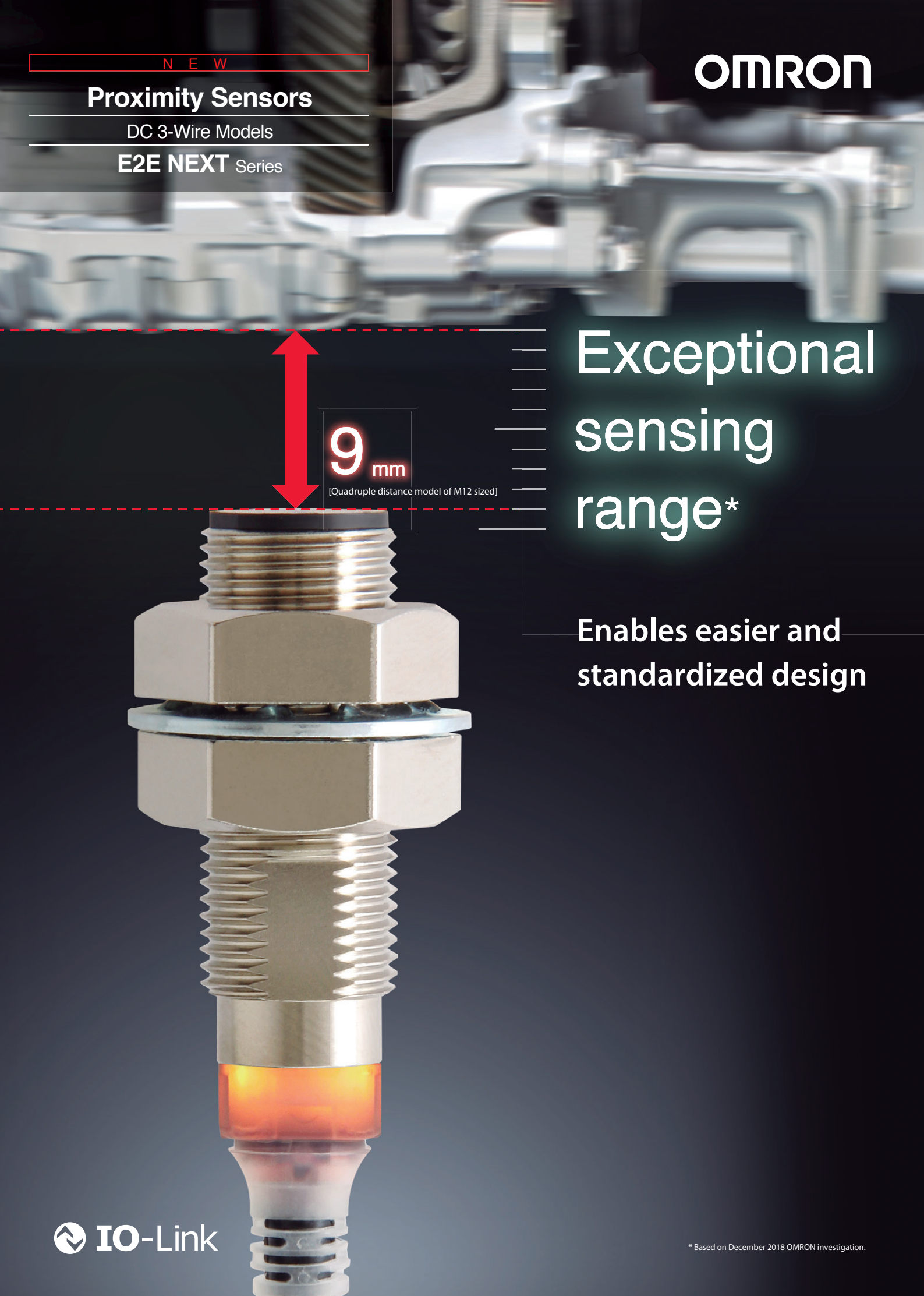
N E W

# Proximity Sensors

DC 3-Wire Models

**E2E NEXT** Series

OMRON




## Exceptional sensing range*

**Enables easier and standardized design**

IO-Link

* Based on December 2018 OMRON investigation.

# Enables easier and standardi

## previously not possible

PREMIUM Model

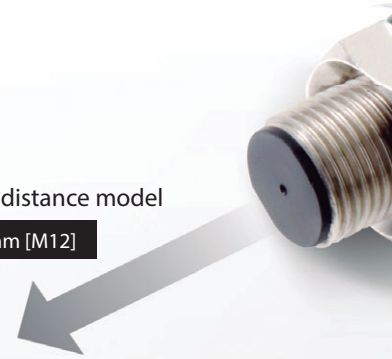
**Easy design** **Standardized design**

## Exceptional sensing range*1 9 mm [M12]*2

The PREMIUM Model, which has a longer detection range compared to previous models, allows for more spacious designs with less risk of contact. It also enables you to standardize your designs by letting you adopt a single one-size model instead of multiple models of different sizes.

*1. Based on December 2018 OMRON investigation.

*2. Quadruple distance models of M12 sized




P.4-7


BASIC Model

In addition to our HIGH SPEC Models, we also offer mid/short-distance BASIC Models, to meet various facility design requirement specifications.

# zed designs


## New standards for usability

### Early error detection

1 location, all new E2E Sensors can be monitored with IO-Link IO-Link

P.8

### Quick recovery

10 second replaceable with e-jig (adaptor)

P.10

360 degree view with high visibility LED indicator

P.10

### Less unexpected facility stoppages

Strong resistance to cutting oil 2 -year oil resistance *3

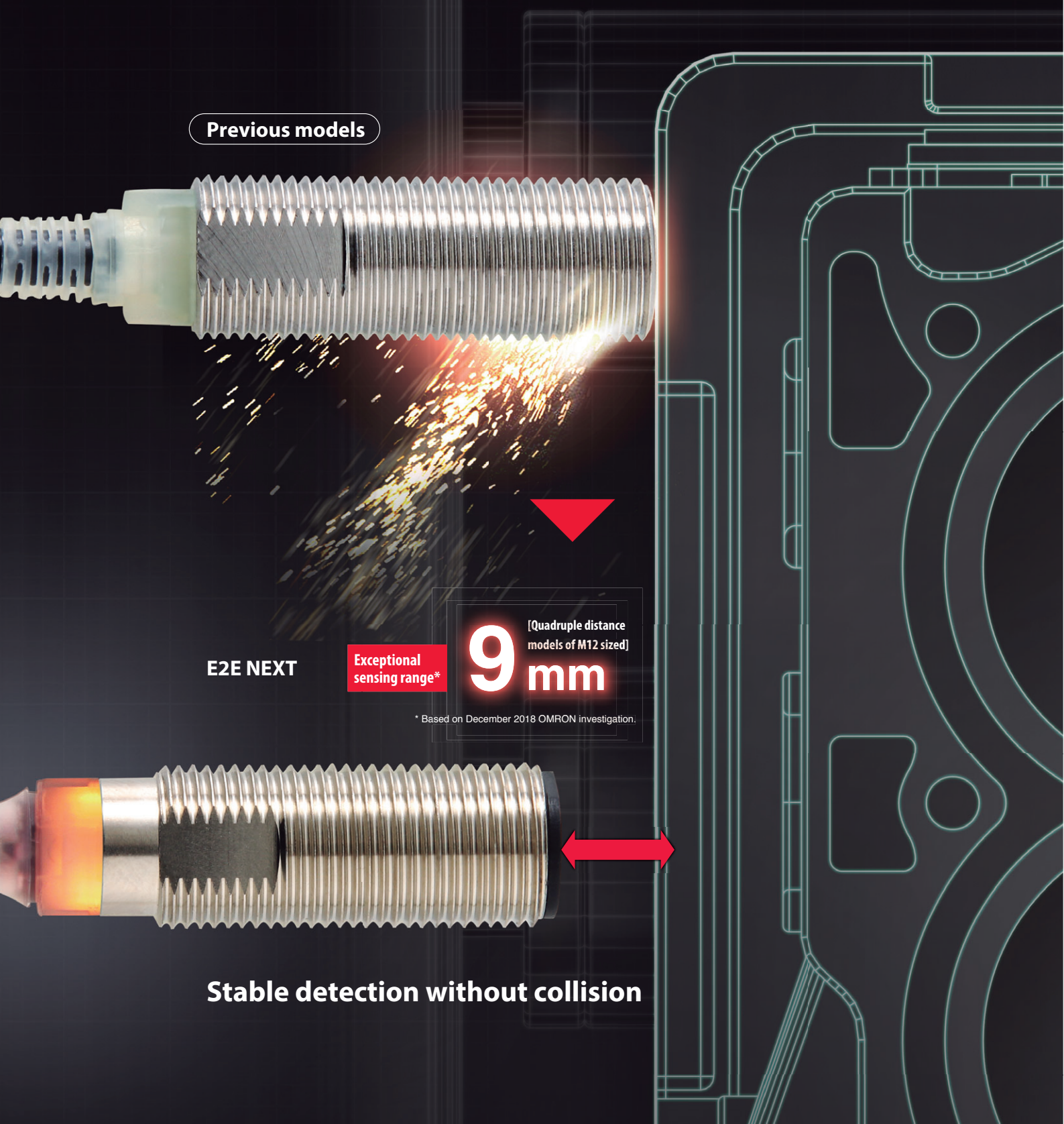
P.12

*3. Pre-wired models and pre-wired connector models.

Easy design

# Equipped with exceptional sensing range* to enable collision-free sensor installation

Enables designs with more distance between the sensor and the sensing object, thereby reducing unexpected facility stoppages due to collision and false detection, which occurred with previous proximity sensors.

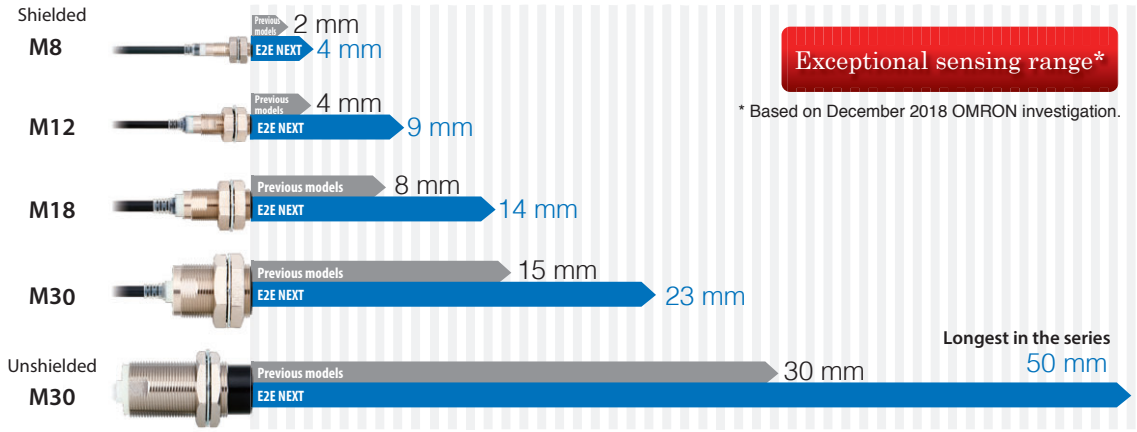


# Allows for more spacious design with less risk of contact

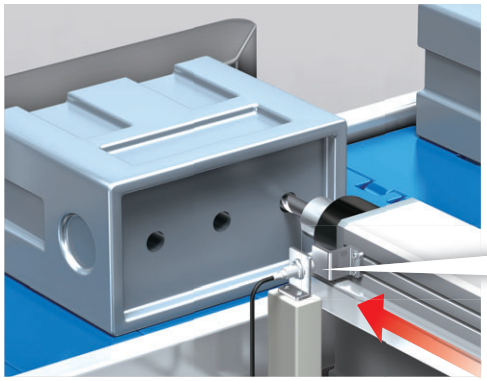
With previous models, to avoid false detections, you were forced to adopt sensor installation designs that risked contact. The E2E NEXT PREMIUM Proximity Sensor can detect accurately from a greater distance, which means you can adopt designs with more space and less risk of contact.

## ■Approximately double the sensing distance of previous models

**Sensing distance comparisons** (Quadruple distance models)



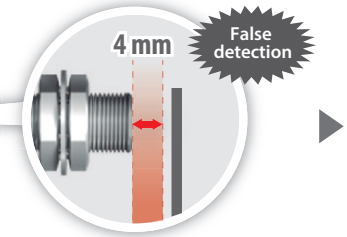

# Less false detection even when a stationary gets away from the sensor due to equipment vibration



Spindle presence detection

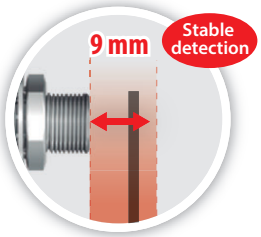
**Previous models**

The equipment vibration widens the distance between a stationary and a sensor to cause false detection and facility stoppages.




**E2E NEXT**

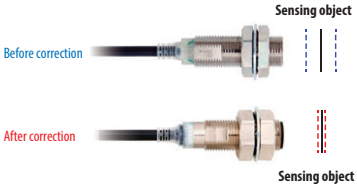
**Long-distance detection enhances the degree of the detection margin. Stable detection even when a stationary gets away.**




* Quadruple distance models of M12 sized

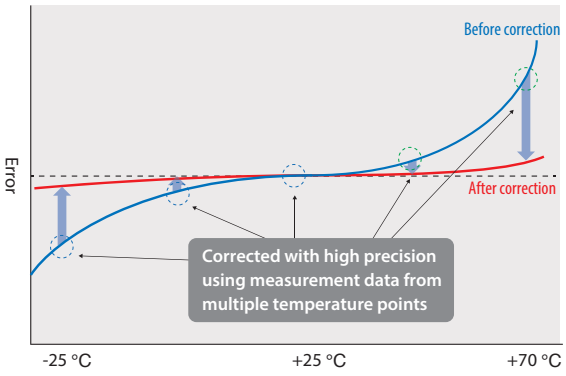
## PROX3 hybrid circuitry with Thermal Distance Control 2 eliminates ambient temperature influence to enable extended sensing ranges.

Proximity sensors with longer sensing distance require increased sensitivity. However, with the increased sensitivity, temperature changes will have bigger influence in sensing distance, and differences between individual sensors will be bigger. E2E NEXT Proximity Sensors (3-wire models) solve these issues by newly implementing Thermal Distance Control 2, a technology to enable extended sensing ranges. It enables in-line measurements of each sensor's temperature characteristics, using multiple temperature points, in IoT-enabled production processes. The optimal correction values are then calculated based on our unique algorithm. The values are written into the analog digital hybrid IC (PROX3) for shipping to minimize differences between sensors and the influence of temperature changes that may occur in the customer's environments.




Patent Pending **Thermal Distance Control 2 technology reduces the extent of error**

**Sensing distance fluctuation due to ambient temperature**



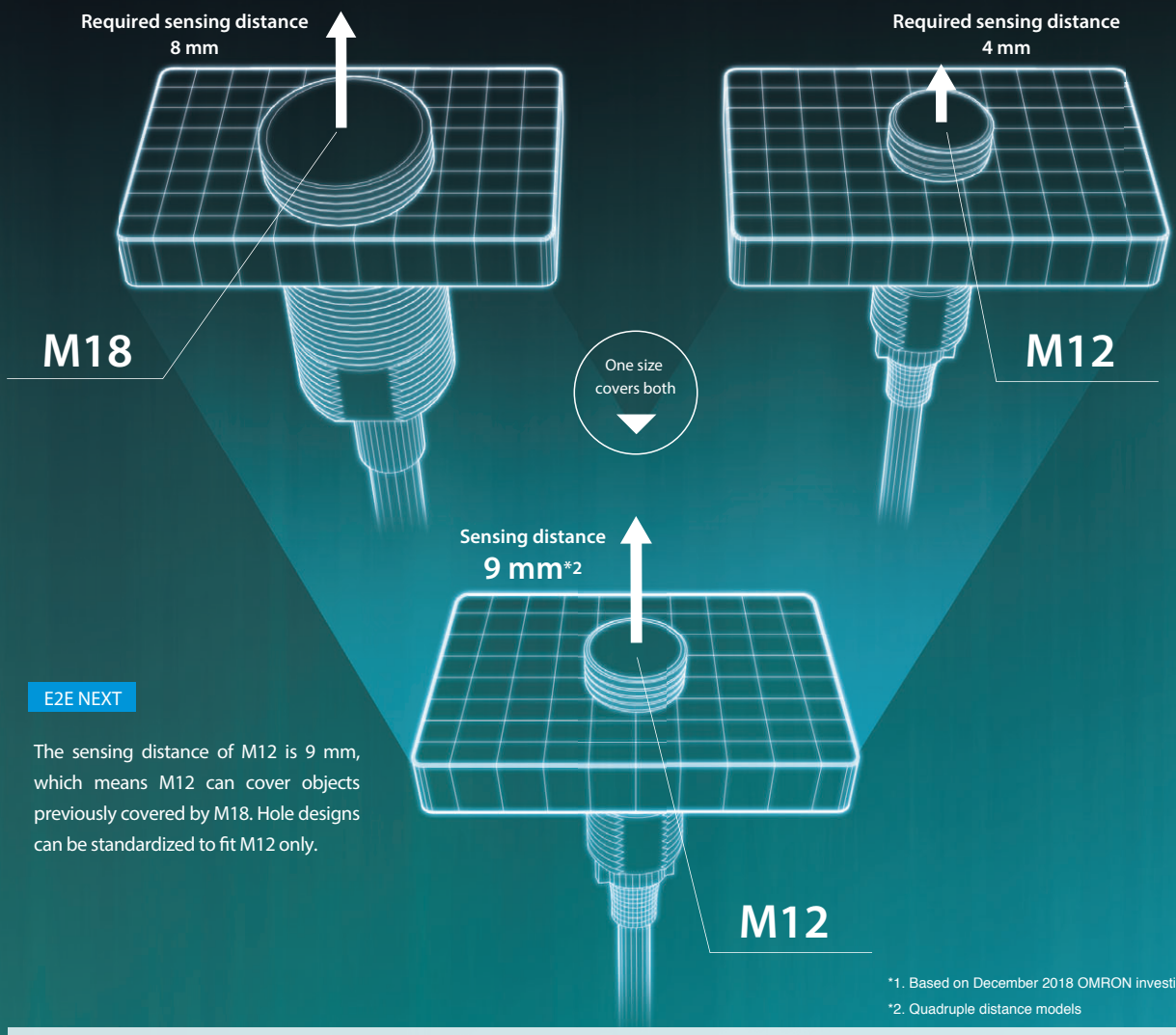
Standardized design

## Exceptional sensing range*1 allows you to standardize your design with a single one-size model

Ensures equivalent sensing distance while being one size smaller than previous models. Equipment and facilities formerly designed to use sensors of multiple sizes can now be designed to use sensors that are all the same size, allowing you to standardize your designs.

### Case where either M12 or M18 is used depending on sensing distance

Previous models Two different types of hole designs were required for the sensing distance of 4 mm and 8 mm.

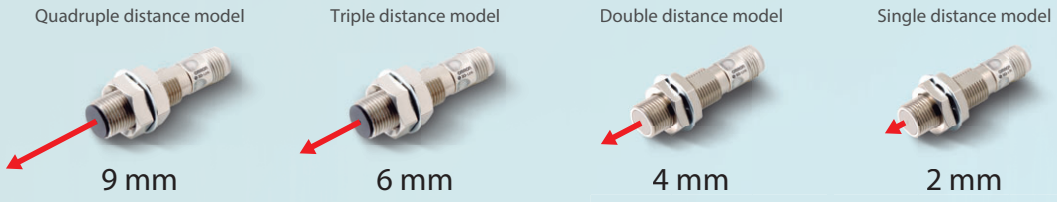



E2E NEXT

The sensing distance of M12 is 9 mm, which means M12 can cover objects previously covered by M18. Hole designs can be standardized to fit M12 only.

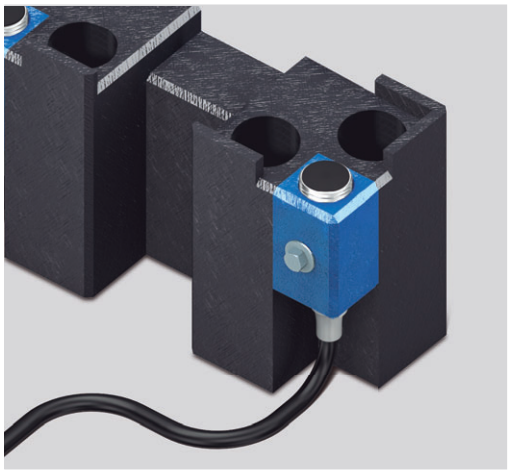
*1. Based on December 2018 OMRON investigation.
*2. Quadruple distance models

**Four types of M12 size sensors are available to meet the need for variable sensing distances for different installation sites.**

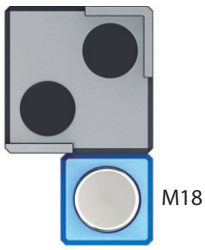


# Easy to install, even where space is limited

E2E NEXT PREMIUM Model Proximity Sensors ensure equivalent sensing distance while being one size smaller than previous models, allowing you to install them in spaces where conventional sensors were too big to fit.

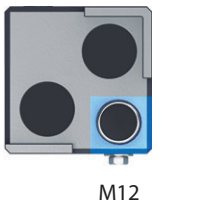


**Previous models** Proximity sensors could not be installed due to limited space.




**E2E NEXT** **They can be installed due to limited space.**

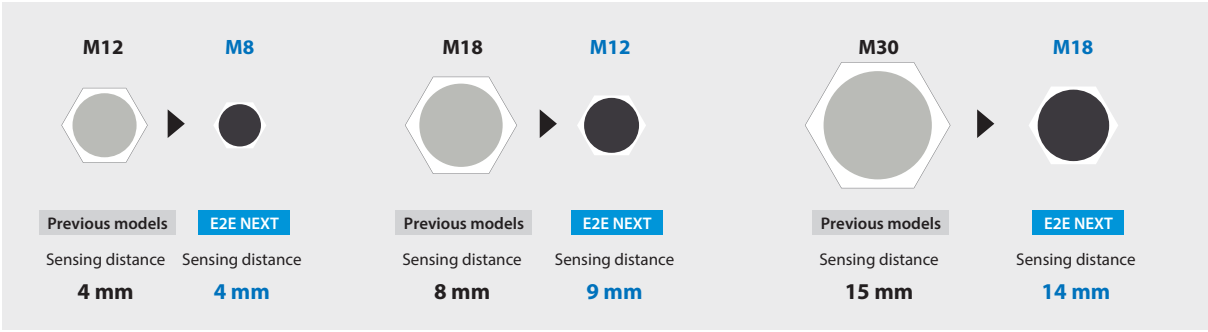
One size smaller to allow you to install proximity sensors where space is limited.




Note: When installing proximity sensors, make sure to factor the influence of surrounding metal into your designs.
(Refer to ●Influence of Surrounding Metal upon Design on page 62 and page 80 for details.)

## ■One size smaller than previous models

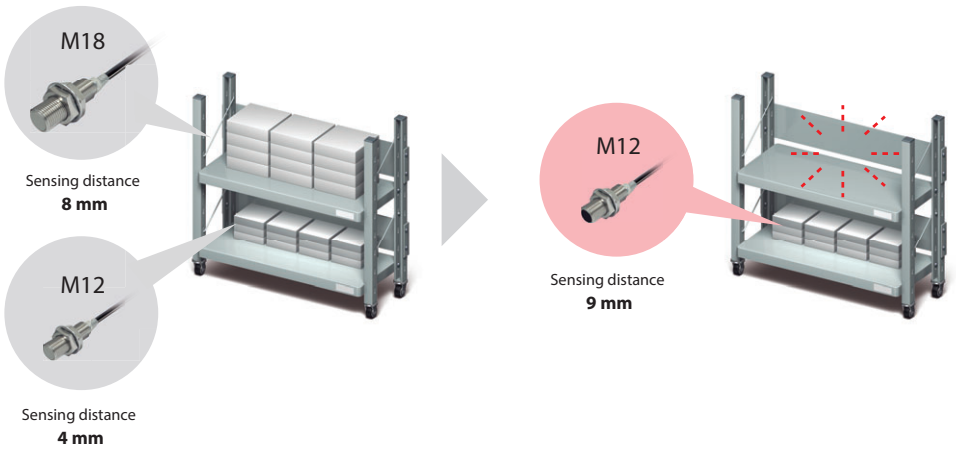
Size comparisons between models with equivalent sensing distance ("E2E NEXT" refers to quadruple distance models)




**Unifying the model types to reduce the number of parts kept in inventory.**

**Previous models** Two models (M12 and M18) stocked

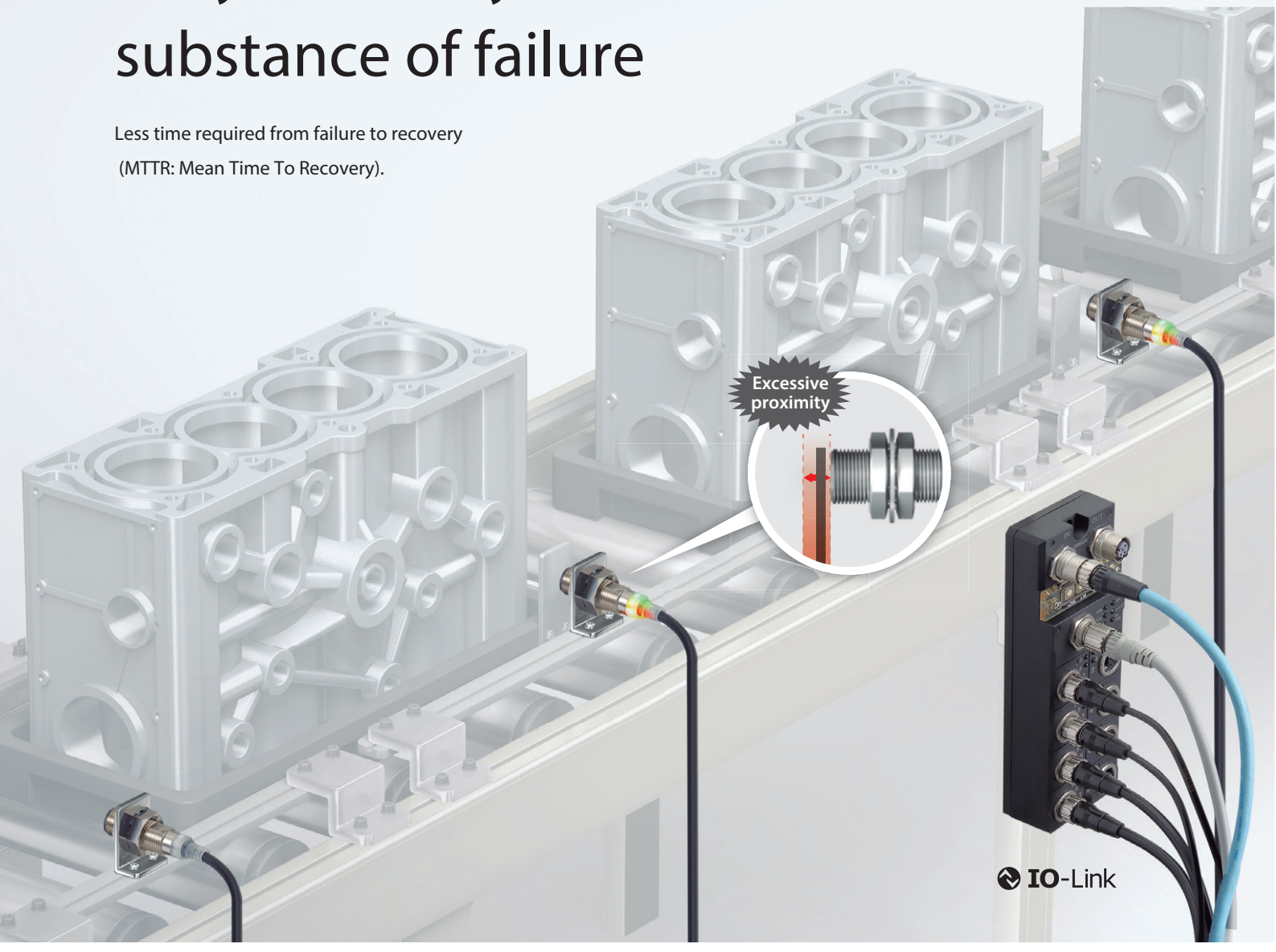
**E2E NEXT** The extended range of the new sensors allows you to reduce the sensor size from M18 down to M12.



New standards for usability | Early error detection

# Enables facility designs that allow for early discovery of the site and substance of failure

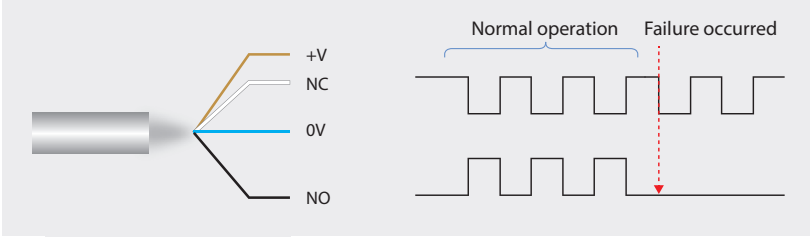
Less time required from failure to recovery
(MTTR: Mean Time To Recovery).




