

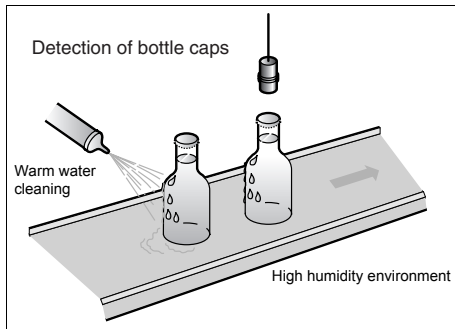
Cylindrical Proximity Sensor in Plastic Housing

E2F

- High quality full body plastic housing for high water proof requirements
- Polyarylate housing for light chemical resistance



Applications



Ordering Information

Sensors

Model		Sensing distance				Model	
						Operating status	
						NO	NC
Shielded 	M8	1.5mm			DC 3-wire NPN	E2F-X1R5E1	E2F-X1R5E2
					AC 2-wire Models	E2F-X1R5Y1	E2F-X1R5Y2
	M12	2mm			DC 3-wire NPN	E2F-X2E1 *1	E2F-X2E2 *1
					AC 2-wire Models	E2F-X2Y1 *1	E2F-X2Y2 *1
	M18	5mm			DC 3-wire NPN	E2F-X5E1 *1	E2F-X5E2 *1
					AC 2-wire Models	E2F-X5Y1 *1*2	E2F-X5Y2 *1*2
	M30	10mm			DC 3-wire NPN	E2F-X10E1 *1	E2F-X10E2 *1
					AC 2-wire Models	E2F-X10Y1 *1*2	E2F-X10Y2 *1*2

*1. A different frequency type is available. (E2F-X□□5; e.g. E2F-X5E15)
*2. A short-circuit protection type is available. (E2F-X□Y□-53; e.g. E2F-X5Y1-53) Power supply voltage: 100 to 120 VAC

Accessories (Order Separately)

Rating/performance

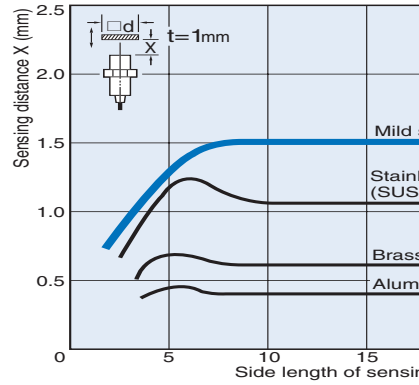
Model		E2F-X1R5E□ E2F-X1R5Y□	E2F-X2E□ E2F-X2Y□	E2F-X5E□ E2F-X5Y□	E2F-X10E□ E2F-X10Y□
Item					
Sensing distance		1.5 mm ±10%	2 mm ±10%	5 mm ±10%	10 mm ±10%
Setting distance		0 to 1.2 mm	0 to 1.6 mm	0 to 4 mm	0 to 8 mm
Differential distance		10% max.			
Sensing object		Ferrous metal (Sensitivity lowers with non-ferrous metals)			
Standard sensing object		Iron, 8 × 8 × 1 mm	Iron, 12 × 12 × 1 mm	Iron, 18 × 18 × 1 mm	Iron, 30 × 30 × 1 mm
Response frequency*1		E models: 2 kHz, Y models: 25 Hz	E models: 1.5 kHz, Y models: 25 Hz	E models: 600 Hz, Y models: 25 Hz	E models: 400 Hz, Y models: 25 Hz
Power supply(Operating voltage range)		E models: 12 to 24 VDC (10 to 30 VDC), ripple (p-p): 10% max. Y models: 24 to 240 VAC (20 to 264 VAC)			
Current consumption		E models: 17 mA max.			
Leakage current		Y models: 1.7 mA at 200 VAC			
Control output	Switching capacity	E models: 200 mA max. Y models: 5 to 100 mA		E models: 200 mA max. Y models: 5 to 300 mA	
	Residual voltage	E models: 2 V max. (load current: 200 mA with cable length: 2 m) Y models: Refer to the Specifications			
Indicator lamp		E models: Detection indicator (red LED) Y models: Operation indicator (red LED)			
Operating status (with sensing object approaching)		E1, Y1 models: ON E2, Y2 models: NC			
Protective circuits		E models: Reverse connection protection, load short-circuit protection, surge absorber Y models: None			
Ambient temperature		Operating/Storage: -25° C to 70° C (with no icing or condensation)			
Ambient humidity		Operating/Storage: 35% to 95%RH			
Temperature influence		A maximum fluctuation of ±10% max. of sensing distance at 23° C in temperature range of -25° C and 70° C			
Voltage influence		E models: ±2.5% max. of sensing distance within a range of ±15% of rated power supply voltage Y models: ±1% max. of sensing distance within a range of ±10% of rated power supply voltage			
Insulation resistance		50 MΩ min. (at 500 VDC) between current carry parts and case			
Dielectric strength		E models: 1,000 VAC, 50/60 Hz for 1 min between current carry parts and case			
Vibration resistance		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/s² for 10 times each in X, Y, and Z directions			
Protective structure		IEC IP67			
Connection method		Pre-wired models (standard length: 2 m)			
Weight (Packed state)		Approx.40g	Approx. 50 g	Approx. 130 g	Approx. 170 g
Material	Case	Polyarylate			
	Sensing surface				
	Clamp-ing nut	Polyallylate resin			
Accessories		Instruction manual			

