OMRON

# Standard Proximity Sensor
# E2E
## (DC 2/3-Wire)

## Your Search for Proximity Sensors Starts with the World-leading Performance and Quality of the E2E

- Standard Sensors for detecting ferrous metals.
- Wide array of variations. Ideal for a variety of applications.
- Models with different frequencies are also available to prevent mutual interference.
- Superior environment resistance with standard cable made of oil-resistant PVC and sensing surface made of material that resists cutting oil.
- Useful to help prevent disconnection.
  Cable protector provided as a standard feature.



(Standards do not apply to all models.)



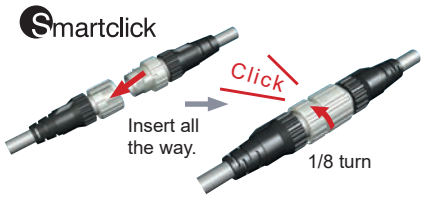
For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

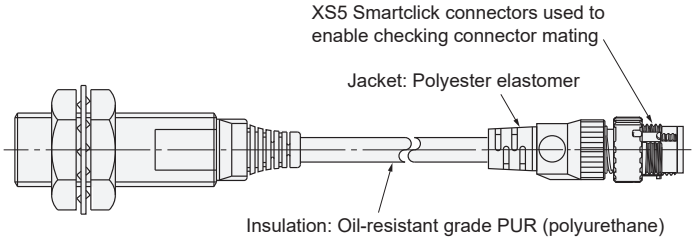
⚠ Be sure to read *Safety Precautions* on page 18.

**Note:** DC 2-Wire Models have been integrated into the E2E NEXT Series at the end of october 2022.
DC 3-Wire Models have been discontinued at the end of March 2022.
Refer to the catalog (Cat. No. D120) for details.

## Features

### Lineup includes models with Smartclick pre-wired connectors for fast connection.




### UL-recognized Models Available

## E2E Model Number Legend

E2E- (1) (2) (3) (4) (5) (6) (7) - (8) (9) - (10) - (11) - (12) (13)

| No. | Classification | Code | Meaning | Remarks |
|---|---|---|---|---|
| (1) | Appearance | X | Cylindrical (threaded) | |
| (2) | Sensing distance | Number | Sensing distance (Unit: mm) | Example:<br>1R5: 1.5 mm |
| | | R | Indication of decimal point | |
| (3) | Shielding | Blank | Shielded Model | |
| | | M | Unshielded Model | |
| (4) | Power supply and output specifications | B | DC 3-wire PNP open-collector output | Whether D models have polarity is defined by number 10. |
| | | C | DC 3-wire NPN open-collector output | |
| | | D | DC 2-wire polarity/no polarity | |
| | | E | DC 3-wire NPN collector load built-in output | |
| | | F | DC 3-wire PNP collector load built-in output | |
| | | T | AC/DC 2-wire | |
| | | Y | AC 2-wire | |
| (5) | Form of output switching element | 1 | Normally open (NO) | |
| | | 2 | Normally closed (NC) | |
| (6) | Oscillation frequency type | Blank | Standard frequency | Used to prevent mutual interference. |
| | | 5 | Different frequency | |
| (7) | Self-diagnosis | Blank | No | |
| | | 5 | Yes | |
| (8) | Connection method | Blank | Pre-wired | |
| | | M1 | M12-size metal connector | |
| | | M3 | M8-size metal connector | |
| (9) | Connector specifications | Blank | Connector Model<br>DC 3-wire and AC 2-wire, DC 2-wire with self-diagnosis output, DC 2-wire with old pin arrangement | |
| | | G | Connector Model<br>DC 2-wire with IEC pin arrangement | |
| | | J | Pre-wired Connector Model<br>DC 3-wire and AC 2-wire, DC 2-wire with old pin arrangement | |
| | | GJ | Pre-wired Connector Model<br>DC 2-wire with IEC pin arrangement | |
| | | TJ | Pre-wired Smartclick Connector Model<br>DC 2-wire | |
| | | TGJ | Pre-wired Smartclick Connector Model<br>DC 2-wire with IEC pin arrangement | |
| (10) | DC 2-wire polarity | Blank | Polarity | |
| | | T | No polarity | |
| (11) | Cable specifications | Blank | Standard PVC cable (oil resistant) | |
| | | R | Flexible PVC cable (oil resistant) | |
| | | U | Polyurethane cable (oil resistant and reinforced) | |
| (12) | New model | N | New model (Applies only to DC 2-wire pre-wired and shielded models.) | This is blank if the cable specification in number 11 is R or U. |
| | Standard-certified model | US | UL-recognized model (Applies to DC 2-wire pre-wired models and pre-wired connector models.) | |
| (13) | Cable length | Letter M | Cable length (Unit: m) (Applicable to Pre-wired Models and Pre-wired Connector Models.) | Example:<br>2M<br>0.3M |

Note: The purpose of this model number legend is to provide understanding of the meaning of specifications from the model number. Models are not available for all combinations of code numbers.

# Ordering Information

**Note:** DC 2-Wire Models have been integrated into the E2E NEXT Series at the end of october 2022. Refer to the catalog (Cat. No. D120) for details.

## 2-Wire Models

### Shielded DC 2-wire Models with No Self-diagnostic Output [Refer to *Dimensions* on page 20.]



| Appearance | Sensing distance | Connection method | Cable specifications | Polarity | Operation mode | Pin arrangement | Applicable connector code *2 | Model |
|---|---|---|---|---|---|---|---|---|
| M8 | 2 mm | M12 Pre-wired Smartclick Connector Models (0.3m) | PVC (oil-resistant) | Yes | NO | 1: +V, 4: 0 V | E | **E2E-X2D1-M1TGJ 0.3M** |
| | | Pre-wired Models (2 m) | PVC (oil-resistant) | | NO | --- | --- | **E2E-X2D1-N 2M** |
| | | | | | NC | | | **E2E-X2D2-N 2M** |
| | | M12 Connector Models | --- | | NO | 1: +V, 4: 0 V | A | **E2E-X2D1-M1G** |
| | | | | | NC | 1: +V, 2: 0 V | D | **E2E-X2D2-M1G** |
| | | M8 Connector Models | --- | | NO | 1: +V, 4: 0 V | F | **E2E-X2D1-M3G** |
| | | | | | NC | 1: +V, 2: 0 V | | **E2E-X2D2-M3G** |
| M12 | 3 mm | M12 Pre-wired Smartclick Connector Models (0.3m) | PVC (oil-resistant) | Yes | NO | 1: +V, 4: 0 V | E | **E2E-X3D1-M1TGJ 0.3M** |
| | | Pre-wired Models (2 m) | PVC (oil-resistant) | | NO | --- | --- | **E2E-X3D1-N 2M *1** |
| | | | | | NC | | | **E2E-X3D2-N 2M** |
| | | M12 Connector Models | --- | | NO | 1: +V, 4: 0 V | A | **E2E-X3D1-M1G *1** |
| | | | | | NC | 1: +V, 2: 0 V | D | **E2E-X3D2-M1G** |
| | | M12 Standard Pre-wired Connector Models (0.3 m) | PVC (oil-resistant) | Yes | NO | 1: +V, 4: 0 V | A | **E2E-X3D1-M1GJ 0.3M** |
| | | | | | NC | 1: +V, 2: 0 V | D | **E2E-X3D2-M1GJ 0.3M** |
| | | | | No *3 | NO | (3, 4): (+V, 0 V) | C | **E2E-X3D1-M1J-T 0.3M** |
| | | | | | NC | (1, 2): (+V, 0 V) | D | --- |
| M18 | 7 mm | M12 Pre-wired Smartclick Connector Models (0.3m) | PVC (oil-resistant) | Yes | NO | 1: +V, 4: 0 V | E | **E2E-X7D1-M1TGJ 0.3M** |
| | | Pre-wired Models (2 m) | PVC (oil-resistant) | | NO | --- | --- | **E2E-X7D1-N 2M *1** |
| | | | | | NC | | | **E2E-X7D2-N 2M** |
| | | M12 Connector Models | --- | | NO | 1: +V, 4: 0 V | A | **E2E-X7D1-M1G *1** |
| | | | | | NC | 1: +V, 2: 0 V | D | **E2E-X7D2-M1G** |
| | | M12 Standard Pre-wired Connector Models (0.3 m) | PVC (oil-resistant) | Yes | NO | 1: +V, 4: 0 V | A | **E2E-X7D1-M1GJ 0.3M** |
| | | | | | NC | 1: +V, 2: 0 V | D | **E2E-X7D2-M1GJ 0.3M** |
| | | | | No *3 | NO | (3, 4): (+V, 0 V) | C | **E2E-X7D1-M1J-T 0.3M** |
| | | | | | NC | (1, 2): (+V, 0 V) | D | **E2E-X7D2-M1J-T 0.3M** |
| M30 | 10 mm | M12 Pre-wired Smartclick Connector Models (0.3m) | PVC (oil-resistant) | Yes | NO | 1: +V, 4: 0 V | E | **E2E-X10D1-M1TGJ 0.3M** |
| | | Pre-wired Models (2 m) | PVC (oil-resistant) | | NO | --- | --- | **E2E-X10D1-N 2M *1** |
| | | | | | NC | | | **E2E-X10D2-N 2M** |
| | | M12 Connector Models | --- | | NO | 1: +V, 4: 0 V | A | **E2E-X10D1-M1G *1** |
| | | | | | NC | 1: +V, 2: 0 V | D | **E2E-X10D2-M1G** |
| | | M12 Standard Pre-wired Connector Models (0.3 m) | PVC (oil-resistant) | Yes | NO | 1: +V, 4: 0 V | A | **E2E-X10D1-M1GJ 0.3M** |
| | | | | | NC | 1: +V, 2: 0 V | D | **E2E-X10D2-M1GJ 0.3M** |
| | | | | No *3 | NO | (3, 4): (+V, 0 V) | C | **E2E-X10D1-M1J-T 0.3M** |
| | | | | | NC | (1, 2): (+V, 0 V) | D | **E2E-X10D2-M1J-T 0.3M** |

*1. Models with different frequencies are also available. The model number is E2E-X □D15 (example: E2E-X3D15-N 2M).
*2. Refer to page 15 for details.
*3. The residual voltage for models without polarity is 5 V, so use caution concerning the connection load interface conditions (e.g., PLC ON voltage). Refer to page 19

**Note:** DC 2-Wire Models have been integrated into the E2E NEXT Series at the end of october 2022. Refer to the catalog (Cat. No. D120) for details.

## 2-Wire Models

### Shielded DC 2-Wire UL-recognized Models with No Self-diagnostic Output [Refer to *Dimensions* on page 20.]



| Appear-ance | Sensing distance | Connection method | Cable specifications | Polar-ity | Opera-tion mode | Pin arrangement | Applicable connector code * | Model |
|---|---|---|---|---|---|---|---|---|
| M8 | 2 mm | M12 Pre-wired Smart-click Connector Models (0.3 m) | PVC (oil-resistant) | Yes | NO | 1: +V, 4: 0 V | E | E2E-X2D1-M1TGJ-US 0.3M |
| | | | | | NC | 1: +V, 2: 0 V | | E2E-X2D2-M1TGJ-US 0.3M |
| | | Pre-wired Models (2 m) | | | NO | --- | --- | E2E-X2D1-US 2M |
| | | | | | NC | | | E2E-X2D2-US 2M |
| M12 | 3 mm | M12 Pre-wired Smart-click Connector Models (0.3 m) | | | NO | 1: +V, 4: 0 V | E | E2E-X3D1-M1TGJ-US 0.3M |
| | | | | | NC | 1: +V, 2: 0 V | | E2E-X3D2-M1TGJ-US 0.3M |
| | | Pre-wired Models (2 m) | | | NO | --- | --- | E2E-X3D1-US 2M |
| | | | | | NC | | | E2E-X3D2-US 2M |
| M18 | 7 mm | M12 Pre-wired Smart-click Connector Models (0.3 m) | | | NO | 1: +V, 4: 0 V | E | E2E-X7D1-M1TGJ-US 0.3M |
| | | | | | NC | 1: +V, 2: 0 V | | E2E-X7D2-M1TGJ-US 0.3M |
| | | Pre-wired Models (2 m) | | | NO | --- | --- | E2E-X7D1-US 2M |
| | | | | | NC | | | E2E-X7D2-US 2M |
| M30 | 10 mm | M12 Pre-wired Smart-click Connector Models (0.3 m) | | | NO | 1: +V, 4: 0 V | E | E2E-X10D1-M1TGJ-US 0.3M |
| | | | | | NC | 1: +V, 2: 0 V | | E2E-X10D2-M1TGJ-US 0.3M |
| | | Pre-wired Models (2 m) | | | NO | --- | --- | E2E-X10D1-US 2M |
| | | | | | NC | | | E2E-X10D2-US 2M |

* Refer to page 15 for details.

**Note:** DC 2-Wire Models have been integrated into the E2E NEXT Series at the end of october 2022. Refer to the catalog (Cat. No. D120) for details.