## Detects sensor failures through two output types, NO and NC

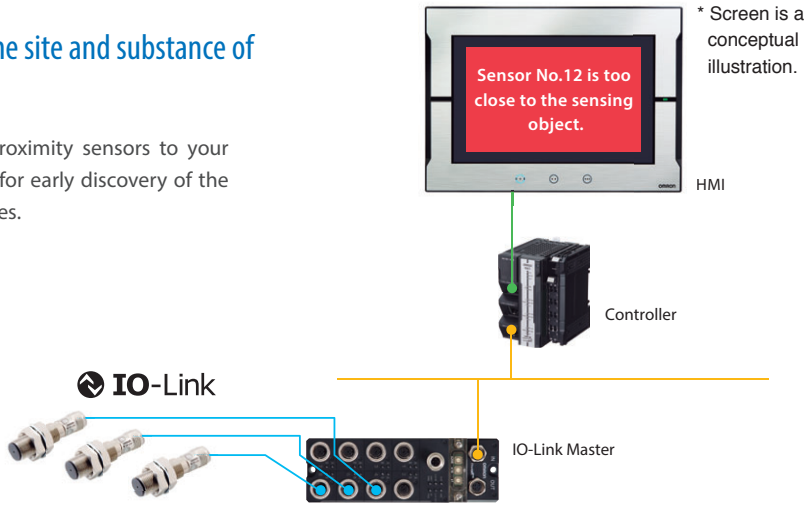
Enables failure discovery by wiring two outputs, NO and NC.

When NO cable is disconnected



## Enables real-time identification of the site and substance of sensor failure from a single location

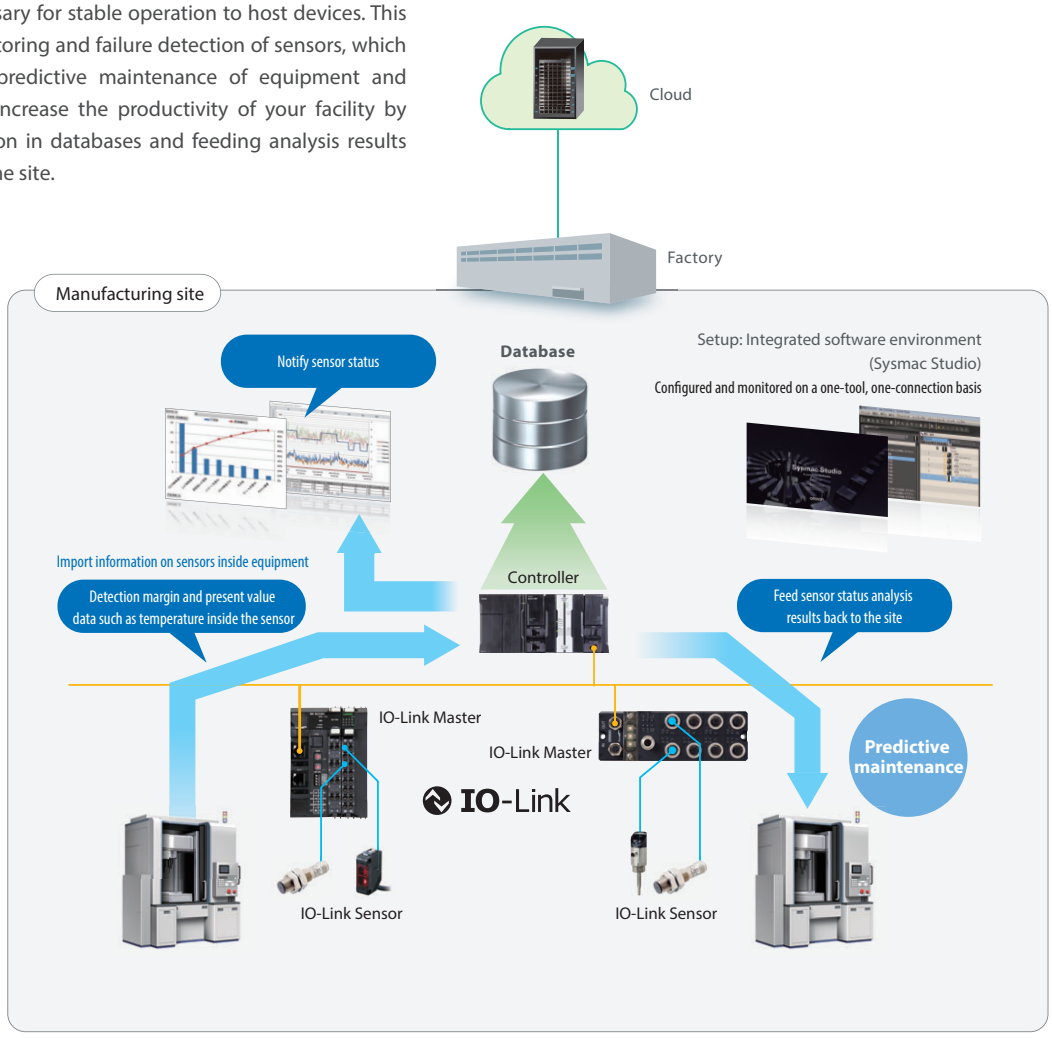
By using the IO-Link Master to connect proximity sensors to your controller, you can use your monitor (HMI) for early discovery of the site and substance of proximity sensor failures.




* Screen is a conceptual illustration.

## Enables predictive maintenance through condition monitoring

Connecting sensors with controllers using IO-Link Master enables to send information necessary for stable operation to host devices. This enables condition monitoring and failure detection of sensors, which in turn contribute to predictive maintenance of equipment and facilities. You can also increase the productivity of your facility by accumulating information in databases and feeding analysis results back to equipment on the site.



* Applies only to the description of the high-brightness LED indicator.

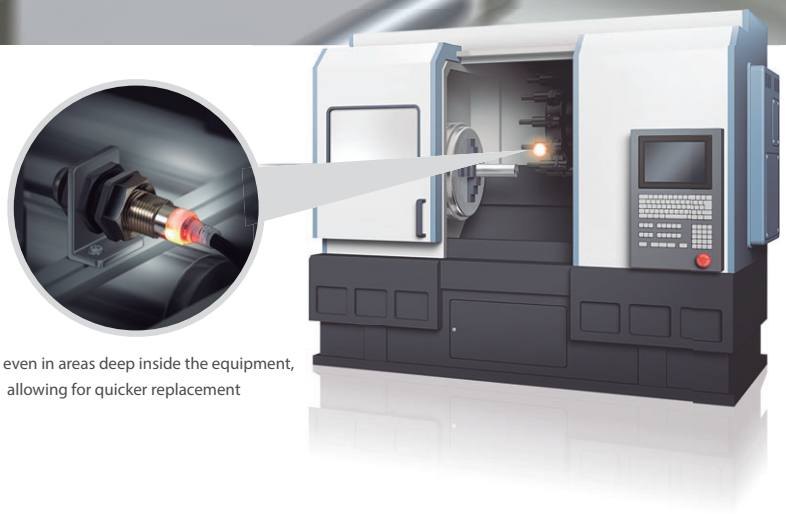


# Enables facility designs that allow for quick recovery in case of failure

Less time required from failure to recovery
(MTTR: Mean Time To Recovery).

## All around visible high-brightness LED indicator

Adopts high-brightness LED that is more luminous and visible than those in previous models. The indicator is visible from all angles, reducing the time required for operation checks after sensor replacement.



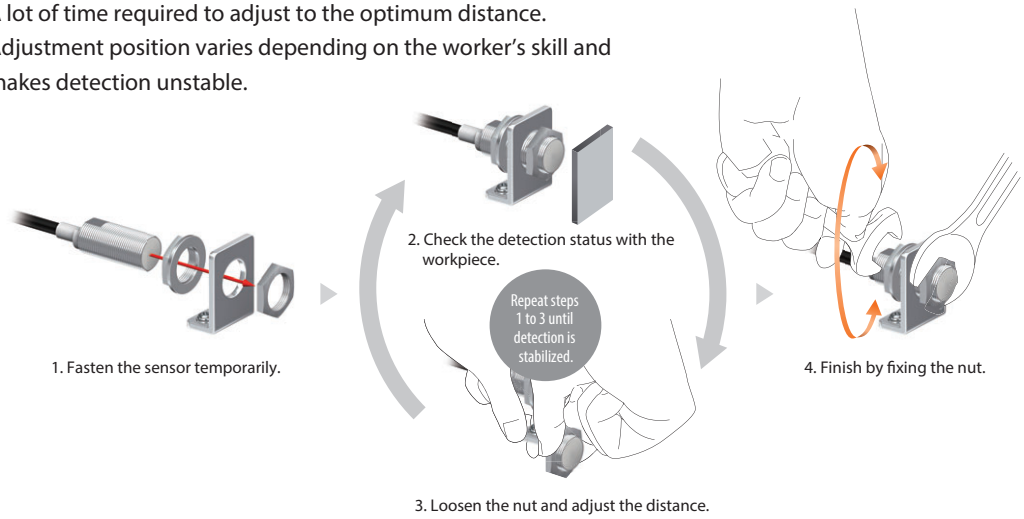
Visible even in areas deep inside the equipment, allowing for quicker replacement

## Replacements in as little as 10 seconds* using e-jig

Using e-jig eliminates the need for adjustment so that anyone can install in the same position.

**Previous models**

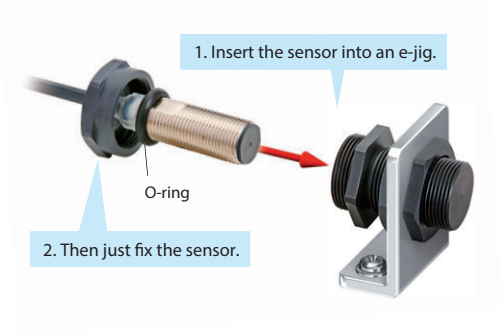
A lot of time required to adjust to the optimum distance.
Adjustment position varies depending on the worker's skill and makes detection unstable.




**E2E NEXT**

**Replacement time reduced significantly to approx. 10 sec.***

**Eliminating the need for adjustment allows for installation in the same position by any worker.**




Patent Pending

The O-ring blocks the ingress of foreign matter, including cutting oil, into the e-jig and ensures positioning precision (IP67G).

* Time required to adjust the distance when installing a sensor. Based on OMRON investigation.

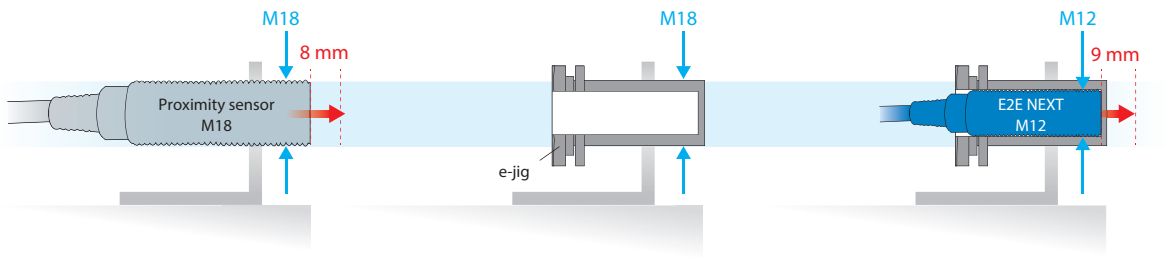
### Easily upgrade existing facilities to enable "10-second* proximity sensor replacements"

The HIGH SPEC Model's sensing distance is approximately twice that of previous models. For example, the sensing distance of the quadruple distance model of M12 sized is 9 mm, which is about the same as conventional M18 models. Using these sensors together with the e-jig allows you to easily upgrade your existing facilities so that you can replace their sensors in just 10 seconds.*

**1. Dismount the M18 proximity sensor from the existing facility.**

**2. Mount an M18-sized e-jig.**

**3. Insert an E2E NEXT Series M12 Proximity Sensor into the e-jig.**



New standards for usability | Less unexpected facility stoppages

# Excellent environmental resistance enables robust facility design

Reduces sudden facility stoppages by reducing the number of failures, even in severe environments.


■Environmental Causes of Component Failures

(Based on June 2016 OMRON investigation.)

## Cables with enhanced oil resistance shut out cutting oil for 2 years*

Our new PVC compound protects against damage caused by swelling, deterioration or cracking, preventing oil from seeping into and destroying internal circuits. Designed to resist oil ingress for up to two years.

### ■Two years* of stable operation verified by OMRON's unique evaluation technology

**Previous models** Cables damaged by cutting oil

PUR cables get cracks under environments where water-soluble cutting oil is used.

**E2E NEXT** Verified 2-year oil resistance,* **based on IP67G and OMRON's oil-resistant component evaluation standards**

OMRON's E2E NEXT Series Proximity Sensors use PVC cables with enhanced oil resistance, and have been evaluated according to IP67G of JIS C 0920, and also OMRON's own, even stricter evaluation standards for oil-resistant components.

Oil resistance: **2 years***

| IP67G | |
|---|---|
| Oil type | N3 (water-insoluble cutting oil) |
| Evaluation time | 48 hours |
| Evaluation temperature | Room temperature |
| Dilution concentration | —— |
| Criteria | Appearance and performance |

(Illustration)

| OMRON's Oil-resistant Component Evaluation Standards | |
|---|---|
| Oil type | A1 (water-soluble cutting oil) |
| Evaluation time | 1,000 hours of machining |
| Evaluation temperature | 55 °C |
| Dilution concentration | Undiluted |
| Criteria | Appearance, performance, and no label text loss |

(Illustration)

### ■Two years* of stable operation verified for pre-wired connector models as well, using similar oil resistance tests

- Delivers 2-year oil resistance* by adopting technologies unique to OMRON and PVC cables with enhanced oil resistance. Patent Pending
- Smartclick connector cables block the ingress of cutting oil, and with the same torque, no matter who connects them.


Smartclick is a registered trademark of OMRON Corporation.

For machining processes where the amount of splashing cutting oil is large, **oil-resistant Proximity Sensors E2ER/E2ERZ**

**Oil Resistance: 4 years**

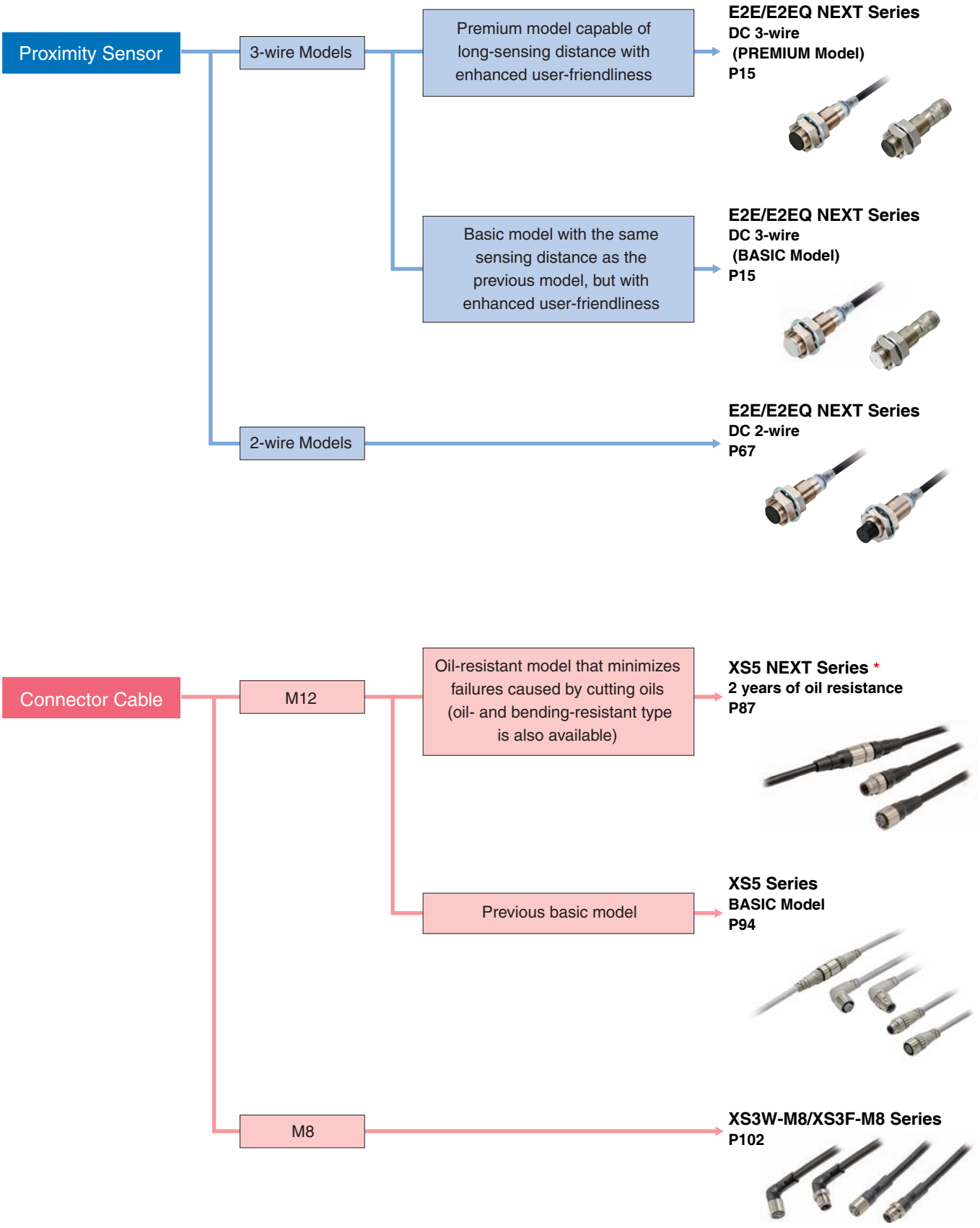
Cat. No. Y215

*•Applicable oil types: specified in JIS K 2241:2000
"2-year oil resistance" refers to median values (=Typical values) of the product designs and the oil-resistance performance evaluation results.
Products to be shipped will have around 2 years of oil resistance; actual oil resistance will vary depending on the product.
•The pre-wired connector model has a verified oil resistance of 2 years when mated with XS5 NEXT series round oil-resistant connectors.
This value has not been verified for connector models(M1/M3/M5).

## IP69K compliant for water resistance and wash resistance

IEC 60529 compliant. Ensures water resistance during hot pressure washing, where equipment is washed intensively with high-pressure water or steam. (8,000 to 10,000 kPa pressure, 80°C hot water, 30 seconds for each angle)

# E2E/E2EQ NEXT Series
# Selection Guide




* Applicable oil types: specified in JIS K 2241:2000
"2-year oil resistance" refers to median values (=Typical values) of the product designs and the oil-resistance performance evaluation results. Products to be shipped will have around 2 years of oil resistance; actual oil resistance will vary depending on the product.
The Pre-wired Connector Model has a verified oil resistance of 2 years when mated with XS5 NEXT Series round oil-resistant connectors.

# E2E/E2EQ NEXT Series

DC 3-Wire



## Enables easier and standardized designs previously not possible

- The world's longest sensing distance*1
  Nearly double the sensing distance of previous
- With high-brightness LED, the indicator is visible anywhere from 360°.
- Only 10 Seconds*2 to Replace a Proximity Sensor with the "e-jig" (Mounting Sleeve).
- Cables with enhanced oil resistance enabled 2-year oil resistance*3.
- IP69K compliant for water resistance and wash resistance*4
- Comes in a wide variation to make sensor selection easy
- UL certification (UL60947-5-2)*5 and CSA certification (CSA C22.2 UL60947-5-2-14)

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

*1. Based on December 2018 OMRON investigation.
*2. Time required to adjust the distance when installing a Sensor. Based on OMRON investigation.
*3. Refer to *Ratings and Specifications* for details. However, E2E Connector Models and E2EQ series is excluded.
*4. E2EQ series is excluded.
*5. M8 (4-pin) Connector Models are not UL certified.

⚠ Be sure to read *Safety Precautions* on page 61.

## Features

PREMIUM Model

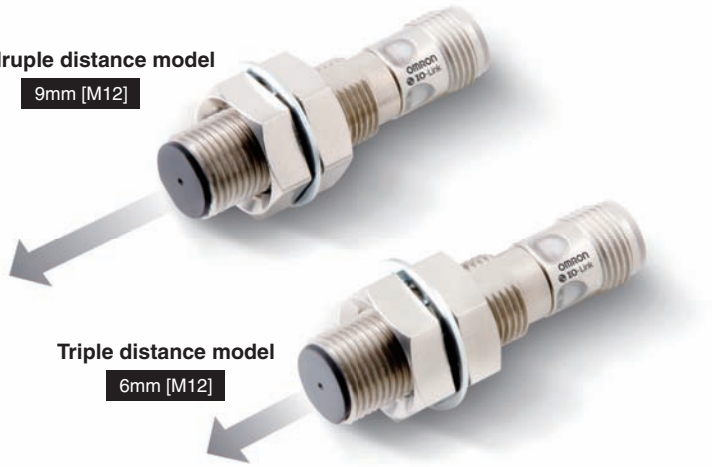
**Easy design** **Standardized design**

### Exceptional sensing range *6

**9 mm** [M12] *7

The PREMIUM Model, which has a longer detection range compared to previous models, allows for more spacious designs with less risk of contact. It also enables you to standardize your designs by letting you adopt a single one-size model instead of multiple models of different sizes.

*6. Based on December 2018 OMRON investigation.
*7. Quadruple distance models of M12 sized




BASIC Model

In addition to our HIGH SPEC Models, we also offer mid/short-distance BASIC Models, to meet various facility design requirement specifications.

**Double distance model**
4mm [M12]

**Single distance model**
2mm [M12]

## New standards for usability

### Early error detection

**1 location,** all new E2E Sensors can be monitored
**with IO-Link** IO-Link

### Quick recovery

**10 second** replaceable **with e-jig** (adaptor) *8

**360° degree** view **with high visibility LED indicator**

*8. Time required to adjust the distance when installing a Sensor. Based on OMRON investigation.

### Less unexpected facility stoppages

Strong resistance to cutting oil **2-year** oil resistance *9

*9. E2E Connector Models and E2EQ series is excluded.

# E2E/E2EQ NEXT Series Model Number Legend

## DC 3-wire

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

| No. | Type | Code | Meaning |
|---|---|---|---|
| (1) | Case | Blank | Without spatter-resistant coating |
| | | Q | With spatter-resistant coating |
| (2) | Sensing distance | Number | Sensing distance (Unit: mm)<br>(R: Indication of decimal point) |
| (3) | Shielding | Blank | Shielded |
| | | M | Unshielded |
| (4) | Output configuration | B | PNP open collector |
| | | C | NPN open collector |
| (5) | Operation mode | 1 | Normally open (NO) |
| | | 2 | Normally closed (NC) |
| | | 3 | Normally open, Normally closed (NO+NC) |
| (6) | IO-Link baud rate | Blank | Non IO-Link compliant |
| | | D | COM2 (38.4 kbps) |
| | | T | COM3 (230.4 kbps) |
| (7) | Body size | Blank | Standard |
| | | L | Long Body |
| (8) | Size | 8 | M8 |
| | | 12 | M12 |
| | | 18 | M18 |
| | | 30 | M30 |
| (9) | Connection method | Blank | Pre-wired Models |
| | | M1 | M12 Connector Models |
| | | M3 | M8 (4-pin) Connector Models |
| | | M5 | M8 (3-pin) Connector Models |
| | | M1TJ | M12 Pre-wired Smartclick Connector Models |
| | | M1TJR | M12 Pre-wired Smartclick Connector Models<br>Robot (bending-resistant) cable |
| (10) | Cable specifications * | Blank | Standard PVC cable |
| | | R | Robot (bending-resistant) cable |
| (11) | Cable length | Number M | Cable length |

* (10) is only shown in the model number of Pre-wired Models.

**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

PREMIUM Model

## E2E NEXT Series (Quadruple distance model)

DC 3-wire [Refer to *Dimensions* on page 64.]

Shielded *1

| Size (Sensing distance) | Connection method | Body size | Operation mode | Model | | |
|---|---|---|---|---|---|---|
| | | | | PNP | | NPN |
| | | | | IO-Link (COM3) | IO-Link (COM2) *5 | --- *5 |
| M8 (4 mm) | Pre-wired (2 m) *2 | 38 mm *3 | NO | E2E-X4B1T8 2M | E2E-X4B1D8 2M | E2E-X4C18 2M |
| | | | NC | - | E2E-X4B28 2M | E2E-X4C28 2M |
| | | 48 mm | NO | E2E-X4B1TL8 2M | E2E-X4B1DL8 2M | E2E-X4C1L8 2M |
| | | | NC | - | E2E-X4B2L8 2M | E2E-X4C2L8 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 38 mm *4 | NO | E2E-X4B1T8-M1TJ 0.3M | E2E-X4B1D8-M1TJ 0.3M | E2E-X4C18-M1TJ 0.3M |
| | | | NC | - | E2E-X4B28-M1TJ 0.3M | E2E-X4C28-M1TJ 0.3M |
| | | 48 mm | NO | E2E-X4B1TL8-M1TJ 0.3M | E2E-X4B1DL8-M1TJ 0.3M | E2E-X4C1L8-M1TJ 0.3M |
| | | | NC | - | E2E-X4B2L8-M1TJ 0.3M | E2E-X4C2L8-M1TJ 0.3M |
| | M12 Connector | 43 mm | NO | E2E-X4B1T8-M1 | E2E-X4B1D8-M1 | E2E-X4C18-M1 |
| | | | NC | - | E2E-X4B28-M1 | E2E-X4C28-M1 |
| | | 53 mm | NO | E2E-X4B1TL8-M1 | E2E-X4B1DL8-M1 | E2E-X4C1L8-M1 |
| | | | NC | - | E2E-X4B2L8-M1 | E2E-X4C2L8-M1 |
| | M8 Connector (4-pin) | 39 mm | NO | E2E-X4B1T8-M3 | E2E-X4B1D8-M3 | E2E-X4C18-M3 |
| | | | NC | - | E2E-X4B28-M3 | E2E-X4C28-M3 |
| | | 49 mm | NO | E2E-X4B1TL8-M3 | E2E-X4B1DL8-M3 | E2E-X4C1L8-M3 |
| | | | NC | - | E2E-X4B2L8-M3 | E2E-X4C2L8-M3 |
| | M8 Connector (3-pin) | 39 mm | NO | E2E-X4B1T8-M5 | E2E-X4B1D8-M5 | E2E-X4C18-M5 |
| | | | NC | - | E2E-X4B28-M5 | E2E-X4C28-M5 |
| | | 49 mm | NO | E2E-X4B1TL8-M5 | E2E-X4B1DL8-M5 | E2E-X4C1L8-M5 |
| | | | NC | - | E2E-X4B2L8-M5 | E2E-X4C2L8-M5 |
| M12 (9 mm) | Pre-wired (2 m) *2 | 47 mm *3 | NO | E2E-X9B1T12 2M | E2E-X9B1D12 2M | E2E-X9C112 2M |
| | | | NC | - | E2E-X9B212 2M | E2E-X9C212 2M |
| | | 69 mm | NO | E2E-X9B1TL12 2M | E2E-X9B1DL12 2M | E2E-X9C1L12 2M |
| | | | NC | - | E2E-X9B2L12 2M | E2E-X9C2L12 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 47 mm *4 | NO | E2E-X9B1T12-M1TJ 0.3M | E2E-X9B1D12-M1TJ 0.3M | E2E-X9C112-M1TJ 0.3M |
| | | | NC | - | E2E-X9B212-M1TJ 0.3M | E2E-X9C212-M1TJ 0.3M |
| | | 69 mm | NO | E2E-X9B1TL12-M1TJ 0.3M | E2E-X9B1DL12-M1TJ 0.3M | E2E-X9C1L12-M1TJ 0.3M |
| | | | NC | - | E2E-X9B2L12-M1TJ 0.3M | E2E-X9C2L12-M1TJ 0.3M |
| | M12 Connector | 48 mm | NO | E2E-X9B1T12-M1 | E2E-X9B1D12-M1 | E2E-X9C112-M1 |
| | | | NC | - | E2E-X9B212-M1 | E2E-X9C212-M1 |
| | | 70 mm | NO | E2E-X9B1TL12-M1 | E2E-X9B1DL12-M1 | E2E-X9C1L12-M1 |
| | | | NC | - | E2E-X9B2L12-M1 | E2E-X9C2L12-M1 |
| M18 (14 mm) | Pre-wired (2 m) *2 | 55 mm *3 | NO | E2E-X14B1T18 2M | E2E-X14B1D18 2M | E2E-X14C118 2M |
| | | | NC | - | E2E-X14B218 2M | E2E-X14C218 2M |
| | | 77 mm | NO | E2E-X14B1TL18 2M | E2E-X14B1DL18 2M | E2E-X14C1L18 2M |
| | | | NC | - | E2E-X14B2L18 2M | E2E-X14C2L18 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 55 mm *4 | NO | E2E-X14B1T18-M1TJ 0.3M | E2E-X14B1D18-M1TJ 0.3M | E2E-X14C118-M1TJ 0.3M |
| | | | NC | - | E2E-X14B218-M1TJ 0.3M | E2E-X14C218-M1TJ 0.3M |
| | | 77 mm | NO | E2E-X14B1TL18-M1TJ 0.3M | E2E-X14B1DL18-M1TJ 0.3M | E2E-X14C1L18-M1TJ 0.3M |
| | | | NC | - | E2E-X14B2L18-M1TJ 0.3M | E2E-X14C2L18-M1TJ 0.3M |
| | M12 Connector | 53 mm | NO | E2E-X14B1T18-M1 | E2E-X14B1D18-M1 | E2E-X14C118-M1 |
| | | | NC | - | E2E-X14B218-M1 | E2E-X14C218-M1 |
| | | 75 mm | NO | E2E-X14B1TL18-M1 | E2E-X14B1DL18-M1 | E2E-X14C1L18-M1 |
| | | | NC | - | E2E-X14B2L18-M1 | E2E-X14C2L18-M1 |

**PREMIUM Model**

| Size (Sensing distance) | Connection method | Body size | Operation mode | Model | | |
|---|---|---|---|---|---|---|
| | | | | PNP | | NPN |
| | | | | IO-Link (COM3) | IO-Link (COM2) *5 | --- *5 |
| M30 (23 mm) | Pre-wired (2 m) *2 | 60 mm *4 | NO | **E2E-X23B1T30 2M** | **E2E-X23B1D30 2M** | **E2E-X23C130 2M** |
| | | | NC | **-** | **E2E-X23B230 2M** | **E2E-X23C230 2M** |
| | | 82 mm | NO | **E2E-X23B1TL30 2M** | **E2E-X23B1DL30 2M** | **E2E-X23C1L30 2M** |
| | | | NC | **-** | **E2E-X23B2L30 2M** | **E2E-X23C2L30 2M** |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 60 mm *4 | NO | **E2E-X23B1T30-M1TJ 0.3M** | **E2E-X23B1D30-M1TJ 0.3M** | **E2E-X23C130-M1TJ 0.3M** |
| | | | NC | **-** | **E2E-X23B230-M1TJ 0.3M** | **E2E-X23C230-M1TJ 0.3M** |
| | | 82 mm | NO | **E2E-X23B1TL30-M1TJ 0.3M** | **E2E-X23B1DL30-M1TJ 0.3M** | **E2E-X23C1L30-M1TJ 0.3M** |
| | | | NC | **-** | **E2E-X23B2L30-M1TJ 0.3M** | **E2E-X23C2L30-M1TJ 0.3M** |
| | M12 Connector | 58 mm | NO | **E2E-X23B1T30-M1** | **E2E-X23B1D30-M1** | **E2E-X23C130-M1** |
| | | | NC | **-** | **E2E-X23B230-M1** | **E2E-X23C230-M1** |
| | | 80 mm | NO | **E2E-X23B1TL30-M1** | **E2E-X23B1DL30-M1** | **E2E-X23C1L30-M1** |
| | | | NC | **-** | **E2E-X23B2L30-M1** | **E2E-X23C2L30-M1** |

*1. When embedding the Proximity Sensor in metal, refer to *Influence of Surrounding Metal* on page 62.
*2. Models with 5-m cable length are also available with "5M" suffix. (Example: E2E-X9B1D12 5M)
*3. Models with 2-m and 5-m robot (bending-resistant) cables are also available with "-R" in the model number. (Example: E2E-X9B1D12-R 2M/ E2E-X9B1D12-R 5M)
*4. Models with M12 Smartclick connector model robot (bending-resistant) cables are also available with "R" in the model number. (Example: E2E-X9B1D12-M1TJR 0.3M)
*5. IO-Link is not supported for NC-type PNP outputs or all types of NPN outputs.

