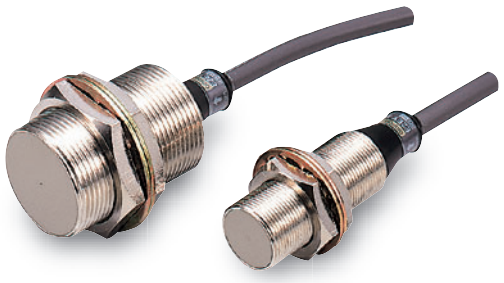
E2EY

CSM_E2EY_DS_E_4_1

A Proximity Sensor for Aluminum, Brass and Other Non-ferrous Metals. Iron Is Not Detected.

- Non-ferrous metals, such as aluminum and brass, are detected. *
- Ferrous metals, such as iron and nickel, are not detected.

* Aluminum foil, however, cannot be detected.



⚠ Be sure to read *Safety Precautions* on page 4.

Ordering Information

Sensors [Refer to *Dimensions* on page 4.]

Appearance		Sensing distance	Output configuration/Operation mode	Model
Shielded 	M18	4 mm	DC 3-wire, NPN NO	**E2EY-X4C1 2M**
	M30	8 mm		**E2EY-X8C1 2M**

Accessories (Order Separately)

Mounting Brackets

Protective Covers

Sputter Protective Covers

Refer to *Y92□* for details.

Ratings and Specifications

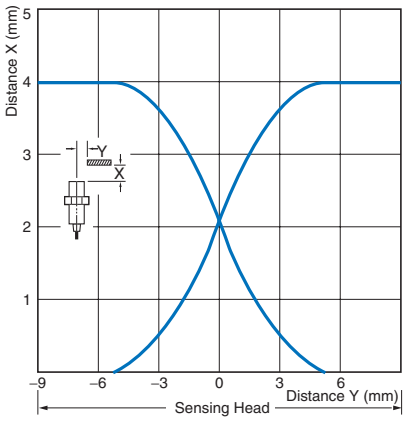
Item	Model	E2EY-X4C1	E2EY-X8C1
Sensing distance		4 mm ±10%	8 mm ±10%
Set distance		0 to 2.8 mm	0 to 5.6 mm
Differential travel		20% max. of sensing distance	
Detectable object		Non-ferrous metal (Does not detect ferrous metal.)	
Standard sensing object		Aluminum: 18 × 18 × 1 mm	Aluminum: 30 × 30 × 1 mm
Response frequency *		70 Hz	
Power supply voltage (operating voltage range)		12 to 24 VDC (10 to 30 VDC), ripple (p-p): 10% max.	
Current consumption		20 mA max.	
Control output	Load current	NPN open-collector output, 100 mA max. (at 30 VDC)	
	Residual voltage	2 V max. (Load current: 100 mA, Cable length: 2 m)	
Indicators		Detection indicator (red)	
Operation mode (with sensing object approaching)		Load ON: NO (Refer to the timing charts under *I/O Circuit Diagrams* on page 3 for details.)	
Protection circuits		Reverse polarity protection, Load short-circuit 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% (with no condensation)	
Temperature influence		±20% 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 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 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: 1,000 m/s^2 10 times each in X, Y, and Z directions	
Degree of protection		IEC 60529 IP67, in-house standards: oil-resistant	
Connection method		Pre-wired Models (Standard cable length: 2 m)	
Weight (packed state)		Approx. 140 g	Approx. 190 g
Materials	Case	Nickel-plated brass	
	Sensing surface	Heat-resistant ABS	
	Clamping nuts	Nickel-plated brass	
	Toothed washer	Zinc-plated iron	
Accessories		---	

* The response frequency is an average value. Measurement conditions are as follows: standard sensing object, a distance of twice the standard sensing object, and a set distance of half the sensing distance.

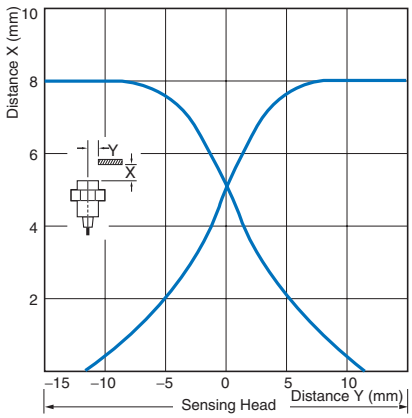
Engineering Data (Typical)

Sensing Area

E2EY-X4C1

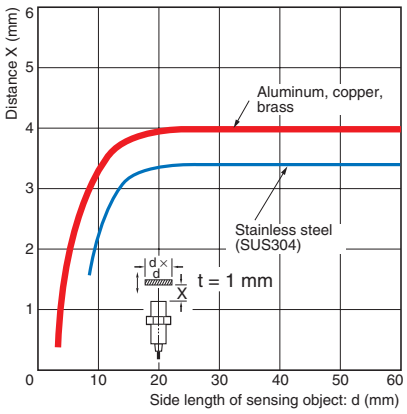


E2EY-X8C1

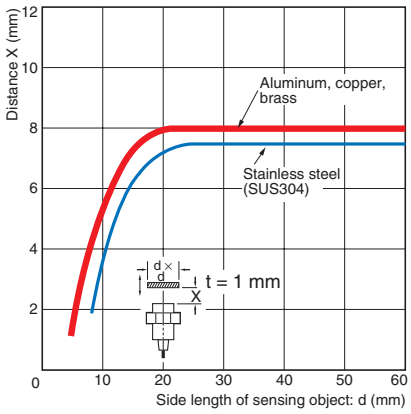


Influence of Sensing Object Size and Material

E2EY-X4C1

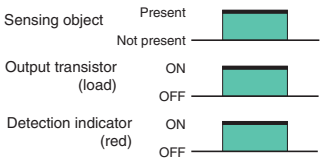
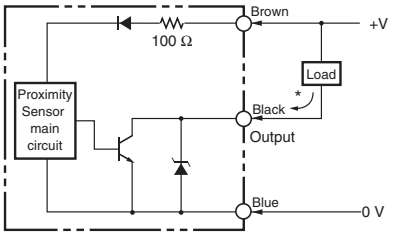