## 2-Wire Models

### Unshielded DC 2-Wire Models with No Self-diagnosis Output [Refer to *Dimensions* on page 20.]



| Appearance | Sensing distance | Connection method | Cable specifications | Polarity | Operation mode | Pin arrangement | Applicable connector code *2 | Model |
|---|---|---|---|---|---|---|---|---|
| M8 | 4 mm | Pre-wired Models (2 m) | PVC (oil-resistant) | Yes | NO | --- | --- | **E2E-X4MD1 2M** |
| | | | | | NC | | | **E2E-X4MD2 2M** |
| | | M12 Connector Models | --- | | NO | 1: +V, 4: 0 V | A | **E2E-X4MD1-M1G** |
| | | | | | NC | 1: +V, 2: 0 V | D | **E2E-X4MD2-M1G** |
| | | M8 Connector Models | --- | | NO | 1: +V, 4: 0 V | F | **E2E-X4MD1-M3G** |
| | | | | | NC | 1: +V, 2: 0 V | | **E2E-X4MD2-M3G** |
| M12 | 8 mm | M12 Pre-wired Smartclick Connector Models (0.3m) | PVC (oil-resistant) | | NO | 1: +V, 4: 0 V | E | **E2E-X8MD1-M1TGJ 0.3M** |
| | | Pre-wired Models (2 m) | PVC (oil-resistant) | | NO | --- | --- | **E2E-X8MD1 2M *1** |
| | | | | | NC | | | **E2E-X8MD2 2M** |
| | | M12 Connector Models | --- | | NO | 1: +V, 4: 0 V | A | **E2E-X8MD1-M1G *1** |
| | | | | | NC | 1: +V, 2: 0 V | D | **E2E-X8MD2-M1G** |
| | | M12 Standard Pre-wired Connector Models (0.3 m) | PVC (oil-resistant) | | NO | 1: +V, 4: 0 V | A | **E2E-X8MD1-M1GJ 0.3M** |
| | | | | | NC | 1: +V, 2: 0 V | D | --- |
| M18 | 14 mm | M12 Pre-wired Smartclick Connector Models (0.3m) | PVC (oil-resistant) | | NO | 1: +V, 4: 0 V | E | **E2E-X14MD1-M1TGJ 0.3M** |
| | | Pre-wired Models (2 m) | PVC (oil-resistant) | | NO | --- | --- | **E2E-X14MD1 2M *1** |
| | | | | | NC | | | **E2E-X14MD2 2M** |
| | | M12 Connector Models | --- | | NO | 1: +V, 4: 0 V | A | **E2E-X14MD1-M1G *1** |
| | | | | | NC | 1: +V, 2: 0 V | D | **E2E-X14MD2-M1G** |
| | | M12 Standard Pre-wired Connector Models (0.3 m) | PVC (oil-resistant) | | NO | 1: +V, 4: 0 V | A | **E2E-X14MD1-M1GJ 0.3M** |
| | | | | | NC | 1: +V, 2: 0 V | D | **E2E-X14MD2-M1GJ 0.3M** |
| M30 | 20 mm | M12 Pre-wired Smartclick Connector Models (0.3m) | PVC (oil-resistant) | | NO | 1: +V, 4: 0 V | E | **E2E-X20MD1-M1TGJ 0.3M** |
| | | Pre-wired Models (2 m) | PVC (oil-resistant) | | NO | --- | --- | **E2E-X20MD1 2M *1** |
| | | | | | NC | | | **E2E-X20MD2 2M** |
| | | M12 Connector Models | --- | | NO | 1: +V, 4: 0 V | A | **E2E-X20MD1-M1G *1** |
| | | | | | NC | 1: +V, 2: 0 V | D | **E2E-X20MD2-M1G** |
| | | M12 Standard Pre-wired Connector Models (0.3 m) | PVC (oil-resistant) | | NO | 1: +V, 4: 0 V | A | **E2E-X20MD1-M1GJ 0.3M** |
| | | | | | NC | 1: +V, 2: 0 V | D | --- |

*1. Models with different frequencies are also available. The model number is E2E-X □D15 (example: E2E-X8MD15 2M).
*2. Refer to page 15 for details.

**Note:** DC 2-Wire Models have been integrated into the E2E NEXT Series at the end of october 2022. Refer to the catalog (Cat. No. D120) for details.

## 2-Wire Models

### Unshielded DC 2-Wire UL-recognized Models with No Self-diagnostic Output [Refer to *Dimensions* on page 20.]



| Appearance | Sensing distance | Connection method | Cable specifications | Polarity | Operation mode | Pin arrangement | Applicable connector code * | Model |
|---|---|---|---|---|---|---|---|---|
| M8 | 4 mm | M12 Pre-wired Smartclick Connector Models (0.3 m) | PVC (oil-resistant) | Yes | NO | 1: +V, 4: 0 V | E | E2E-X4MD1-M1TGJ-US 0.3M |
| | | | | | NC | 1: +V, 2: 0 V | | E2E-X4MD2-M1TGJ-US 0.3M |
| | | Pre-wired Models (2 m) | | | NO | --- | --- | E2E-X4MD1-US 2M |
| | | | | | NC | | | E2E-X4MD2-US 2M |
| M12 | 8 mm | M12 Pre-wired Smartclick Connector Models (0.3 m) | | | NO | 1: +V, 4: 0 V | E | E2E-X8MD1-M1TGJ-US 0.3M |
| | | | | | NC | 1: +V, 2: 0 V | | E2E-X8MD2-M1TGJ-US 0.3M |
| | | Pre-wired Models (2 m) | | | NO | --- | --- | E2E-X8MD1-US 2M |
| | | | | | NC | | | E2E-X8MD2-US 2M |
| M18 | 14 mm | M12 Pre-wired Smartclick Connector Models (0.3 m) | | | NO | 1: +V, 4: 0 V | E | E2E-X14MD1-M1TGJ-US 0.3M |
| | | | | | NC | 1: +V, 2: 0 V | | E2E-X14MD2-M1TGJ-US 0.3M |
| | | Pre-wired Models (2 m) | | | NO | --- | --- | E2E-X14MD1-US 2M |
| | | | | | NC | | | E2E-X14MD2-US 2M |
| M30 | 20 mm | M12 Pre-wired Smartclick Connector Models (0.3 m) | | | NO | 1: +V, 4: 0 V | E | E2E-X20MD1-M1TGJ-US 0.3M |
| | | | | | NC | 1: +V, 2: 0 V | | E2E-X20MD2-M1TGJ-US 0.3M |
| | | Pre-wired Models (2 m) | | | NO | --- | --- | E2E-X20MD1-US 2M |
| | | | | | NC | | | E2E-X20MD2-US 2M |

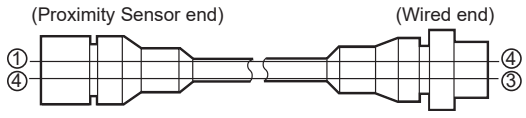
* Refer to page 15 for details.

**Connector Pin Assignments of DC 2-Wire Models**

- The connector pin assignments of each New E2E DC 2-Wire Model conform to IEC 947-5-2 Table III. (Only DC 2-Wire Models have been changed in comparison to the previous models.)
- The following models with conventional connector pin assignments are available as well. (Only NO Models can be used.)
  The cable at the right should also be used if the XW3D-P□55-G11/ XW3B-P□55-G11 Connector Junction Box is already being used.

| Cable length | Model |
|---|---|
| 500 mm | XS2W-D421-BY1 |

Internal Wiring




**Models with conventional connector pin assignments are available as well.**

| Appearance | | Model | | | |
|---|---|---|---|---|---|
| | | NO | Applicable connector code * | NC | Applicable connector code * |
| Shielded | M8 | E2E-X2D1-M1 | C | E2E-X2D2-M1 | D |
| | M12 | E2E-X3D1-M1 | C | E2E-X3D2-M1 | D |
| | M18 | E2E-X7D1-M1 | C | E2E-X7D2-M1 | D |
| | M30 | E2E-X10D1-M1 | C | E2E-X10D2-M1 | D |
| Unshielded | M8 | E2E-X4MD1-M1 | C | E2E-X4MD2-M1 | D |
| | M12 | E2E-X8MD1-M1 | C | E2E-X8MD2-M1 | D |
| | M18 | E2E-X14MD1-M1 | C | E2E-X14MD2-M1 | D |
| | M30 | E2E-X20MD1-M1 | C | E2E-X20MD2-M1 | D |

* Refer to page 15 for details.

**Note:** DC 3-Wire Models have been discontinued at the end of March 2022. Refer to the catalog (Cat. No. D120) for details.

## 3-Wire Models

### Shielded DC 3-Wire Models [Refer to *Dimensions* on page 20.]



| Appearance | Sensing distance | Connection method | Cable specifications | Operation mode | Pin arrangement | Applicable connector code *2 | Model | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | NPN output | PNP output |
| M8 | 1.5 mm | Pre-wired Models (2 m) | PVC (oil-resistant) | NO | --- | --- | **E2E-X1R5E1 2M** | **E2E-X1R5F1 2M** |
| | | | PVC (oil-resistant) | NC | | | **E2E-X1R5E2 2M** | **E2E-X1R5F2 2M** |
| | | M12 Connector Models | --- | NO | 1: +V, 3: 0 V, 4: Control output | B | **E2E-X1R5E1-M1** | **E2E-X1R5F1-M1** |
| | | | | NC | 1: +V, 3: 0 V, 2: Control output | D | **E2E-X1R5E2-M1** | **E2E-X1R5F2-M1** |
| | | M8 Connector Models | --- | NO | 1: +V, 3: 0 V, 4: Control output | F | **E2E-X1R5E1-M3** | **E2E-X1R5F1-M3** |
| | | | | NC | 1: +V, 3: 0 V, 2: Control output | | **E2E-X1R5E2-M3** | **E2E-X1R5F2-M3** |
| M12 | 2 mm | Pre-wired Models (2 m) | PVC (oil-resistant) | NO | --- | --- | **E2E-X2E1 2M *1** | **E2E-X2F1 2M *1** |
| | | | | NC | | | **E2E-X2E2 2M** | **E2E-X2F2 2M** |
| | | M12 Connector Models | --- | NO | 1: +V, 3: 0 V, 4: Control output | B | **E2E-X2E1-M1** | **E2E-X2F1-M1** |
| | | | | NC | 1: +V, 3: 0 V, 2: Control output | D | **E2E-X2E2-M1** | **E2E-X2F2-M1** |
| M18 | 5 mm | Pre-wired Models (2 m) | PVC (oil-resistant) | NO | --- | --- | **E2E-X5E1 2M *1** | **E2E-X5F1 2M *1** |
| | | | | NC | | | **E2E-X5E2 2M** | **E2E-X5F2 2M** |
| | | M12 Connector Models | --- | NO | 1: +V, 3: 0 V, 4: Control output | B | **E2E-X5E1-M1** | **E2E-X5F1-M1** |
| | | | | NC | 1: +V, 3: 0 V, 2: Control output | D | **E2E-X5E2-M1** | **E2E-X5F2-M1** |
| M30 | 10 mm | Pre-wired Models (2 m) | PVC (oil-resistant) | NO | --- | --- | **E2E-X10E1 2M *1** | **E2E-X10F1 2M** |
| | | | | NC | | | **E2E-X10E2 2M** | **E2E-X10F2 2M** |
| | | M12 Connector Models | --- | NO | 1: +V, 3: 0 V, 4: Control output | B | **E2E-X10E1-M1** | **E2E-X10F1-M1** |
| | | | | NC | 1: +V, 3: 0 V, 2: Control output | D | **E2E-X10E2-M1** | **E2E-X10F2-M1** |

*1. Models with different frequencies are also available. The model number is E2E-X□□□5 (example: E2E-X5E15 2M).
*2. Refer to page 15 for details.

**Note:** DC 3-Wire Models have been discontinued at the end of March 2022. Refer to the catalog (Cat. No. D120) for details.

## 3-Wire Models

### Unshielded DC 3-Wire Models [Refer to *Dimensions* on page 20.]



| Appearance | Sensing distance | Connection method | Cable specifications | Operation mode | Pin arrangement | Applicable connector code *2 | Model | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | NPN output | PNP output |
| M8 | 2 mm | Pre-wired Models (2 m) | PVC (oil-resistant) | NO | --- | --- | **E2E-X2ME1 2M** | **E2E-X2MF1 2M** |
| | | | | NC | | | **E2E-X2ME2 2M** | **E2E-X2MF2 2M** |
| | | M12 Connector Models | --- | NO | 1: +V, 3: 0 V, 4: Control output | B | **E2E-X2ME1-M1** | **E2E-X2MF1-M1** |
| | | | | NC | 1: +V, 3: 0 V, 2: Control output | D | **E2E-X2ME2-M1** | **E2E-X2MF2-M1** |
| | | M8 Connector Models | --- | NO | 1: +V, 3: 0 V, 4: Control output | F | **E2E-X2ME1-M3** | **E2E-X2MF1-M3** |
| | | | | NC | 1: +V, 3: 0 V, 2: Control output | | **E2E-X2ME2-M3** | **E2E-X2MF2-M3** |
| M12 | 5 mm | Pre-wired Models (2 m) | PVC (oil-resistant) | NO | --- | --- | **E2E-X5ME1 2M *1** | **E2E-X5MF1 2M** |
| | | | | NC | | | **E2E-X5ME2 2M** | **E2E-X5MF2 2M** |
| | | M12 Connector Models | --- | NO | 1: +V, 3: 0 V, 4: Control output | B | **E2E-X5ME1-M1** | **E2E-X5MF1-M1** |
| | | | | NC | 1: +V, 3: 0 V, 2: Control output | D | **E2E-X5ME2-M1** | **E2E-X5MF2-M1** |
| M18 | 10 mm | Pre-wired Models (2 m) | PVC (oil-resistant) | NO | --- | --- | **E2E-X10ME1 2M *1** | **E2E-X10MF1 2M** |
| | | | | NC | | | **E2E-X10ME2 2M** | **E2E-X10MF2 2M** |
| | | M12 Connector Models | --- | NO | 1: +V, 3: 0 V, 4: Control output | B | **E2E-X10ME1-M1** | **E2E-X10MF1-M1** |
| | | | | NC | 1: +V, 3: 0 V, 2: Control output | D | **E2E-X10ME2-M1** | **E2E-X10MF2-M1** |
| M30 | 18 mm | Pre-wired Models (2 m) | PVC (oil-resistant) | NO | --- | --- | **E2E-X18ME1 2M *1** | **E2E-X18MF1 2M** |
| | | | | NC | | | **E2E-X18ME2 2M** | **E2E-X18MF2 2M** |
| | | M12 Connector Models | --- | NO | 1: +V, 3: 0 V, 4: Control output | B | **E2E-X18ME1-M1** | **E2E-X18MF1-M1** |
| | | | | NC | 1: +V, 3: 0 V, 2: Control output | D | **E2E-X18ME2-M1** | **E2E-X18MF2-M1** |

*1. Models with different frequencies are also available. The model number is E2E-X□M□□5 (example: E2E-X5ME15 2M).
*2. Refer to page 15 for details.