**Note:** Operation mode NO can be changed to NC via IO-Link communications.

PREMIUM Model

## E2E NEXT Series (Quadruple distance model)

DC 3-wire [Refer to *Dimensions* on page 64.]

**Unshielded**

| Size (Sensing distance) | Connection method | Body size | Operation mode | Model | | |
|---|---|---|---|---|---|---|
| | | | | PNP | | NPN |
| | | | | IO-Link (COM3) | IO-Link (COM2) *4 | --- *4 |
| M8 (8 mm) | Pre-wired (2 m) *1 | 38 mm *2 | NO | E2E-X8MB1T8 2M | E2E-X8MB1D8 2M | E2E-X8MC18 2M |
| | | | NC | - | E2E-X8MB28 2M | E2E-X8MC28 2M |
| | | 48 mm | NO | E2E-X8MB1TL8 2M | E2E-X8MB1DL8 2M | E2E-X8MC1L8 2M |
| | | | NC | - | E2E-X8MB2L8 2M | E2E-X8MC2L8 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 38 mm *3 | NO | E2E-X8MB1T8-M1TJ 0.3M | E2E-X8MB1D8-M1TJ 0.3M | E2E-X8MC18-M1TJ 0.3M |
| | | | NC | - | E2E-X8MB28-M1TJ 0.3M | E2E-X8MC28-M1TJ 0.3M |
| | | 48 mm | NO | E2E-X8MB1TL8-M1TJ 0.3M | E2E-X8MB1DL8-M1TJ 0.3M | E2E-X8MC1L8-M1TJ 0.3M |
| | | | NC | - | E2E-X8MB2L8-M1TJ 0.3M | E2E-X8MC2L8-M1TJ 0.3M |
| | M12 Connector | 43 mm | NO | E2E-X8MB1T8-M1 | E2E-X8MB1D8-M1 | E2E-X8MC18-M1 |
| | | | NC | - | E2E-X8MB28-M1 | E2E-X8MC28-M1 |
| | | 53 mm | NO | E2E-X8MB1TL8-M1 | E2E-X8MB1DL8-M1 | E2E-X8MC1L8-M1 |
| | | | NC | - | E2E-X8MB2L8-M1 | E2E-X8MC2L8-M1 |
| | M8 Connector (4-pin) | 39 mm | NO | E2E-X8MB1T8-M3 | E2E-X8MB1D8-M3 | E2E-X8MC18-M3 |
| | | | NC | - | E2E-X8MB28-M3 | E2E-X8MC28-M3 |
| | | 49 mm | NO | E2E-X8MB1TL8-M3 | E2E-X8MB1DL8-M3 | E2E-X8MC1L8-M3 |
| | | | NC | - | E2E-X8MB2L8-M3 | E2E-X8MC2L8-M3 |
| | M8 Connector (3-pin) | 39 mm | NO | E2E-X8MB1T8-M5 | E2E-X8MB1D8-M5 | E2E-X8MC18-M5 |
| | | | NC | - | E2E-X8MB28-M5 | E2E-X8MC28-M5 |
| | | 49 mm | NO | E2E-X8MB1TL8-M5 | E2E-X8MB1DL8-M5 | E2E-X8MC1L8-M5 |
| | | | NC | - | E2E-X8MB2L8-M5 | E2E-X8MC2L8-M5 |
| M12 (16 mm) | Pre-wired (2 m) *1 | 47 mm *2 | NO | E2E-X16MB1T12 2M | E2E-X16MB1D12 2M | E2E-X16MC112 2M |
| | | | NC | - | E2E-X16MB212 2M | E2E-X16MC212 2M |
| | | 69 mm | NO | E2E-X16MB1TL12 2M | E2E-X16MB1DL12 2M | E2E-X16MC1L12 2M |
| | | | NC | - | E2E-X16MB2L12 2M | E2E-X16MC2L12 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 47 mm *3 | NO | E2E-X16MB1T12-M1TJ 0.3M | E2E-X16MB1D12-M1TJ 0.3M | E2E-X16MC112-M1TJ 0.3M |
| | | | NC | - | E2E-X16MB212-M1TJ 0.3M | E2E-X16MC212-M1TJ 0.3M |
| | | 69 mm | NO | E2E-X16MB1TL12-M1TJ 0.3M | E2E-X16MB1DL12-M1TJ 0.3M | E2E-X16MC1L12-M1TJ 0.3M |
| | | | NC | - | E2E-X16MB2L12-M1TJ 0.3M | E2E-X16MC2L12-M1TJ 0.3M |
| | M12 Connector | 48 mm | NO | E2E-X16MB1T12-M1 | E2E-X16MB1D12-M1 | E2E-X16MC112-M1 |
| | | | NC | - | E2E-X16MB212-M1 | E2E-X16MC212-M1 |
| | | 70 mm | NO | E2E-X16MB1TL12-M1 | E2E-X16MB1DL12-M1 | E2E-X16MC1L12-M1 |
| | | | NC | - | E2E-X16MB2L12-M1 | E2E-X16MC2L12-M1 |
| M18 (30 mm) | Pre-wired (2 m) *1 | 77 mm *2 | NO | E2E-X30MB1TL18 2M | E2E-X30MB1DL18 2M | E2E-X30MC1L18 2M |
| | | | NC | - | E2E-X30MB2L18 2M | E2E-X30MC2L18 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 77 mm *3 | NO | E2E-X30MB1TL18-M1TJ 0.3M | E2E-X30MB1DL18-M1TJ 0.3M | E2E-X30MC1L18-M1TJ 0.3M |
| | | | NC | - | E2E-X30MB2L18-M1TJ 0.3M | E2E-X30MC2L18-M1TJ 0.3M |
| | M12 Connector | 75 mm | NO | E2E-X30MB1TL18-M1 | E2E-X30MB1DL18-M1 | E2E-X30MC1L18-M1 |
| | | | NC | - | E2E-X30MB2L18-M1 | E2E-X30MC2L18-M1 |
| M30 (50 mm) | Pre-wired (2 m) *1 | 97 mm *2 | NO | E2E-X50MB1TL30 2M | E2E-X50MB1DL30 2M | E2E-X50MC1L30 2M |
| | | | NC | - | E2E-X50MB2L30 2M | E2E-X50MC2L30 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 97 mm *3 | NO | E2E-X50MB1TL30-M1TJ 0.3M | E2E-X50MB1DL30-M1TJ 0.3M | E2E-X50MC1L30-M1TJ 0.3M |
| | | | NC | - | E2E-X50MB2L30-M1TJ 0.3M | E2E-X50MC2L30-M1TJ 0.3M |
| | M12 Connector | 95 mm | NO | E2E-X50MB1TL30-M1 | E2E-X50MB1DL30-M1 | E2E-X50MC1L30-M1 |
| | | | NC | - | E2E-X50MB2L30-M1 | E2E-X50MC2L30-M1 |

*1. Models with 5-m cable length are also available (Example: E2E-X16MB1D12 5M)
*2. Models with 2-m and 5-m robot (bending-resistant) cables are also available with "-R" in the model number. (Example: E2E-X16MB1D12-R 2M/E2E-X16MB1D12-R 5M)
*3. Models with M12 Smartclick connector model robot (bending-resistant) cables are also available with R" in the model number. (Example: E2E-X16MB1D12-M1TJR 0.3M)
*4. IO-Link is not supported for NC-type PNP outputs or all types of NPN outputs.

**Note:** Operation mode NO can be changed to NC via IO-Link communications.

PREMIUM Model

## E2E NEXT Series (Triple distance model)

DC 3-wire [Refer to *Dimensions* on page 64.]

Shielded *1

| Size (Sensing distance) | Connection method | Body size | Operation mode | Model | | |
|---|---|---|---|---|---|---|
| | | | | PNP | | NPN |
| | | | | IO-Link (COM3) | IO-Link (COM2) *5 | --- *5 |
| M8 (3 mm) | Pre-wired (2 m) *2 | 38 mm *3 | NO | E2E-X3B1T8 2M | E2E-X3B1D8 2M | E2E-X3C18 2M |
| | | | NC | - | E2E-X3B28 2M | E2E-X3C28 2M |
| | | 48 mm | NO | E2E-X3B1TL8 2M | E2E-X3B1DL8 2M | E2E-X3C1L8 2M |
| | | | NC | - | E2E-X3B2L8 2M | E2E-X3C2L8 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 38 mm *4 | NO | E2E-X3B1T8-M1TJ 0.3M | E2E-X3B1D8-M1TJ 0.3M | E2E-X3C18-M1TJ 0.3M |
| | | | NC | - | E2E-X3B28-M1TJ 0.3M | E2E-X3C28-M1TJ 0.3M |
| | | 48 mm | NO | E2E-X3B1TL8-M1TJ 0.3M | E2E-X3B1DL8-M1TJ 0.3M | E2E-X3C1L8-M1TJ 0.3M |
| | | | NC | - | E2E-X3B2L8-M1TJ 0.3M | E2E-X3C2L8-M1TJ 0.3M |
| | M12 Connector | 43 mm | NO | E2E-X3B1T8-M1 | E2E-X3B1D8-M1 | E2E-X3C18-M1 |
| | | | NC | - | E2E-X3B28-M1 | E2E-X3C28-M1 |
| | | 53 mm | NO | E2E-X3B1TL8-M1 | E2E-X3B1DL8-M1 | E2E-X3C1L8-M1 |
| | | | NC | - | E2E-X3B2L8-M1 | E2E-X3C2L8-M1 |
| | M8 Connector (4-pin) | 39 mm | NO | E2E-X3B1T8-M3 | E2E-X3B1D8-M3 | E2E-X3C18-M3 |
| | | | NC | - | E2E-X3B28-M3 | E2E-X3C28-M3 |
| | | 49 mm | NO | E2E-X3B1TL8-M3 | E2E-X3B1DL8-M3 | E2E-X3C1L8-M3 |
| | | | NC | - | E2E-X3B2L8-M3 | E2E-X3C2L8-M3 |
| | M8 Connector (3-pin) | 39 mm | NO | E2E-X3B1T8-M5 | E2E-X3B1D8-M5 | E2E-X3C18-M5 |
| | | | NC | - | E2E-X3B28-M5 | E2E-X3C28-M5 |
| | | 49 mm | NO | E2E-X3B1TL8-M5 | E2E-X3B1DL8-M5 | E2E-X3C1L8-M5 |
| | | | NC | - | E2E-X3B2L8-M5 | E2E-X3C2L8-M5 |
| M12 (6 mm) | Pre-wired (2 m) *2 | 47 mm *3 | NO | E2E-X6B1T12 2M | E2E-X6B1D12 2M | E2E-X6C112 2M |
| | | | NC | - | E2E-X6B212 2M | E2E-X6C212 2M |
| | | | NO+NC | - | E2E-X6B3D12 2M | E2E-X6C312 2M |
| | | 69 mm | NO | E2E-X6B1TL12 2M | E2E-X6B1DL12 2M | E2E-X6C1L12 2M |
| | | | NC | - | E2E-X6B2L12 2M | E2E-X6C2L12 2M |
| | | | NO+NC | - | E2E-X6B3DL12 2M | E2E-X6C3L12 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 47 mm *4 | NO | E2E-X6B1T12-M1TJ 0.3M | E2E-X6B1D12-M1TJ 0.3M | E2E-X6C112-M1TJ 0.3M |
| | | | NC | - | E2E-X6B212-M1TJ 0.3M | E2E-X6C212-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X6B3D12-M1TJ 0.3M | E2E-X6C312-M1TJ 0.3M |
| | | 69 mm | NO | E2E-X6B1TL12-M1TJ 0.3M | E2E-X6B1DL12-M1TJ 0.3M | E2E-X6C1L12-M1TJ 0.3M |
| | | | NC | - | E2E-X6B2L12-M1TJ 0.3M | E2E-X6C2L12-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X6B3DL12-M1TJ 0.3M | E2E-X6C3L12-M1TJ 0.3M |
| | M12 Connector | 48 mm | NO | E2E-X6B1T12-M1 | E2E-X6B1D12-M1 | E2E-X6C112-M1 |
| | | | NC | - | E2E-X6B212-M1 | E2E-X6C212-M1 |
| | | | NO+NC | - | E2E-X6B3D12-M1 | E2E-X6C312-M1 |
| | | 70 mm | NO | E2E-X6B1TL12-M1 | E2E-X6B1DL12-M1 | E2E-X6C1L12-M1 |
| | | | NC | - | E2E-X6B2L12-M1 | E2E-X6C2L12-M1 |
| | | | NO+NC | - | E2E-X6B3DL12-M1 | E2E-X6C3L12-M1 |

**PREMIUM Model**

| Size (Sensing distance) | Connection method | Body size | Operation mode | Model | | |
|---|---|---|---|---|---|---|
| | | | | PNP | | NPN |
| | | | | IO-Link (COM3) | IO-Link (COM2) *5 | --- *5 |
| M18 (12 mm) | Pre-wired (2 m) *2 | 55 mm *3 | NO | E2E-X12B1T18 2M | E2E-X12B1D18 2M | E2E-X12C118 2M |
| | | | NC | - | E2E-X12B218 2M | E2E-X12C218 2M |
| | | | NO+NC | - | E2E-X12B3D18 2M | E2E-X12C318 2M |
| | | 77 mm | NO | E2E-X12B1TL18 2M | E2E-X12B1DL18 2M | E2E-X12C1L18 2M |
| | | | NC | - | E2E-X12B2L18 2M | E2E-X12C2L18 2M |
| | | | NO+NC | - | E2E-X12B3DL18 2M | E2E-X12C3L18 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 55 mm *4 | NO | E2E-X12B1T18-M1TJ 0.3M | E2E-X12B1D18-M1TJ 0.3M | E2E-X12C118-M1TJ 0.3M |
| | | | NC | - | E2E-X12B218-M1TJ 0.3M | E2E-X12C218-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X12B3D18-M1TJ 0.3M | E2E-X12C318-M1TJ 0.3M |
| | | 77 mm | NO | E2E-X12B1TL18-M1TJ 0.3M | E2E-X12B1DL18-M1TJ 0.3M | E2E-X12C1L18-M1TJ 0.3M |
| | | | NC | - | E2E-X12B2L18-M1TJ 0.3M | E2E-X12C2L18-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X12B3DL18-M1TJ 0.3M | E2E-X12C3L18-M1TJ 0.3M |
| | M12 Connector | 53 mm | NO | E2E-X12B1T18-M1 | E2E-X12B1D18-M1 | E2E-X12C118-M1 |
| | | | NC | - | E2E-X12B218-M1 | E2E-X12C218-M1 |
| | | | NO+NC | - | E2E-X12B3D18-M1 | E2E-X12C318-M1 |
| | | 75 mm | NO | E2E-X12B1TL18-M1 | E2E-X12B1DL18-M1 | E2E-X12C1L18-M1 |
| | | | NC | - | E2E-X12B2L18-M1 | E2E-X12C2L18-M1 |
| | | | NO+NC | - | E2E-X12B3DL18-M1 | E2E-X12C3L18-M1 |
| M30 (22 mm) | Pre-wired (2 m) *2 | 60 mm *3 | NO | E2E-X22B1T30 2M | E2E-X22B1D30 2M | E2E-X22C130 2M |
| | | | NC | - | E2E-X22B230 2M | E2E-X22C230 2M |
| | | | NO+NC | - | E2E-X22B3D30 2M | E2E-X22C330 2M |
| | | 82 mm | NO | E2E-X22B1TL30 2M | E2E-X22B1DL30 2M | E2E-X22C1L30 2M |
| | | | NC | - | E2E-X22B2L30 2M | E2E-X22C2L30 2M |
| | | | NO+NC | - | E2E-X22B3DL30 2M | E2E-X22C3L30 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 60 mm *4 | NO | E2E-X22B1T30-M1TJ 0.3M | E2E-X22B1D30-M1TJ 0.3M | E2E-X22C130-M1TJ 0.3M |
| | | | NC | - | E2E-X22B230-M1TJ 0.3M | E2E-X22C230-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X22B3D30-M1TJ 0.3M | E2E-X22C330-M1TJ 0.3M |
| | | 82 mm | NO | E2E-X22B1TL30-M1TJ 0.3M | E2E-X22B1DL30-M1TJ 0.3M | E2E-X22C1L30-M1TJ 0.3M |
| | | | NC | - | E2E-X22B2L30-M1TJ 0.3M | E2E-X22C2L30-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X22B3DL30-M1TJ 0.3M | E2E-X22C3L30-M1TJ 0.3M |
| | M12 Connector | 58 mm | NO | E2E-X22B1T30-M1 | E2E-X22B1D30-M1 | E2E-X22C130-M1 |
| | | | NC | - | E2E-X22B230-M1 | E2E-X22C230-M1 |
| | | | NO+NC | - | E2E-X22B3D30-M1 | E2E-X22C330-M1 |
| | | 80 mm | NO | E2E-X22B1TL30-M1 | E2E-X22B1DL30-M1 | E2E-X22C1L30-M1 |
| | | | NC | - | E2E-X22B2L30-M1 | E2E-X22C2L30-M1 |
| | | | NO+NC | - | E2E-X22B3DL30-M1 | E2E-X22C3L30-M1 |

*1. When embedding the Proximity Sensor in metal, refer to *Influence of Surrounding Metal* on page 62.
*2. Models with 5-m cable length are also available (Example: E2E-X6B1D12 5M)
*3. Models with 2-m and 5-m robot (bending-resistant) cables are also available with "-R" in the model number. (Example: E2E-X6B1D12-R 2M/ E2E-X6B1D12-R 5M)
*4. Models with M12 Smartclick connector model robot (bending-resistant) cables are also available with R" in the model number. (Example: E2E-X6B1D12-M1TJR 0.3M)
*5. IO-Link is not supported for NC-type PNP outputs or all types of NPN outputs.

**Note:** Operation mode NO can be changed to NC via IO-Link communications.

PREMIUM Model

## E2E NEXT Series (Triple distance model)

DC 3-wire [Refer to *Dimensions* on page 64.]

**Unshielded**

| Size (Sensing distance) | Connection method | Body size | Operation mode | Model | | |
|---|---|---|---|---|---|---|
| | | | | PNP | | NPN |
| | | | | IO-Link (COM3) | IO-Link (COM2) *4 | --- *4 |
| M8 (6 mm) | Pre-wired (2 m) *1 | 38 mm *2 | NO | E2E-X6MB1T8 2M | E2E-X6MB1D8 2M | E2E-X6MC18 2M |
| | | | NC | - | E2E-X6MB28 2M | E2E-X6MC28 2M |
| | | 48 mm | NO | E2E-X6MB1TL8 2M | E2E-X6MB1DL8 2M | E2E-X6MC1L8 2M |
| | | | NC | - | E2E-X6MB2L8 2M | E2E-X6MC2L8 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 38 mm *3 | NO | E2E-X6MB1T8-M1TJ 0.3M | E2E-X6MB1D8-M1TJ 0.3M | E2E-X6MC18-M1TJ 0.3M |
| | | | NC | - | E2E-X6MB28-M1TJ 0.3M | E2E-X6MC28-M1TJ 0.3M |
| | | 48 mm | NO | E2E-X6MB1TL8-M1TJ 0.3M | E2E-X6MB1DL8-M1TJ 0.3M | E2E-X6MC1L8-M1TJ 0.3M |
| | | | NC | - | E2E-X6MB2L8-M1TJ 0.3M | E2E-X6MC2L8-M1TJ 0.3M |
| | M12 Connector | 43 mm | NO | E2E-X6MB1T8-M1 | E2E-X6MB1D8-M1 | E2E-X6MC18-M1 |
| | | | NC | - | E2E-X6MB28-M1 | E2E-X6MC28-M1 |
| | | 53 mm | NO | E2E-X6MB1TL8-M1 | E2E-X6MB1DL8-M1 | E2E-X6MC1L8-M1 |
| | | | NC | - | E2E-X6MB2L8-M1 | E2E-X6MC2L8-M1 |
| | M8 Connector (4-pin) | 39 mm | NO | E2E-X6MB1T8-M3 | E2E-X6MB1D8-M3 | E2E-X6MC18-M3 |
| | | | NC | - | E2E-X6MB28-M3 | E2E-X6MC28-M3 |
| | | 49 mm | NO | E2E-X6MB1TL8-M3 | E2E-X6MB1DL8-M3 | E2E-X6MC1L8-M3 |
| | | | NC | - | E2E-X6MB2L8-M3 | E2E-X6MC2L8-M3 |
| | M8 Connector (3-pin) | 39 mm | NO | E2E-X6MB1T8-M5 | E2E-X6MB1D8-M5 | E2E-X6MC18-M5 |
| | | | NC | - | E2E-X6MB28-M5 | E2E-X6MC28-M5 |
| | | 49 mm | NO | E2E-X6MB1TL8-M5 | E2E-X6MB1DL8-M5 | E2E-X6MC1L8-M5 |
| | | | NC | - | E2E-X6MB2L8-M5 | E2E-X6MC2L8-M5 |
| M12 (10 mm) | Pre-wired (2 m) *1 | 47 mm *2 | NO | E2E-X10MB1T12 2M | E2E-X10MB1D12 2M | E2E-X10MC112 2M |
| | | | NC | - | E2E-X10MB212 2M | E2E-X10MC212 2M |
| | | | NO+NC | - | E2E-X10MB3D12 2M | E2E-X10MC312 2M |
| | | 69 mm | NO | E2E-X10MB1TL12 2M | E2E-X10MB1DL12 2M | E2E-X10MC1L12 2M |
| | | | NC | - | E2E-X10MB2L12 2M | E2E-X10MC2L12 2M |
| | | | NO+NC | - | E2E-X10MB3DL12 2M | E2E-X10MC3L12 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 47 mm *3 | NO | E2E-X10MB1T12-M1TJ 0.3M | E2E-X10MB1D12-M1TJ 0.3M | E2E-X10MC112-M1TJ 0.3M |
| | | | NC | - | E2E-X10MB212-M1TJ 0.3M | E2E-X10MC212-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X10MB3D12-M1TJ 0.3M | E2E-X10MC312-M1TJ 0.3M |
| | | 69 mm | NO | E2E-X10MB1TL12-M1TJ 0.3M | E2E-X10MB1DL12-M1TJ 0.3M | E2E-X10MC1L12-M1TJ 0.3M |
| | | | NC | - | E2E-X10MB2L12-M1TJ 0.3M | E2E-X10MC2L12-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X10MB3DL12-M1TJ 0.3M | E2E-X10MC3L12-M1TJ 0.3M |
| | M12 Connector | 48 mm | NO | E2E-X10MB1T12-M1 | E2E-X10MB1D12-M1 | E2E-X10MC112-M1 |
| | | | NC | - | E2E-X10MB212-M1 | E2E-X10MC212-M1 |
| | | | NO+NC | - | E2E-X10MB3D12-M1 | E2E-X10MC312-M1 |
| | | 70 mm | NO | E2E-X10MB1TL12-M1 | E2E-X10MB1DL12-M1 | E2E-X10MC1L12-M1 |
| | | | NC | - | E2E-X10MB2L12-M1 | E2E-X10MC2L12-M1 |
| | | | NO+NC | - | E2E-X10MB3DL12-M1 | E2E-X10MC3L12-M1 |
| M18 (20 mm) | Pre-wired (2 m) *1 | 77 mm *2 | NO | E2E-X20MB1TL18 2M | E2E-X20MB1DL18 2M | E2E-X20MC1L18 2M |
| | | | NC | - | E2E-X20MB2L18 2M | E2E-X20MC2L18 2M |
| | | | NO+NC | - | E2E-X20MB3DL18 2M | E2E-X20MC3L18 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 77 mm *3 | NO | E2E-X20MB1TL18-M1TJ | E2E-X20MB1DL18-M1TJ | E2E-X20MC1L18-M1TJ 0.3M |
| | | | NC | - | E2E-X20MB2L18-M1TJ 0.3M | E2E-X20MC2L18-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X20MB3DL18-M1TJ 0.3M | E2E-X20MC3L18-M1TJ 0.3M |
| | M12 Connector | 75 mm | NO | E2E-X20MB1TL18-M1 | E2E-X20MB1DL18-M1 | E2E-X20MC1L18-M1 |
| | | | NC | - | E2E-X20MB2L18-M1 | E2E-X20MC2L18-M1 |
| | | | NO+NC | - | E2E-X20MB3DL18-M1 | E2E-X20MC3L18-M1 |

**PREMIUM Model**

| Size (Sensing distance) | Connection method | Body size | Operation mode | Model | | |
|---|---|---|---|---|---|---|
| | | | | PNP | | NPN |
| | | | | IO-Link (COM3) | IO-Link (COM2) *4 | --- *4 |
| M30 (40 mm) | Pre-wired (2 m) *1 | 82 mm *2 | NO | **E2E-X40MB1TL30 2M** | **E2E-X40MB1DL30 2M** | **E2E-X40MC1L30 2M** |
| | | | NC | - | **E2E-X40MB2L30 2M** | **E2E-X40MC2L30 2M** |
| | | | NO+NC | - | **E2E-X40MB3DL30 2M** | **E2E-X40MC3L30 2M** |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 82 mm *3 | NO | **E2E-X40MB1TL30-M1TJ 0.3M** | **E2E-X40MB1DL30-M1TJ 0.3M** | **E2E-X40MC1L30-M1TJ 0.3M** |
| | | | NC | - | **E2E-X40MB2L30-M1TJ 0.3M** | **E2E-X40MC2L30-M1TJ 0.3M** |
| | | | NO+NC | - | **E2E-X40MB3DL30-M1TJ 0.3M** | **E2E-X40MC3L30-M1TJ 0.3M** |
| | M12 Connector | 80 mm | NO | **E2E-X40MB1TL30-M1** | **E2E-X40MB1DL30-M1** | **E2E-X40MC1L30-M1** |
| | | | NC | - | **E2E-X40MB2L30-M1** | **E2E-X40MC2L30-M1** |
| | | | NO+NC | - | **E2E-X40MB3DL30-M1** | **E2E-X40MC3L30-M1** |

*1. Models with 5-m cable length are also available (Example: E2E-X10MB1D12 5M)
*2. Models with 2-m and 5-m robot (bending-resistant) cables are also available with "-R" in the model number. (Example: E2E-X10MB1D12-R 2M/E2E-X10MB1D12-R 5M)
*3. Models with M12 Smartclick connector model robot (bending-resistant) cables are also available with R" in the model number. (Example: E2E-X10MB1D12-M1TJR 0.3M)
*4. IO-Link is not supported for NC-type PNP outputs or all types of NPN outputs.

**Note:** Operation mode NO can be changed to NC via IO-Link communications.

PREMIUM Model

## E2EQ NEXT Series (Spatter-resistant Triple distance model)

DC 3-wire [Refer to *Dimensions* on page 64.]