E2EY-X8C1



I/O Circuit Diagrams

DC 3-Wire Models

Operation mode	Model	Timing chart	Output circuit
NO	E2EY-X4C1 E2EY-X8C1		

* Load current: 100 mA max.

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.

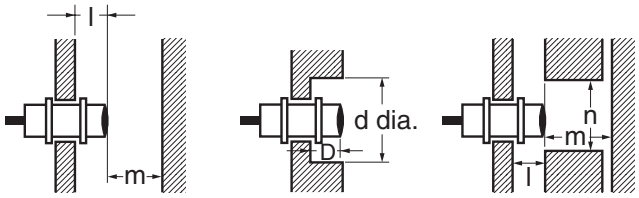
Precautions for Correct Use

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

● Design

Influence of Surrounding Metal

When mounting the Sensor within a metal panel, ensure that the clearances given in the following table are maintained. Failure to maintain these distances may cause deterioration in the performance of the Sensor.



Influence of Surrounding Metal (Unit: mm)

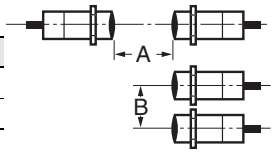
Model / Item	l	d	D	m	n
E2EY-X4C1	0	18	0	20	27
E2EY-X8C1		30		40	45

Mutual Interference

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

Mutual Interference (Unit: mm)

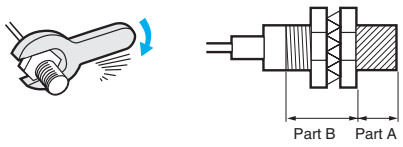
Model / Item	A	B
E2EY-X4C1	50	35
E2EY-X8C1	100	70



Note: Aluminum (non-ferrous metal) cannot be detected through iron (ferrous metal).

Mounting

Do not tighten the nut with excessive force. A toothed washer must be used with the nut.



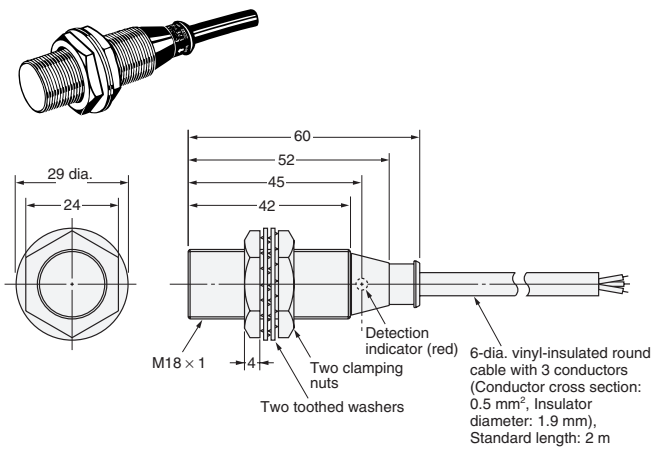
Note: 1. The allowable tightening strength depends on the distance from the edge of the head, as shown in the following table. (A is the distance from the edge of the head. B includes the nut on the head side. If the edge of the nut is in part A, the tightening torque for part A applies instead.)
2. The following torque assume washers are being used.

Model / Tightening Torque	Part A		Part B
	Dimension (mm)	Torque	Torque
E2EY-X4C1	22	15 N·m	49 N·m
E2EY-X8C1	26	39 N·m	78 N·m

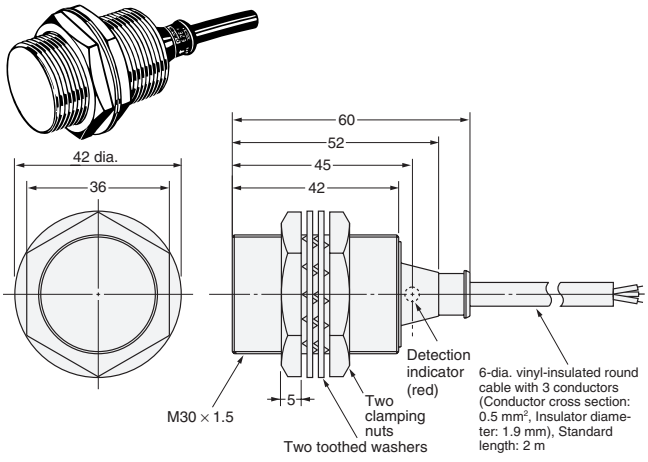
Dimensions

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

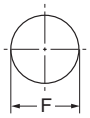
E2EY-X4C1



E2EY-X8C1



Mounting Hole Dimensions



Model	F (mm)
E2EY-X4C1	18.5 $^{+5}_{0}$ dia.
E2EY-X8C1	30.5 $^{+5}_{0}$ dia.

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2010.8

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