# Ratings and Specifications

**Note:** DC 2-Wire Models have been integrated into the E2E NEXT Series at the end of october 2022. Refer to the catalog (Cat. No. D120) for details.

## E2E-X□D□ DC 2-Wire Models

| Size | | M8 | | M12 | | M18 | | M30 | |
|---|---|---|---|---|---|---|---|---|---|
| Shielded | | Shielded | Unshielded | Shielded | Unshielded | Shielded | Unshielded | Shielded | Unshielded |
| Item | Model | E2E-X2D□ | E2E-X4MD□ | E2E-X3D□ | E2E-X8MD□ | E2E-X7D□ | E2E-X14MD□ | E2E-X10D□ | E2E-X20MD□ |
| Sensing distance | | 2 mm ±10% | 4 mm ±10% | 3 mm ±10% | 8 mm ±10% | 7 mm ±10% | 14 mm ±10% | 10 mm ±10% | 20 mm ±10% |
| Set distance *1 | | 0 to 1.6 mm | 0 to 3.2 mm | 0 to 2.4 mm | 0 to 6.4 mm | 0 to 5.6 mm | 0 to 11.2 mm | 0 to 8 mm | 0 to 16 mm |
| Differential travel | | 15% max. of sensing distance | | 10% max. of sensing distance | | | | | |
| Detectable object | | Ferrous metal (The sensing distance decreases with non-ferrous metal. Refer to *Engineering Data* on pages 11 and 12. | | | | | | | |
| Standard sensing object | | Iron, 8 × 8 × 1 mm | Iron, 20 × 20 × 1 mm | Iron, 12 × 12 × 1 mm | Iron, 30 × 30 × 1 mm | Iron, 18 × 18 × 1 mm | Iron, 30 × 30 × 1 mm | Iron, 54 × 54 × 1 mm | |
| Response frequency *2 | | 1.5 kHz | 1 kHz | | 0.8 kHz | 0.5 kHz | 0.4 kHz | 0.1 kHz | |
| Power supply voltage (operating voltage range) | | Standard Models: 12 to 24 VDC, ripple (p-p): 10% max. (10 to 30 VDC)<br>US Models and Connector Models Used as UL-certified Models:<br>12 to 24 VDC, ripple (p-p): 10% max. (The operating voltage range is also the same.) *3 | | | | | | | |
| Leakage current | | 0.8 mA max. | | | | | | | |
| Control output | Load current | 3 to 100 mA, Diagnostic output: 50 mA for -D1(5)S Models | | | | | | | |
| | Residual voltage *4 | 3 V max. (Load current: 100 mA, Cable length: 2 m, M1J-T Models only: 5 V max.) | | | | | | | |
| Indicators | | D1 Models: Operation indicator (red) and setting indicator (green)<br>D2 Models: Operation indicator (red) | | | | | | | |
| Operation mode (with sensing object approaching) | | D1 Models: NO<br>D2 Models: NC Refer to the timing charts under *I/O Circuit Diagrams* on page 13 for details. | | | | | | | |
| Diagnostic output delay | | 0.3 to 1 s | | | | | | | |
| Protection circuits | | Surge suppressor, Load short-circuit protection (for control and diagnostic output) | | | | | | | |
| Ambient temperature range | | Operating: –25 to 70°C, Storage: –40 to 85°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 –25 to 70°C | | ±10% max. of sensing distance at 23°C in the temperature range of –25 to 70°C | | | | | |
| Voltage influence | | ±1% max. of sensing distance at rated voltage in the rated voltage ±15% range | | | | | | | |
| Insulation resistance | | 50 MΩ min. (at 500 VDC) between current-carrying parts and case | | | | | | | |
| Dielectric strength | | 1000 VAC, 50/60 Hz for 1 minute between current carry 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 10 times each in X, Y, and Z directions | | Destruction: 1,000 m/s² 10 times each in X, Y, and Z directions | | | | | |
| Degree of protection | | Pre-wired Models: IEC 60529 IP67, in-house standards: oil-resistant<br>Connector Models: IEC 60529 IP67 | | | | | | | |
| Connection method | | Pre-wired Models (Standard cable length: 2 m), Connector Models, or Pre-wired Connector Models (Standard cable length: 0.3 m) | | | | | | | |
| Weight (packed state) | Pre-wired Models | Approx. 60 g | | Approx. 70 g | | Approx. 130 g | | Approx. 175 g | |
| | Pre-wired Connector Models | --- | | Approx. 40 g | | Approx. 70 g | | Approx. 110 g | |
| | Connector Models | Approx. 15 g | | Approx. 25 g | | Approx. 40 g | | Approx. 90 g | |
| Materials | Case | Stainless steel (SUS303) | | Nickel-plated brass | | | | | |
| | Sensing surface | PBT | | | | | | | |
| | Clamping nuts | Nickel-plated brass | | | | | | | |
| | Toothed washer | Zinc-plated iron | | | | | | | |
| Accessories | | Instruction manual | | | | | | | |

*1. Use the E2E within the range in which the setting indicator (green LED) is ON (except D2 Models).
*2. 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.
*3. For the information on UL-certified connector models, refer to your OMRON website.
*4. The residual voltage of each M1J-T Model is 5 V. When connecting to a device, make sure that the device can withstand the residual voltage. (Refer to page 19 for details.)

**Note:** DC 3-Wire Models have been discontinued at the end of March 2022. Refer to the catalog (Cat. No. D120) for details.

## E2E-X□E□/F□ DC 3-Wire Models

| Item | Size | M8 | | M12 | | M18 | | M30 | |
|---|---|---|---|---|---|---|---|---|---|
| | Shielded | Shielded | Unshielded | Shielded | Unshielded | Shielded | Unshielded | Shielded | Unshielded |
| | Model | E2E -X1R5E□/F□ | E2E -X2ME□/F□ | E2E -X2E□/F□ | E2E -X5ME□/F□ | E2E -X5E□/F□ | E2E -X10ME□/F□ | E2E-X10E□/ F□ | E2E -X18ME□/F□ |
| Sensing distance | | 1.5 mm ±10% | 2 mm ±10% | | 5 mm ±10% | | 10 mm ±10% | | 18 mm ±10% |
| Set distance | | 0 to 1.2 mm | 0 to 1.6 mm | | 0 to 4 mm | | 0 to 8 mm | | 0 to 14 mm |
| Differential travel | | 10% max. of sensing distance | | | | | | | |
| Detectable object | | Ferrous metal (The sensing distance decreases with non-ferrous metal. Refer to *Engineering Data* on page 12.) | | | | | | | |
| Standard sensing object | | Iron, 8 × 8 × 1 mm | Iron, 12 × 12 × 1 mm | | Iron, 15 ×15 × 1 mm | Iron, 18 × 18 × 1 mm | Iron, 30 × 30 × 1 mm | | Iron, 54 × 54 × 1 mm |
| Response frequency *1 | | 2 kHz | 0.8 kHz | 1.5 kHz | 0.4 kHz | 0.6 kHz | 0.2 kHz | 0.4 kHz | 0.1 kHz |
| Power supply voltage (operating voltage range) *2 | | 12 to 24 VDC, ripple(p-p): 10% max. (10 to 30 VDC)<br>Connector Models Used as UL-certified Models: 12 to 24 VDC, ripple (p-p): 10% max. (The operating voltage range is also the same.) *3 | | | | | | | |
| Current consumption | | 13 mA max. | | | | | | | |
| Control output | Load current *2 | 200 mA max. | | | | | | | |
| | Residual voltage | 2 V max. (Load current: 200 mA, Cable length: 2 m) | | | | | | | |
| Indicators | | Operation indicator (red) | | | | | | | |
| Operation mode (with sensing object approaching) | | E1/F1 Models: NO<br>E2/F2 Models: NC<br>Refer to the timing charts under */O Circuit Diagrams* on page 14 for details. | | | | | | | |
| Protection circuits | | Load short-circuit protection, Surge suppressor, Reverse polarity protection | | | | | | | |
| Ambient temperature range *2 | | Operating/Storage: –40 to 85°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 –40 to 85°C<br>±10% max. of sensing distance at 23°C in the temperature range of –25 to 70°C | | | | | | | |
| Voltage influence | | ±1% max. of sensing distance at rated voltage in the 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 carry 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 | | Destruction: 1,000 m/s$^2$ 10 times each in X, Y, and Z directions | | | | | |
| Degree of protection | | Pre-wired Models : IEC 60529 IP67, in-house standards: oil-resistant<br>Connector Models : IEC 60529 IP67 | | | | | | | |
| Connection method | | Pre-wired Models (Standard cable length: 2 m) and Connector Models | | | | | | | |
| Weight (packed state) | Pre-wired Models | Approx. 65 g | | Approx. 75 g | | Approx. 150 g | | Approx. 195 g | |
| | Connector Models | Approx. 15 g | | Approx. 25 g | | Approx. 40 g | | Approx. 90 g | |
| Materials | Case | Stainless steel (SUS303) | | Nickel-plated brass | | | | | |
| | Sensing surface | PBT | | | | | | | |
| | Clamping nuts | Nickel-plated brass | | | | | | | |
| | Toothed washer | Zinc-plated iron | | | | | | | |
| Accessories | | Instruction manual | | | | | | | |

*1. 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.
*2. When using an M8 Model at an ambient temperature between 70 and 85°C, supply 10 to 30 VDC to the Sensor and make sure that the Sensor has a control output of 100 mA maximum.
*3. For the information on UL-certified connector models, refer to your OMRON website.

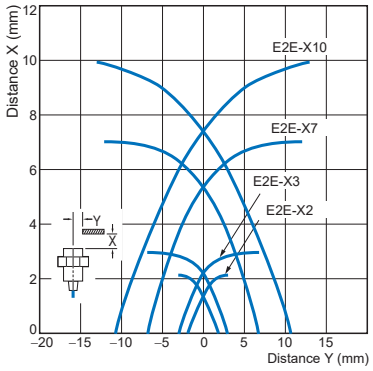
# Engineering Data (Reference Value)

**Note:** DC 2-Wire Models have been integrated into the E2E NEXT Series at the end of october 2022. DC 3-Wire Models have been discontinued at the end of March 2022. Refer to the catalog (Cat. No. D120) for details.