**Shielded *1**

| Size (Sensing distance) | Connection method | Body size | Operation mode | Model | | |
|---|---|---|---|---|---|---|
| | | | | PNP | | NPN |
| | | | | IO-Link (COM3) | IO-Link (COM2) *3 | --- *3 |
| M8 (3 mm) | Pre-wired (2 m) *2 | 38 mm | NO | E2EQ-X3B1T8 2M | E2EQ-X3B1D8 2M | E2EQ-X3C18 2M |
| | | | NC | - | E2EQ-X3B28 2M | E2EQ-X3C28 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 38 mm | NO | E2EQ-X3B1T8-M1TJ 0.3M | E2EQ-X3B1D8-M1TJ 0.3M | E2EQ-X3C18-M1TJ 0.3M |
| | | | NC | - | E2EQ-X3B28-M1TJ 0.3M | E2EQ-X3C28-M1TJ 0.3M |
| | M12 Connector | 43 mm | NO | E2EQ-X3B1T8-M1 | E2EQ-X3B1D8-M1 | E2EQ-X3C18-M1 |
| | | | NC | - | E2EQ-X3B28-M1 | E2EQ-X3C28-M1 |
| M12 (6 mm) | Pre-wired (2 m) *2 | 47 mm | NO | E2EQ-X6B1T12 2M | E2EQ-X6B1D12 2M | E2EQ-X6C112 2M |
| | | | NC | - | E2EQ-X6B212 2M | E2EQ-X6C212 2M |
| | | | NO+NC | - | E2EQ-X6B3D12 2M | E2EQ-X6C312 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 47 mm | NO | E2EQ-X6B1T12-M1TJ 0.3M | E2EQ-X6B1D12-M1TJ 0.3M | E2EQ-X6C112-M1TJ 0.3M |
| | | | NC | - | E2EQ-X6B212-M1TJ 0.3M | E2EQ-X6C212-M1TJ 0.3M |
| | | | NO+NC | - | E2EQ-X6B3D12-M1TJ 0.3M | E2EQ-X6C312-M1TJ 0.3M |
| | M12 Connector | 48 mm | NO | E2EQ-X6B1T12-M1 | E2EQ-X6B1D12-M1 | E2EQ-X6C112-M1 |
| | | | NC | - | E2EQ-X6B212-M1 | E2EQ-X6C212-M1 |
| | | | NO+NC | - | E2EQ-X6B3D12-M1 | E2EQ-X6C312-M1 |
| M18 (12 mm) | Pre-wired (2 m) *2 | 55 mm | NO | E2EQ-X12B1T18 2M | E2EQ-X12B1D18 2M | E2EQ-X12C118 2M |
| | | | NC | - | E2EQ-X12B218 2M | E2EQ-X12C218 2M |
| | | | NO+NC | - | E2EQ-X12B3D18 2M | E2EQ-X12C318 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 55 mm | NO | E2EQ-X12B1T18-M1TJ 0.3M | E2EQ-X12B1D18-M1TJ 0.3M | E2EQ-X12C118-M1TJ 0.3M |
| | | | NC | - | E2EQ-X12B218-M1TJ 0.3M | E2EQ-X12C218-M1TJ 0.3M |
| | | | NO+NC | - | E2EQ-X12B3D18-M1TJ 0.3M | E2EQ-X12C318-M1TJ 0.3M |
| | M12 Connector | 53 mm | NO | E2EQ-X12B1T18-M1 | E2EQ-X12B1D18-M1 | E2EQ-X12C118-M1 |
| | | | NC | - | E2EQ-X12B218-M1 | E2EQ-X12C218-M1 |
| | | | NO+NC | - | E2EQ-X12B3D18-M1 | E2EQ-X12C318-M1 |
| M30 (22 mm) | Pre-wired (2 m) *2 | 60 mm | NO | E2EQ-X22B1T30 2M | E2EQ-X22B1D30 2M | E2EQ-X22C130 2M |
| | | | NC | - | E2EQ-X22B230 2M | E2EQ-X22C230 2M |
| | | | NO+NC | - | E2EQ-X22B3D30 2M | E2EQ-X22C330 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 60 mm | NO | E2EQ-X22B1T30-M1TJ 0.3M | E2EQ-X22B1D30-M1TJ 0.3M | E2EQ-X22C130-M1TJ 0.3M |
| | | | NC | - | E2EQ-X22B230-M1TJ 0.3M | E2EQ-X22C230-M1TJ 0.3M |
| | | | NO+NC | - | E2EQ-X22B3D30-M1TJ 0.3M | E2EQ-X22C330-M1TJ 0.3M |
| | M12 Connector | 58 mm | NO | E2EQ-X22B1T30-M1 | E2EQ-X22B1D30-M1 | E2EQ-X22C130-M1 |
| | | | NC | - | E2EQ-X22B230-M1 | E2EQ-X22C230-M1 |
| | | | NO+NC | - | E2EQ-X22B3D30-M1 | E2EQ-X22C330-M1 |

*1. When embedding the Proximity Sensor in metal, refer to *Influence of Surrounding Metal* on page 62.
*2. Models with 5-m cable length are also available (Example: E2EQ-X6B1D12 5M)
*3. IO-Link is not supported for NC-type PNP outputs or all types of NPN outputs.

**Note:** Operation mode NO can be changed to NC via IO-Link communications.

BASIC Model

# E2E NEXT Series (Double distance model)

DC 3-wire [Refer to *Dimensions* on page 65.]

**Shielded**

| Size (Sensing distance) | Connection method | Body size | Operation mode | Model | | |
|---|---|---|---|---|---|---|
| | | | | PNP | | NPN |
| | | | | IO-Link (COM3) | IO-Link (COM2) *4 | --- *4 |
| M8 (2 mm) | Pre-wired (2 m) *1 | 38 mm *2 | NO | E2E-X2B1T8 2M | E2E-X2B1D8 2M | E2E-X2C18 2M |
| | | | NC | - | E2E-X2B28 2M | E2E-X2C28 2M |
| | | 48 mm | NO | E2E-X2B1TL8 2M | E2E-X2B1DL8 2M | E2E-X2C1L8 2M |
| | | | NC | - | E2E-X2B2L8 2M | E2E-X2C2L8 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 38 mm *3 | NO | E2E-X2B1T8-M1TJ 0.3M | E2E-X2B1D8-M1TJ 0.3M | E2E-X2C18-M1TJ 0.3M |
| | | | NC | - | E2E-X2B28-M1TJ 0.3M | E2E-X2C28-M1TJ 0.3M |
| | | 48 mm | NO | E2E-X2B1TL8-M1TJ 0.3M | E2E-X2B1DL8-M1TJ 0.3M | E2E-X2C1L8-M1TJ 0.3M |
| | | | NC | - | E2E-X2B2L8-M1TJ 0.3M | E2E-X2C2L8-M1TJ 0.3M |
| | M12 Connector | 43 mm | NO | E2E-X2B1T8-M1 | E2E-X2B1D8-M1 | E2E-X2C18-M1 |
| | | | NC | - | E2E-X2B28-M1 | E2E-X2C28-M1 |
| | | 53 mm | NO | E2E-X2B1TL8-M1 | E2E-X2B1DL8-M1 | E2E-X2C1L8-M1 |
| | | | NC | - | E2E-X2B2L8-M1 | E2E-X2C2L8-M1 |
| | | | NO+NC | - | E2E-X2B3DL8-M1 | E2E-X2C3L8-M1 |
| | M8 Connector (4-pin) | 39 mm | NO | E2E-X2B1T8-M3 | E2E-X2B1D8-M3 | E2E-X2C18-M3 |
| | | | NC | - | E2E-X2B28-M3 | E2E-X2C28-M3 |
| | | 49 mm | NO | E2E-X2B1TL8-M3 | E2E-X2B1DL8-M3 | E2E-X2C1L8-M3 |
| | | | NC | - | E2E-X2B2L8-M3 | E2E-X2C2L8-M3 |
| | M8 Connector (3-pin) | 39 mm | NO | E2E-X2B1T8-M5 | E2E-X2B1D8-M5 | E2E-X2C18-M5 |
| | | | NC | - | E2E-X2B28-M5 | E2E-X2C28-M5 |
| | | 49 mm | NO | E2E-X2B1TL8-M5 | E2E-X2B1DL8-M5 | E2E-X2C1L8-M5 |
| | | | NC | - | E2E-X2B2L8-M5 | E2E-X2C2L8-M5 |
| M12 (4 mm) | Pre-wired (2 m) *1 | 47 mm *2 | NO | E2E-X4B1T12 2M | E2E-X4B1D12 2M | E2E-X4C112 2M |
| | | | NC | - | E2E-X4B212 2M | E2E-X4C212 2M |
| | | | NO+NC | - | E2E-X4B3D12 2M | E2E-X4C312 2M |
| | | 69 mm | NO | E2E-X4B1TL12 2M | E2E-X4B1DL12 2M | E2E-X4C1L12 2M |
| | | | NC | - | E2E-X4B2L12 2M | E2E-X4C2L12 2M |
| | | | NO+NC | - | E2E-X4B3DL12 2M | E2E-X4C3L12 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 47 mm *3 | NO | E2E-X4B1T12-M1TJ 0.3M | E2E-X4B1D12-M1TJ 0.3M | E2E-X4C112-M1TJ 0.3M |
| | | | NC | - | E2E-X4B212-M1TJ 0.3M | E2E-X4C212-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X4B3D12-M1TJ 0.3M | E2E-X4C312-M1TJ 0.3M |
| | | 69 mm | NO | E2E-X4B1TL12-M1TJ 0.3M | E2E-X4B1DL12-M1TJ 0.3M | E2E-X4C1L12-M1TJ 0.3M |
| | | | NC | - | E2E-X4B2L12-M1TJ 0.3M | E2E-X4C2L12-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X4B3DL12-M1TJ 0.3M | E2E-X4C3L12-M1TJ 0.3M |
| | M12 Connector | 48 mm | NO | E2E-X4B1T12-M1 | E2E-X4B1D12-M1 | E2E-X4C112-M1 |
| | | | NC | - | E2E-X4B212-M1 | E2E-X4C212-M1 |
| | | | NO+NC | - | E2E-X4B3D12-M1 | E2E-X4C312-M1 |
| | | 70 mm | NO | E2E-X4B1TL12-M1 | E2E-X4B1DL12-M1 | E2E-X4C1L12-M1 |
| | | | NC | - | E2E-X4B2L12-M1 | E2E-X4C2L12-M1 |
| | | | NO+NC | - | E2E-X4B3DL12-M1 | E2E-X4C3L12-M1 |

## BASIC Model

| Size (Sensing distance) | Connection method | Body size | Operation mode | Model | | |
|---|---|---|---|---|---|---|
| | | | | PNP | | NPN |
| | | | | IO-Link (COM3) | IO-Link (COM2) *4 | --- *4 |
| M18 (8 mm) | Pre-wired (2 m) *1 | 55 mm *2 | NO | E2E-X8B1T18 2M | E2E-X8B1D18 2M | E2E-X8C118 2M |
| | | | NC | - | E2E-X8B218 2M | E2E-X8C218 2M |
| | | | NO+NC | - | E2E-X8B3D18 2M | E2E-X8C318 2M |
| | | 77 mm | NO | E2E-X8B1TL18 2M | E2E-X8B1DL18 2M | E2E-X8C1L18 2M |
| | | | NC | - | E2E-X8B2L18 2M | E2E-X8C2L18 2M |
| | | | NO+NC | - | E2E-X8B3DL18 2M | E2E-X8C3L18 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 55 mm *3 | NO | E2E-X8B1T18-M1TJ 0.3M | E2E-X8B1D18-M1TJ 0.3M | E2E-X8C118-M1TJ 0.3M |
| | | | NC | - | E2E-X8B218-M1TJ 0.3M | E2E-X8C218-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X8B3D18-M1TJ 0.3M | E2E-X8C318-M1TJ 0.3M |
| | | 77 mm | NO | E2E-X8B1TL18-M1TJ 0.3M | E2E-X8B1DL18-M1TJ 0.3M | E2E-X8C1L18-M1TJ 0.3M |
| | | | NC | - | E2E-X8B2L18-M1TJ 0.3M | E2E-X8C2L18-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X8B3DL18-M1TJ 0.3M | E2E-X8C3L18-M1TJ 0.3M |
| | M12 Connector | 53 mm | NO | E2E-X8B1T18-M1 | E2E-X8B1D18-M1 | E2E-X8C118-M1 |
| | | | NC | - | E2E-X8B218-M1 | E2E-X8C218-M1 |
| | | | NO+NC | - | E2E-X8B3D18-M1 | E2E-X8C318-M1 |
| | | 75 mm | NO | E2E-X8B1TL18-M1 | E2E-X8B1DL18-M1 | E2E-X8C1L18-M1 |
| | | | NC | - | E2E-X8B2L18-M1 | E2E-X8C2L18-M1 |
| | | | NO+NC | - | E2E-X8B3DL18-M1 | E2E-X8C3L18-M1 |
| M30 (15 mm) | Pre-wired (2 m) *1 | 60 mm *2 | NO | E2E-X15B1T30 2M | E2E-X15B1D30 2M | E2E-X15C130 2M |
| | | | NC | - | E2E-X15B230 2M | E2E-X15C230 2M |
| | | | NO+NC | - | E2E-X15B3D30 2M | E2E-X15C330 2M |
| | | 82 mm | NO | E2E-X15B1TL30 2M | E2E-X15B1DL30 2M | E2E-X15C1L30 2M |
| | | | NC | - | E2E-X15B2L30 2M | E2E-X15C2L30 2M |
| | | | NO+NC | - | E2E-X15B3DL30 2M | E2E-X15C3L30 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 60 mm *3 | NO | E2E-X15B1T30-M1TJ 0.3M | E2E-X15B1D30-M1TJ 0.3M | E2E-X15C130-M1TJ 0.3M |
| | | | NC | - | E2E-X15B230-M1TJ 0.3M | E2E-X15C230-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X15B3D30-M1TJ 0.3M | E2E-X15C330-M1TJ 0.3M |
| | | 82 mm | NO | E2E-X15B1TL30-M1TJ 0.3M | E2E-X15B1DL30-M1TJ 0.3M | E2E-X15C1L30-M1TJ 0.3M |
| | | | NC | - | E2E-X15B2L30-M1TJ 0.3M | E2E-X15C2L30-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X15B3DL30-M1TJ 0.3M | E2E-X15C3L30-M1TJ 0.3M |
| | M12 Connector | 58 mm | NO | E2E-X15B1T30-M1 | E2E-X15B1D30-M1 | E2E-X15C130-M1 |
| | | | NC | - | E2E-X15B230-M1 | E2E-X15C230-M1 |
| | | | NO+NC | - | E2E-X15B3D30-M1 | E2E-X15C330-M1 |
| | | 80 mm | NO | E2E-X15B1TL30-M1 | E2E-X15B1DL30-M1 | E2E-X15C1L30-M1 |
| | | | NC | - | E2E-X15B2L30-M1 | E2E-X15C2L30-M1 |
| | | | NO+NC | - | E2E-X15B3DL30-M1 | E2E-X15C3L30-M1 |

*1. Models with 5-m cable length are also available (Example: E2E-X2B1D8 5M)
*2. Models with 2-m and 5-m robot (bending-resistant) cables are also available with "-R" in the model number. (Example: E2E-X2B1D8-R 2M/ E2E-X2B1D8-R 5M)
*3. Models with M12 Smartclick connector model robot (bending-resistant) cables are also available with R" in the model number. (Example: E2E-X4B1T12-M1TJR 0.3M)
*4. IO-Link is not supported for NC-type PNP outputs or all types of NPN outputs.

**Note:** Operation mode NO can be changed to NC via IO-Link communications.

BASIC Model

## E2E NEXT Series (Double distance model)

DC 3-wire [Refer to *Dimensions* on page 65.]

**Unshielded**

| Size (Sensing distance) | Connection method | Body size | Operation mode | Model | | |
|---|---|---|---|---|---|---|
| | | | | PNP | | NPN |
| | | | | IO-Link (COM3) | IO-Link (COM2) *4 | --- *4 |
| M8 (4 mm) | Pre-wired (2 m) *1 | 38 mm *2 | NO | E2E-X4MB1T8 2M | E2E-X4MB1D8 2M | E2E-X4MC18 2M |
| | | | NC | - | E2E-X4MB28 2M | E2E-X4MC28 2M |
| | | 48 mm | NO | E2E-X4MB1TL8 2M | E2E-X4MB1DL8 2M | E2E-X4MC1L8 2M |
| | | | NC | - | E2E-X4MB2L8 2M | E2E-X4MC2L8 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 38 mm *3 | NO | E2E-X4MB1T8-M1TJ 0.3M | E2E-X4MB1D8-M1TJ 0.3M | E2E-X4MC18-M1TJ 0.3M |
| | | | NC | - | E2E-X4MB28-M1TJ 0.3M | E2E-X4MC28-M1TJ 0.3M |
| | | 48 mm | NO | E2E-X4MB1TL8-M1TJ 0.3M | E2E-X4MB1DL8-M1TJ 0.3M | E2E-X4MC1L8-M1TJ 0.3M |
| | | | NC | - | E2E-X4MB2L8-M1TJ 0.3M | E2E-X4MC2L8-M1TJ 0.3M |
| | M12 Connector | 43 mm | NO | E2E-X4MB1T8-M1 | E2E-X4MB1D8-M1 | E2E-X4MC18-M1 |
| | | | NC | - | E2E-X4MB28-M1 | E2E-X4MC28-M1 |
| | | 53 mm | NO | E2E-X4MB1TL8-M1 | E2E-X4MB1DL8-M1 | E2E-X4MC1L8-M1 |
| | | | NC | - | E2E-X4MB2L8-M1 | E2E-X4MC2L8-M1 |
| | | | NO+NC | - | E2E-X4MB3DL8-M1 | E2E-X4MC3L8-M1 |
| | M8 Connector (4-pin) | 39 mm | NO | E2E-X4MB1T8-M3 | E2E-X4MB1D8-M3 | E2E-X4MC18-M3 |
| | | | NC | - | E2E-X4MB28-M3 | E2E-X4MC28-M3 |
| | | 49 mm | NO | E2E-X4MB1TL8-M3 | E2E-X4MB1DL8-M3 | E2E-X4MC1L8-M3 |
| | | | NC | - | E2E-X4MB2L8-M3 | E2E-X4MC2L8-M3 |
| | M8 Connector (3-pin) | 39 mm | NO | E2E-X4MB1T8-M5 | E2E-X4MB1D8-M5 | E2E-X4MC18-M5 |
| | | | NC | - | E2E-X4MB28-M5 | E2E-X4MC28-M5 |
| | | 49 mm | NO | E2E-X4MB1TL8-M5 | E2E-X4MB1DL8-M5 | E2E-X4MC1L8-M5 |
| | | | NC | - | E2E-X4MB2L8-M5 | E2E-X4MC2L8-M5 |
| M12 (8 mm) | Pre-wired (2 m) *1 | 47 mm *2 | NO | E2E-X8MB1T12 2M | E2E-X8MB1D12 2M | E2E-X8MC112 2M |
| | | | NC | - | E2E-X8MB212 2M | E2E-X8MC212 2M |
| | | | NO+NC | - | E2E-X8MB3D12 2M | E2E-X8MC312 2M |
| | | 69 mm | NO | E2E-X8MB1TL12 2M | E2E-X8MB1DL12 2M | E2E-X8MC1L12 2M |
| | | | NC | - | E2E-X8MB2L12 2M | E2E-X8MC2L12 2M |
| | | | NO+NC | - | E2E-X8MB3DL12 2M | E2E-X8MC3L12 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 47 mm *3 | NO | E2E-X8MB1T12-M1TJ 0.3M | E2E-X8MB1D12-M1TJ 0.3M | E2E-X8MC112-M1TJ 0.3M |
| | | | NC | - | E2E-X8MB212-M1TJ 0.3M | E2E-X8MC212-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X8MB3D12-M1TJ 0.3M | E2E-X8MC312-M1TJ 0.3M |
| | | 69 mm | NO | E2E-X8MB1TL12-M1TJ 0.3M | E2E-X8MB1DL12-M1TJ 0.3M | E2E-X8MC1L12-M1TJ 0.3M |
| | | | NC | - | E2E-X8MB2L12-M1TJ 0.3M | E2E-X8MC2L12-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X8MB3DL12-M1TJ 0.3M | E2E-X8MC3L12-M1TJ 0.3M |
| | M12 Connector | 48 mm | NO | E2E-X8MB1T12-M1 | E2E-X8MB1D12-M1 | E2E-X8MC112-M1 |
| | | | NC | - | E2E-X8MB212-M1 | E2E-X8MC212-M1 |
| | | | NO+NC | - | E2E-X8MB3D12-M1 | E2E-X8MC312-M1 |
| | | 70 mm | NO | E2E-X8MB1TL12-M1 | E2E-X8MB1DL12-M1 | E2E-X8MC1L12-M1 |
| | | | NC | - | E2E-X8MB2L12-M1 | E2E-X8MC2L12-M1 |
| | | | NO+NC | - | E2E-X8MB3DL12-M1 | E2E-X8MC3L12-M1 |

## BASIC Model

| Size (Sensing distance) | Connection method | Body size | Operation mode | Model | | |
|---|---|---|---|---|---|---|
| | | | | PNP | | NPN |
| | | | | IO-Link (COM3) | IO-Link (COM2) *4 | --- *4 |
| M18 (16 mm) | Pre-wired (2 m) *1 | 55 mm *2 | NO | E2E-X16MB1T18 2M | E2E-X16MB1D18 2M | E2E-X16MC118 2M |
| | | | NC | - | E2E-X16MB218 2M | E2E-X16MC218 2M |
| | | | NO+NC | - | E2E-X16MB3D18 2M | E2E-X16MC318 2M |
| | | 77 mm | NO | E2E-X16MB1TL18 2M | E2E-X16MB1DL18 2M | E2E-X16MC1L18 2M |
| | | | NC | - | E2E-X16MB2L18 2M | E2E-X16MC2L18 2M |
| | | | NO+NC | - | E2E-X16MB3DL18 2M | E2E-X16MC3L18 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 55 mm *3 | NO | E2E-X16MB1T18-M1TJ 0.3M | E2E-X16MB1D18-M1TJ 0.3M | E2E-X16MC118-M1TJ 0.3M |
| | | | NC | - | E2E-X16MB218-M1TJ 0.3M | E2E-X16MC218-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X16MB3D18-M1TJ 0.3M | E2E-X16MC318-M1TJ 0.3M |
| | | 77 mm | NO | E2E-X16MB1TL18-M1TJ 0.3M | E2E-X16MB1DL18-M1TJ 0.3M | E2E-X16MC1L18-M1TJ 0.3M |
| | | | NC | - | E2E-X16MB2L18-M1TJ 0.3M | E2E-X16MC2L18-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X16MB3DL18-M1TJ 0.3M | E2E-X16MC3L18-M1TJ 0.3M |
| | M12 Connector | 53 mm | NO | E2E-X16MB1T18-M1 | E2E-X16MB1D18-M1 | E2E-X16MC118-M1 |
| | | | NC | - | E2E-X16MB218-M1 | E2E-X16MC218-M1 |
| | | | NO+NC | - | E2E-X16MB3D18-M1 | E2E-X16MC318-M1 |
| | | 75 mm | NO | E2E-X16MB1TL18-M1 | E2E-X16MB1DL18-M1 | E2E-X16MC1L18-M1 |
| | | | NC | - | E2E-X16MB2L18-M1 | E2E-X16MC2L18-M1 |
| | | | NO+NC | - | E2E-X16MB3DL18-M1 | E2E-X16MC3L18-M1 |
| M30 (30 mm) | Pre-wired (2 m) *1 | 82 mm *2 | NO | E2E-X30MB1TL30 2M | E2E-X30MB1DL30 2M | E2E-X30MC1L30 2M |
| | | | NC | - | E2E-X30MB2L30 2M | E2E-X30MC2L30 2M |
| | | | NO+NC | - | E2E-X30MB3DL30 2M | E2E-X30MC3L30 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 82 mm *3 | NO | E2E-X30MB1TL30-M1TJ 0.3M | E2E-X30MB1DL30-M1TJ 0.3M | E2E-X30MC1L30-M1TJ 0.3M |
| | | | NC | - | E2E-X30MB2L30-M1TJ 0.3M | E2E-X30MC2L30-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X30MB3DL30-M1TJ 0.3M | E2E-X30MC3L30-M1TJ 0.3M |
| | M12 Connector | 80 mm | NO | E2E-X30MB1TL30-M1 | E2E-X30MB1DL30-M1 | E2E-X30MC1L30-M1 |
| | | | NC | - | E2E-X30MB2L30-M1 | E2E-X30MC2L30-M1 |
| | | | NO+NC | - | E2E-X30MB3DL30-M1 | E2E-X30MC3L30-M1 |

*1. Models with 5-m cable length are also available (Example: E2E-X8MB1D12 5M)
*2. Models with 2-m and 5-m robot (bending-resistant) cables are also available with "-R" in the model number. (Example: E2E-X8MB1D12-R 2M/ E2E-X8MB1D12-R 5M)
*3. Models with M12 Smartclick connector model robot (bending-resistant) cables are also available with R" in the model number. (Example: E2E-X8MB1D12-M1TJR 0.3M)
*4. IO-Link is not supported for NC-type PNP outputs or all types of NPN outputs.

**Note:** Operation mode NO can be changed to NC via IO-Link communications.

BASIC Model

## E2E NEXT Series (Single distance model)

DC 3-wire [Refer to *Dimensions* on page 65.]

**Shielded**

| Size (Sensing distance) | Connection method | Body size | Operation mode | Model | | |
|---|---|---|---|---|---|---|
| | | | | PNP | | NPN |
| | | | | IO-Link (COM3) | IO-Link (COM2) *4 | --- *4 |
| M8 (1.5 mm) | Pre-wired (2 m) *1 | 38 mm *2 | NO | E2E-X1R5B1T8 2M | E2E-X1R5B1D8 2M | E2E-X1R5C18 2M |
| | | | NC | - | E2E-X1R5B28 2M | E2E-X1R5C28 2M |
| | | 48 mm | NO | E2E-X1R5B1TL8 2M | E2E-X1R5B1DL8 2M | E2E-X1R5C1L8 2M |
| | | | NC | - | E2E-X1R5B2L8 2M | E2E-X1R5C2L8 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 38 mm *3 | NO | E2E-X1R5B1T8-M1TJ 0.3M | E2E-X1R5B1D8-M1TJ 0.3M | E2E-X1R5C18-M1TJ 0.3M |
| | | | NC | - | E2E-X1R5B28-M1TJ 0.3M | E2E-X1R5C28-M1TJ 0.3M |
| | | 48 mm | NO | E2E-X1R5B1TL8-M1TJ 0.3M | E2E-X1R5B1DL8-M1TJ 0.3M | E2E-X1R5C1L8-M1TJ 0.3M |
| | | | NC | - | E2E-X1R5B2L8-M1TJ 0.3M | E2E-X1R5C2L8-M1TJ 0.3M |
| | M12 Connector | 43 mm | NO | E2E-X1R5B1T8-M1 | E2E-X1R5B1D8-M1 | E2E-X1R5C18-M1 |
| | | | NC | - | E2E-X1R5B28-M1 | E2E-X1R5C28-M1 |
| | | 53 mm | NO | E2E-X1R5B1TL8-M1 | E2E-X1R5B1DL8-M1 | E2E-X1R5C1L8-M1 |
| | | | NC | - | E2E-X1R5B2L8-M1 | E2E-X1R5C2L8-M1 |
| | | | NO+NC | - | E2E-X1R5B3DL8-M1 | E2E-X1R5C3L8-M1 |
| | M8 Connector (4-pin) | 39 mm | NO | E2E-X1R5B1T8-M3 | E2E-X1R5B1D8-M3 | E2E-X1R5C18-M3 |
| | | | NC | - | E2E-X1R5B28-M3 | E2E-X1R5C28-M3 |
| | | 49 mm | NO | E2E-X1R5B1TL8-M3 | E2E-X1R5B1DL8-M3 | E2E-X1R5C1L8-M3 |
| | | | NC | - | E2E-X1R5B2L8-M3 | E2E-X1R5C2L8-M3 |
| | M8 Connector (3-pin) | 39 mm | NO | E2E-X1R5B1T8-M5 | E2E-X1R5B1D8-M5 | E2E-X1R5C18-M5 |
| | | | NC | - | E2E-X1R5B28-M5 | E2E-X1R5C28-M5 |
| | | 49 mm | NO | E2E-X1R5B1TL8-M5 | E2E-X1R5B1DL8-M5 | E2E-X1R5C1L8-M5 |
| | | | NC | - | E2E-X1R5B2L8-M5 | E2E-X1R5C2L8-M5 |
| M12 (2 mm) | Pre-wired (2 m) *1 | 47 mm *2 | NO | E2E-X2B1T12 2M | E2E-X2B1D12 2M | E2E-X2C112 2M |
| | | | NC | - | E2E-X2B212 2M | E2E-X2C212 2M |
| | | | NO+NC | - | E2E-X2B3D12 2M | E2E-X2C312 2M |
| | | 69 mm | NO | E2E-X2B1TL12 2M | E2E-X2B1DL12 2M | E2E-X2C1L12 2M |
| | | | NC | - | E2E-X2B2L12 2M | E2E-X2C2L12 2M |
| | | | NO+NC | - | E2E-X2B3DL12 2M | E2E-X2C3L12 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 47 mm *3 | NO | E2E-X2B1T12-M1TJ 0.3M | E2E-X2B1D12-M1TJ 0.3M | E2E-X2C112-M1TJ 0.3M |
| | | | NC | - | E2E-X2B212-M1TJ 0.3M | E2E-X2C212-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X2B3D12-M1TJ 0.3M | E2E-X2C312-M1TJ 0.3M |
| | | 69 mm | NO | E2E-X2B1TL12-M1TJ 0.3M | E2E-X2B1DL12-M1TJ 0.3M | E2E-X2C1L12-M1TJ 0.3M |
| | | | NC | - | E2E-X2B2L12-M1TJ 0.3M | E2E-X2C2L12-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X2B3DL12-M1TJ 0.3M | E2E-X2C3L12-M1TJ 0.3M |
| | M12 Connector | 48 mm | NO | E2E-X2B1T12-M1 | E2E-X2B1D12-M1 | E2E-X2C112-M1 |
| | | | NC | - | E2E-X2B212-M1 | E2E-X2C212-M1 |
| | | | NO+NC | - | E2E-X2B3D12-M1 | E2E-X2C312-M1 |
| | | 70 mm | NO | E2E-X2B1TL12-M1 | E2E-X2B1DL12-M1 | E2E-X2C1L12-M1 |
| | | | NC | - | E2E-X2B2L12-M1 | E2E-X2C2L12-M1 |
| | | | NO+NC | - | E2E-X2B3DL12-M1 | E2E-X2C3L12-M1 |

