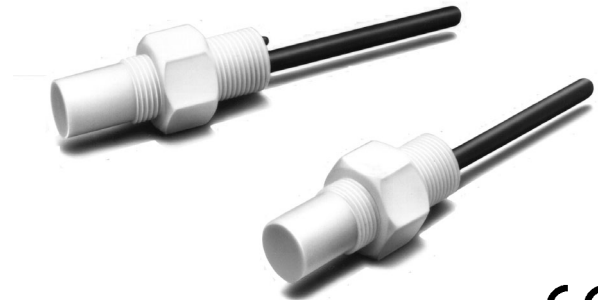

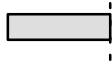


Proximity Sensor with Easy Sensing Distance Adjustment and Fluoresin Coating Effectively Resists Oils and Chemicals

- Oil- and chemical-resistant fluoresin case.
- Sensitivity adjuster ensures easy sensing distance adjustment according to the sensing object.
- Incorporates a cord connector with an easy-to-see indicator.



Ordering Information

Shape	Sensing distance	Output	Model
Non-shielded 	 6 to 10 mm	NPN NO	E2KQ-X10ME1

Specifications

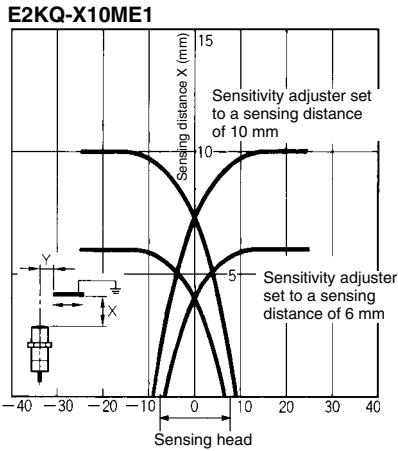
■ Ratings/Characteristics

Item	E2KQ-X10ME1	
Supply voltage (operating voltage range)	12 to 24 VDC (10 to 30 VDC), ripple (p-p): 10% max.	
Current consumption	15 mA max.	
Sensing object	Conductors and dielectrics	
Sensing distance	6 to 10 mm (adjustable)	
Sensing distance (standard object) (see note)	10 mm (with grounded metal: 50 x 50 x 1 t mm)	
Differential travel	4% to 20% max. of sensing distance	
Response frequency	35 Hz	
Operating status (with sensing object approaching)	L output signal with load ON	
Control output (switching capacity)	100 mA max.	
Circuit protection	Reverse connection protection and surge absorber	
Ambient temperature	Operating: -10°C to 55°C (with no icing)	
Ambient humidity	Operating: 35% to 85%	
Temperature influence	±15% max. of sensing distance at 23°C in the temperature range of -10°C and 55°C	
Voltage influence	±2% max. of sensing distance within a range of ±20% of the rated power supply voltage	
Residual voltage	1.5 V max. under a load current of 100 mA and a cord length of 2 m	
Insulation resistance	50 MΩ min. (at 500 VDC) between current-carrying parts and case	
Dielectric strength	DC switching model: 500 VAC, 50/60 Hz for 1 min between the case and carry parts	
Vibration resistance	10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions	
Shock resistance	Malfunction: 500 m/s ² 3 times each in X, Y, and Z directions	
Enclosure rating	IEC60529 IP66	
Weight (with 2-m cord)	Approx. 150 g	
Material	Case	Fluoride resin
	Sensing surface	Fluoride resin
	Cord	Oil- and vibration-resistant, vinyl-insulated round cord
Clamping nut	Fluoride resin	

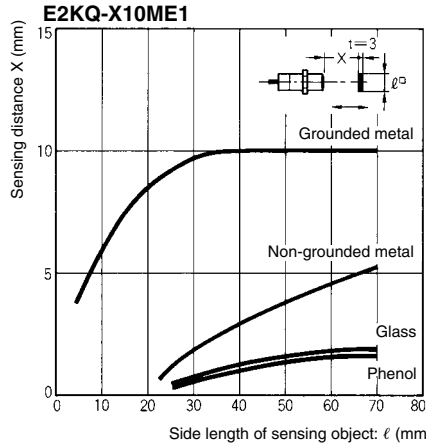
Note: The sensing distance is possible with a standard sensing object. Refer to *Engineering Data* for sensing distances of other materials.

Engineering Data

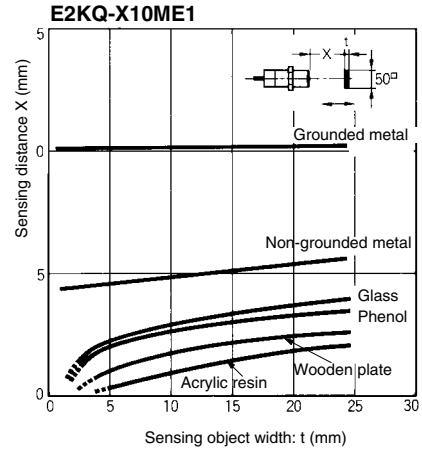
Operating Range (Typical) (with Grounded Metal Plate)



Sensing Object Size and Material vs. Sensing Distance (Typical)