*1. The response frequencies are average values measured on condition that the distance between each sensing object is twice as large as the size of the sensing object and the sensing distance set is half of the maximum sensing distance.

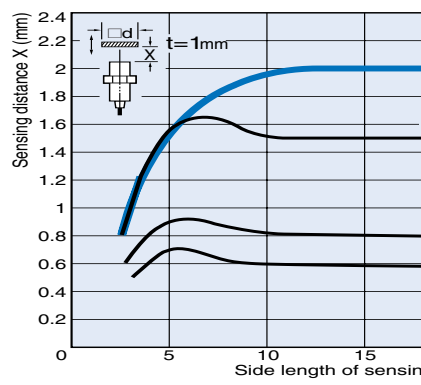
Characteristic data (typical)

Sensing Distance vs. Sensing Object

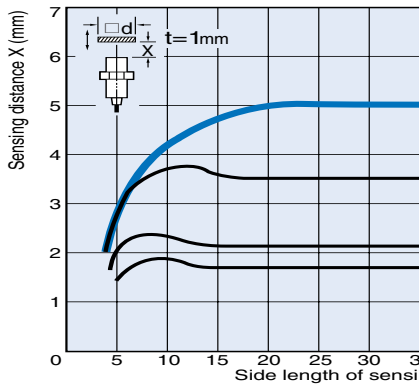
E2F-X1R5□□



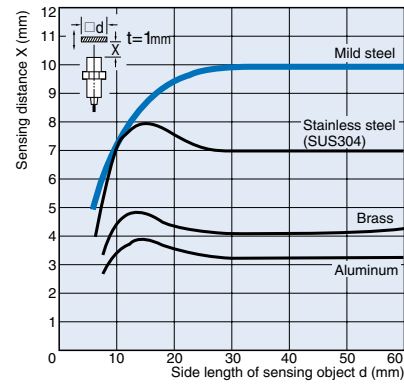
E2F-X2□□



E2F-X5□□



E2F-X10□□



Output Circuit Diagram

Output	Operating status	Model	Timing chart	Output circuit
DC 3-wire	NO	E2F-X1R5E1 E2F-X2E1 E2F-X5E1 E2F-X10E1	Sensing object: Yes (ON), No (OFF) Load (between brown and black leads): Operates (ON), Reset (OFF) Output voltage (between black and blue leads): H (ON), L (OFF) Detection indicator: ON (ON), OFF (OFF)	*1. 200 mA max. (source current) *2. When connecting to the transistor circuit.
	NC	E2F-X1R5E2 E2F-X2E2 E2F-X5E2 E2F-X10E2	Sensing object: Yes (ON), No (OFF) Load (between brown and black leads): Operates (ON), Reset (OFF) Output voltage (between black and blue leads): H (ON), L (OFF) Detection indicator: ON (ON), OFF (OFF)	
AC 2-wire Models	NO	E2F-X1R5Y1 E2F-X2Y1 E2F-X5Y1 E2F-X10Y1	Sensing object: Yes (ON), No (OFF) Load: Operates (ON), Reset (OFF) Detection indicator: ON (ON), OFF (OFF)	
	NC	E2F-X1R5Y2 E2F-X2Y2 E2F-X5Y2 E2F-X10Y2	Sensing object: Yes (ON), No (OFF) Load: Operates (ON), Reset (OFF) Detection indicator: ON (ON), OFF (OFF)	

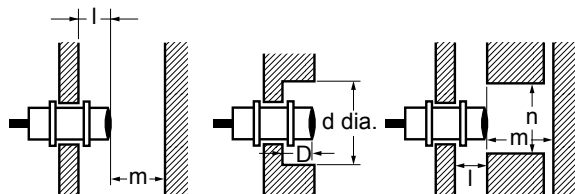
Precautions

Correct Use

Design

Effects of Surrounding Metal

Provide a minimum distance as shown in the table below between the Sensor and the surrounding metal.