## BASIC Model

| Size (Sensing distance) | Connection method | Body size | Operation mode | Model | | |
|---|---|---|---|---|---|---|
| | | | | PNP | | NPN |
| | | | | IO-Link (COM3) | IO-Link (COM2) *4 | --- *4 |
| M18 (5 mm) | Pre-wired (2 m) *1 | 55 mm *2 | NO | E2E-X5B1T18 2M | E2E-X5B1D18 2M | E2E-X5C118 2M |
| | | | NC | - | E2E-X5B218 2M | E2E-X5C218 2M |
| | | | NO+NC | - | E2E-X5B3D18 2M | E2E-X5C318 2M |
| | | 77 mm | NO | E2E-X5B1TL18 2M | E2E-X5B1DL18 2M | E2E-X5C1L18 2M |
| | | | NC | - | E2E-X5B2L18 2M | E2E-X5C2L18 2M |
| | | | NO+NC | - | E2E-X5B3DL18 2M | E2E-X5C3L18 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 55 mm *3 | NO | E2E-X5B1T18-M1TJ 0.3M | E2E-X5B1D18-M1TJ 0.3M | E2E-X5C118-M1TJ 0.3M |
| | | | NC | - | E2E-X5B218-M1TJ 0.3M | E2E-X5C218-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X5B3D18-M1TJ 0.3M | E2E-X5C318-M1TJ 0.3M |
| | | 77 mm | NO | E2E-X5B1TL18-M1TJ 0.3M | E2E-X5B1DL18-M1TJ 0.3M | E2E-X5C1L18-M1TJ 0.3M |
| | | | NC | - | E2E-X5B2L18-M1TJ 0.3M | E2E-X5C2L18-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X5B3DL18-M1TJ 0.3M | E2E-X5C3L18-M1TJ 0.3M |
| | M12 Connector | 53 mm | NO | E2E-X5B1T18-M1 | E2E-X5B1D18-M1 | E2E-X5C118-M1 |
| | | | NC | - | E2E-X5B218-M1 | E2E-X5C218-M1 |
| | | | NO+NC | - | E2E-X5B3D18-M1 | E2E-X5C318-M1 |
| | | 75 mm | NO | E2E-X5B1TL18-M1 | E2E-X5B1DL18-M1 | E2E-X5C1L18-M1 |
| | | | NC | - | E2E-X5B2L18-M1 | E2E-X5C2L18-M1 |
| | | | NO+NC | - | E2E-X5B3DL18-M1 | E2E-X5C3L18-M1 |
| M30 (10 mm) | Pre-wired (2 m) *1 | 60 mm *2 | NO | E2E-X10B1T30 2M | E2E-X10B1D30 2M | E2E-X10C130 2M |
| | | | NC | - | E2E-X10B230 2M | E2E-X10C230 2M |
| | | | NO+NC | - | E2E-X10B3D30 2M | E2E-X10C330 2M |
| | | 82 mm | NO | E2E-X10B1TL30 2M | E2E-X10B1DL30 2M | E2E-X10C1L30 2M |
| | | | NC | - | E2E-X10B2L30 2M | E2E-X10C2L30 2M |
| | | | NO+NC | - | E2E-X10B3DL30 2M | E2E-X10C3L30 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 60 mm *3 | NO | E2E-X10B1T30-M1TJ 0.3M | E2E-X10B1D30-M1TJ 0.3M | E2E-X10C130-M1TJ 0.3M |
| | | | NC | - | E2E-X10B230-M1TJ 0.3M | E2E-X10C230-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X10B3D30-M1TJ 0.3M | E2E-X10C330-M1TJ 0.3M |
| | | 82 mm | NO | E2E-X10B1TL30-M1TJ 0.3M | E2E-X10B1DL30-M1TJ 0.3M | E2E-X10C1L30-M1TJ 0.3M |
| | | | NC | - | E2E-X10B2L30-M1TJ 0.3M | E2E-X10C2L30-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X10B3DL30-M1TJ 0.3M | E2E-X10C3L30-M1TJ 0.3M |
| | M12 Connector | 58 mm | NO | E2E-X10B1T30-M1 | E2E-X10B1D30-M1 | E2E-X10C130-M1 |
| | | | NC | - | E2E-X10B230-M1 | E2E-X10C230-M1 |
| | | | NO+NC | - | E2E-X10B3D30-M1 | E2E-X10C330-M1 |
| | | 80 mm | NO | E2E-X10B1TL30-M1 | E2E-X10B1DL30-M1 | E2E-X10C1L30-M1 |
| | | | NC | - | E2E-X10B2L30-M1 | E2E-X10C2L30-M1 |
| | | | NO+NC | - | E2E-X10B3DL30-M1 | E2E-X10C3L30-M1 |

*1. Models with 5-m cable length are also available (Example: E2E-X2B1D12 5M)
*2. Models with 2-m and 5-m robot (bending-resistant) cables are also available with "-R" in the model number. (Example: E2E-X2B1D12-R 2M/ E2E-X2B1D12-R 5M)
*3. Models with M12 Smartclick connector model robot (bending-resistant) cables are also available with R" in the model number. (Example: E2E-X2B1D12-M1TJR 0.3M)
*4. IO-Link is not supported for NC-type PNP outputs or all types of NPN outputs.

**Note:** Operation mode NO can be changed to NC via IO-Link communications.

BASIC Model

## E2E NEXT Series (Single distance model)

DC 3-wire [Refer to *Dimensions* on page 65.]

**Unshielded**

| Size (Sensing distance) | Connection method | Body size | Operation mode | Model | | |
|---|---|---|---|---|---|---|
| | | | | PNP | | NPN |
| | | | | IO-Link (COM3) | IO-Link (COM2) *4 | --- *4 |
| M8 (2mm) | Pre-wired (2 m) *1 | 38 mm *2 | NO | E2E-X2MB1T8 2M | E2E-X2MB1D8 2M | E2E-X2MC18 2M |
| | | | NC | - | E2E-X2MB28 2M | E2E-X2MC28 2M |
| | | 48 mm | NO | E2E-X2MB1TL8 2M | E2E-X2MB1DL8 2M | E2E-X2MC1L8 2M |
| | | | NC | - | E2E-X2MB2L8 2M | E2E-X2MC2L8 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 38 mm *3 | NO | E2E-X2MB1T8-M1TJ 0.3M | E2E-X2MB1D8-M1TJ 0.3M | E2E-X2MC18-M1TJ 0.3M |
| | | | NC | - | E2E-X2MB28-M1TJ 0.3M | E2E-X2MC28-M1TJ 0.3M |
| | | 48 mm | NO | E2E-X2MB1TL8-M1TJ 0.3M | E2E-X2MB1DL8-M1TJ 0.3M | E2E-X2MC1L8-M1TJ 0.3M |
| | | | NC | - | E2E-X2MB2L8-M1TJ 0.3M | E2E-X2MC2L8-M1TJ 0.3M |
| | M12 Connector | 43 mm | NO | E2E-X2MB1T8-M1 | E2E-X2MB1D8-M1 | E2E-X2MC18-M1 |
| | | | NC | - | E2E-X2MB28-M1 | E2E-X2MC28-M1 |
| | | 53 mm | NO | E2E-X2MB1TL8-M1 | E2E-X2MB1DL8-M1 | E2E-X2MC1L8-M1 |
| | | | NC | - | E2E-X2MB2L8-M1 | E2E-X2MC2L8-M1 |
| | | | NO+NC | - | E2E-X2MB3DL8-M1 | E2E-X2MC3L8-M1 |
| | M8 Connector (4-pin) | 39 mm | NO | E2E-X2MB1T8-M3 | E2E-X2MB1D8-M3 | E2E-X2MC18-M3 |
| | | | NC | - | E2E-X2MB28-M3 | E2E-X2MC28-M3 |
| | | 49 mm | NO | E2E-X2MB1TL8-M3 | E2E-X2MB1DL8-M3 | E2E-X2MC1L8-M3 |
| | | | NC | - | E2E-X2MB2L8-M3 | E2E-X2MC2L8-M3 |
| | M8 Connector (3-pin) | 39 mm | NO | E2E-X2MB1T8-M5 | E2E-X2MB1D8-M5 | E2E-X2MC18-M5 |
| | | | NC | - | E2E-X2MB28-M5 | E2E-X2MC28-M5 |
| | | 49 mm | NO | E2E-X2MB1TL8-M5 | E2E-X2MB1DL8-M5 | E2E-X2MC1L8-M5 |
| | | | NC | - | E2E-X2MB2L8-M5 | E2E-X2MC2L8-M5 |
| M12 (5mm) | Pre-wired (2 m) *1 | 47 mm *2 | NO | E2E-X5MB1T12 2M | E2E-X5MB1D12 2M | E2E-X5MC112 2M |
| | | | NC | - | E2E-X5MB212 2M | E2E-X5MC212 2M |
| | | | NO+NC | - | E2E-X5MB3D12 2M | E2E-X5MC312 2M |
| | | 69 mm | NO | E2E-X5MB1TL12 2M | E2E-X5MB1DL12 2M | E2E-X5MC1L12 2M |
| | | | NC | - | E2E-X5MB2L12 2M | E2E-X5MC2L12 2M |
| | | | NO+NC | - | E2E-X5MB3DL12 2M | E2E-X5MC3L12 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 47 mm *3 | NO | E2E-X5MB1T12-M1TJ 0.3M | E2E-X5MB1D12-M1TJ 0.3M | E2E-X5MC112-M1TJ 0.3M |
| | | | NC | - | E2E-X5MB212-M1TJ 0.3M | E2E-X5MC212-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X5MB3D12-M1TJ 0.3M | E2E-X5MC312-M1TJ 0.3M |
| | | 69 mm | NO | E2E-X5MB1TL12-M1TJ 0.3M | E2E-X5MB1DL12-M1TJ 0.3M | E2E-X5MC1L12-M1TJ 0.3M |
| | | | NC | - | E2E-X5MB2L12-M1TJ 0.3M | E2E-X5MC2L12-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X5MB3DL12-M1TJ 0.3M | E2E-X5MC3L12-M1TJ 0.3M |
| | M12 Connector | 48 mm | NO | E2E-X5MB1T12-M1 | E2E-X5MB1D12-M1 | E2E-X5MC112-M1 |
| | | | NC | - | E2E-X5MB212-M1 | E2E-X5MC212-M1 |
| | | | NO+NC | - | E2E-X5MB3D12-M1 | E2E-X5MC312-M1 |
| | | 70 mm | NO | E2E-X5MB1TL12-M1 | E2E-X5MB1DL12-M1 | E2E-X5MC1L12-M1 |
| | | | NC | - | E2E-X5MB2L12-M1 | E2E-X5MC2L12-M1 |
| | | | NO+NC | - | E2E-X5MB3DL12-M1 | E2E-X5MC3L12-M1 |

## BASIC Model

| Size (Sensing distance) | Connection method | Body size | Operation mode | Model | | |
|---|---|---|---|---|---|---|
| | | | | PNP | | NPN |
| | | | | IO-Link (COM3) | IO-Link (COM2) *4 | --- *4 |
| M18 (10mm) | Pre-wired (2 m) *1 | 55 mm *2 | NO | E2E-X10MB1T18 2M | E2E-X10MB1D18 2M | E2E-X10MC118 2M |
| | | | NC | - | E2E-X10MB218 2M | E2E-X10MC218 2M |
| | | | NO+NC | - | E2E-X10MB3D18 2M | E2E-X10MC318 2M |
| | | 77 mm | NO | E2E-X10MB1TL18 2M | E2E-X10MB1DL18 2M | E2E-X10MC1L18 2M |
| | | | NC | - | E2E-X10MB2L18 2M | E2E-X10MC2L18 2M |
| | | | NO+NC | - | E2E-X10MB3DL18 2M | E2E-X10MC3L18 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 55 mm *3 | NO | E2E-X10MB1T18-M1TJ 0.3M | E2E-X10MB1D18-M1TJ 0.3M | E2E-X10MC118-M1TJ 0.3M |
| | | | NC | - | E2E-X10MB218-M1TJ 0.3M | E2E-X10MC218-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X10MB3D18-M1TJ 0.3M | E2E-X10MC318-M1TJ 0.3M |
| | | 77 mm | NO | E2E-X10MB1TL18-M1TJ 0.3M | E2E-X10MB1DL18-M1TJ 0.3M | E2E-X10MC1L18-M1TJ 0.3M |
| | | | NC | - | E2E-X10MB2L18-M1TJ 0.3M | E2E-X10MC2L18-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X10MB3DL18-M1TJ 0.3M | E2E-X10MC3L18-M1TJ 0.3M |
| | M12 Connector | 53 mm | NO | E2E-X10MB1T18-M1 | E2E-X10MB1D18-M1 | E2E-X10MC118-M1 |
| | | | NC | - | E2E-X10MB218-M1 | E2E-X10MC218-M1 |
| | | | NO+NC | - | E2E-X10MB3D18-M1 | E2E-X10MC318-M1 |
| | | 75 mm | NO | E2E-X10MB1TL18-M1 | E2E-X10MB1DL18-M1 | E2E-X10MC1L18-M1 |
| | | | NC | - | E2E-X10MB2L18-M1 | E2E-X10MC2L18-M1 |
| | | | NO+NC | - | E2E-X10MB3DL18-M1 | E2E-X10MC3L18-M1 |
| M30 (18mm) | Pre-wired (2 m) *1 | 60 mm *2 | NO | E2E-X18MB1T30 2M | E2E-X18MB1D30 2M | E2E-X18MC130 2M |
| | | | NC | - | E2E-X18MB230 2M | E2E-X18MC230 2M |
| | | | NO+NC | - | E2E-X18MB3D30 2M | E2E-X18MC330 2M |
| | | 82 mm | NO | E2E-X18MB1TL30 2M | E2E-X18MB1DL30 2M | E2E-X18MC1L30 2M |
| | | | NC | - | E2E-X18MB2L30 2M | E2E-X18MC2L30 2M |
| | | | NO+NC | - | E2E-X18MB3DL30 2M | E2E-X18MC3L30 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 60 mm *3 | NO | E2E-X18MB1T30-M1TJ 0.3M | E2E-X18MB1D30-M1TJ 0.3M | E2E-X18MC130-M1TJ 0.3M |
| | | | NC | - | E2E-X18MB230-M1TJ 0.3M | E2E-X18MC230-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X18MB3D30-M1TJ 0.3M | E2E-X18MC330-M1TJ 0.3M |
| | | 82 mm | NO | E2E-X18MB1TL30-M1TJ 0.3M | E2E-X18MB1DL30-M1TJ 0.3M | E2E-X18MC1L30-M1TJ 0.3M |
| | | | NC | - | E2E-X18MB2L30-M1TJ 0.3M | E2E-X18MC2L30-M1TJ 0.3M |
| | | | NO+NC | - | E2E-X18MB3DL30-M1TJ 0.3M | E2E-X18MC3L30-M1TJ 0.3M |
| | M12 Connector | 58 mm | NO | E2E-X18MB1T30-M1 | E2E-X18MB1D30-M1 | E2E-X18MC130-M1 |
| | | | NC | - | E2E-X18MB230-M1 | E2E-X18MC230-M1 |
| | | | NO+NC | - | E2E-X18MB3D30-M1 | E2E-X18MC330-M1 |
| | | 80 mm | NO | E2E-X18MB1TL30-M1 | E2E-X18MB1DL30-M1 | E2E-X18MC1L30-M1 |
| | | | NC | - | E2E-X18MB2L30-M1 | E2E-X18MC2L30-M1 |
| | | | NO+NC | - | E2E-X18MB3DL30-M1 | E2E-X18MC3L30-M1 |

*1. Models with 5-m cable length are also available (Example: E2E-X5MB1D12 5M)
*2. Models with 2-m and 5-m robot (bending-resistant) cables are also available with "-R" in the model number. (Example: E2E-X5MB1D12-R 2M/ E2E-X5MB1D12-R 5M)
*3. Models with M12 Smartclick connector model robot (bending-resistant) cables are also available with R" in the model number. (Example: E2E-X5MB1D12-M1TJR 2M)
*4. IO-Link is not supported for NC-type PNP outputs or all types of NPN outputs.

**Note:** Operation mode NO can be changed to NC via IO-Link communications.

BASIC Model

## E2EQ NEXT Series (Spatter-resistant Double distance model)

DC 3-wire [Refer to *Dimensions* on page 65.]

**Shielded**

| Size (Sensing distance) | Connection method | Body size | Operation mode | Model | | |
|---|---|---|---|---|---|---|
| | | | | PNP | | NPN |
| | | | | IO-Link (COM3) | IO-Link (COM2) *2 | --- *2 |
| M8 (2 mm) | Pre-wired (2 m) *1 | 38 mm | NO | E2EQ-X2B1T8 2M | E2EQ-X2B1D8 2M | E2EQ-X2C18 2M |
| | | | NC | - | E2EQ-X2B28 2M | E2EQ-X2C28 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 38 mm | NO | E2EQ-X2B1T8-M1TJ 0.3M | E2EQ-X2B1D8-M1TJ 0.3M | E2EQ-X2C18-M1TJ 0.3M |
| | | | NC | - | E2EQ-X2B28-M1TJ 0.3M | E2EQ-X2C28-M1TJ 0.3M |
| | M12 Connector | 43 mm | NO | E2EQ-X2B1T8-M1 | E2EQ-X2B1D8-M1 | E2EQ-X2C18-M1 |
| | | | NC | - | E2EQ-X2B28-M1 | E2EQ-X2C28-M1 |
| M12 (4 mm) | Pre-wired (2 m) *1 | 47 mm | NO | E2EQ-X4B1T12 2M | E2EQ-X4B1D12 2M | E2EQ-X4C112 2M |
| | | | NC | - | E2EQ-X4B212 2M | E2EQ-X4C212 2M |
| | | | NO+NC | - | E2EQ-X4B3D12 2M | E2EQ-X4C312 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 47 mm | NO | E2EQ-X4B1T12-M1TJ 0.3M | E2EQ-X4B1D12-M1TJ 0.3M | E2EQ-X4C112-M1TJ 0.3M |
| | | | NC | - | E2EQ-X4B212-M1TJ 0.3M | E2EQ-X4C212-M1TJ 0.3M |
| | | | NO+NC | - | E2EQ-X4B3D12-M1TJ 0.3M | E2EQ-X4C312-M1TJ 0.3M |
| | M12 Connector | 48 mm | NO | E2EQ-X4B1T12-M1 | E2EQ-X4B1D12-M1 | E2EQ-X4C112-M1 |
| | | | NC | - | E2EQ-X4B212-M1 | E2EQ-X4C212-M1 |
| | | | NO+NC | - | E2EQ-X4B3D12-M1 | E2EQ-X4C312-M1 |
| M18 (8 mm) | Pre-wired (2 m) *1 | 55 mm | NO | E2EQ-X8B1T18 2M | E2EQ-X8B1D18 2M | E2EQ-X8C118 2M |
| | | | NC | - | E2EQ-X8B218 2M | E2EQ-X8C218 2M |
| | | | NO+NC | - | E2EQ-X8B3D18 2M | E2EQ-X8C318 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 55 mm | NO | E2EQ-X8B1T18-M1TJ 0.3M | E2EQ-X8B1D18-M1TJ 0.3M | E2EQ-X8C118-M1TJ 0.3M |
| | | | NC | - | E2EQ-X8B218-M1TJ 0.3M | E2EQ-X8C218-M1TJ 0.3M |
| | | | NO+NC | - | E2EQ-X8B3D18-M1TJ 0.3M | E2EQ-X8C318-M1TJ 0.3M |
| | M12 Connector | 53 mm | NO | E2EQ-X8B1T18-M1 | E2EQ-X8B1D18-M1 | E2EQ-X8C118-M1 |
| | | | NC | - | E2EQ-X8B218-M1 | E2EQ-X8C218-M1 |
| | | | NO+NC | - | E2EQ-X8B3D18-M1 | E2EQ-X8C318-M1 |
| M30 (15 mm) | Pre-wired (2 m) *1 | 60 mm | NO | E2EQ-X15B1T30 2M | E2EQ-X15B1D30 2M | E2EQ-X15C130 2M |
| | | | NC | - | E2EQ-X15B230 2M | E2EQ-X15C230 2M |
| | | | NO+NC | - | E2EQ-X15B3D30 2M | E2EQ-X15C330 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 60 mm | NO | E2EQ-X15B1T30-M1TJ 0.3M | E2EQ-X15B1D30-M1TJ 0.3M | E2EQ-X15C130-M1TJ 0.3M |
| | | | NC | - | E2EQ-X15B230-M1TJ 0.3M | E2EQ-X15C230-M1TJ 0.3M |
| | | | NO+NC | - | E2EQ-X15B3D30-M1TJ 0.3M | E2EQ-X15C330-M1TJ 0.3M |
| | M12 Connector | 58 mm | NO | E2EQ-X15B1T30-M1 | E2EQ-X15B1D30-M1 | E2EQ-X15C130-M1 |
| | | | NC | - | E2EQ-X15B230-M1 | E2EQ-X15C230-M1 |
| | | | NO+NC | - | E2EQ-X15B3D30-M1 | E2EQ-X15C330-M1 |

*1. Models with 5-m cable length are also available (Example: E2EQ-X6B1D12 5M)
*2. IO-Link is not supported for NC-type PNP outputs or all types of NPN outputs.

**Note:** Operation mode NO can be changed to NC via IO-Link communications.

BASIC Model

## E2EQ NEXT Series (Spatter-resistant Single distance model)

DC 3-wire [Refer to *Dimensions* on page 65.]

**Shielded**

| Size (Sensing distance) | Connection method | Body size | Operation mode | Model | | |
|---|---|---|---|---|---|---|
| | | | | PNP | | NPN |
| | | | | IO-Link (COM3) | IO-Link (COM2) *2 | --- *2 |
| M8 (1.5 mm) | Pre-wired (2 m) *1 | 38 mm | NO | E2EQ-X1R5B1T8 2M | E2EQ-X1R5B1D8 2M | E2EQ-X1R5C18 2M |
| | | | NC | - | E2EQ-X1R5B28 2M | E2EQ-X1R5C28 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 38 mm | NO | E2EQ-X1R5B1T8-M1TJ 0.3M | E2EQ-X1R5B1D8-M1TJ 0.3M | E2EQ-X1R5C18-M1TJ 0.3M |
| | | | NC | - | E2EQ-X1R5B28-M1TJ 0.3M | E2EQ-X1R5C28-M1TJ 0.3M |
| | M12 Connector | 43 mm | NO | E2EQ-X1R5B1T8-M1 | E2EQ-X1R5B1D8-M1 | E2EQ-X1R5C18-M1 |
| | | | NC | - | E2EQ-X1R5B28-M1 | E2EQ-X1R5C28-M1 |
| M12 (2 mm) | Pre-wired (2 m) *1 | 47 mm | NO | E2EQ-X2B1T12 2M | E2EQ-X2B1D12 2M | E2EQ-X2C112 2M |
| | | | NC | - | E2EQ-X2B212 2M | E2EQ-X2C212 2M |
| | | | NO+NC | - | E2EQ-X2B3D12 2M | E2EQ-X2C312 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 47 mm | NO | E2EQ-X2B1T12-M1TJ 0.3M | E2EQ-X2B1D12-M1TJ 0.3M | E2EQ-X2C112-M1TJ 0.3M |
| | | | NC | - | E2EQ-X2B212-M1TJ 0.3M | E2EQ-X2C212-M1TJ 0.3M |
| | | | NO+NC | - | E2EQ-X2B3D12-M1TJ 0.3M | E2EQ-X2C312-M1TJ 0.3M |
| | M12 Connector | 48 mm | NO | E2EQ-X2B1T12-M1 | E2EQ-X2B1D12-M1 | E2EQ-X2C112-M1 |
| | | | NC | - | E2EQ-X2B212-M1 | E2EQ-X2C212-M1 |
| | | | NO+NC | - | E2EQ-X2B3D12-M1 | E2EQ-X2C312-M1 |
| M18 (5 mm) | Pre-wired (2 m) *1 | 55 mm | NO | E2EQ-X5B1T18 2M | E2EQ-X5B1D18 2M | E2EQ-X5C118 2M |
| | | | NC | - | E2EQ-X5B218 2M | E2EQ-X5C218 2M |
| | | | NO+NC | - | E2EQ-X5B3D18 2M | E2EQ-X5C318 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 55 mm | NO | E2EQ-X5B1T18-M1TJ 0.3M | E2EQ-X5B1D18-M1TJ 0.3M | E2EQ-X5C118-M1TJ 0.3M |
| | | | NC | - | E2EQ-X5B218-M1TJ 0.3M | E2EQ-X5C218-M1TJ 0.3M |
| | | | NO+NC | - | E2EQ-X5B3D18-M1TJ 0.3M | E2EQ-X5C318-M1TJ 0.3M |
| | M12 Connector | 53 mm | NO | E2EQ-X5B1T18-M1 | E2EQ-X5B1D18-M1 | E2EQ-X5C118-M1 |
| | | | NC | - | E2EQ-X5B218-M1 | E2EQ-X5C218-M1 |
| | | | NO+NC | - | E2EQ-X5B3D18-M1 | E2EQ-X5C318-M1 |
| M30 (10 mm) | Pre-wired (2 m) *1 | 60 mm | NO | E2EQ-X10B1T30 2M | E2EQ-X10B1D30 2M | E2EQ-X10C130 2M |
| | | | NC | - | E2EQ-X10B230 2M | E2EQ-X10C230 2M |
| | | | NO+NC | - | E2EQ-X10B3D30 2M | E2EQ-X10C330 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | 60 mm | NO | E2EQ-X10B1T30-M1TJ 0.3M | E2EQ-X10B1D30-M1TJ 0.3M | E2EQ-X10C130-M1TJ 0.3M |
| | | | NC | - | E2EQ-X10B230-M1TJ 0.3M | E2EQ-X10C230-M1TJ 0.3M |
| | | | NO+NC | - | E2EQ-X10B3D30-M1TJ 0.3M | E2EQ-X10C330-M1TJ 0.3M |
| | M12 Connector | 58 mm | NO | E2EQ-X10B1T30-M1 | E2EQ-X10B1D30-M1 | E2EQ-X10C130-M1 |
| | | | NC | - | E2EQ-X10B230-M1 | E2EQ-X10C230-M1 |
| | | | NO+NC | - | E2EQ-X10B3D30-M1 | E2EQ-X10C330-M1 |

*1. Models with 5-m cable length are also available (Example: E2EQ-X6B1D12 5M)
*2. IO-Link is not supported for NC-type PNP outputs or all types of NPN outputs.

