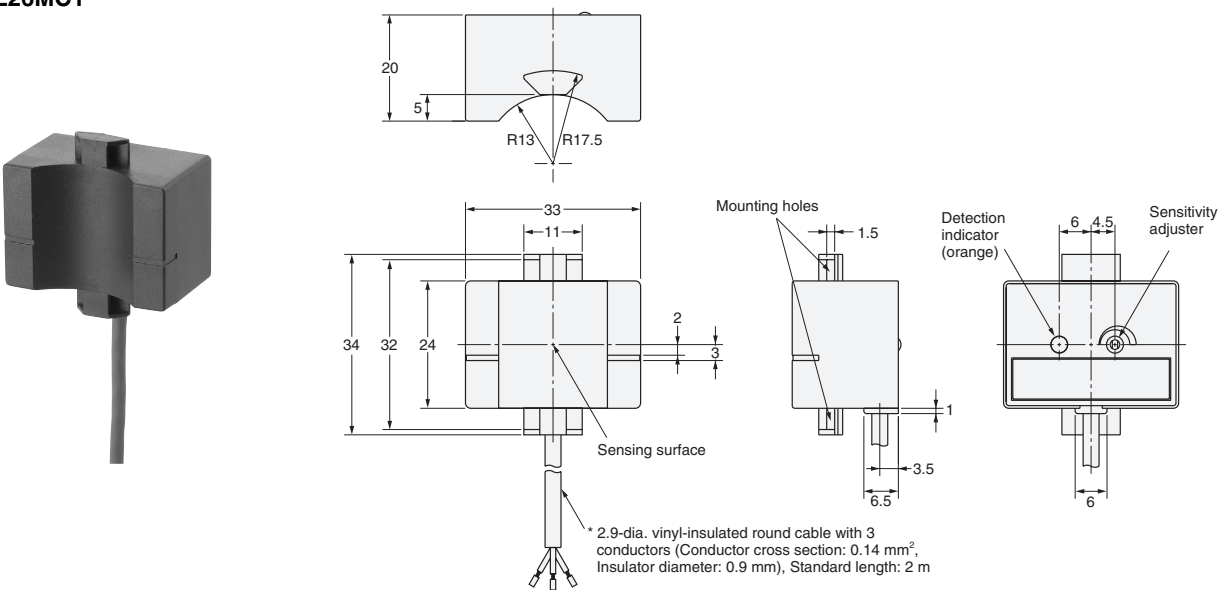
Dimensions

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

E2K-L13MC1



E2K-L26MC1



Read and Understand This Catalog

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

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At the customer's request, OMRON will provide applicable third party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system, or other application or use.

The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this catalog.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCTS ARE PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

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Disclaimers

CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons.

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DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

PERFORMANCE DATA

Performance data given in this catalog is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

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Наши преимущества:

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- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
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- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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