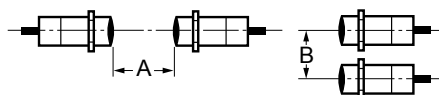


Effects of Surrounding Metal(Unit: mm)

Model	Item	l	d	D	m	n
E2F-X1R5□□	0	0	8	0	4.5	12
E2F-X2□□			12		8	18
E2F-X5□□			18		20	27
E2F-X10□□			30		40	45

Mutual Interference

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



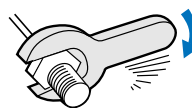
Mutual Interference (Unit: mm)

Model	Item	A	B
E2F-X1R5□□		20	15
E2F-X2□□		30 (20)	20(12)
E2F-X5□□		50 (30)	35 (18)
E2F-X10□□		100(50)	70(35)

Note: Figures in parentheses are for an E2F used in combination with an E2F (i.e., E2F-X□□□5) that is operating at a different frequency.

Mounting

Do not apply excessive torque when tightening any nuts.



Model	Tensile strength (torque)
E2F-X1R5□□	0.78 N•m
E2F-X2□□	
E2F-X5□□	2 N•m
E2F-X10□□	

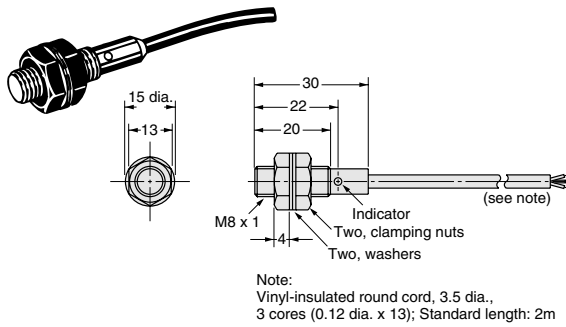
● Maintenance and Inspection

Do not use the AC 2-wire models (sensing surface is broken), where directly exposed to water. There is fear of an electric shock.

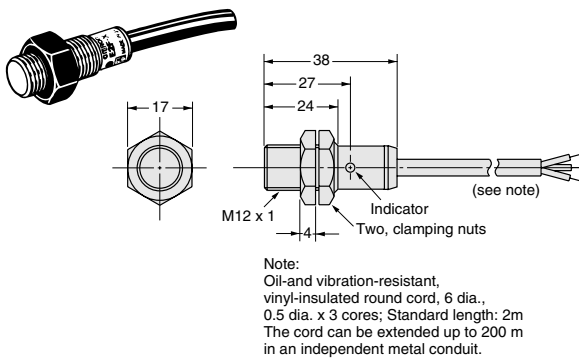
Dimensions (Unit: mm)