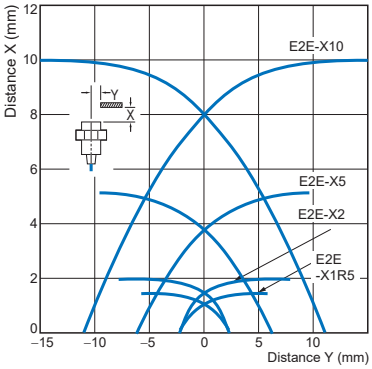
## Sensing Area

### Shielded Models

**E2E-X□D□**

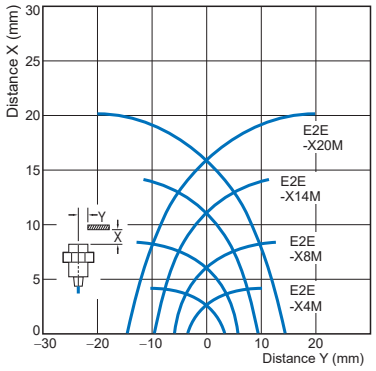



**E2E-X□E□/-X□F□**

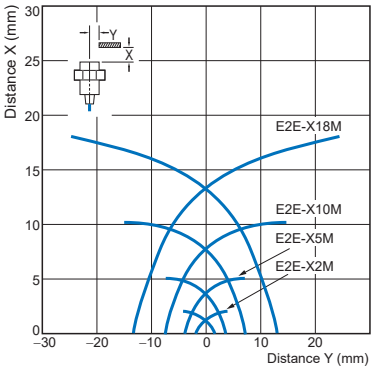



### Unshielded Models

**E2E-X□MD□**

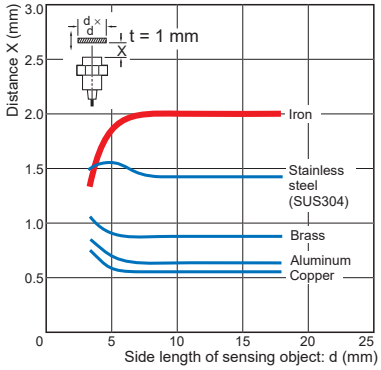



**E2E-X□ME□/-X□MF□**

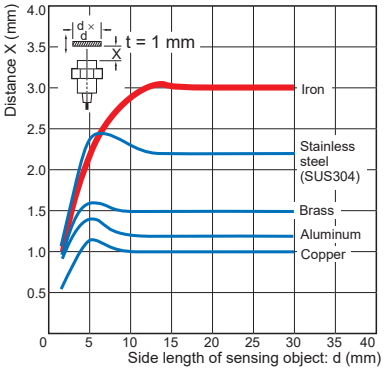



## Influence of Sensing Object Size and Material

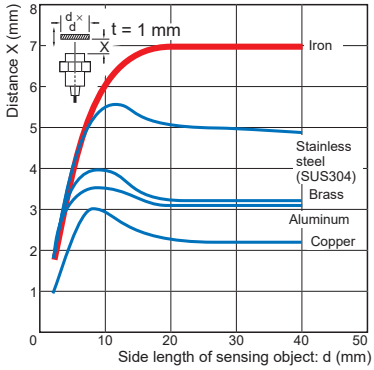
**E2E-X2D□**



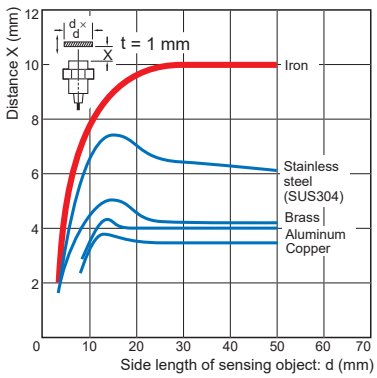

**E2E-X3D□**



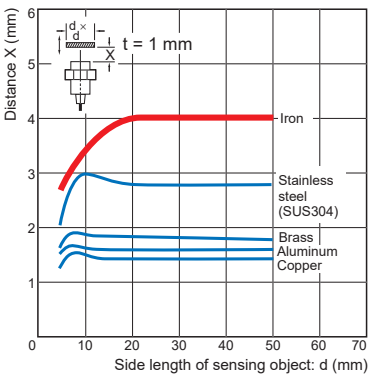

**E2E-X7D□**



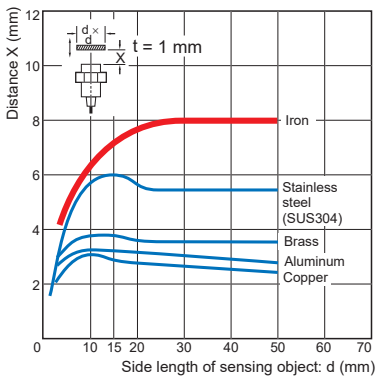

**E2E-X10D□**




**E2E-X4MD□**

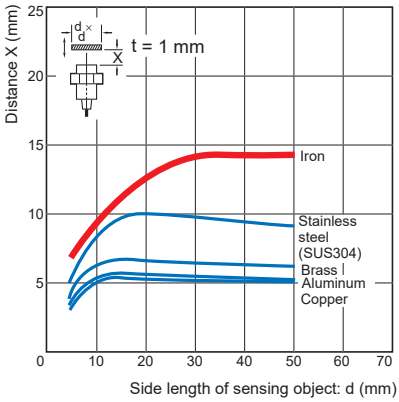



**E2E-X8MD□**

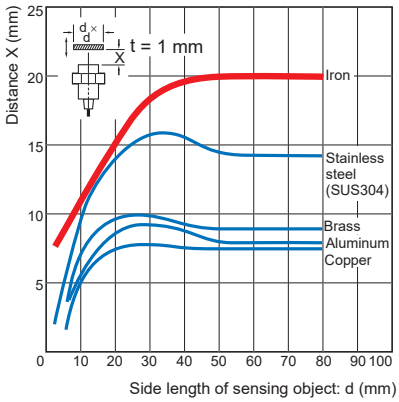


**Note:** DC 2-Wire Models have been integrated into the E2E NEXT Series at the end of october 2022. DC 3-Wire Models have been discontinued at the end of March 2022. Refer to the catalog (Cat. No. D120) for details.

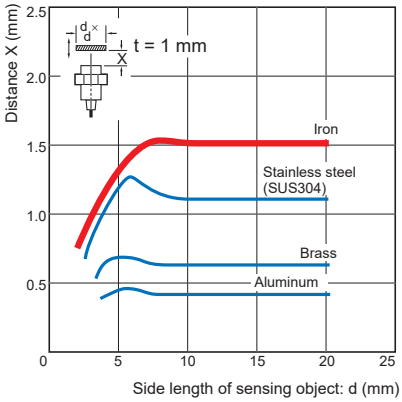
### E2E-X14MD□



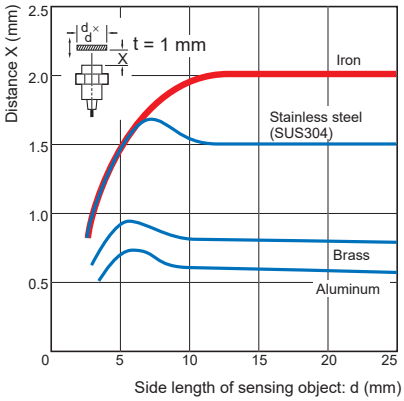

### E2E-X20MD□



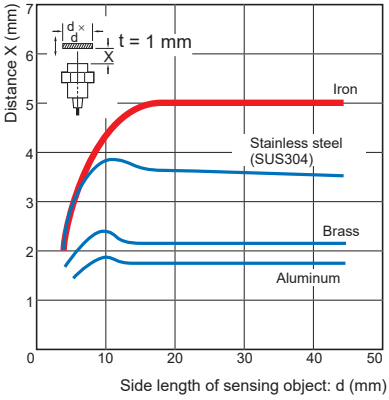

### E2E-X1R5E□/-X1R5F□



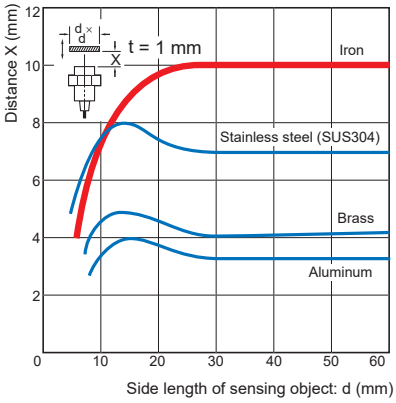

### E2E-X2E□/-X2F□



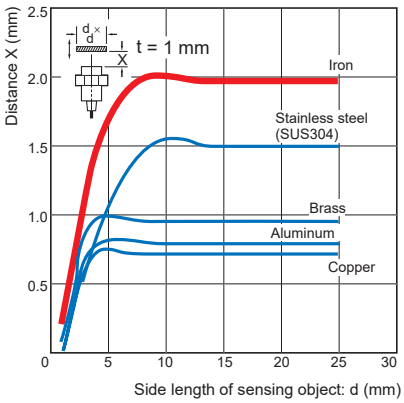

### E2E-X5E□/-X5F□



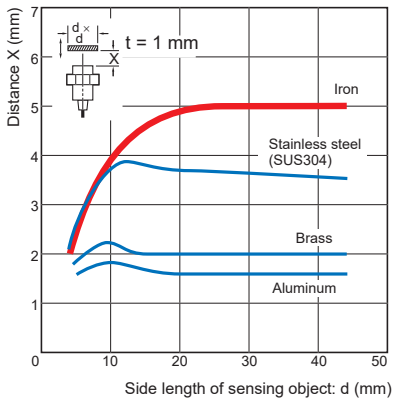

### E2E-X10E□/-X10F□



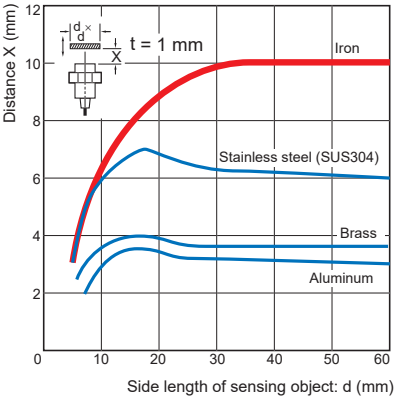

### E2E-X2ME□/-X2MF□




### E2E-X5ME□/-X5MF□

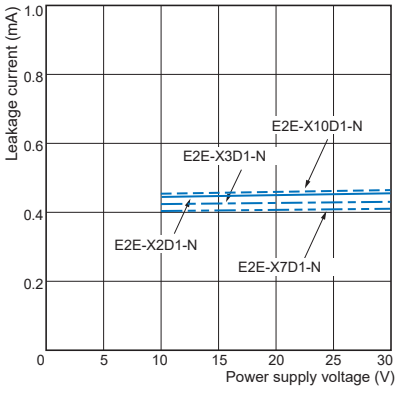



### E2E-X10ME□/-X10MF□



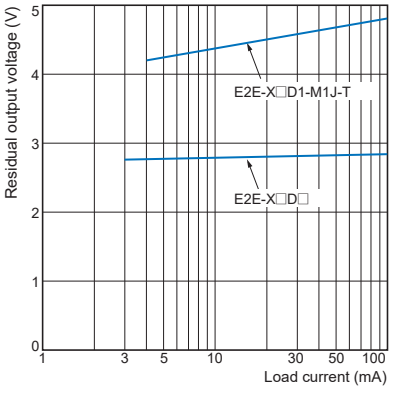

## Leakage Current

### E2E-X□D□

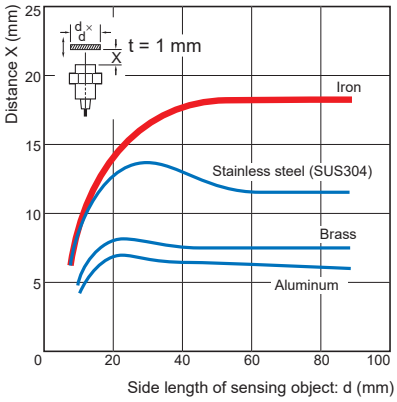



## Residual Output Voltage

### E2E-X□D□



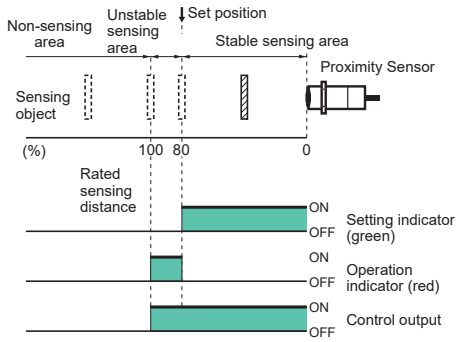
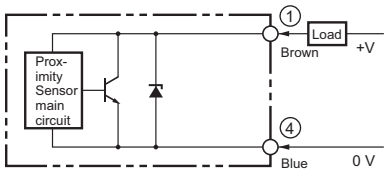
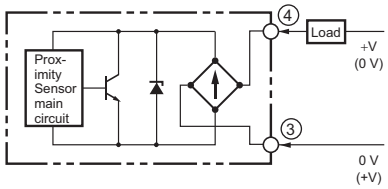
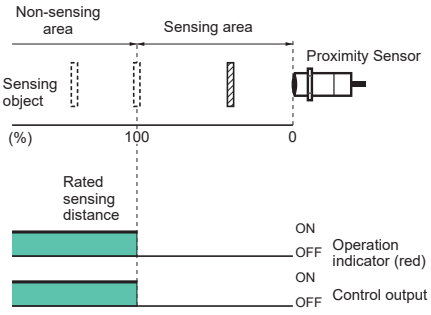
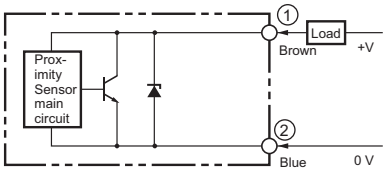

### E2E-X18ME□/-X18MF□



# I/O Circuit Diagrams

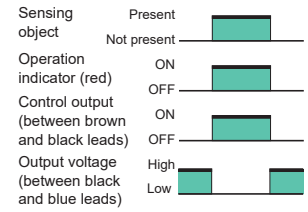
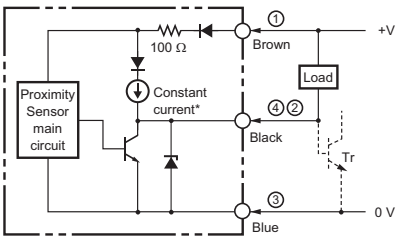
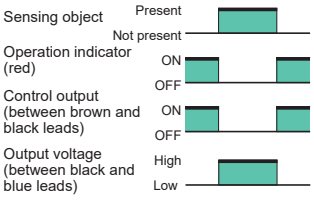
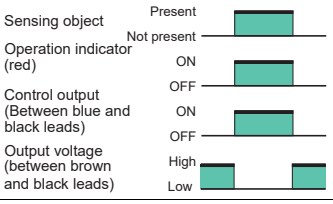
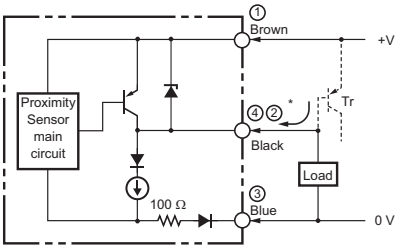
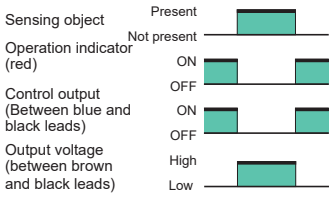
**Note:** DC 2-Wire Models have been integrated into the E2E NEXT Series at the end of october 2022. Refer to the catalog (Cat. No. D120) for details.