**Note:** Operation mode NO can be changed to NC via IO-Link communications.

## Accessories (Sold Separately)

### Sensor I/O Connectors

**(Models for Pre-wired Connectors) A Sensor I/O Connector is not provided with the Sensor. It must be ordered separately as required.**

**Round Oil-resistant Connectors XS5 NEXT series**

| Appearance | Cable specification | Type | Cable diameter (mm) | Cable connection direction | Cable length (m) | Sensor I/O Connector model number | Applicable Proximity Sensor model number |
|---|---|---|---|---|---|---|---|
| M12 Smartclick Connector Models<br>Straight type<br>  | Oil-resistant PVC cable | Sockets on One Cable End | 6 dia. | Straight | 1 | **XS5F-D421-C80-X** | E2E-X□□□-M1TJ(R)<br>E2EQ-X□□□-M1TJ<br>E2E(Q)-X□□□-M1 |
| | | | | | 2 | **XS5F-D421-D80-X** | |
| | | | | | 3 | **XS5F-D421-E80-X** | |
| | | | | | 5 | **XS5F-D421-G80-X** | |
| | | | | | 10 | **XS5F-D421-J80-X** | |
| | Oil-resistant PVC robot cable | Sockets on One Cable End | 6 dia. | Straight | 1 | **XS5F-D421-C80-XR** | |
| | | | | | 2 | **XS5F-D421-D80-XR** | |
| | | | | | 3 | **XS5F-D421-E80-XR** | |
| | | | | | 5 | **XS5F-D421-G80-XR** | |
| | | | | | 10 | **XS5F-D421-J80-XR** | |
| | Oil-resistant PVC cable | Socket and Plug on Cable Ends | 6 dia. | Straight (Socket)/ Straight (Plug) | 1 | **XS5W-D421-C81-X** | |
| | | | | | 2 | **XS5W-D421-D81-X** | |
| | | | | | 3 | **XS5W-D421-E81-X** | |
| | | | | | 5 | **XS5W-D421-G81-X** | |
| | | | | | 10 | **XS5W-D421-J81-X** | |
| | Oil-resistant PVC robot cable | Socket and Plug on Cable Ends | 6 dia. | Straight (Socket)/ Straight (Plug) | 1 | **XS5W-D421-C81-XR** | |
| | | | | | 2 | **XS5W-D421-D81-XR** | |
| | | | | | 3 | **XS5W-D421-E81-XR** | |
| | | | | | 5 | **XS5W-D421-G81-XR** | |
| | | | | | 10 | **XS5W-D421-J81-XR** | |

**Note:** For details of the connector, refer to *XS5 NEXT Series* on page 87.

**Round Water-resistant Connectors XS5 series**

| Appearance | Cable Specification | Type | Cable diameter (mm) | Cable Connection Direction | Cable length (m) | Sensor I/O Connector model number | Applicable Proximity Sensor model number |
|---|---|---|---|---|---|---|---|
| M12 Smartclick Connector<br>Straight type<br>  <br>Right-angle type<br>  | PVC robot cable | Sockets on One Cable End | 6 dia. | Straight | 1 | **XS5F-D421-C80-F** | E2E-X□□□-M1TJ(R)<br>E2EQ-X□□□-M1TJ<br>E2E(Q)-X□□□-M1 |
| | | | | | 2 | **XS5F-D421-D80-F** | |
| | | | | | 3 | **XS5F-D421-E80-F** | |
| | | | | | 5 | **XS5F-D421-G80-F** | |
| | | | | | 10 | **XS5F-D421-J80-F** | |
| | | | | Right-angle | 1 | **XS5F-D422-C80-F** | |
| | | | | | 2 | **XS5F-D422-D80-F** | |
| | | | | | 3 | **XS5F-D422-E80-F** | |
| | | | | | 5 | **XS5F-D422-G80-F** | |
| | | | | | 10 | **XS5F-D422-J80-F** | |
| | | Socket and Plug on Cable Ends | 6 dia. | Straight (Socket)/ Straight (Plug) | 1 | **XS5W-D421-C81-F** | |
| | | | | | 2 | **XS5W-D421-D81-F** | |
| | | | | | 3 | **XS5W-D421-E81-F** | |
| | | | | | 5 | **XS5W-D421-G81-F** | |
| | | | | | 10 | **XS5W-D421-J81-F** | |
| | | | | Right-angle (Socket)/ Right-angle (Plug) | 2 | **XS5W-D422-D81-F** | |
| | | | | | 5 | **XS5W-D422-G81-F** | |
| | | | | Straight (Socket)/ Right-angle (Plug) | 2 | **XS5W-D423-D81-F** | |
| | | | | | 5 | **XS5W-D423-G81-F** | |
| | | | | Right-angle (Socket)/ Straight (Plug) | 2 | **XS5W-D424-D81-F** | |
| | | | | | 5 | **XS5W-D424-G81-F** | |

**Note:** For details of the connector, refer to *XS5 Series* on page 94.

### Round Water-resistant Connectors XS3W-M8/XS3F-M8 series

| Appearance | Cable specification | Type | Cable diameter (mm) | No. of cable cores (Poles) | Cable connection direction | Cable length (m) | Sensor I/O Connector model number | Applicable Proximity Sensor model number |
|---|---|---|---|---|---|---|---|---|
| M8 Connector<br>Straight type<br>  <br>Right-angle type<br>  | PVC cable | Sockets on One Cable End | 5 dia. | 3 | Straight | 2 | **XS3F-M8PVC3S2M** | E2E-X□□□-M5 |
| | | | | | | 5 | **XS3F-M8PVC3S5M** | |
| | | | | | | 10 | **XS3F-M8PVC3S10M** | |
| | | | | | Right-angle | 2 | **XS3F-M8PVC3A2M** | |
| | | | | | | 5 | **XS3F-M8PVC3A5M** | |
| | | | | | | 10 | **XS3F-M8PVC3A10M** | |
| | | | | 4 | Straight | 2 | **XS3F-M8PVC4S2M** | E2E-X□□□-M3 |
| | | | | | | 5 | **XS3F-M8PVC4S5M** | |
| | | | | | | 10 | **XS3F-M8PVC4S10M** | |
| | | | | | Right-angle | 2 | **XS3F-M8PVC4A2M** | |
| | | | | | | 5 | **XS3F-M8PVC4A5M** | |
| | | | | | | 10 | **XS3F-M8PVC4A10M** | |
| | | Socket and Plug on Cable Ends | | 3 | Straight (Plug)/ Straight (Socket) | 2 | **XS3W-M8PVC3SS2M** | E2E-X□□□-M5 |
| | | | | | | 5 | **XS3W-M8PVC3SS5M** | |
| | | | | | | 10 | **XS3W-M8PVC3SS10M** | |
| | | | | | Straight (Plug)/ Right-angle (Socket) | 2 | **XS3W-M8PVC3SA2M** | |
| | | | | | | 5 | **XS3W-M8PVC3SA5M** | |
| | | | | | | 10 | **XS3W-M8PVC3SA10M** | |
| | | | | 4 | Straight (Plug)/ Straight (Socket) | 2 | **XS3W-M8PVC4SS2M** | E2E-X□□□-M3 |
| | | | | | | 5 | **XS3W-M8PVC4SS5M** | |
| | | | | | | 10 | **XS3W-M8PVC4SS10M** | |
| | | | | | Straight (Plug)/ Right-angle (Socket) | 2 | **XS3W-M8PVC4SA2M** | |
| | | | | | | 5 | **XS3W-M8PVC4SA5M** | |
| | | | | | | 10 | **XS3W-M8PVC4SA10M** | |

**Note:** For details of the connector, refer to *XS3W-M8/XS3F-M8 Series* on page 102.

### Sensor I/O Connectors Oil resistance performance of mating combination

| E2E NEXT Series | | Applicable connector Model | | |
|---|---|---|---|---|
| Connecting method | Model | XS5 NEXT Series | XS5 Series | XS3W-M8/XS3F-M8 Series |
| Pre-wired Connector Models | E2E-X□□-M1TJ(R) | Oil resistant (2 years) * | Water-resistant (IP67) | --- |
| M12 Connector Models | E2E-X□□-M1 | Water-resistant (IP67) | Water-resistant (IP67) | --- |
| M8 Connector (4-pin) Models | E2E-X□□-M3 | --- | --- | Water-resistant (IP67) |
| M8 Connector (3-pin) Models | E2E-X□□-M5 | --- | --- | Water-resistant (IP67) |

* Applicable cutting oil type: specified in JIS K 2241:2000
2 years of oil resistance indicates the median value of the product design and the oil-resistance performance criterion result (=Typical value). Products to be shipped will have around 2 years of oil resistance, but will very depending on the product.

### e-jig (Mounting Sleeves) [Refer to Dimensions on page 66.]

**A Mounting Bracket is not provided with the Sensor. It must be ordered separately as required.**

Only applicable to standard body-sized E2E NEXT Series Sensors.

| Appearance | Model | Applicable Sensors |
|---|---|---|
|  | **Y92E-J8S12** | E2E NEXT M8 Shielded Sensors |
| | **Y92E-J12S18** | E2E NEXT M12 Shielded Sensors |
| | **Y92E-J18S30** | E2E NEXT M18 Shielded Sensors |

**Note:** Not applicable for E2E NEXT Series long-body models and E2EQ NEXT Series (spatter-resistant) models.

# Ratings and Specifications

PREMIUM Model

## E2E NEXT Series (Quadruple/Triple distance model)
## DC 3-wire
## Shielded

| Types | | Quadruple distance model | | | | Triple distance model | | | |
|---|---|---|---|---|---|---|---|---|---|
| Size | | M8 | M12 | M18 | M30 | M8 | M12 | M18 | M30 |
| Item | Model | E2E-X4□8 | E2E-X9□12 | E2E-X14□18 | E2E-X23□30 | E2E-X3□8 | E2E-X6□12 | E2E-X12□18 | E2E-X22□30 |
| Sensing distance | | 4 mm±10% | 9 mm±10% | 14 mm±10% | 23 mm±10% | 3 mm±10% | 6 mm±10% | 12 mm±10% | 22 mm±10% |
| Setting distance | | 0 to 3 mm | 0 to 6.8 mm | 0 to 10.6 mm | 0 to 17.6 mm | 0 to 2.4 mm | 0 to 4.8 mm | 0 to 9.6 mm | 0 to 16.8 mm |
| Differential travel | | 15% max. of sensing distance | | | | | | | |
| Detectable object | | Ferrous metals (For non-ferrous metals, refer to the *Engineering Data* on page 48.) | | | | | | | |
| Standard sensing object | | Iron, 12 × 12 × 1 mm | Iron, 27 × 27 × 1 mm | Iron, 42 × 42 × 1 mm | Iron, 69 × 69 × 1 mm | Iron, 9 × 9 × 1 mm | Iron, 18 × 18 × 1 mm | Iron, 36 × 36 × 1 mm | Iron, 66 × 66 × 1 mm |
| Response frequency *1 | | 700 Hz | 700 Hz | 350 Hz | 200 Hz | 1,000 Hz | 800 Hz | 500 Hz | 200 Hz |
| Power supply voltage | | 10 to 30 VDC (including 10% ripple (p-p)), Class 2 | | | | | | | |
| Current consumption | | 1-output models:16 mA max. | | | | | 1-output models: 16 mA max., 2-output models: 20 mA max. | | |
| Output configuration | | B□ Models: PNP open collector, C□ Models: NPN open collector | | | | | | | |
| Operation mode (with sensing object approaching) | | 1-output models (B1, C1): NO (Normally open), 1-output models (B2, C2): NC (Normally closed) | | | | | 1-output models (B1, C1): NO (Normally open), 1-output models (B2, C2): NC (Normally closed), 2-output models (B3, C3): NO+NC (Normally open, Normally closed) | | |
| Control output | Load current | 1-output models: 10 to 30 VDC, Class 2, 50 mA max. | | | | 1-output models: 10 to 30 VDC, Class 2, 100 mA max. | 1-output models: 10 to 30 VDC, Class 2, 100 mA max., 2-output models: 10 to 30 VDC, Class 2, 50 mA max. | | |
| | Residual voltage | 1-output models: 2 V max. (Load current: 50 mA, Cable length: 2 m) | | | | 1-output models: 2 V max. (Load current: 100 mA, Cable length: 2 m) | 1-output models: 2 V max. (Load current: 100 mA, Cable length: 2 m), 2-output models: 2 V max. (Load current: 50 mA, Cable length: 2 m) | | |
| Indicator *2 | | In the Standard I/O mode (SIO mode): Operation indicator (orange, lit) and communication indicator (green, not lit) In the IO-Link communication mode (COM mode): Operation indicator (orange, lit) and communication indicator (green, blinking at 1 s intervals) | | | | | | | |
| Protection circuits | | Power supply reverse polarity protection, Surge suppressor, Output short-circuit protection, Output reverse polarity protection | | | | | | | |
| Ambient temperature range | | Operating: -25 to 60°C Storage: -25 to 70°C (with no icing or condensation) | Operating/Storage: -25 to 70°C (with no icing or condensation) | | | | | | |
| Ambient humidity range | | Operating/Storage: 35% to 95% (with no condensation) | | | | | | | |
| Temperature influence | | -15% to 25% max. of sensing distance at 23°C in the temperature range of -25 to 60°C | ±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 | | 1,000 VAC, 50/60 Hz for 1 minute between current-carrying parts and case | | | | | | | |
| Vibration resistance (destruction) | | 10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions | | | | | | | |
| Shock resistance (destruction) | | 500 m/s² 10 times each in X, Y, and Z directions | 1,000 m/s² 10 times each in X, Y, and Z directions | | | 500 m/s² 10 times each in X, Y, and Z directions | 1,000 m/s² 10 times each in X, Y, and Z directions | | |
| Degree of protection | | Pre-wired Models, Pre-wired Connector Models: IEC 60529: IP67, ISO 20653 (old standard: DIN 40050 PART9): IP69K, JIS C 0920 Annex 1: IP67G, Passed OMRON's Oil-resistant Component Evaluation Standards *3 (Cutting oil type: specified in JIS K 2241: 2000; Temperature: 35°C max.) Connector Models: IEC 60529: IP67, ISO 20653 (old standard: DIN 40050 PART9): IP69K | | | | | | | |
| Connection method | | Pre-wired Models (Standard cable length: 2 m), Pre-wired Connector Models (Standard cable length: 0.3 m) and Connector Models (M12 Connector, M8 (4-pin) Connector and M8 (3-pin) Connector) | | | | | | | |
| Weight *4 (packed state) | Pre-wired | Approx. 85 g | Approx. 95 g | Approx. 180 g | Approx. 260 g | Approx. 85 g | Approx. 95 g | Approx. 180 g | Approx. 260 g |
| | M12 Pre-wired Smartclick Connector | Approx. 55 g | Approx. 70 g | Approx. 115 g | Approx. 200 g | Approx. 55 g | Approx. 70 g | Approx. 115 g | Approx. 200 g |
| | Connector | Approx. 40 g *5 | Approx. 55 g | Approx. 95 g | Approx. 180 g | Approx. 40 g *5 | Approx. 55 g | Approx. 95 g | Approx. 180 g |

| Item | | Types | Quadruple distance model | | | | Triple distance model | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Size | M8 | M12 | M18 | M30 | M8 | M12 | M18 | M30 |
| | | Model | E2E-X4□8 | E2E-X9□12 | E2E-X14□18 | E2E-X23□30 | E2E-X3□8 | E2E-X6□12 | E2E-X12□18 | E2E-X22□30 |
| Materials | Case | | Nickel-plated brass | | | | | | | |
| | Sensing surface | | Polybutylene terephthalat (PBT) | | | | | | | |
| | Clamping nuts | | Nickel-plated brass | | | | | | | |
| | Toothed washers | | Zinc-plated iron | | | | | | | |
| | Cable | | Vinyl chloride (PVC) | | | | | | | |
| Main IO-Link functions*2 | | | Operation mode switching between NO and NC, self diagnosis enabling, excessive proximity judgment distance selecting, timer function of the control output and timer time selecting, instability output (IO-Link mode) ON delay timer time selecting function, monitor output, operating hours read-out, readout of the sensor internal temperature, and initial reset | | | | | | | |
| IO-Link Communication specifications *2 | IO-Link specification | | Ver 1.1 | | | | | | | |
| | Baud rate | | COM2 (38.4 kbps), COM3 (230.4 kbps) | | | | | | | |
| | Data length | | PD size: 2 bytes, OD size: 1 byte (M-sequence type: TYPE_2_2) | | | | | | | |
| | Minimum cycle time | | COM2: 2.3 ms, COM3: 0.4 ms | | | | | | | |
| Accessories | | | Instruction manual, Clamping nuts, Toothed washer | | | | | | | |

*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. IO-Link is not supported for NC-type PNP outputs or all types of NPN outputs.
*3. The Oil-resistant Component Evaluation Standards are OMRON's own durability evaluation standards.
2-year oil resistance indicates the median value of the product design and the oil-resistance performance criterion result (=Typical value).
The Pre-wired Connector Model verifies 2 years of oil resistance when mating with Round Oil-resistant Connectors XS5 NEXT series correctly.
The degree of protection is not satisfied with the part where cable wires are uncovered for the Pre-wired Models.
*4. Weight of the standard body-sized model.
*5. Both M8 connectors and M12 connectors are available.

PREMIUM Model

## E2E NEXT Series (Quadruple/Triple distance model)
## DC 3-wire
## Unshielded

| Types | | Quadruple distance model | | | | Triple distance model | | | |
|---|---|---|---|---|---|---|---|---|---|
| Size | | M8 | M12 | M18 | M30 | M8 | M12 | M18 | M30 |
| Item | Model | E2E-X8M□8 | E2E-X16M□12 | E2E-X30M□18 | E2E-X50M□30 | E2E-X6M□8 | E2E-X10M□12 | E2E-X20M□18 | E2E-X40M□30 |
| Sensing distance | | 8 mm±10% | 16 mm±10% | 30 mm±10% | 50 mm±10% | 6 mm±10% | 10 mm±10% | 20 mm±10% | 40 mm±10% |
| Setting distance | | 0 to 6 mm | 0 to 12.2 mm | 0 to 23 mm | 0 to 38.2 mm | 0 to 4.8 mm | 0 to 8 mm | 0 to 16 mm | 0 to 32 mm |
| Differential travel | | 15% max. of sensing distance | | | | | | | |
| Detectable object | | Ferrous metals (For non-ferrous metals, refer to the *Engineering Data* on page 48.) | | | | | | | |
| Standard sensing object | | Iron, 24 × 24 × 1 mm | Iron, 48 × 48 × 1 mm | Iron, 90 × 90 × 1 mm | Iron, 150 × 150 × 1 mm | Iron, 18 × 18 × 1 mm | Iron, 30 × 30 × 1 mm | Iron, 60 × 60 × 1 mm | Iron, 120 × 120 × 1 mm |
| Response frequency *1 | | 500 Hz | 400 Hz | 200 Hz | 100 Hz | 800 Hz | 400 Hz | 200 Hz | 100 Hz |
| Power supply voltage | | 10 to 30 VDC (including 10% ripple (p-p)), Class 2 | | | | | | | |
| Current consumption | | 1-output models: 16 mA max. | | | | | 1-output models: 16 mA max., 2-output models: 20 mA max. | | |
| Output configuration | | B□ Models: PNP open collector<br>C□ Models: NPN open collector | | | | | | | |
| Operation mode (with sensing object approaching) | | 1-output models (B1, C1): NO (Normally open), 1-output models (B2, C2): NC (Normally closed) | | | | | 1-output models (B1, C1): NO (Normally open), 1-output models (B2, C2): NC (Normally closed), 2-output models (B3, C3): NO+NC (Normally open, Normally closed) | | |
| Control output | Load current | 1-output models: 10 to 30 VDC, Class 2, 50 mA max. | | | | 1-output models: 10 to 30 VDC, Class 2, 100 mA max. | 1-output models: 10 to 30 VDC, Class 2, 100 mA max., 2-output models: 10 to 30 VDC, Class 2, 50 mA max. | | |
| | Residual voltage | 1-output models: 2 V max. (Load current: 50 mA, Cable length: 2 m) | | | | 1-output models: 2 V max. (Load current: 100 mA, Cable length: 2 m) | 1-output models: 2 V max. (Load current: 100 mA, Cable length: 2 m), 2-output models: 2 V max. (Load current: 50 mA, Cable length: 2 m) | | |
| Indicator *2 | | In the Standard I/O mode (SIO mode): Operation indicator (orange, lit) and communication indicator (green, not lit)<br>In the IO-Link communication mode (COM mode): Operation indicator (orange, lit) and communication indicator (green, blinking at 1 s intervals) | | | | | | | |
| Protection circuits | | Power supply reverse polarity protection, Surge suppressor, Output short-circuit protection, Output reverse polarity protection | | | | | | | |
| Ambient temperature range | | Operating/Storage: -25 to 70°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 | | 1,000 VAC, 50/60 Hz for 1 minute between current-carrying parts and case | | | | | | | |
| Vibration resistance (destruction) | | 10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions | | | | | | | |
| Shock resistance (destruction) | | 500 m/s² 10 times each in X, Y, and Z directions | 1,000 m/s² 10 times each in X, Y, and Z directions | | | 500 m/s² 10 times each in X, Y, and Z directions | 1,000 m/s² 10 times each in X, Y, and Z directions | | |
| Degree of protection | | Pre-wired Models, Pre-wired Connector Models: IEC 60529:IP67, ISO 20653 (old standard: DIN 40050 PART9): IP69K, JIS C 0920 Annex 1: IP67G, Passed OMRON's Oil-resistant Component Evaluation Standards *3 (Cutting oil type: specified in JIS K 2241: 2000; Temperature: 35°C max.)<br>Connector Models: IEC 60529: IP67, ISO 20653 (old standard: DIN 40050 PART9): IP69K | | | | | | | |
| Connection method | | Pre-wired Models (Standard cable length: 2 m), Pre-wired Connector Models (Standard cable length: 0.3 m) and Connector Models (M12 Connector, M8 (4-pin) Connector and M8 (3-pin) Connector) | | | | | | | |
| Weight *4 (packed state) | Pre-wired | Approx. 85 g | Approx. 95 g | Approx. 190 g | Approx. 310 g | Approx. 85 g | Approx. 95 g | Approx. 190 g | Approx. 280 g |
| | M12 Pre-wired Smartclick Connector | Approx. 55 g | Approx. 70 g | Approx. 125 g | Approx. 250 g | Approx. 55 g | Approx. 70 g | Approx. 125 g | Approx. 220 g |
| | Connector | Approx. 40 g *5 | Approx. 55 g | Approx. 105 g | Approx. 230 g | Approx. 40 g *5 | Approx. 55 g | Approx. 105 g | Approx. 200 g |

| Item | | Types | Quadruple distance model | | | | Triple distance model | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Size | M8 | M12 | M18 | M30 | M8 | M12 | M18 | M30 |
| | | Model | E2E-X8M□8 | E2E-X16M□12 | E2E-X30M□18 | E2E-X50M□30 | E2E-X6M□8 | E2E-X10M□12 | E2E-X20M□18 | E2E-X40M□30 |
| Materials | Case | | Stainless (SUS303) | Nickel-plated brass | | | Stainless (SUS303) | Nickel-plated brass | | |
| | Sensing surface | | Polybutylene terephthalat (PBT) | | | | | | | |
| | Clamping nuts | | Nickel-plated brass | | | | | | | |
| | Toothed washers | | Zinc-plated iron | | | | | | | |
| | Cable | | Vinyl chloride (PVC) | | | | | | | |
| Main IO-Link functions*2 | | | Operation mode switching between NO and NC, self diagnosis enabling, excessive proximity judgment distance selecting, timer function of the control output and timer time selecting, instability output (IO-Link mode) ON delay timer time selecting function, monitor output, operating hours read-out, readout of the sensor internal temperature, and initial reset | | | | | | | |
| IO-Link Communication specifications *2 | IO-Link specification | | Ver1.1 | | | | | | | |
| | Baud rate | | COM2 (38.4 kbps), COM3 (230.4 kbps) | | | | | | | |
| | Data length | | PD size: 2 bytes, OD size: 1 byte (M-sequence type: TYPE_2_2) | | | | | | | |
| | Minimum cycle time | | COM2: 2.3 ms, COM3: 0.4 ms | | | | | | | |
| Accessories | | | Instruction manual, Clamping nuts, Toothed washer | | | | | | | |

*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. IO-Link is not supported for NC-type PNP outputs or all types of NPN outputs.
*3. The Oil-resistant Component Evaluation Standards are OMRON's own durability evaluation standards. 2-year oil resistance indicates the median value of the product design and the oil-resistance performance criterion result (=Typical value). Actual performance can be expected to decline after two years on average from shipment. The Pre-wired Connector Model verifies 2 years of oil resistance when mating with Round Oil-resistant Connectors XS5 NEXT series correctly. The degree of protection is not satisfied with the part where cable wires are uncovered for the Pre-wired Models.
*4. Weight of the standard body-sized model.
*5. Both M8 connectors and M12 connectors are available.

PREMIUM Model

## E2EQ NEXT Series (Spatter-resistant Triple distance model)
## DC 3-wire
## Shielded

| Types | | Triple distance Models | | | |
|---|---|---|---|---|---|
| Size | | M8 | M12 | M18 | M30 |
| Item | Model | E2EQ-X3□8 | E2EQ-X6□12 | E2EQ-X12□18 | E2EQ-X22□30 |
| Sensing distance | | 3 mm±10% | 6 mm±10% | 12 mm±10% | 22 mm±10% |
| Setting distance | | 0 to 2.4 mm | 0 to 4.8 mm | 0 to 9.6 mm | 0 to 16.8 mm |
| Differential travel | | 15% max. of sensing distance | | | |
| Detectable object | | Ferrous metals (For non-ferrous metals, refer to the *Engineering Data* on page 48.) | | | |
| Standard sensing object | | Iron, 9 × 9 × 1 mm | Iron, 18 × 18 × 1 mm | Iron, 36 × 36 × 1 mm | Iron, 66 × 66 × 1 mm |
| Response frequency *1 | | 1,000 Hz | 800 Hz | 500 Hz | 200 Hz |
| Power supply voltage | | 10 to 30 VDC (including 10% ripple (p-p)), Class 2 | | | |
| Current consumption | | 1-output models: 16 mA max. | 1-output models: 16 mA max.<br>2-output models: 20 mA max. | | |
| Output configuration | | B□ Models: PNP open collector, C□ Models: NPN open collector | | | |
| Operation mode (with sensing object approaching) | | 1-output models (B1, C1): NO (Normally open),<br>1-output models (B2, C2): NC (Normally closed) | 1-output models (B1, C1): NO (Normally open),<br>1-output models (B2, C2): NC (Normally closed),<br>2-output models (B3, C3): NO+NC (Normally open, Normally closed) | | |
| Control output | Load current | 1-output models: 10 to 30 VDC, Class 2, 100 mA max. | 1-output models: 10 to 30 VDC, Class 2, 100 mA max.,,<br>2-output models: 10 to 30 VDC, Class 2, 50 mA max. | | |
| | Residual voltage | 1-output models: 2 V max. (Load current: 100 mA, Cable length: 2 m) | 1-output models: 2 V max. (Load current: 100 mA, Cable length: 2 m),<br>2-output models: 2 V max. (Load current: 50 mA, Cable length: 2 m) | | |
| Indicator *2 | | In the Standard I/O mode (SIO mode): Operation indicator (orange, lit) and communication indicator (green, not lit)<br>In the IO-Link communication mode (COM mode): Operation indicator (orange, lit) and communication indicator (green, blinking at 1 s intervals) | | | |
| Protection circuits | | Power supply reverse polarity protection, Surge suppressor, Output short-circuit protection, Output reverse polarity protection | | | |
| Ambient temperature range | | Operating/Storage: -25 to 70°C (with no icing or condensation) | | | |
| Ambient humidity range | | Operating/Storage: 35% to 95% (with no condensation) | | | |
| Temperature influence | | ±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-carrying parts and case | | | |
| Vibration resistance (destruction) | | 10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions | | | |
| Shock resistance (destruction) | | 500 m/s$^2$ 10 times each in X, Y, and Z directions | 1,000 m/s$^2$ 10 times each in X, Y, and Z directions | | |
| Degree of protection | | Pre-wired Models, Pre-wired Connector Models: IEC 60529: IP67, JIS C 0920 Annex 1: IP67G<br>Connector Models: IEC 60529: IP67 | | | |
| Connection method | | Pre-wired Models (Standard cable length: 2 m) and Pre-wired Connector Models (Standard cable length: 0.3 m), M12 Connector Models | | | |
| Weight *3 (packed state) | Pre-wired Models | Approx. 85 g | Approx. 95 g | Approx. 180 g | Approx. 260 g |
| | M12 Pre-wired Smartclick Connector | Approx. 55 g | Approx. 70 g | Approx. 115 g | Approx. 200 g |
| | Connector | Approx. 40 g | Approx. 55 g | Approx. 95 g | Approx. 180 g |
| Materials | Case | Fluororesin coating (Base material: brass) | | | |
| | Sensing surface | Fluorine resin | | | |
| | Clamping nuts | Fluororesin coating (Base material: brass) | | | |
| | Toothed washers | Zinc-plated iron | | | |
| | Cable | Vinyl chloride (PVC) | | | |
| Main IO-Link functions *2 | | Operation mode switching between NO and NC, self diagnosis enabling, excessive proximity judgment distance selecting, timer function of the control output and timer time selecting, instability output (IO-Link mode) ON delay timer time selecting function, monitor output, operating hours read-out, readout of the sensor internal temperature, and initial reset | | | |
| IO-Link Communication specifications *2 | IO-Link specification | Ver 1.1 | | | |
| | Baud rate | COM2 (38.4 kbps), COM3 (230.4 kbps) | | | |
| | Data length | PD size: 2 bytes, OD size: 1 byte (M-sequence type: TYPE_2_2) | | | |
| | Minimum cycle time | COM2: 2.3 ms, COM3: 0.4 ms | | | |
| Accessories | | Instruction manual, Clamping nuts, Toothed washer | | | |

*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. IO-Link is not supported for NC-type PNP outputs or all types of NPN outputs.
*3. Weight of the standard body-sized model.