DC 3-wire Models

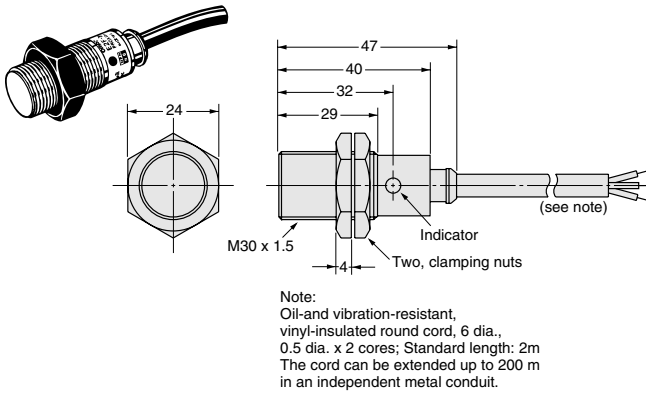
E2F-X1R5E



E2F-X2E

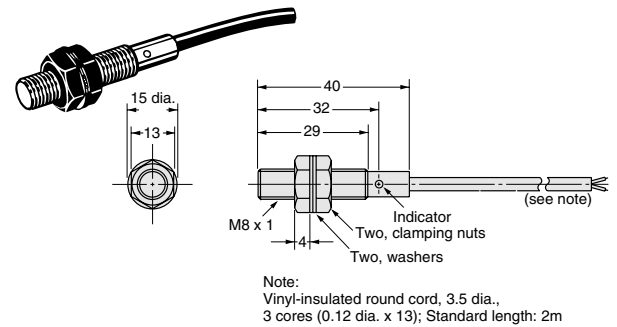


E2F-X5E

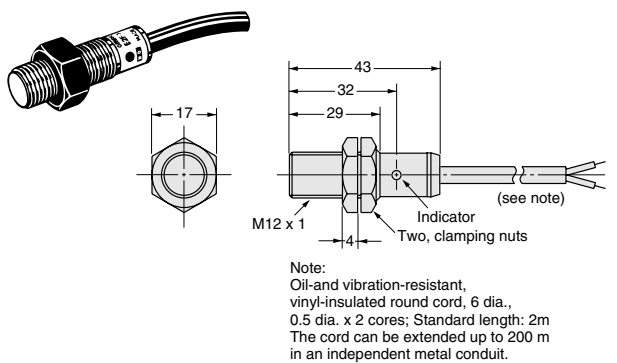


AC 2-wire Models

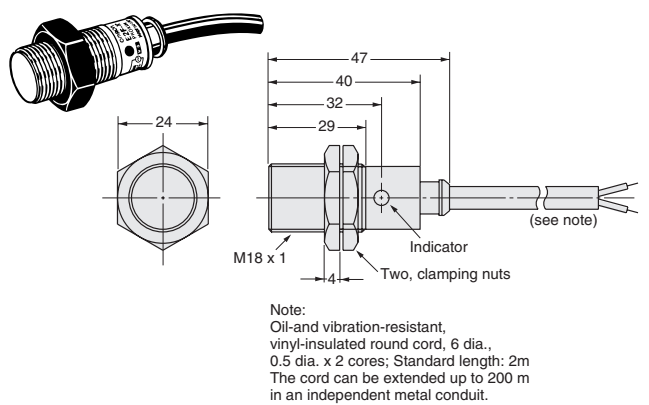
E2F-X1R5Y



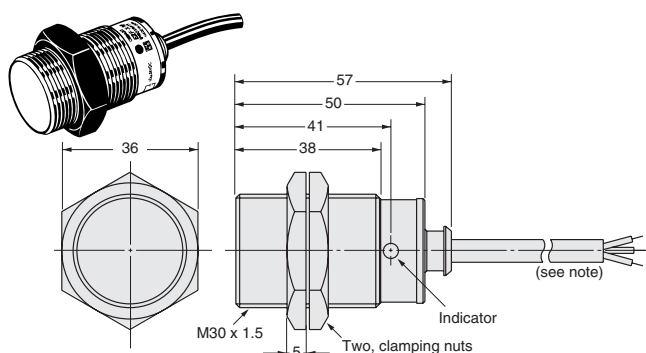
E2F-X2Y



E2F-X5Y

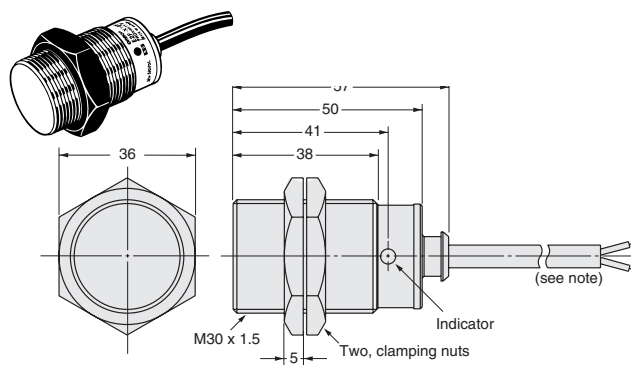


E2F-X10E□



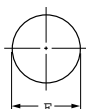
Note:
Oil- and vibration-resistant,
vinyl-insulated round cord, 6 dia.,
0.5 dia. x 3 cores; Standard length: 2m
The cord can be extended up to 200 m
in an independent metal conduit.

E2F-X10Y□



Note:
Oil- and vibration-resistant,
vinyl-insulated round cord, 6 dia.,
0.5 dia. x 2 cores; Standard length: 2m
The cord can be extended up to 200 m
in an independent metal conduit.

Mounting Hole Dimension



Model	E2F-X1R5□□	E2F-X2□□	E2F-X5□□	E2F-X10□□
F (mm)	8.5-mm dia. +0	12.5-mm dia. +0	18.5-mm dia. +0	30.5-mm dia. +0

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- 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

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.