## E2E-X□D□ DC 2-Wire Models

<table>
<tr><th>Operation mode</th><th>Model</th><th>Timing Chart</th><th>Output circuit</th></tr>
<tr><td rowspan="2">Without self-diagnostic output: NO</td><td>E2E-X□D1-N<br>E2E-X□D1-M1G(J)<br>E2E-X□D1-M3G<br>E2E-X□D1(-M1TGJ)-US</td><td rowspan="2">
</td><td>Polarity: Yes<br>
<br>Note: The load can be connected to either the +V or 0 V side.</td></tr>
<tr><td>E2E-X□D1-M1J-T</td><td>Polarity: None<br>
<br>Note 1. The load can be connected to either the +V or 0 V side.<br>2. The E2E-X□D1-M1J-T has no polarity. Therefore, terminals 3 and 4 have no polarity.</td></tr>
<tr><td>Without self-diagnostic output: NC</td><td>E2E-X□D2-N<br>E2E-X□D2-M1G<br>E2E-X□D2-M3G<br>E2E-X□D2(-M1TGJ)-US</td><td>
</td><td>
<br>Note: The load can be connected to either the +V or 0 V side.</td></tr>
</table>

**Note:** DC 3-Wire Models have been discontinued at the end of March 2022. Refer to the catalog (Cat. No. D120) for details.

## DC 3-Wire Models

| Operation mode | Output specifications | Model | Timing Chart | Output circuit |
|---|---|---|---|---|
| NO | NPN output | E2E-X□E□<br>E2E-X□E□-M1<br>E2E-X□E□-M3 |  | <br>*Constant current output is 1.5 to 3 mA.<br>Note: For Connector Models, the connection between pins 1, 4 and 3 uses an NO contact, and the connection between pins 1, 2 and 3 uses an NC contact. |
| NC | | |  | |
| NO | PNP output | E2E-X□F□<br>E2E-X□F□-M1<br>E2E-X□F□-M3 |  | <br>*When a transistor is connected<br>Note: For Connector Models, the connection between pins 1, 4 and 3 uses an NO contact, and the connection between pins 1, 2 and 3 uses an NC contact. |
| NC | | |  | |

# Sensor I/O Connectors (Sockets on One Cable End)

**Model for Connectors and Pre-wired Connectors: A Connector is not provided with the Sensor. Be sure to order a Connector separately.**

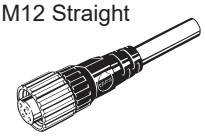
**[Refer to Dimensions for the XS2, XS3, and XS5.]**

**Note:** DC 2-Wire Models have been integrated into the E2E NEXT Series at the end of october 2022. DC 3-Wire Models have been discontinued at the end of March 2022. Refer to the catalog (Cat. No. D120) for details.

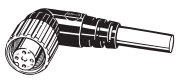
| Applicable connector code | Connector | | | | Applicable Proximity Sensor model number | Connection diagram No. *2 |
|---|---|---|---|---|---|---|
| | Screw | Appearance *1 | Cable length 2m | Cable length 5m | | |
| | | | CablConnector model number | CablConnector model number | | |
| A | M12 | Straight | **XS2F-D421-DA0-F** | **XS2F-D421-GA0-F** | E2E-X□D1-M1G(J) | 1 |
| | | L-shape | **XS2F-D422-DA0-F** | **XS2F-D422-GA0-F** | | |
| B | | Straight | **XS2F-D421-DC0-F** | **XS2F-D421-GC0-F** | E2E-X□E1-M1<br>E2E-X□F1-M1 | 9 |
| | | L-shape | **XS2F-D422-DC0-F** | **XS2F-D422-GC0-F** | | |
| C | | Straight | **XS2F-D421-DD0** | **XS2F-D421-GD0** | E2E-X□D1-M1J-T | 3 |
| | | | | | E2E-X□D1-M1 | 2 |
| | | L-shape | **XS2F-D422-DD0** | **XS2F-D422-GD0** | E2E-X□D1-M1J-T | 3 |
| | | | | | E2E-X□D1-M1 | 2 |
| D | | Straight | **XS2F-D421-D80-F** | **XS2F-D421-G80-F** | E2E-X□D2-M1G(J) | 5 |
| | | | | | E2E-X□D2-M1J-T | 7 |
| | | | | | E2E-X□D2-M1 | 6 |
| | | | | | E2E-X□E2-M1<br>E2E-X□F2-M1 | 10 |
| | | L-shape | **XS2F-D422-D80-F** | **XS2F-D422-G80-F** | E2E-X□D2-M1G(J) | 5 |
| | | | | | E2E-X□D2-M1J-T | 7 |
| | | | | | E2E-X□D2-M1 | 6 |
| | | | | | E2E-X□E2-M1<br>E2E-X□F2-M1 | 10 |
| E | | Smartclick Connector, Straight | **XS5F-D421-D80-F** | **XS5F-D421-G80-F** | E2E-X□D1-M1TGJ(-US) | 13 |
| | | | | | E2E-X□D2-M1TGJ-US | 14 |
| F | M8 | Straight | **XS3F-M421-402-A** | **XS3F-M421-405-A** | E2E-X□D1-M3G | 4 |
| | | | | | E2E-X□D2-M3G | 8 |
| | | | | | E2E-X□E1-M3<br>E2E-X□F1-M3 | 11 |
| | | | | | E2E-X□E2-M3<br>E2E-X□F2-M3 | 12 |
| | | L-shape | **XS3F-M422-402-A** | **XS3F-M422-405-A** | E2E-X□D1-M3G | 4 |
| | | | | | E2E-X□D2-M3G | 8 |
| | | | | | E2E-X□E1-M3<br>E2E-X□F1-M3 | 11 |
| | | | | | E2E-X□E2-M3<br>E2E-X□F2-M3 | 12 |

Note: Refer to *Introduction to Sensor I/O Connectors/Sensor Controllers* for details and for information on Cable length and Robotics Cables.
*1. Images of straight and L-shaped connectors.

M12 Straight



M12 L-shape



M8 Straight



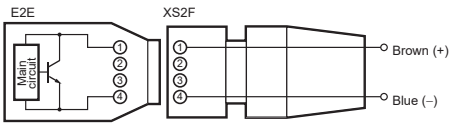
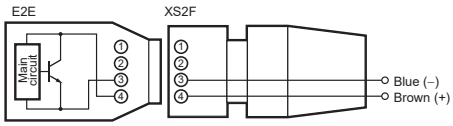
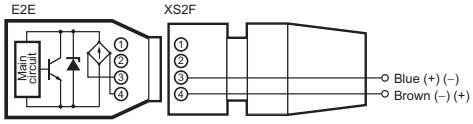
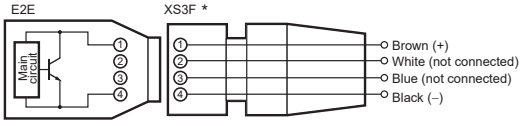
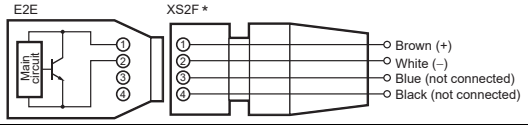
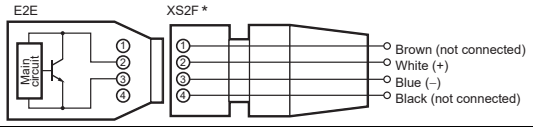
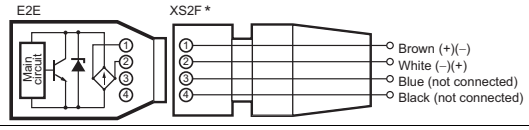
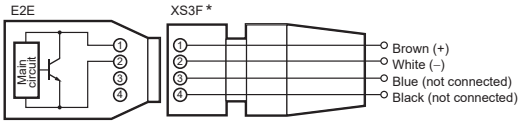
M8 L-shape



*2. Refer to *Connection Diagrams* on page 16 for information on Proximity Sensor and I/O Connector connections.

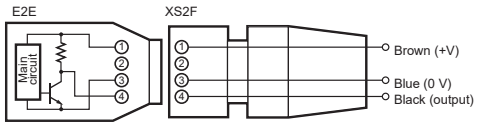
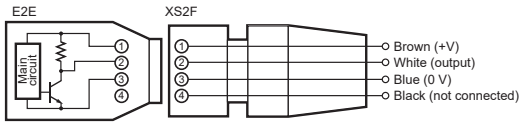
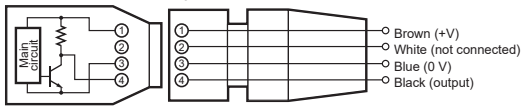
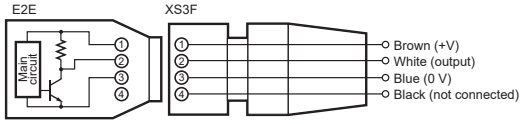
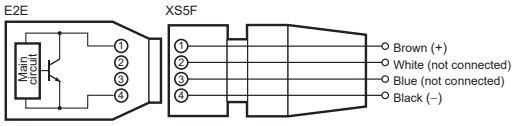
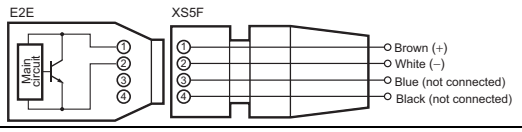
## Connections for Sensor I/O Connectors

**Note:** DC 2-Wire Models have been integrated into the E2E NEXT Series at the end of october 2022. DC 3-Wire Models have been discontinued at the end of March 2022. Refer to the catalog (Cat. No. D120) for details.

| Connection diagram No. | Proximity Sensor | | | Sensor I/O Connector model number | Connections |
|---|---|---|---|---|---|
| | Type | Operation mode | Model | | |
| 1 | DC 2-wire (IEC pin wiring) | NO | E2E-X□D1-M1G/M1GJ | XS2F-D42□-□A0-F (1: Straight, 2: L-shape; D: 2-m cable, G: 5-m cable) |   |
| 2 | DC 2-wire (previous pin wiring) | | E2E-X□D1-M1 | XS2F-D42□-□D0 (1: Straight, 2: L-shape; D: 2-m cable, G: 5-m cable) |   |
| 3 | DC 2-wire (no polarity) | | E2E-X□D1-M1J-T | XS2F-D42□-□D0 (1: Straight, 2: L-shape; D: 2-m cable, G: 5-m cable) |   |
| 4 | DC 2-wire (M8 connector) | | E2E-X□D1-M3G | XS3F-M42□-40□-A (1: Straight, 2: L-shape; 2: 2-m cable, 5: 5-m cable) |   |
| 5 | DC 2-wire (IEC pin wiring) | NC | E2E-X□D2-M1G/M1GJ | XS2F-D42□-□80-F (1: Straight, 2: L-shape; D: 2-m cable, G: 5-m cable) |   |
| 6 | DC 2-wire (previous pin wiring) | | E2E-X□D2-M1 | XS2F-D42□-□80-F (1: Straight, 2: L-shape; D: 2-m cable, G: 5-m cable) |   |
| 7 | DC 2-wire (no polarity) | | E2E-X□D2-M1J-T | XS2F-D42□-□80-F (1: Straight, 2: L-shape; D: 2-m cable, G: 5-m cable) |   |
| 8 | DC 2-wire (M8 connector) | | E2E-X□D2-M3G | XS3F-M42□-40□-A (1: Straight, 2: L-shape; 2: 2-m cable, 5: 5-m cable) |   |

* Different from Proximity Sensor wire colors.

**Note:** DC 2-Wire Models have been integrated into the E2E NEXT Series at the end of october 2022. DC 3-Wire Models have been discontinued at the end of March 2022. Refer to the catalog (Cat. No. D120) for details.

| Connection diagram No. | Proximity Sensor | | | Sensor I/O Connector model number | Connections |
|---|---|---|---|---|---|
| | Type | Operation mode | Model | | |
| 9 | DC 3-wire | NO | E2E-X□E/F1-M1 | XS2F-D42□-□C0-F (1: Straight, 2: L-shape; D: 2-m cable, G: 5-m cable) |   |
| 10 | | NC | E2E-X□E2/F2-M1 | XS2F-D42□-□80-F (1: Straight, 2: L-shape; D: 2-m cable, G: 5-m cable) |   |
| 11 | DC 3-wire (M8 connector) | NO | E2E-X□E1/F1-M3 | XS3F-M42□-40□-A (1: Straight, 2: L-shape; 2: 2-m cable, 5: 5-m cable) |   |
| 12 | | NC | E2E-X□E2/F2-M3 | XS3F-M42□-40□-A (1: Straight, 2: L-shape; 2: 2-m cable, 5: 5-m cable) |   |
| 13 | DC 2-wire (Smartclick connector) | NO | E2E-X□D1-M1TGJ(-US) | XS5F-D421-□80-F (D: 2-m cable, G: 5-m cable) |   |
| 14 | | NC | E2E-X□D2-M1TGJ-US | XS5F-D421-□80-F (D: 2-m cable, G: 5-m cable) |   |

**Refer to *Introduction to Sensor I/O Connectors/Sensor Controllers* for details.**

## Safety Precautions

**Note:** DC 2-Wire Models have been integrated into the E2E NEXT Series at the end of october 2022. DC 3-Wire Models have been discontinued at the end of March 2022. Refer to the catalog (Cat. No. D120) for details.