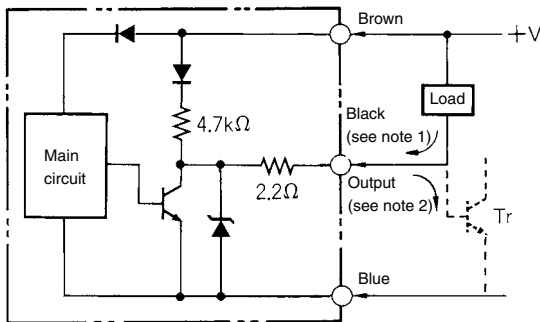
Sensing Object Thickness and Material vs. Sensing Distance (Typical)



Operation

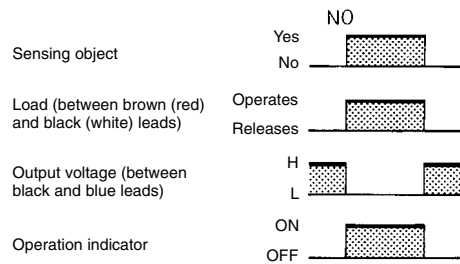
Output Circuit

DC 3-wire



- Note:** 1. 100 mA max. (load current)
2. When a transistor is connected

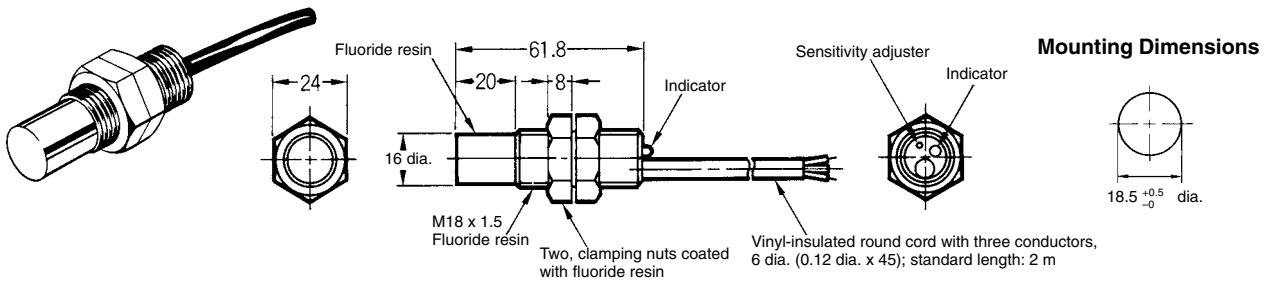
Timing Chart



Dimensions

Note: All units are in millimeters unless otherwise indicated.

E2KQ-X10ME1



Precautions

Ambient Conditions

Be sure that the E2KQ-X is free from sprayed water, oil, chemical, or condensation, otherwise the E2KQ-X may malfunction by detecting them as sensing objects.

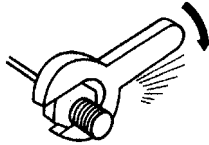
Environment

The E2KQ-X is of water-resistant construction. To increase the reliability of the E2KQ-X in operation, however, it is recommended that the E2KQ-X be protected with an appropriate cover so that the E2KQ-X will be free from sprayed water or machining oil.

The cord is not coated with fluororesin, which must be taken into consideration when installing the E2KQ-X.

Mounting

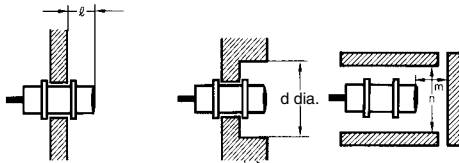
Be sure to tighten each nut with torque not exceeding the following value.



Model	Tightening torque
E2KQ-X10ME1	6 kgf • cm (0.6 N • m)

Effects of Surrounding Metals

If the E2KQ-X is embedded in metal, maintain at least the following distances between the E2KQ-X and the metal.



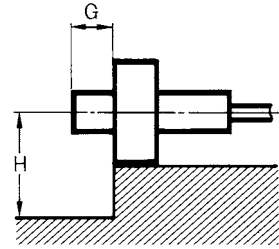
Be sure to ground the metal object.

Note: Be sure to ground the metal object, otherwise the E2KQ-X will not be in stable operation.

(Unit: mm)

Distance	Model
	E2KQ-X10ME1
l	30
d	75
m	18
n	90

If a mounting bracket is used, be sure that at least the following distances are maintained.

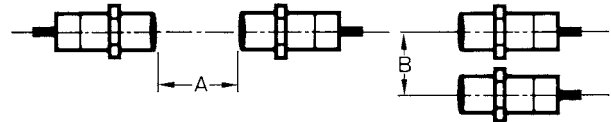


(Unit: mm)

Distance	Model
	E2KQ-X10ME1
G	30
H	35

Mutual Interference

If more than one E2KQ-X is mounted face-to-face or side-by-side, keep them separated at the following distances or more.



(Unit: mm)

Distance	Model
	E2KQ-X10ME1
A	200
B	32

Sensing Object

The maximum sensing distance will decrease if the sensing object is a metal or dielectric object that is not grounded.

- **Sensing Object Material:**
The E2KQ-X detects most types of objects. The sensing distance of each object varies with the electrical characteristics, such as the conductance and inductance, amount of water absorption, and capacity of the object. The longest sensing distance is ensured with grounded metal objects.
- Be sure that the ambient operating temperature is constant during the indirect detection of objects.

Influence of a High-frequency Electromagnetic Field

The E2KQ-X may malfunction if operated near machines that generate a high-frequency electromagnetic fields (e.g., ultrasonic cleaners, high-frequency generators, and transceivers).

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Cat. No. D078-E1-03 **In the interest of product improvement, specifications are subject to change without notice.**

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