BASIC Model

## E2E NEXT Series (Double/Single distance model)
## DC 3-wire
## Shielded

| Types | | Double distance | | | | Single distance | | | |
|---|---|---|---|---|---|---|---|---|---|
| Size | | M8 | M12 | M18 | M30 | M8 | M12 | M18 | M30 |
| Item | Model | E2E-X2□8 | E2E-X4□12 | E2E-X8□18 | E2E-X15□30 | E2E-X1R5□8 | E2E-X2□12 | E2E-X5□18 | E2E-X10□30 |
| Sensing distance | | 2 mm±10% | 4 mm±10% | 8 mm±10% | 15 mm±10% | 1.5 mm±10% | 2 mm±10% | 5 mm±10% | 10 mm±10% |
| Setting distance | | 0 to 1.6 mm | 0 to 3.2 mm | 0 to 6.4 mm | 0 to 12 mm | 0 to 1.2 mm | 0 to 1.6 mm | 0 to 4 mm | 0 to 8 mm |
| Differential travel | | 15% max. of sensing distance | | | | 10% max. of sensing distance | | | |
| Detectable object | | Ferrous metals (For non-ferrous metals, refer to the *Engineering Data* on page 48.) | | | | | | | |
| Standard sensing object | | Iron, 8 × 8 × 1 mm | Iron, 12 × 12 × 1 mm | Iron, 24 × 24 × 1 mm | Iron, 45 × 45 × 1 mm | Iron, 8 × 8 × 1 mm | Iron, 12 × 12 × 1 mm | Iron, 18 × 18 × 1 mm | Iron, 30 × 30 × 1 mm |
| Response frequency *1 | | 1,500 Hz | 1,000 Hz | 500 Hz | 250 Hz | 2,000 Hz | 1,500 Hz | 600 Hz | 400 Hz |
| Power supply voltage | | 10 to 30 VDC (including 10% ripple (p-p)), Class 2 | | | | | | | |
| Current consumption | | 1-output models: 16 mA max.<br>2-output models: 20 mA max. | | | | | | | |
| Output configuration | | B□ Models: PNP open collector<br>C□ Models: NPN open collector | | | | | | | |
| Operation mode (with sensing object approaching) | | 1-output models (B1, C1): NO (Normally open),<br>1-output models (B2, C2): NC (Normally closed),<br>2-output models (B3, C3): NO+NC (Normally open, Normally closed) *3 | | | | | | | |
| Control output | Load current | 1-output models: 10 to 30 VDC, Class 2, 200 mA max., (-40 to 70°C), 100 mA max., (70 to 85°C)<br>2-output models: 10 to 30 VDC, Class 2, 50 mA max. | 1-output models: 10 to 30 VDC, Class 2, 200 mA max.,<br>2-output models: 10 to 30 VDC, Class 2, 100 mA max. | | | 1-output models: 10 to 30 VDC, Class 2, 200 mA max., (-40 to 70°C), 100 mA max., (70 to 85°C)<br>2-output models: 10 to 30 VDC, Class 2, 50 mA max. | 1-output models: 10 to 30 VDC, Class 2, 200 mA max.,<br>2-output models: 10 to 30 VDC, Class 2, 100 mA max. | | |
| | Residual voltage | 1-output models: 2 V max. (Load current: 200 mA, Cable length: 2 m),<br>2-output models: 2 V max. (Load current: 50 mA, Cable length: 2 m) | 1-output models: 2 V max. (Load current: 200 mA, Cable length: 2 m),<br>2-output models: 2 V max. (Load current: 100 mA, Cable length: 2 m) | | | 1-output models: 2 V max. (Load current: 200 mA, Cable length: 2 m),<br>2-output models: 2 V max. (Load current: 50 mA, Cable length: 2 m) | 1-output models: 2 V max. (Load current: 200 mA, Cable length: 2 m),<br>2-output models: 2 V max. (Load current: 100 mA, Cable length: 2 m) | | |
| Indicator *2 | | In the Standard I/O mode (SIO mode): Operation indicator (orange, lit) and communication indicator (green, not lit)<br>In the IO-Link communication mode (COM mode): Operation indicator (orange, lit) and communication indicator (green, blinking at 1 s intervals) | | | | | | | |
| Protection circuits | | Power supply reverse polarity protection, Surge suppressor, Output short-circuit protection, Output reverse polarity protection | | | | | | | |
| Ambient temperature range | | Operating/Storage: -40 to 85°C (with no icing or condensation)<br>**Note:** The UL temperature rating for M12 Pre-wired Connector Models is -25 to 70°C. | | | | | | | |
| 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-carrying parts and case | | | | | | | |
| Vibration resistance (destruction) | | 10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions | | | | | | | |
| Shock resistance (destruction) | | 500 m/s² 10 times each in X, Y, and Z directions | 1,000 m/s² 10 times each in X, Y, and Z directions | | | 500 m/s² 10 times each in X, Y, and Z directions | 1,000 m/s² 10 times each in X, Y, and Z directions | | |
| Degree of protection | | Pre-wired Models, Pre-wired Connector Models: IEC 60529:IP67, ISO 20653 (old standard: DIN 40050 PART9): IP69K, JIS C 0920 Annex 1: IP67G, Passed OMRON's Oil-resistant Component Evaluation Standards *4 (Cutting oil type: specified in JIS K 2241:2000; Temperature: 35°C max.)<br>Connector Models: IEC 60529: IP67, ISO 20653 (old standard: DIN 40050 PART9): IP69K | | | | | | | |
| Connection method | | Pre-wired Models (Standard cable length: 2 m), Pre-wired Connector Models (Standard cable length: 0.3 m) and Connector Models (M12 Connector, M8 (4-pin) Connector and M8 (3-pin) Connector) | | | | | | | |
| Weight *5 (packed state) | Pre-wired | Approx. 85 g | Approx. 95 g | Approx. 170 g | Approx. 240 g | Approx. 85 g | Approx. 95 g | Approx. 170 g | Approx. 240 g |
| | M12 Pre-wired Smartclick Connector | Approx. 55 g | Approx. 70 g | Approx. 105 g | Approx. 170 g | Approx. 55 g | Approx. 70 g | Approx. 105 g | Approx. 170 g |
| | Connector | Approx. 40 g *6 | Approx. 55 g | Approx. 85 g | Approx. 160 g | Approx. 40 g *6 | Approx. 55 g | Approx. 85 g | Approx. 160 g |

| Item | | Types | Double distance | | | | Single distance | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Size | M8 | M12 | M18 | M30 | M8 | M12 | M18 | M30 |
| | | Model | E2E-X2□8 | E2E-X4□12 | E2E-X8□18 | E2E-X15□30 | E2E-X1R5□8 | E2E-X2□12 | E2E-X5□18 | E2E-X10□30 |
| Materials | Case | | Stainless (SUS303) | Nickel-plated brass | | | Stainless (SUS303) | Nickel-plated brass | | |
| | Sensing surface | | Polybutylene terephthalat (PBT) | | | | | | | |
| | Clamping nuts | | Nickel-plated brass | | | | | | | |
| | Toothed washers | | Zinc-plated iron | | | | | | | |
| | Cable | | Vinyl chloride (PVC) | | | | | | | |
| Main IO-Link functions *2 | | | Operation mode switching between NO and NC, self diagnosis enabling, excessive proximity judgment distance selecting, timer function of the control output and timer time selecting, instability output (IO-Link mode) ON delay timer time selecting function, monitor output, operating hours read-out, readout of the sensor internal temperature, and initial reset | | | | | | | |
| IO-Link Communication specifications *2 | IO-Link specification | | Ver1.1 | | | | | | | |
| | Baud rate | | COM2 (38.4 kbps), COM3 (230.4 kbps) | | | | | | | |
| | Data length | | PD size: 2 bytes, OD size: 1 byte (M-sequence type: TYPE_2_2) | | | | | | | |
| | Minimum cycle time | | COM2: 2.3 ms, COM3: 0.4 ms | | | | | | | |
| Accessories | | | Instruction manual, Clamping nuts, Toothed washer | | | | | | | |

*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. IO-Link is not supported for NC-type PNP outputs or all types of NPN outputs.
*3. Dual-output specification for the M8-size models is only applicable to long-size M12 Connector models.
*4. The Oil-resistant Component Evaluation Standards are OMRON's own durability evaluation standards. 2-year oil resistance indicates the median value of the product design and the oil-resistance performance criterion result (=Typical value). Actual performance can be expected to decline after two years on average from shipment. The Pre-wired Connector Model verifies 2 years of oil resistance when mating with Round Oil-resistant Connectors XS5 NEXT series correctly. The degree of protection is not satisfied with the part where cable wires are uncovered for the Pre-wired Models.
*5. Weight of the standard body-sized model.
*6. Both M8 connectors and M12 connectors are available.

BASIC Model

## E2E NEXT Series (Double/Single distance model)

### DC 3-wire

### Unshielded

| Types | | Double distance model | | | | Single distance model | | | |
|---|---|---|---|---|---|---|---|---|---|
| Size | | M8 | M12 | M18 | M30 | M8 | M12 | M18 | M30 |
| Item | Model | E2E-X4M□8 | E2E-X8M□12 | E2E-X16M□18 | E2E-X30M□30 | E2E-X2M□8 | E2E-X5M□12 | E2E-X10M□18 | E2E-X18M□30 |
| Sensing distance | | 4 mm±10% | 8 mm±10% | 16 mm±10% | 30 mm±10% | 2 mm±10% | 5 mm±10% | 10 mm±10% | 18 mm±10% |
| Setting distance | | 0 to 3.2 mm | 0 to 6.4 mm | 0 to 12.8 mm | 0 to 24 mm | 0 to 1.6 mm | 0 to 4 mm | 0 to 8 mm | 0 to 14.4 mm |
| Differential travel | | 15% max. of sensing distance | | | | 10% max. of sensing distance | | | |
| Detectable object | | Ferrous metals (For non-ferrous metals, refer to the *Engineering Data* on page 48.) | | | | | | | |
| Standard sensing object | | Iron, 12 × 12 × 1 mm | Iron, 24 × 24 × 1 mm | Iron, 48 × 48 × 1 mm | Iron, 90 × 90 × 1 mm | Iron, 8 × 8 × 1 mm | Iron, 15 × 15 × 1 mm | Iron, 30 × 30 × 1 mm | Iron, 54 × 54 × 1 mm |
| Response frequency *1 | | 1,000 Hz | 800 Hz | 400 Hz | 100 Hz | 1,000 Hz | 800 Hz | 400 Hz | 100 Hz |
| Power supply voltage | | 10 to 30 VDC (including 10% ripple (p-p)), Class 2 | | | | | | | |
| Current consumption | | 1-output models: 16 mA max.<br>2-output models: 20 mA max. | | | | | | | |
| Output configuration | | B□ Models: PNP open collector<br>C□ Models: NPN open collector | | | | | | | |
| Operation mode (with sensing object approaching) | | 1-output models (B1, C1): NO (Normally open),<br>1-output models (B2, C3): NC (Normally closed)<br>2-output models (B3, C3): NO+NC (Normally open, Normally closed) *3 | | | | | | | |
| Control output | Load current | 1-output models: 10 to 30 VDC, Class 2, 200 mA max., (-40 to 70°C), 100 mA max., (70 to 85°C)<br>2-output models: 10 to 30 VDC, Class 2, 50 mA max. | 1-output models: 10 to 30 VDC, Class 2, 200 mA max.,<br>2-output models: 10 to 30 VDC, Class 2, 100 mA max. | | | 1-output models: 10 to 30 VDC, Class 2, 200 mA max., (-40 to 70°C), 100 mA max., (70 to 85°C)<br>2-output models: 10 to 30 VDC, Class 2, 50 mA max. | 1-output models: 10 to 30 VDC, Class 2, 200 mA max.,<br>2-output models: 10 to 30 VDC, Class 2, 100 mA max. | | |
| | Residual voltage | 1-output models: 2 V max. (Load current: 200 mA, Cable length: 2 m),<br>2-output models: 2 V max. (Load current: 50 mA, Cable length: 2 m) | 1-output models: 2 V max. (Load current: 200 mA, Cable length: 2 m),<br>2-output models: 2 V max. (Load current: 100 mA, Cable length: 2 m) | | | 1-output models: 2 V max. (Load current: 200 mA, Cable length: 2 m),<br>2-output models: 2 V max. (Load current: 50 mA, Cable length: 2 m) | 1-output models: 2 V max. (under load current of 200 mA with cable length of 2 m),<br>2-output models: 2 V max. (under load current of 100 mA with cable length of 2 m) | | |
| Indicator *2 | | In the Standard I/O mode (SIO mode): Operation indicator (orange, lit) and communication indicator (green, not lit)<br>In the IO-Link communication mode (COM mode): Operation indicator (orange, lit) and communication indicator (green, blinking at 1 s intervals) | | | | | | | |
| Protection circuits | | Power supply reverse polarity protection, Surge suppressor, Output short-circuit protection, Output reverse polarity protection | | | | | | | |
| Ambient temperature range | | Operating/Storage: -40 to 85°C (with no icing or condensation)<br>**Note:** The UL temperature rating for M12 Pre-wired Connector Models is -25 to 70°C. | | | | | | | |
| 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-carrying parts and case | | | | | | | |
| Vibration resistance (destruction) | | 10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions | | | | | | | |
| Shock resistance (destruction) | | 500 m/s² 10 times each in X, Y, and Z directions | 1,000 m/s² 10 times each in X, Y, and Z directions | | | 500 m/s² 10 times each in X, Y, and Z directions | 1,000 m/s² 10 times each in X, Y, and Z directions | | |
| Degree of protection | | Pre-wired Models, Pre-wired Connector Models: IEC 60529:IP67, ISO 20653 (old standard: DIN 40050 PART9): IP69K, JIS C 0920 Annex 1: IP67G, Passed OMRON's Oil-resistant Component Evaluation Standards *4 (Cutting oil type: specified in JIS K 2241:2000; Temperature: 35°C max.)<br>Connector Models: IEC 60529:IP67, ISO 20653 (old standard: DIN 40050 PART9): IP69K | | | | | | | |
| Connection method | | Pre-wired Models (Standard cable length: 2 m), Pre-wired Connector Models (Standard cable length: 0.3 m) and Models (M12 Connector, M8 (4-pin) Connector and M8 (3-pin) Connector) | | | | | | | |
| Weight *5 (packed state) | Pre-wired | Approx. 85 g | Approx. 95 g | Approx. 170 g | Approx. 280 g | Approx. 85 g | Approx. 95 g | Approx. 170 g | Approx. 240 g |
| | M12 Pre-wired Smartclick Connector | Approx. 55 g | Approx. 70 g | Approx. 105 g | Approx. 220 g | Approx. 55 g | Approx. 70 g | Approx. 105 g | Approx. 170 g |
| | Connector | Approx. 40 g *6 | Approx. 55 g | Approx. 85 g | Approx. 200 g | Approx. 40 g *6 | Approx. 55 g | Approx. 85 g | Approx. 160 g |

| Item | | Types | Double distance model | | | | Single distance model | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Size | M8 | M12 | M18 | M30 | M8 | M12 | M18 | M30 |
| | | Model | E2E-X4M□8 | E2E-X8M□12 | E2E-X16M□18 | E2E-X30M□30 | E2E-X2M□8 | E2E-X5M□12 | E2E-X10M□18 | E2E-X18M□30 |
| Materials | Case | | Stainless (SUS303) | Nickel-plated brass | | | Stainless (SUS303) | Nickel-plated brass | | |
| | Sensing surface | | Polybutylene terephthalat (PBT) | | | | | | | |
| | Clamping nuts | | Nickel-plated brass | | | | | | | |
| | Toothed washers | | Zinc-plated iron | | | | | | | |
| | Cable | | Vinyl chloride (PVC) | | | | | | | |
| Main IO-Link functions *2 | | | Operation mode switching between NO and NC, self diagnosis enabling, excessive proximity judgment distance selecting, timer function of the control output and timer time selecting, instability output (IO-Link mode) ON delay timer time selecting function, monitor output, operating hours read-out, readout of the sensor internal temperature, and initial reset | | | | | | | |
| IO-Link Communication specifications *2 | IO-Link specification | | Ver 1.1 | | | | | | | |
| | Baud rate | | COM2 (38.4 kbps), COM3 (230.4 kbps) | | | | | | | |
| | Data length | | PD size: 2 bytes, OD size: 1 byte (M-sequence type: TYPE_2_2) | | | | | | | |
| | Minimum cycle time | | COM2: 2.3 ms, COM3: 0.4 ms | | | | | | | |
| Accessories | | | Instruction manual, Clamping nuts, Toothed washer | | | | | | | |

*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. IO-Link is not supported for NC-type PNP outputs or all types of NPN outputs.
*3. Dual-output specification for the M8-size models is only applicable to long-size M12 Connector models.
*4. The Oil-resistant Component Evaluation Standards are OMRON's own durability evaluation standards. 2-year oil resistance indicates the median value of the product design and the oil-resistance performance criterion result (=Typical value). Actual performance can be expected to decline after two years on average from shipment. The Pre-wired Connector Model verifies 2 years of oil resistance when mating with Round Oil-resistant Connectors XS5 NEXT series correctly. The degree of protection is not satisfied with the part where cable wires are uncovered for the Pre-wired Models.
*5. Weight of the standard body-sized model.
*6. Both M8 connectors and M12 connectors are available.

BASIC Model

## E2E Q NEXT Series (Spatter-resistant Double distance/Single distance model)
## DC 3-Wire Models
### Shielded

| Types | | Double distance | | | | Single distance | | | |
|---|---|---|---|---|---|---|---|---|---|
| Size | | M8 | M12 | M18 | M30 | M8 | M12 | M18 | M30 |
| Item | Model | E2EQ-X2□8 | E2EQ-X4□12 | E2EQ-X8□18 | E2EQ-X15□30 | E2EQ-X1R5□8 | E2EQ-X2□12 | E2EQ-X5□18 | E2EQ-X10□30 |
| Sensing distance | | 2 mm±10% | 4 mm±10% | 8 mm±10% | 15 mm±10% | 1.5 mm±10% | 2 mm±10% | 5 mm±10% | 10 mm±10% |
| Setting distance | | 0 to 1.6 mm | 0 to 3.2 mm | 0 to 6.4 mm | 0 to 12 mm | 0 to 1.2 mm | 0 to 1.6 mm | 0 to 4 mm | 0 to 8 mm |
| Differential travel | | 15% max. of sensing distance | | | | 10% max. of sensing distance | | | |
| Detectable object | | Ferrous metals (For non-ferrous metals, refer to the *Engineering Data* on page 48.) | | | | | | | |
| Standard sensing object | | Iron, 8 × 8 × 1 mm | Iron, 12 × 12 × 1 mm | Iron, 24 × 24 × 1 mm | Iron, 45 × 45 × 1 mm | Iron, 8 × 8 × 1 mm | Iron, 12 × 12 × 1 mm | Iron, 18 × 18 × 1 mm | Iron, 30 × 30 × 1 mm |
| Response frequency *1 | | 1,500 Hz | 1,000 Hz | 500 Hz | 250 Hz | 2,000 Hz | 1,500 Hz | 600 Hz | 400 Hz |
| Power supply voltage | | 10 to 30 VDC (including 10% ripple (p-p)), Class 2 | | | | | | | |
| Current consumption | | 1-output models: 16 mA max.<br>2-output models: 20 mA max. | | | | | | | |
| Output configuration | | B□ Models: PNP open collector,<br>C□ Models: NPN open collector | | | | | | | |
| Operation mode (with sensing object approaching) | | 1-output models (B1, C1): NO (Normally open),<br>1-output models (B2, C2): NC (Normally closed)<br>2-output models (B3, C3): NO+NC (Normally open, Normally closed) | | | | | | | |
| Control output | Load current | 1-output models: 10 to 30 VDC, Class 2, 200 mA max., (-40 to 70°C), 100 mA max., (70 to 85°C)<br>2-output models: 10 to 30 VDC, Class 2, 50 mA max. | 1-output models: 10 to 30 VDC, Class 2, 200 mA max.,<br>2-output models: 10 to 30 VDC, Class 2, 100 mA max. | | | 1-output models: 10 to 30 VDC, Class 2, 200 mA max., (-40 to 70°C), 100 mA max., (70 to 85°C)<br>2-output models: 10 to 30 VDC, Class 2, 50 mA max. | 1-output models: 10 to 30 VDC, Class 2, 200 mA max.,<br>2-output models: 10 to 30 VDC, Class 2, 100 mA max. | | |
| | Residual voltage | 1-output models: 2 V max. (Load current: 200 mA, Cable length: 2 m),<br>2-output models: 2 V max. (Load current: 50 mA, Cable length: 2 m) | 1-output models: 2 V max. (Load current: 200 mA, Cable length: 2 m),<br>2-output models: 2 V max. (Load current: 100 mA, Cable length: 2 m) | | | 1-output models: 2 V max. (Load current: 200 mA, Cable length: 2 m),<br>2-output models: 2 V max. (Load current: 50 mA, Cable length: 2 m) | 1-output models: 2 V max. (Load current: 200 mA, Cable length: 2 m),<br>2-output models: 2 V max. (Load current: 100 mA, Cable length: 2 m) | | |
| Indicator *2 | | In the Standard I/O mode (SIO mode): Operation indicator (orange, lit) and communication indicator (green, not lit)<br>In the IO-Link communication mode (COM mode): Operation indicator (orange, lit) and communication indicator (green, blinking at 1 s intervals) | | | | | | | |
| Protection circuits | | Power supply reverse polarity protection, Surge suppressor, Output short-circuit protection, Output reverse polarity protection | | | | | | | |
| Ambient temperature range | | Operating/Storage: -40 to 85°C (with no icing or condensation)<br>**Note:** The UL temperature rating for M12 Pre-wired Connector Models is -25 to 70°C. | | | | | | | |
| 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-carrying parts and case | | | | | | | |
| Vibration resistance (destruction) | | 10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions | | | | | | | |
| Shock resistance (destruction) | | 500 m/s² 10 times each in X, Y, and Z directions | 1,000 m/s² 10 times each in X, Y, and Z directions | | | 500 m/s² 10 times each in X, Y, and Z directions | 1,000 m/s² 10 times each in X, Y, and Z directions | | |
| Degree of protection | | Pre-wired Models, Pre-wired Connector Models: IEC 60529:IP67, JIS C 0920 Annex 1: IP67G<br>Connector Models: IEC 60529 IP67 | | | | | | | |
| Connection method | | Pre-wired Models (Standard cable length: 2 m) and Pre-wired Connector Models (Standard cable length: 0.3 m), M12 Connector Models | | | | | | | |
| Weight *3 (packed state) | Pre-wired | Approx. 85 g | Approx. 95 g | Approx. 170 g | Approx. 240 g | Approx. 85 g | Approx. 95 g | Approx. 170 g | Approx. 240 g |
| | M12 Pre-wired Smartclick Connector | Approx. 55 g | Approx. 70 g | Approx. 105 g | Approx. 170 g | Approx. 55 g | Approx. 70 g | Approx. 105 g | Approx. 170 g |
| | Connector | Approx. 40 g | Approx. 55 g | Approx. 85 g | Approx. 160 g | Approx. 40 g | Approx. 55 g | Approx. 85 g | Approx. 160 g |

| Item | Types | Double distance | | | | Single distance | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Size | M8 | M12 | M18 | M30 | M8 | M12 | M18 | M30 |
| | Model | E2EQ-X2□8 | E2EQ-X4□12 | E2EQ-X8□18 | E2EQ-X15□30 | E2EQ-X1R5□8 | E2EQ-X2□12 | E2EQ-X5□18 | E2EQ-X10□30 |
| Materials | Case | Fluororesin coating (Base material: SUS303) | Fluororesin coating (Base material: brass) | | | Fluororesin coating (Base material: SUS303) | Fluororesin coating (Base material: brass) | | |
| | Sensing surface | Fluorine resin | | | | | | | |
| | Clamping nuts | Fluororesin coating (Base material: brass) | | | | | | | |
| | Toothed washers | Zinc-plated iron | | | | | | | |
| | Cable | Vinyl chloride (PVC) | | | | | | | |
| Main IO-Link functions *2 | | Operation mode switching between NO and NC, self diagnosis enabling, excessive proximity judgment distance selecting, timer function of the control output and timer time selecting, instability output (IO-Link mode) ON delay timer time selecting function, monitor output, operating hours read-out, readout of the sensor internal temperature, and initial reset | | | | | | | |
| IO-Link Communication specifications *2 | IO-Link specification | Ver1.1 | | | | | | | |
| | Baud rate | COM2 (38.4 kbps), COM3 (230.4 kbps) | | | | | | | |
| | Data length | PD size: 2 bytes, OD size: 1 byte (M-sequence type: TYPE_2_2) | | | | | | | |
| | Minimum cycle time | COM2: 2.3 ms, COM3: 0.4 ms | | | | | | | |
| Accessories | | Instruction manual, Clamping nuts, Toothed washer | | | | | | | |

*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. IO-Link is not supported for NC-type PNP outputs or all types of NPN outputs.
*3. Weight of the standard body-sized model.

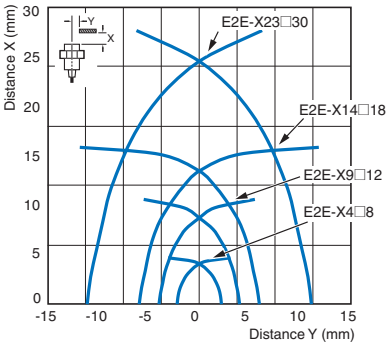
# Engineering Data (Reference Value)

## Sensing Area

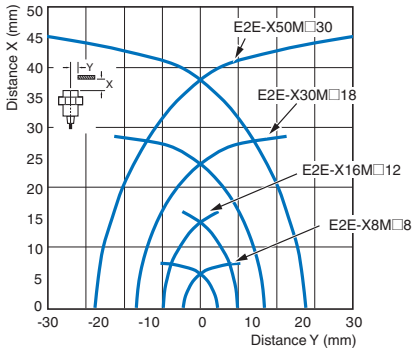
### PREMIUM Model

#### Quadruple distance model

**Shielded**

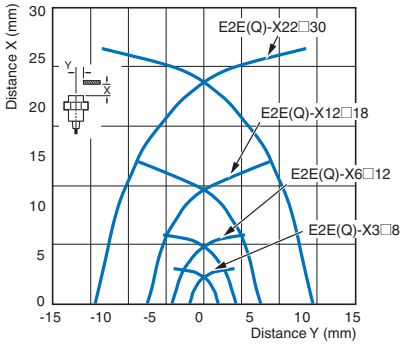



**Unshielded**

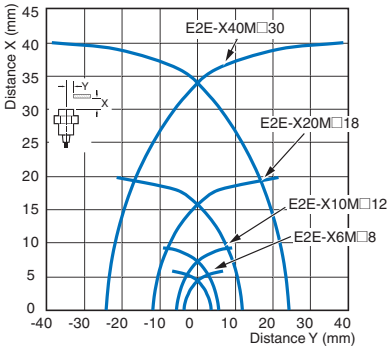



#### Triple distance model, Spatter-resistant Triple distance model

**Shielded**



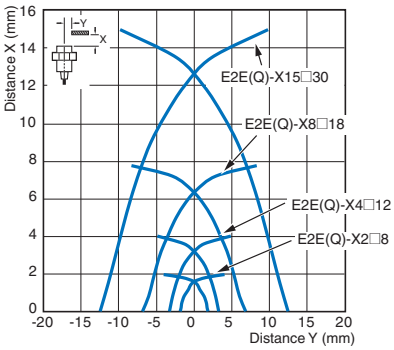

**Unshielded**



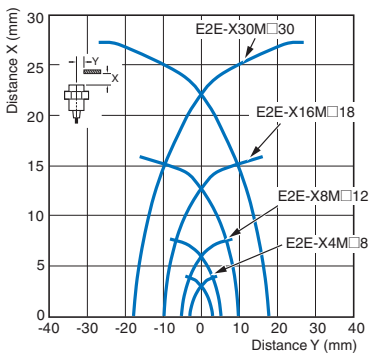

### BASIC Model

#### Double distance model, Spatter-resistant Double distance model

**Shielded**

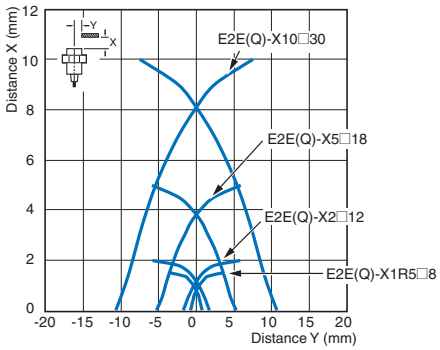



**Unshielded**

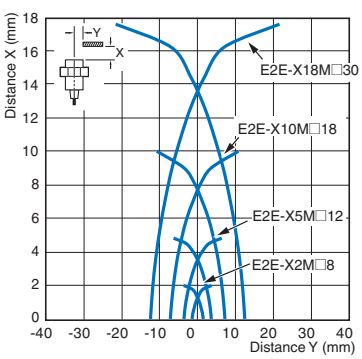



#### Single distance model, Spatter-resistant Single distance model

**Shielded**




**Unshielded**



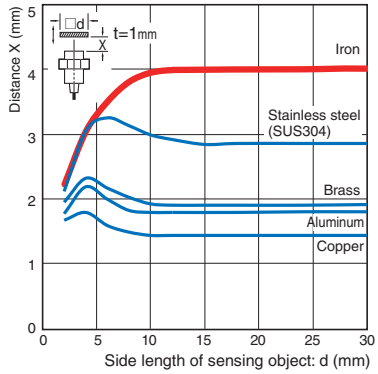
## Influence of Sensing Object Size and Material