**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.**



### ⚠ CAUTION

- Do not short the load. Explosion or burning may result.
- Do not supply power to the Sensor with no load, otherwise Sensor may be damaged.



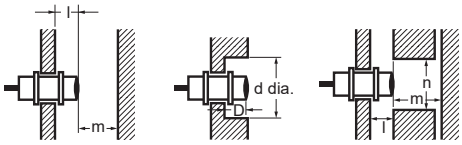
### Precautions for Correct Use

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 | M8 | M12 | M18 | M30 |
|---|---|---|---|---|---|---|
| DC 2-Wire Models E2E-X□D□ | Shielded | l | 0 | | | |
| | | d | 8 | 12 | 18 | 30 |
| | | D | 0 | | | |
| | | m | 4.5 | 8 | 20 | 40 |
| | | n | 12 | 18 | 27 | 45 |
| | Unshielded | l | 12 | 15 | 22 | 30 |
| | | d | 24 | 40 | 70 | 90 |
| | | D | 12 | 15 | 22 | 30 |
| | | m | 8 | 20 | 40 | 70 |
| | | n | 24 | 40 | 70 | 90 |
| DC 3-Wire Models E2E-X□E□ E2E-X□F□ | Shielded | l | 0 | | | |
| | | d | 8 | 12 | 18 | 30 |
| | | D | 0 | | | |
| | | m | 4.5 | 8 | 20 | 40 |
| | | n | 12 | 18 | 27 | 45 |
| | Unshielded | l | 6 | 15 | 22 | 30 |
| | | d | 24 | 40 | 55 | 90 |
| | | D | 6 | 15 | 22 | 30 |
| | | m | 8 | 20 | 40 | 70 |
| | | n | 24 | 36 | 54 | 90 |

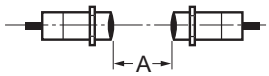
**Relationship between Sizes and Models**

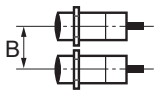
| Model | | Model |
|---|---|---|
| M8 | Shielded | E2E-X2D□ |
| | | E2E-X1R5E□ |
| | | E2E-X1R5F□ |
| | Unshielded | E2E-X4MD□ |
| | | E2E-X2ME□ |
| | | E2E-X2MF□ |
| M12 | Shielded | E2E-X3D□ |
| | | E2E-X2E□ |
| | | E2E-X2F□ |
| | Unshielded | E2E-X8MD□ |
| | | E2E-X5ME□ |
| | | E2E-X5MF□ |
| M18 | Shielded | E2E-X7D□ |
| | | E2E-X5E□ |
| | | E2E-X5F□ |
| | Unshielded | E2E-X14MD□ |
| | | E2E-X10ME□ |
| | | E2E-X10MF□ |
| M30 | Shielded | E2E-X10D□ |
| | | E2E-X10E□ |
| | | E2E-X10F□ |
| | Unshielded | E2E-X20MD□ |
| | | E2E-X18ME□ |
| | | E2E-X18MF□ |

**Note:** DC 2-Wire Models have been integrated into the E2E NEXT Series at the end of october 2022. DC 3-Wire Models have been discontinued at the end of March 2022. Refer to the catalog (Cat. No. D120) for details.

## 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 | M8 | M12 | M18 | M30 |
|---|---|---|---|---|---|---|
| DC 2-Wire Models E2E-X□D□ | Shielded | A | 20 | 30 (20) | 50 (30) | 100 (50) |
| | | B | 15 | 20 (12) * | 35 (18) * | 70 (35) |
| | Unshielded | A | 80 | 120 (60) | 200 (100) | 300 (100) |
| | | B | 60 | 100 (50) | 110 (60) | 200 (100) |
| DC 3-Wire Models E2E-X□E□/X□F□ | Shielded | A | 20 | 30 (20) | 50 (30) | 100 (50) |
| | | B | 15 | 20 (12) * | 35 (18) * | 70 (35) |
| | Unshielded | A | 80 | 120 (60) | 200 (100) | 300 (100) |
| | | B | 60 | 100 (50) | 110 (60) | 200 (100) |

Note: Values in parentheses apply to Sensors operating at different frequencies.
* Mutual interference will not occur for close-proximity mounting if models with different frequencies are used together.

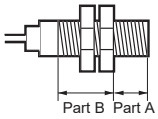
## Mounting

### Tightening Force

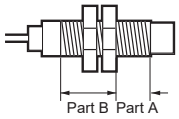
Do not tighten the nut with excessive force.
A washer must be used with the nut.



Shielded Models




Unshielded Models




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 strengths assume washers are being used.

| Model | | Part A | | Part B |
|---|---|---|---|---|
| | | Dimension | Torque | Torque |
| M8 | Shielded | 9 | 9 N·m | 12 N·m |
| | Unshielded | 3 | | |
| M12 | | 30 N·m | | |
| M18 | | 70 N·m | | |
| M30 | | 180 N·m | | |

## Connecting a DC 2-Wire Proximity Sensor to a PLC (Programmable Controller)

### Required Conditions

Connection to a PLC is possible if the specifications of the PLC and the Proximity Sensor satisfy the following conditions. (The meanings of the symbols are given at the right.)

1. The ON voltage of the PLC and the residual voltage of the Proximity Sensor must satisfy the following.
   $V_{ON} \leq V_{CC} - V_R$
2. The OFF current of the PLC and the leakage current of the Proximity Sensor must satisfy the following.
   $I_{OFF} \geq I_{leak}$
   (If the OFF current is not listed in the PLC's input specifications, take it to be 1.3 mA.)
3. The ON current of the PLC and the control output of the Proximity Sensor must satisfy the following.
   $I_{OUT}$ (min.) $\leq I_{ON} \leq I_{OUT}$ (max.)
   The ON current of the PLC will vary, however, with the power supply voltage and the input impedance, as shown in the following equation.
   $I_{ON} = (V_{CC} - V_R - \underline{V_{PC}}) / R_{IN}$

### Example

In this example, the above conditions are checked when the Proximity Sensor is the E2E-X7D1-N and the power supply voltage is 24 V.

1. $V_{ON}$ (14.4 V) ≤ $V_{CC}$ (20.4 V) – $V_R$ (3 V) = 17.4 V: OK
2. $I_{OFF}$ (1.3 mA) ≥ $I_{leak}$ (0.8 mA): OK
3. $I_{ON}$ = [$V_{CC}$ (20.4 V) – $V_R$ (3 V) – $\underline{V_{PC}\ (4\ V)}$] / $R_{IN}$ (3 kΩ)
   = Approx. 4.5 mA
   Therefore, $I_{OUT}$ (min.) (3 mA) ≤ $I_{ON}$ (4.5 mA): OK
   Connection is thus possible.

### Connection Example (Reference)

| | |
|---|---|
| **PLC** | $V_{ON}$: ON voltage (14.4 V)<br>$I_{ON}$: ON current (typically 7 mA)<br>$I_{OFF}$: OFF current (1.3 mA)<br>$R_{IN}$: Input impedance (3 kΩ)<br>$\underline{V_{PC}}$: Internal residual voltage (4 V) |
| **Proximity Sensor** | $V_R$: Output residual voltage (3 V)<br>$I_{leak}$: Leakage current (0.8 mA)<br>$I_{OUT}$: Control output (3 to 100 mA)<br>$V_{CC}$: Power supply voltage (PLC: 20.4 to 26.4 V) |

**Note:** DC 2-Wire Models have been integrated into the E2E NEXT Series at the end of october 2022. DC 3-Wire Models have been discontinued at the end of March 2022. Refer to the catalog (Cat. No. D120) for details.

# Dimensions

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

## Main Units

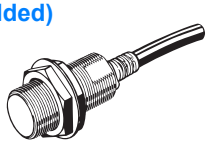
### Model Number-Dimensions Drawing Number Lookup Table

| Model | Shielded | Model | DC 2-Wire Models | | DC 3-Wire Models | |
|---|---|---|---|---|---|---|
| | | | Model | No. | Model | No. |
| Pre-wired Models | Shielded | M8 | E2E-X2D□(-US) | 1 | E2E-X1R5E□/F□ | 1 |
| | | M12 | E2E-X3D□(-US) | 3 | E2E-X2E□/F□ | 3 |
| | | M18 | E2E-X7D□(-US) | 5 | E2E-X5E□/F□ | 5 |
| | | M30 | E2E-X10D□(-US) | 7 | E2E-X10E□/F□ | 7 |
| | Unshielded | M8 | E2E-X4MD□(-US) | 2 | E2E-X2ME□/F□ | 2 |
| | | M12 | E2E-X8MD□(-US) | 4 | E2E-X5ME□/F□ | 4 |
| | | M18 | E2E-X14MD□(-US) | 6 | E2E-X10ME□/F□ | 6 |
| | | M30 | E2E-X20MD□(-US) | 8 | E2E-X18ME□/F□ | 8 |
| Connector Models (M12) | Shielded | M8 | E2E-X2D□-M1(G) | 9 | E2E-X1R5E/F□-M1 | 9 |
| | | M12 | E2E-X3D□-M1(G) | 11 | E2E-X2E/F□-M1 | 11 |
| | | M18 | E2E-X7D□-M1(G) | 13 | E2E-X5E/F□-M1 | 13 |
| | | M30 | E2E-X10D□-M1(G) | 15 | E2E-X10E/F□-M1 | 15 |
| | Unshielded | M8 | E2E-X4MD□-M1(G) | 10 | E2E-X2ME/F□-M1 | 10 |
| | | M12 | E2E-X8MD□-M1(G) | 12 | E2E-X5ME/F□-M1 | 12 |
| | | M18 | E2E-X14MD□-M1(G) | 14 | E2E-X10ME/F□-M1 | 14 |
| | | M30 | E2E-X20MD□-M1(G) | 16 | E2E-X18ME/F□-M1 | 16 |
| Connector Models (M8) | Shielded | M8 | E2E-X2D□-M3G | 17 | E2E-X1R5E/F□-M3 | 17 |
| | Unshielded | | E2E-X4MD□-M3G | 18 | E2E-X2ME/F□-M3 | 18 |
| Pre-wired Connector Models | Shielded | M8 | E2E-X2D□-M1TGJ | 19 | --- | |
| | | | E2E-X2D□-M1TGJ-US | | | |
| | | M12 | E2E-X3D□-M1(T)GJ | 20 | | |
| | | | E2E-X3D□-M1TGJ-US | | | |
| | | M18 | E2E-X7D□-M1(T)GJ | 21 | | |
| | | | E2E-X7D□-M1TGJ-US | | | |
| | | M30 | E2E-X10D□-M1(T)GJ | 22 | | |
| | | | E2E-X10D□-M1TGJ-US | | | |
| | Unshielded | M8 | E2E-X4MD□-M1TGJ-US | 23 | --- | |
| | | M12 | E2E-X8MD1-M1(T)GJ | 24 | | |
| | | | E2E-X8MD□-M1TGJ-US | | | |
| | | M18 | E2E-X14MD1-M1(T)GJ | 25 | | |
| | | | E2E-X14MD□-M1TGJ-US | | | |
| | | M30 | E2E-X20MD1-M1(T)GJ | 26 | | |
| | | | E2E-X20MD□-M1TGJ-US | | | |
| Pre-wired Connector Models (no polarity) | Shielded | M12 | E2E-X3D1-M1J-T | 20 | --- | |
| | | M18 | E2E-X7D□-M1J-T | 21 | | |
| | | M30 | E2E-X10D□-M1J-T | 22 | | |

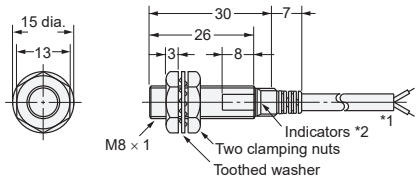
Note 1. Two clamping nuts and one toothed washer are provided with M8 to M30 Models.
2. The model numbers of M8 to M30 Pre-wired Models are laser-marked on the milled section and cable section.

**Note:** DC 2-Wire Models have been integrated into the E2E NEXT Series at the end of october 2022. DC 3-Wire Models have been discontinued at the end of March 2022. Refer to the catalog (Cat. No. D120) for details.

## Pre-wired Models (Shielded)

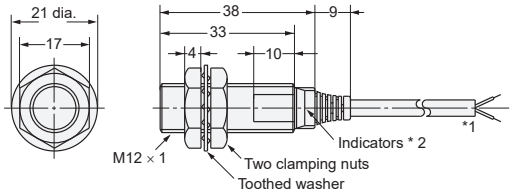


### Diagram 1 E2E-X2D□ E2E-X1R5E□/F□



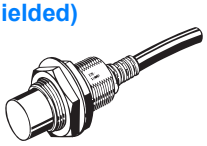

*1. 4-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm$^2$, Insulator diameter: 1.3 mm), Standard length: 2 m
4-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.3 mm$^2$, Insulator diameter: 1.3 mm), Standard length: 2 m
Robotics Cable Models:
4-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm$^2$, Insulator diameter: 1.27 mm), Standard length: 2 m
4-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.3 mm$^2$, Insulator diameter: 1.27 mm), Standard length: 2 m
Models with Highly Oil-resistant Cables:
4-dia. polyurethane-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm$^2$, Insulator diameter: 1.3 mm), Standard length: 2 m
The cable can be extended up to 200 m (separate metal conduit).
*2. D1 Models: Operation indicator (red) and setting indicator (green), D2/E/F Models: Operation indicator (red)

### Diagram 3 E2E-X3D□ E2E-X2E□/F□

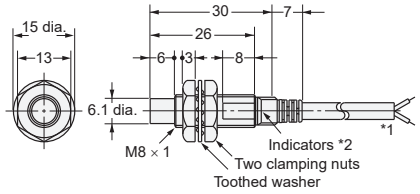



*1. 4-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm$^2$, Insulator diameter: 1.3 mm), Standard length: 2 m
4-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.3 mm$^2$, Insulator diameter: 1.3 mm), Standard length: 2 m
Robotics Cable Models:
4-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm$^2$, Insulator diameter: 1.27 mm), Standard length: 2 m
4-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.3 mm$^2$, Insulator diameter: 1.27 mm), Standard length: 2 m
Models with Highly Oil-resistant Cables:
4-dia. polyurethane-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm$^2$, Insulator diameter: 1.3 mm), Standard length: 2 m
The cable can be extended (separate metal conduit) up to 200 m for the control output and up to 100 m for the diagnostic output.
*2. D1 Models: Operation indicator (red) and setting indicator (green), D2/E/F Models: Operation indicator (red)

## Pre-wired Models (Unshielded)

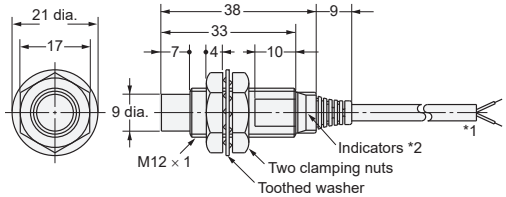


### Diagram 2 E2E-X4MD□ E2E-X2ME□/F□




*1. 4-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm$^2$, Insulator diameter: 1.3 mm), Standard length: 2 m
4-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.3 mm$^2$, Insulator diameter: 1.3 mm), Standard length: 2 m
Robotics Cable Models:
4-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm$^2$, Insulator diameter: 1.27 mm), Standard length: 2 m
4-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.3 mm$^2$, Insulator diameter: 1.27 mm), Standard length: 2 m
The cable can be extended up to 200 m (separate metal conduit).
*2. D1 Models: Operation indicator (red) and setting indicator (green), D2/E/F Models: Operation indicator (red)

### Diagram 4 E2E-X8MD□ E2E-X5ME□/F□




*1. 4-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm$^2$, Insulator diameter: 1.3 mm), Standard length: 2 m
4-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.3 mm$^2$, Insulator diameter: 1.3 mm), Standard length: 2 m
Robotics Cable Models:
4-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.3 mm$^2$, Insulator diameter: 1.27 mm), Standard length: 2 m
4-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.3 mm$^2$, Insulator diameter: 1.27 mm), Standard length: 2 m
The cable can be extended (separate metal conduit) up to 200 m for the control output and up to 100 m for the diagnostic output.
*2. D1 Models: Operation indicator (red) and setting indicator (green), D2/E/F Models: Operation indicator (red)

## Mounting Hole Dimensions

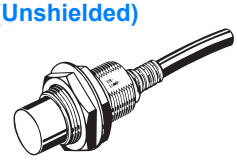



| Dimension | M8 | M12 |
|---|---|---|
| F (mm) | $8.5^{+0.5}_{0}$ dia. | $12.5^{+0.5}_{0}$ dia. |

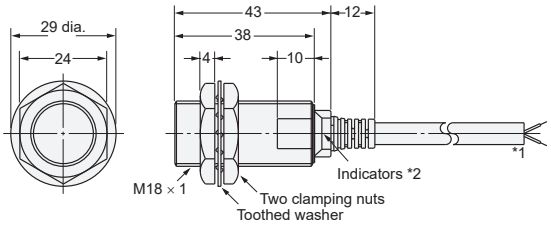
**Note:** DC 2-Wire Models have been integrated into the E2E NEXT Series at the end of october 2022. DC 3-Wire Models have been discontinued at the end of March 2022. Refer to the catalog (Cat. No. D120) for details.

## Pre-wired Models (Shielded)

## Pre-wired Models (Unshielded)

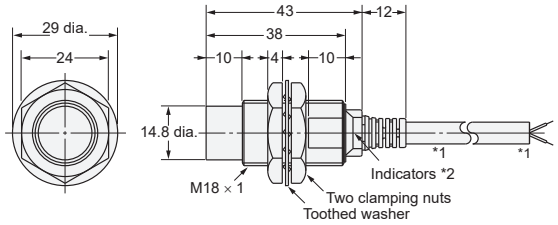


### Diagram 5 E2E-X7D□/E2E-X5E□/F□



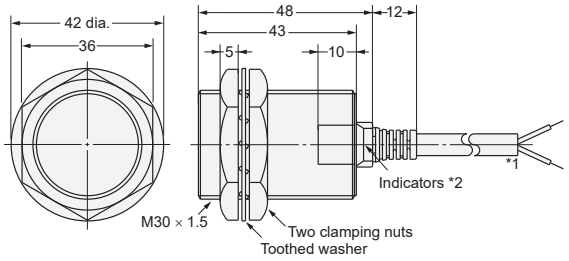

*1. 6-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm², Insulator diameter: 1.9 mm), Standard length: 2 m
6-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.5 mm², Insulator diameter: 1.9 mm), Standard length: 2 m
Robotics Cable Models:
6-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm², Insulator diameter: 1.74 mm), Standard length: 2 m
6-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.5 mm², Insulator diameter: 1.74 mm), Standard length: 2 m
Models with Highly Oil-resistant Cables:
6-dia. polyurethane-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm², Insulator diameter: 1.9 mm), Standard length: 2 m
The cable can be extended (separate metal conduit) up to 200 m for the control output and up to 100 m for the diagnostic output.
*2. D1 Models: Operation indicator (red), Setting indicator (green)
D2/E/F Models: Operation indicator (red)

### Diagram 6 E2E-X14MD□/E2E-X10ME□/F□



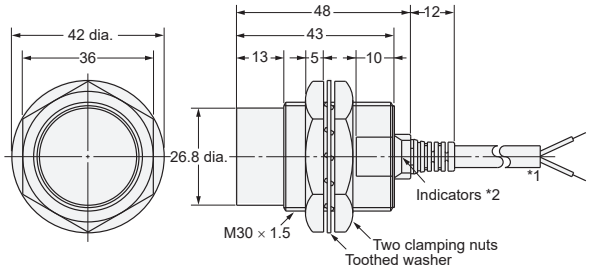

*1. 6-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm², Insulator diameter: 1.9 mm), Standard length: 2 m
6-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.5 mm², Insulator diameter: 1.9 mm), Standard length: 2 m
Robotics Cable Models:
6-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm², Insulator diameter: 1.74 mm), Standard length: 2 m
6-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.5 mm², Insulator diameter: 1.74 mm), Standard length: 2 m
The cable can be extended (separate metal conduit) up to 200 m for the control output and up to 100 m for the diagnostic output.
*2. D1 Models: Operation indicator (red), Setting indicator (green)
D2/E/F Models: Operation indicator (red)

### Diagram 7 E2E-X10D□/E2E-X10E□/F□



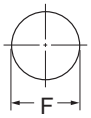

*1. 6-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm², Insulator diameter: 1.9 mm), Standard length: 2 m
6-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.5 mm², Insulator diameter: 1.9 mm), Standard length: 2 m
Robotics Cable Models:
6-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm², Insulator diameter: 1.74 mm), Standard length: 2 m
6-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.5 mm², Insulator diameter: 1.74 mm), Standard length: 2 m
Models with Highly Oil-resistant:
6-dia. polyurethane-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm², Insulator diameter: 1.9 mm), Standard length: 2 m
The cable can be extended (separate metal conduit) up to 200 m for the control output and up to 100 m for the diagnostic output.
*2. D1 Models: Operation indicator (red), Setting indicator (green)
D2/E/F Models: Operation indicator (red)

### Diagram 8 E2E-X20MD□/E2E-X18ME□/F□




*1. 6-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm², Insulator diameter: 1.9 mm), Standard length: 2 m
6-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.5 mm², Insulator diameter: 1.9 mm), Standard length: 2 m
Robotics Cable Models:
6-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.5 mm², Insulator diameter: 1.74 mm), Standard length: 2 m
6-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.5 mm², Insulator diameter: 1.74 mm), Standard length: 2 m
The cable can be extended (separate metal conduit) up to 200 m for the control output and up to 100 m for the diagnostic output.
*2. D1 Models: Operation indicator (red), Setting indicator (green)
D2/E/F Models: Operation indicator (red)

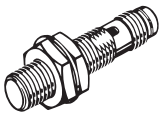
### Mounting Hole Dimensions



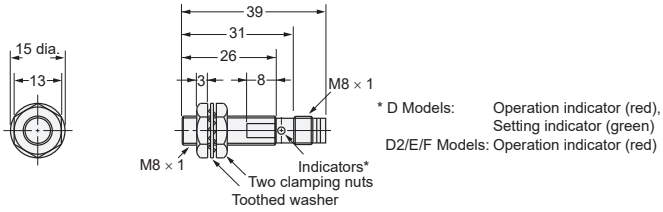

| Dimension | M12 | M18 | M30 |
|---|---|---|---|
| F (mm) | $12.5^{+0.5}_{0}$ dia. | $18.5^{+0.5}_{0}$ dia. | $30.5^{+0.5}_{0}$ dia. |

**Note:** DC 2-Wire Models have been integrated into the E2E NEXT Series at the end of october 2022. DC 3-Wire Models have been discontinued at the end of March 2022. Refer to the catalog (Cat. No. D120) for details.

## M8 Connector Models (Shielded)

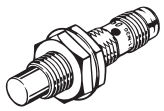


### Diagram 17 E2E-X2D□-M3G/E2E-X1R5E□-M3/X1RF□-M3

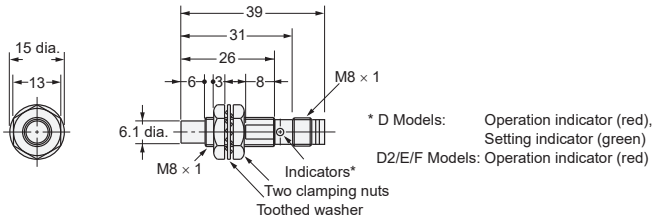



* D Models: Operation indicator (red), Setting indicator (green)
D2/E/F Models: Operation indicator (red)

## M8 Connector Models (Unshielded)

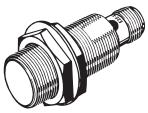


### Diagram 18 E2E-X4MD□-M3G/E2E-X2ME□-M3/X2MF□-M3

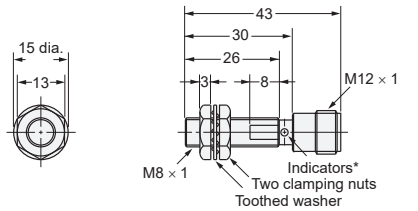



* D Models: Operation indicator (red), Setting indicator (green)
D2/E/F Models: Operation indicator (red)

## M12 Connector Models (Shielded)

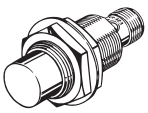


### Diagram 9 E2E-X2D□-M1(G) E2E-X1R5E□-M1/E2E-X1R5F□-M1

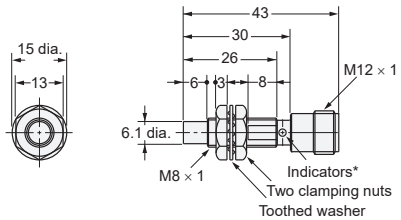



* D1 Models: Operation indicator (red), Setting indicator (green)
D2/E/F Models: Operation indicator (red)

## M12 Connector Models (Unshielded)

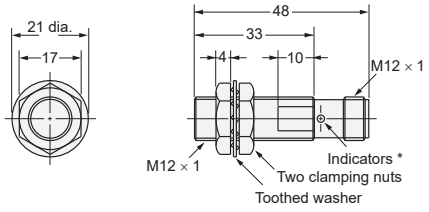


### Diagram 10 E2E-X4MD□-M1(G) E2E-X2ME□-M1/E2E-X2MF□-M1



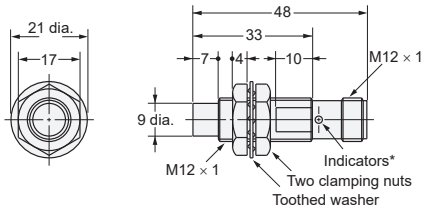

* D1 Models: Operation indicator (red), Setting indicator (green)
D2/E/F Models: Operation indicator (red)

### Diagram 11 E2E-X3D□-M1(G) E2E-X2E□-M1/E2E-X2F□-M1




* D1 Models: Operation indicator (red), Setting indicator (green)
D2/E/F Models: Operation indicator (red)

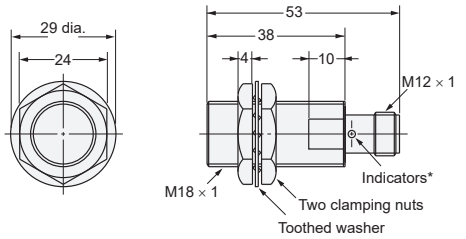
### Diagram 12 E2E-X8MD□-M1(G) E2E-X5ME□-M1/E2E-X5MF□-M1




* D1 Models: Operation indicator (red), Setting indicator (green)
D2/E/F Models: Operation indicator (red)

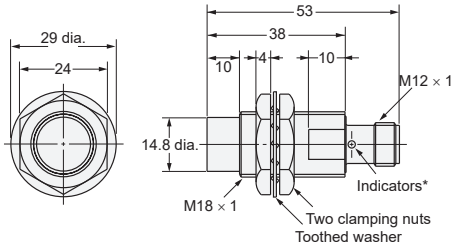
**Note:** DC 2-Wire Models have been integrated into the E2E NEXT Series at the end of october 2022. DC 3-Wire Models have been discontinued at the end of March 2022. Refer to the catalog (Cat. No. D120) for details.

### Diagram 13 E2E-X7D□-M1(G)/E2E-X5E□-M1/X5F□-M1



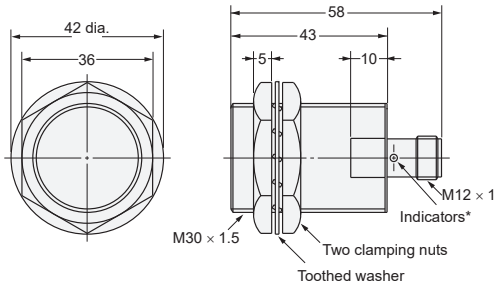

* D1 Models: Operation indicator (red), Setting indicator (green)
D2/E/F Models: Operation indicator (red)

### Diagram 14 E2E-X14MD□-M1(G)/E2E-X10ME□-M1 X10MF□-M1



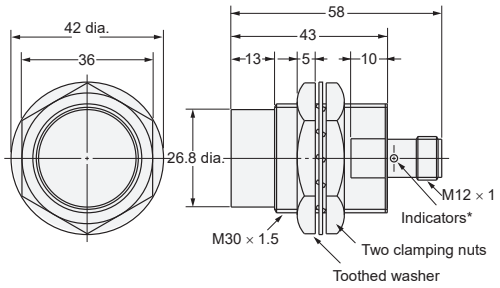

* D1 Models: Operation indicator (red), Setting indicator (green)
D2/E/F Models: Operation indicator (red)

### Diagram 15 E2E-X10D□-M1(G)/E2E-X10E□-M1/X10F□-M1



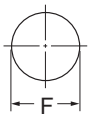

* D1 Models: Operation indicator (red), Setting indicator (green)
D2/E/F Models: Operation indicator (red)

### Diagram 16 E2E-X20MD□-M1(G)/E2E-X18ME□-M1/ X18MF□-M1




* D1 Models: Operation indicator (red), Setting indicator (green)
D2/E/F Models: Operation indicator (red)

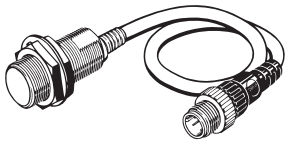
### Mounting Hole Dimensions



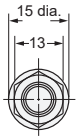

| Dimensions | M8 | M12 | M18 | M30 |
|---|---|---|---|---|
| F (mm) | $8.5^{+0.5}_{0}$ dia. | $12.5^{+0.5}_{0}$ dia. | $18.5^{+0.5}_{0}$ dia. | $30.5^{+0.5}_{0}$ dia. |

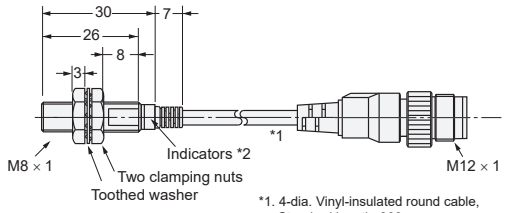
**Note:** DC 2-Wire Models have been integrated into the E2E NEXT Series at the end of october 2022. DC 3-Wire Models have been discontinued at the end of March 2022. Refer to the catalog (Cat. No. D120) for details.

## Pre-wired Connector Models (Shielded)



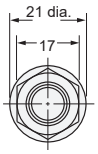
### Diagram 19 E2E-X2D1-M1TGJ<br>E2E-X2D□-M1TGJ-US

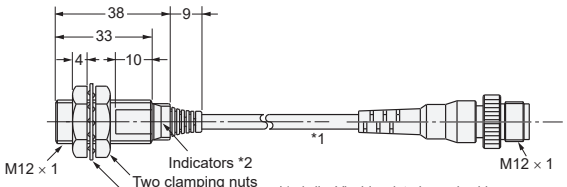



*1. 4-dia. Vinyl-insulated round cable, Standard length: 300 mm
*2. D1 Models: Operation indicator (red), Setting indicator (green)
D2 Models: Operation indicator (red)

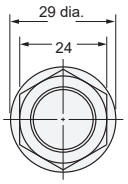
### Diagram 20 E2E-X3D□-M1GJ<br>E2E-X3D1-M1J-T<br>E2E-X3D1-M1TGJ<br>E2E-X3D□-M1TGJ-US

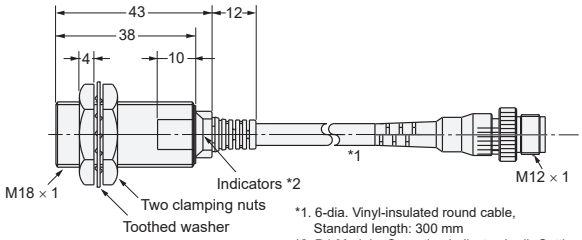



*1. 4-dia. Vinyl-insulated round cable, Standard length: 300 mm
*2. D1 Models: Operation indicator (red), Setting indicator (green)
D2 Models: Operation indicator (red)

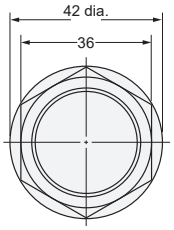
### Diagram 21 E2E-X7D□-M1GJ<br>E2E-X7D□-M1J-T<br>E2E-X7D1-M1TGJ<br>E2E-X7D□-M1TGJ-US

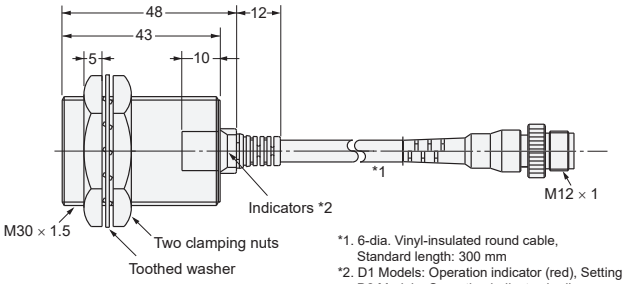



*1. 6-dia. Vinyl-insulated round cable, Standard length: 300 mm
*2. D1 Models: Operation indicator (red), Setting indicator (green)
D2 Models: Operation indicator (red)

### Diagram 22 E2E-X10D□-M1GJ<br>E2E-X10D□-M1J-T<br>E2E-X10D1-M1TGJ<br>E2E-X10D□-M1TGJ-US



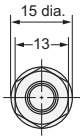



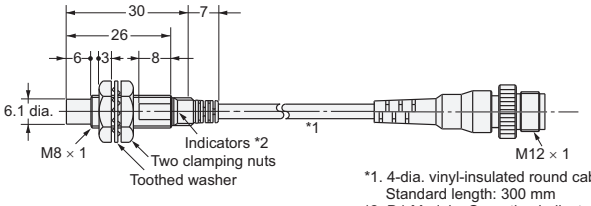

*1. 6-dia. Vinyl-insulated round cable, Standard length: 300 mm
*2. D1 Models: Operation indicator (red), Setting indicator (green)
D2 Models: Operation indicator (red)

**Note:** DC 2-Wire Models have been integrated into the E2E NEXT Series at the end of october 2022. DC 3-Wire Models have been discontinued at the end of March 2022. Refer to the catalog (Cat. No. D120) for details.

## Pre-wired Connector Models (Unshielded)

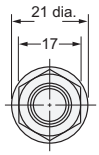
### Diagram 23 E2E-X4MD□-M1TGJ-US

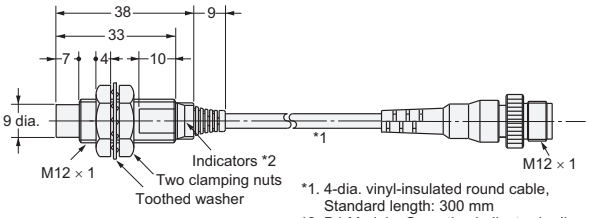



*1. 4-dia. vinyl-insulated round cable
Standard length: 300 mm
*2. D1 Models: Operation indicator (red), Setting indicator (green)
D2 Models: Operation indicator (red)

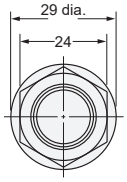
### Diagram 24 E2E-X8MD1-M1GJ<br>E2E-X8MD1-M1TGJ<br>E2E-X8MD□-M1TGJ-US

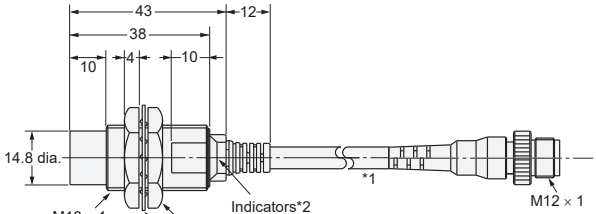



*1. 4-dia. vinyl-insulated round cable,
Standard length: 300 mm
*2. D1 Models: Operation indicator (red), Setting indicator (green)
D2 Models: Operation indicator (red)

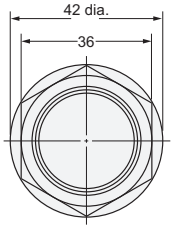
### Diagram 25 E2E-X14MD□-M1GJ<br>E2E-X14MD1-M1TGJ<br>E2E-X14MD□-M1TGJ-US

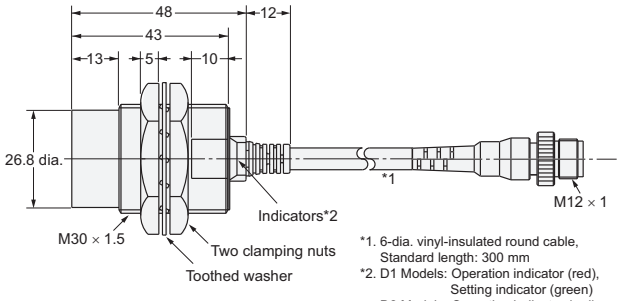



*1. 6-dia. vinyl-insulated round cable,
Standard length: 300 mm
*2. D1 Models: Operation indicator (red), Setting indicator (green)
D2 Models: Operation indicator (red)

### Diagram 26 E2E-X20MD1-M1GJ<br>E2E-X20MD1-M1TGJ<br>E2E-X20MD□-M1TGJ-US




*1. 6-dia. vinyl-insulated round cable,
Standard length: 300 mm
*2. D1 Models: Operation indicator (red), Setting indicator (green)
D2 Models: Operation indicator (red)

### Mounting Hole Dimensions



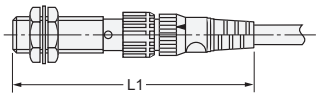

| Dimension | M8 | M12 | M18 | M30 |
|---|---|---|---|---|
| F (mm) | $8.5^{+0.5}_{0}$ dia. | $12.5^{+0.5}_{0}$ dia. | $18.5^{+0.5}_{0}$ dia. | $30.5^{+0.5}_{0}$ dia. |

**Note:** DC 2-Wire Models have been integrated into the E2E NEXT Series at the end of october 2022. DC 3-Wire Models have been discontinued at the end of March 2022. Refer to the catalog (Cat. No. D120) for details.

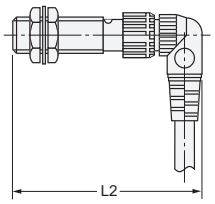
## Dimensions for Proximity Sensors with Sensor I/O Connectors

### Shielded Models

Straight Connectors

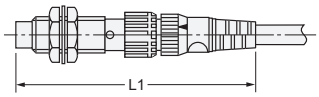



L-shape Connectors

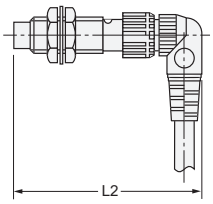



### Unshielded Models

Straight Connectors




L-shape Connectors




### Dimensions with the XS2F/XS5F Connected (Unit: mm)

| Dimension / Sensor diameter | | L1 | L2 |
|---|---|---|---|
| M8 | | Approx. 75 | Approx. 62 |
| M12* | DC | Approx. 80 | Approx. 67 |
| | AC | Approx. 85 | Approx. 72 |
| M18 | | Approx. 85 | Approx. 72 |
| M30 | | Approx. 90 | Approx. 77 |

* The overall length of the Sensor is different between AC and DC Models for Sensors with diameters of M12. This will change the dimension when the I/O Connector is connected.

### Dimensions with the XS3F Connected (Unit: mm)

| Dimension / Sensor diameter | L1 | L2 |
|---|---|---|
| M8 | Approx. 65 | Approx. 54 |

## Accessories (Order Separately)

### Sensor I/O Connectors

Refer to *Introduction to Sensor I/O Connectors/Sensor Controllers* for details.

**Mounting Brackets**
**Protective Covers**
**Sputter Protective Covers**
Refer to *Y92□* for details.

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