**PREMIUM Model**

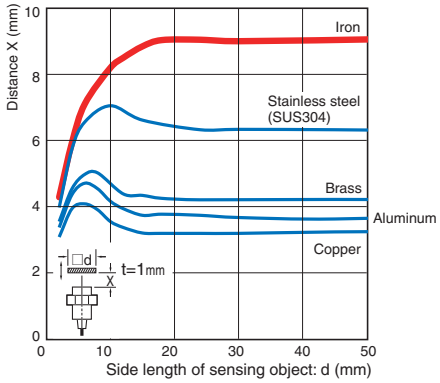
### Shielded

### Quadruple distance model

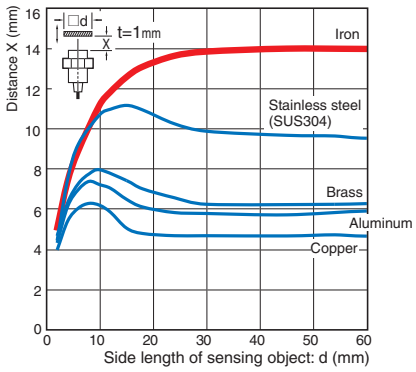
#### Size: M8 E2E-X4□8



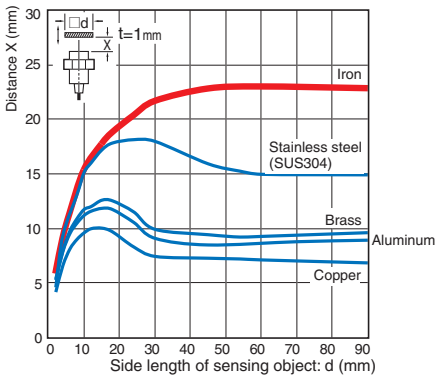

#### Size: M12 E2E-X9□12




#### Size: M18 E2E-X14□18

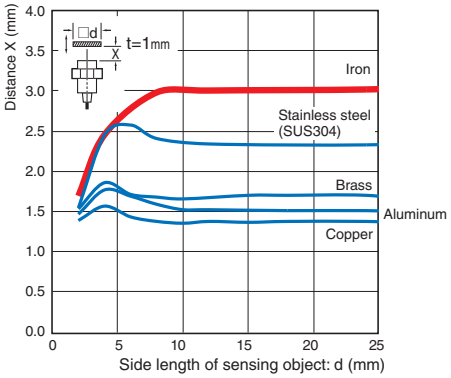



#### Size: M30 E2E-X23□30

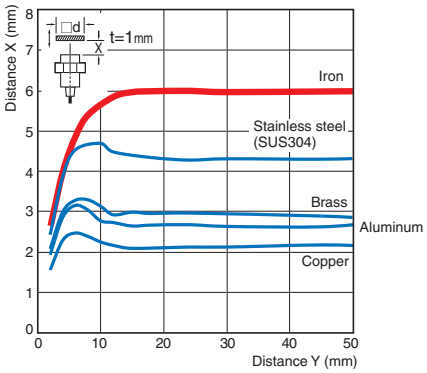



### Triple distance model, Spatter-resistant Triple distance model

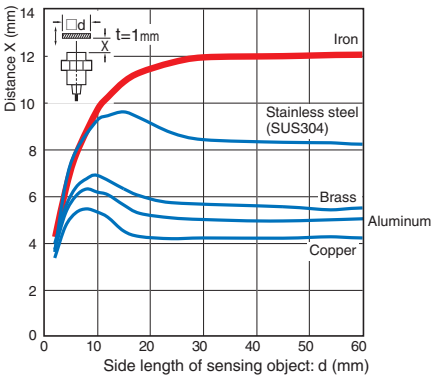
#### Size: M8 E2E(Q)-X3□8



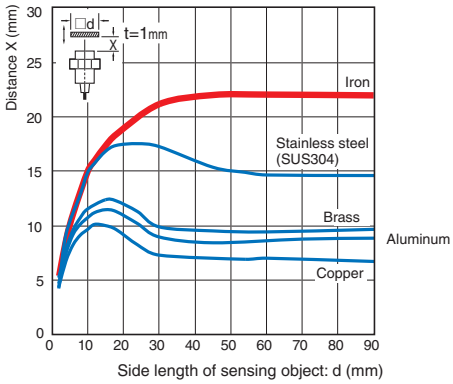

#### Size: M12 E2E(Q)-X6□12




#### Size: M18 E2E(Q)-X12□18




#### Size: M30 E2E(Q)-X22□30

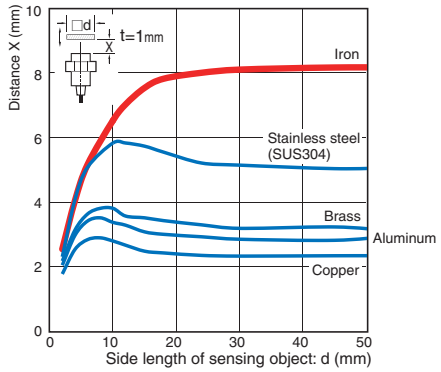


PREMIUM Model

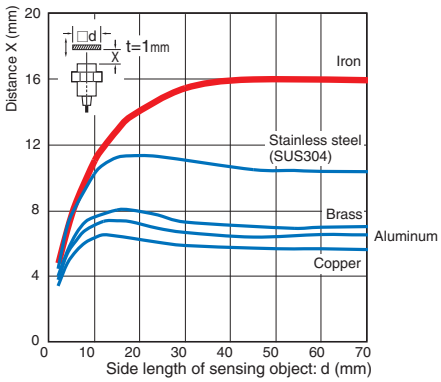
## Unshielded

### Quadruple distance model

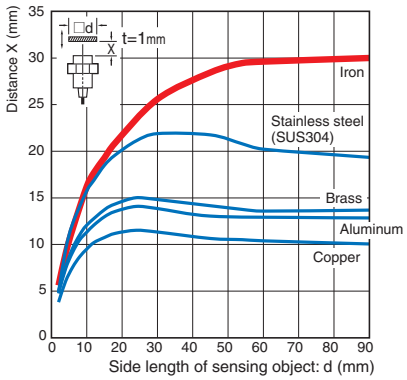
#### Size: M8 E2E-X8M□8



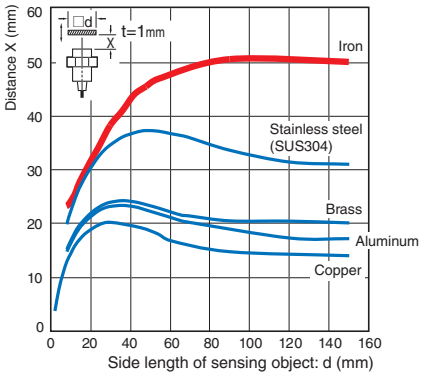

#### Size: M12 E2E-X16M□12




#### Size: M18 E2E-X30M□18

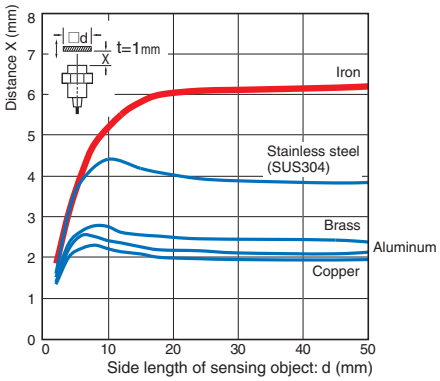



#### Size: M30 E2E-X50M□30

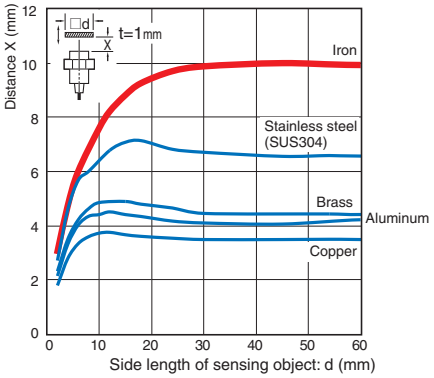



### Triple distance model

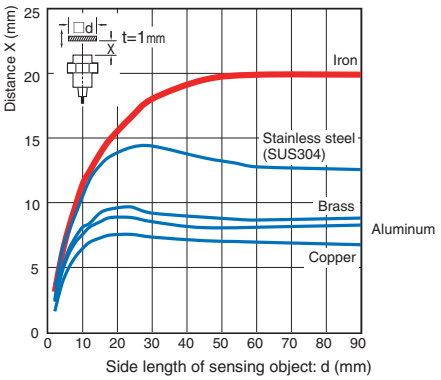
#### Size: M8 E2E-X6M□8



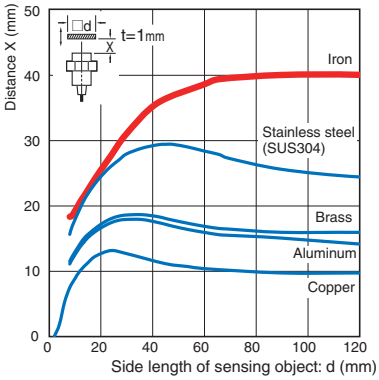

#### Size: M12 E2E-X10M□12




#### Size: M18 E2E-X20M□18




#### Size: M30 E2E-X40M□30

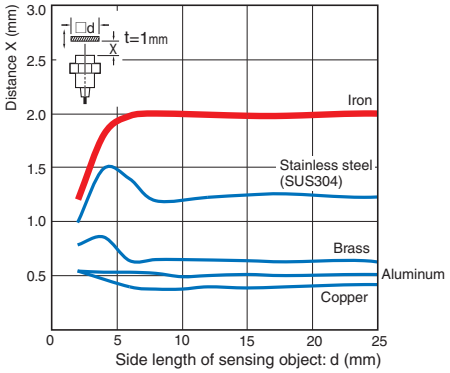


## BASIC Model

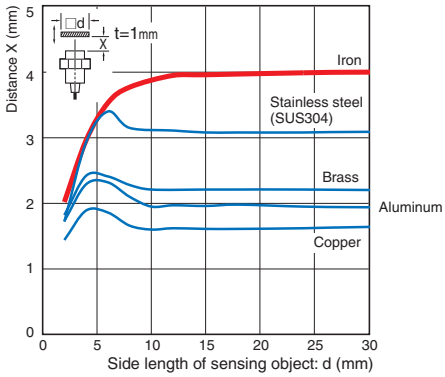
### Shielded

**Double distance model, Spatter-resistant Double distance model**

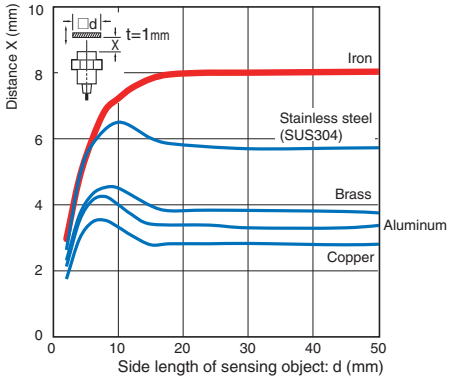
**Size: M8 E2E(Q)-X2□8**



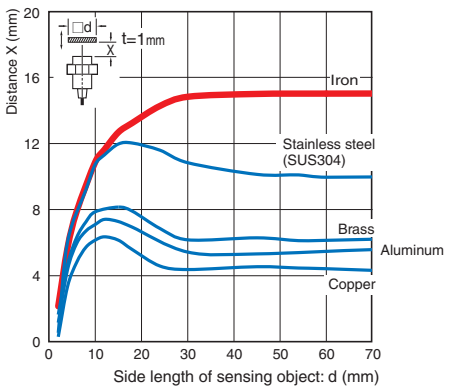

**Size: M12 E2E(Q)-X4□12**




**Size: M18 E2E(Q)-X8□18**

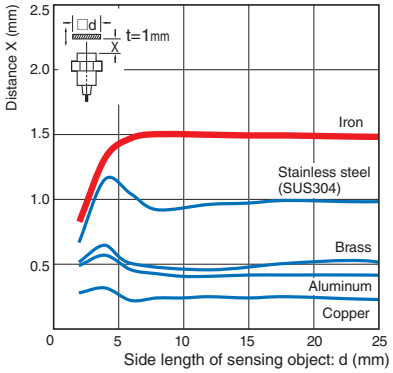



**Size: M30 E2E(Q)-X15□30**

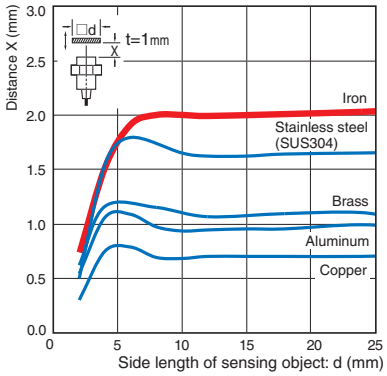



**Single distance model, Spatter-resistant Single distance model**

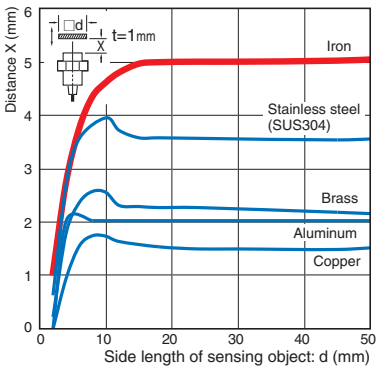
**Size: M8 E2E(Q)-X1R5□8**



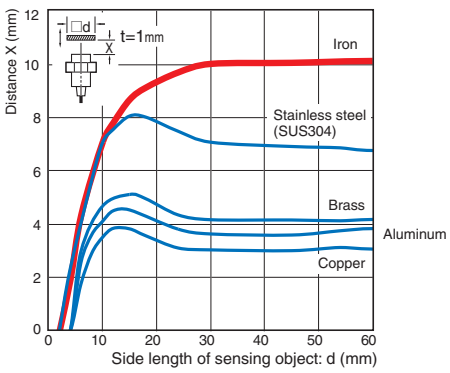

**Size: M12 E2E(Q)-X2□12**




**Size: M18 E2E(Q)-X5□18**




**Size: M30 E2E(Q)-X10□30**

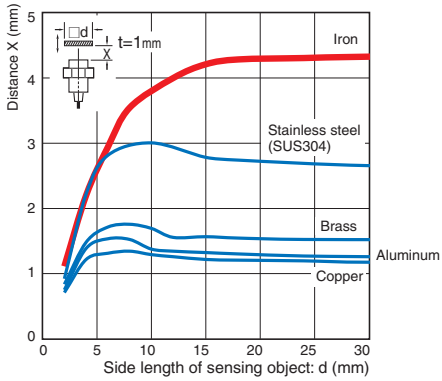


BASIC Model

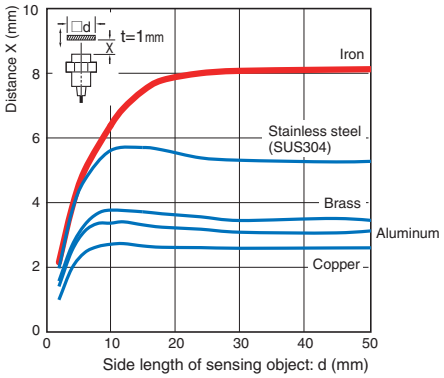
## Unshielded

### Double distance model

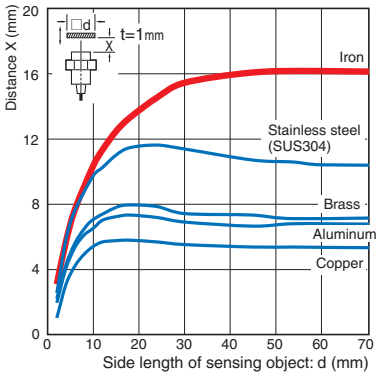
#### Size: M8 E2E-X4M□8



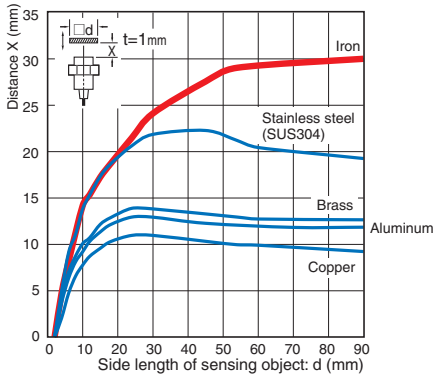

#### Size: M12 E2E-X8M□12




#### Size: M18 E2E-X16M□18

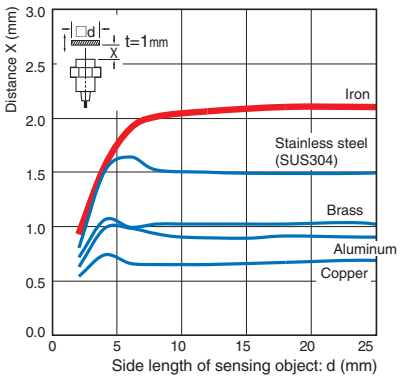



#### Size: M30 E2E-X30M□30

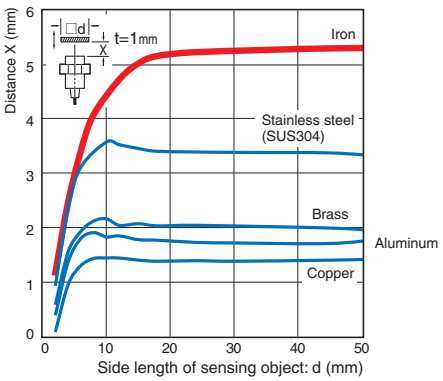



### Single distance model

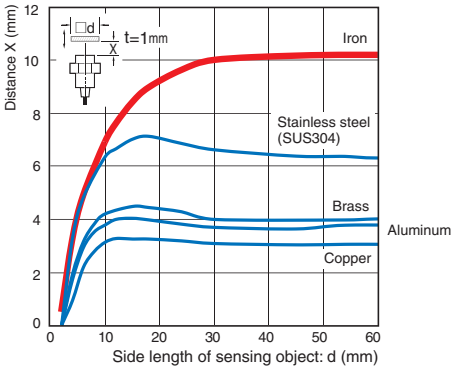
#### Size: M8 E2E-X2M□8



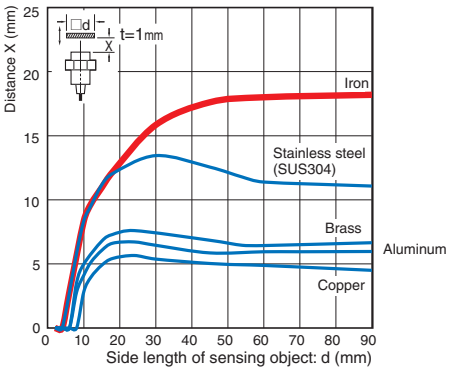

#### Size: M12 E2E-X5M□12




#### Size: M18 E2E-X10M□18




#### Size: M30 E2E-X18M□30



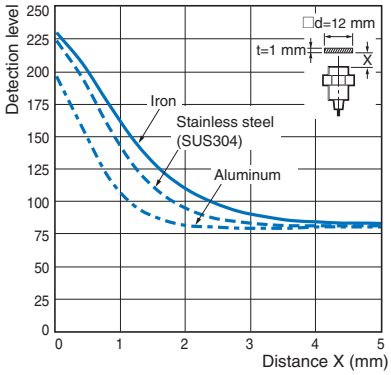
## Monitor Output vs. Sensing Distance

PREMIUM Model

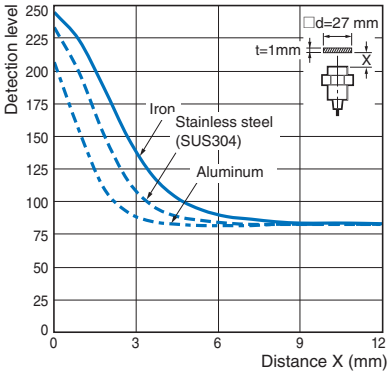
### Shielded

#### Quadruple distance model

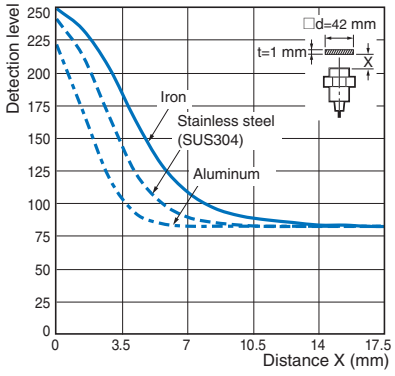
**Size: M8 E2E-X4□8**



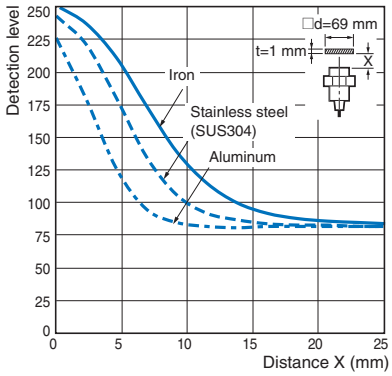

**Size: M12 E2E-X9□12**




**Size: M18 E2E-X14□18**

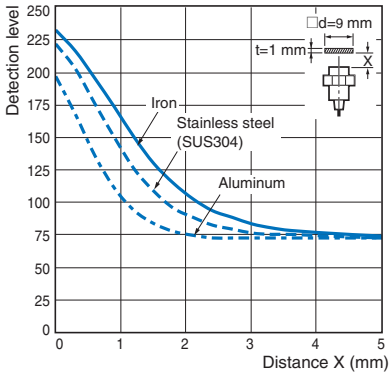



**Size: M30 E2E-X23□30**

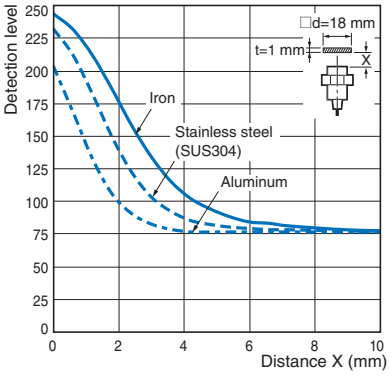



#### Triple model, Spatter-resistant Triple distance model

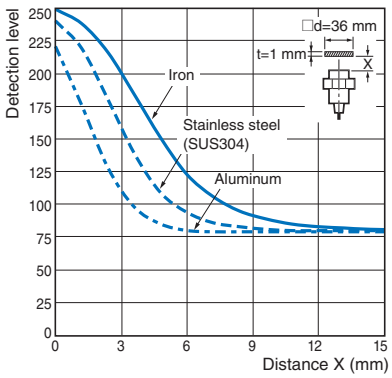
**Size: M8 E2E(Q)-X3□8**



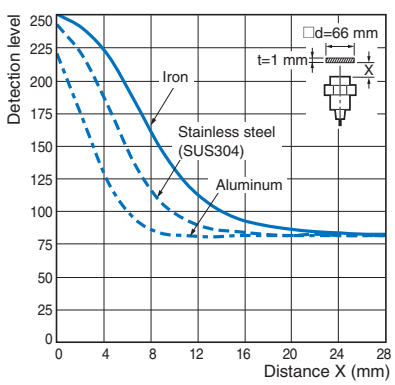

**Size: M12 E2E(Q)-X6□12**




**Size: M18 E2E(Q)-X12□18**




**Size: M30 E2E(Q)-X22□30**

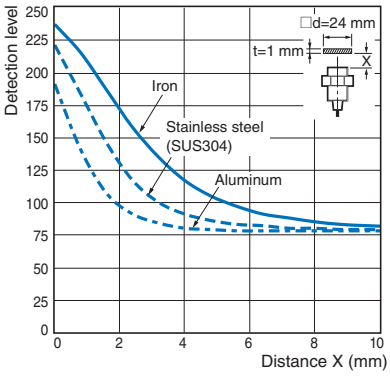


PREMIUM Model

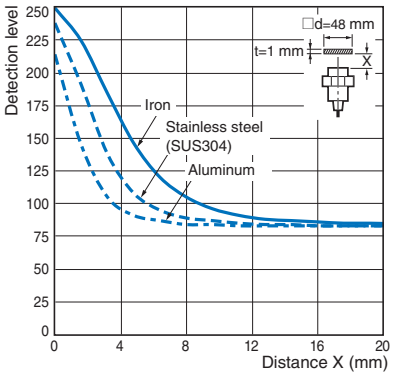
## Unshielded

### Quadruple distance model

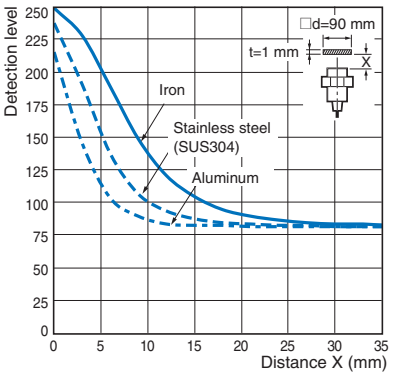
#### Size: M8 E2E-X8M□8



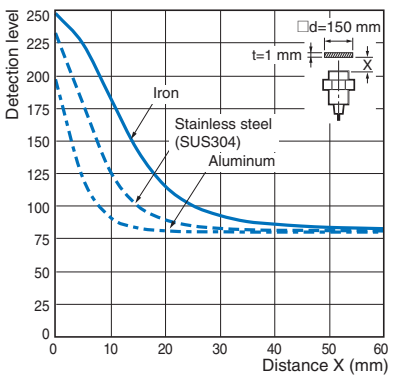

#### Size: M12 E2E-X16M□12




#### Size: M18 E2E-X30M□18

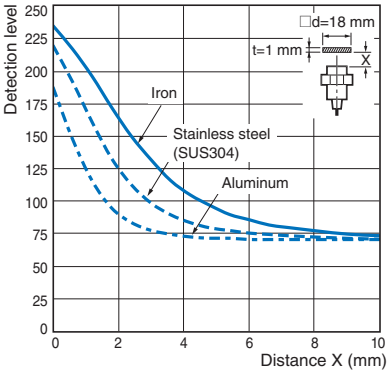



#### Size: M30 E2E-X50M□30

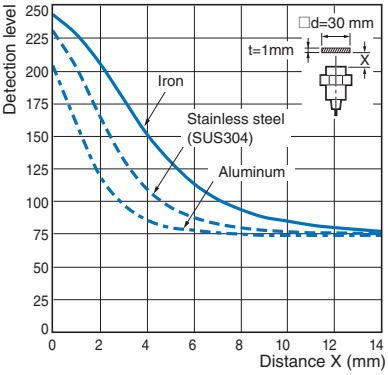



### Triple distance model

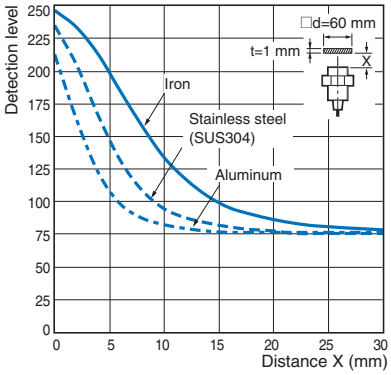
#### Size: M8 E2E-X6M□8



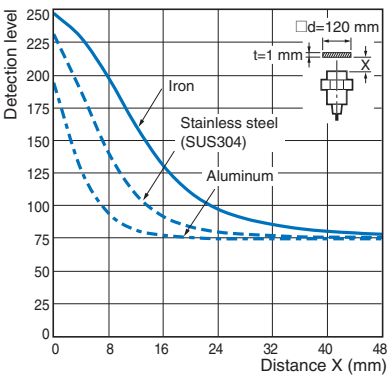

#### Size: M12 E2E-X10M□12




#### Size: M18 E2E-X20M□18




#### Size: M30 E2E-X40M□30

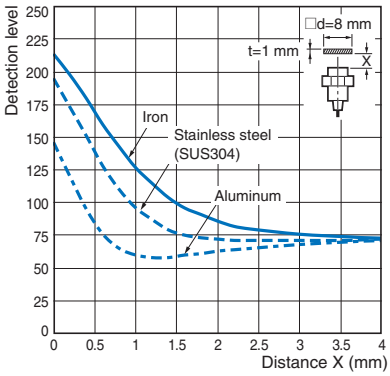


BASIC Model

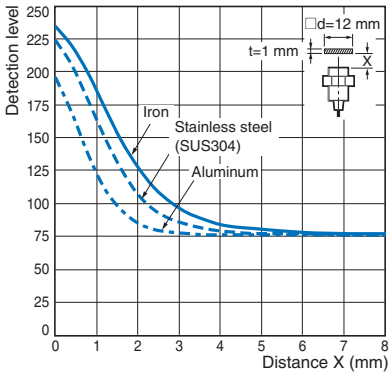
## Shielded

### Double distance model, Spatter-resistant Double distance model

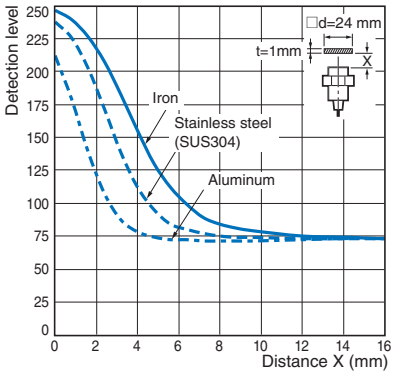
**Size: M8 E2E(Q)-X2□8**



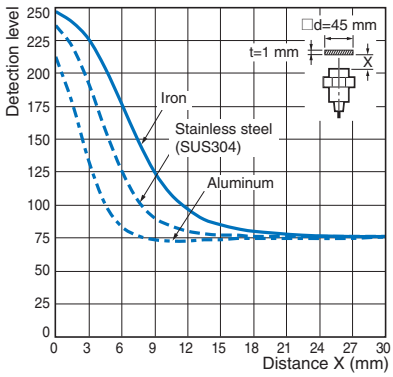

**Size: M12 E2E(Q)-X4□12**




**Size: M18 E2E(Q)-X8□18**

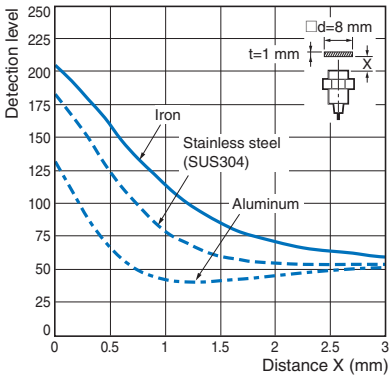



**Size: M30 E2E(Q)-X15□30**

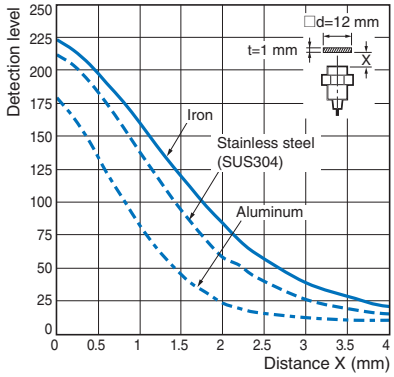



### Single distance model, Spatter-resistant Single distance model

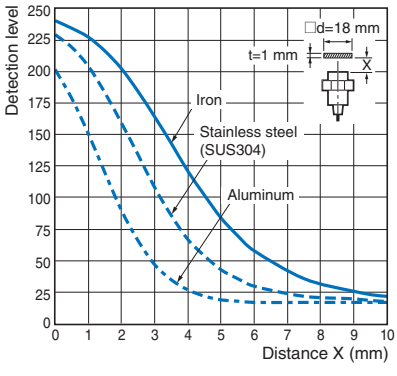
**Size: M8 E2E(Q)-X1R5□8**



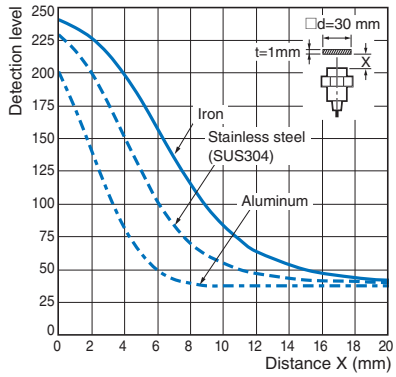

**Size: M12 E2E(Q)-X2□12**




**Size: M18 E2E(Q)-X5□18**




**Size: M30 E2E(Q)-X10□30**

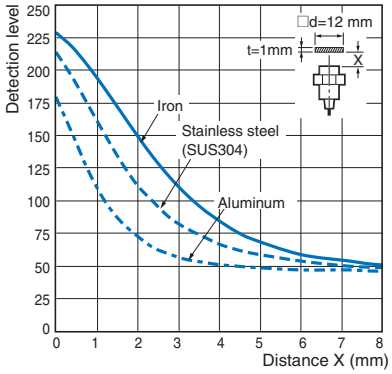


BASIC Model

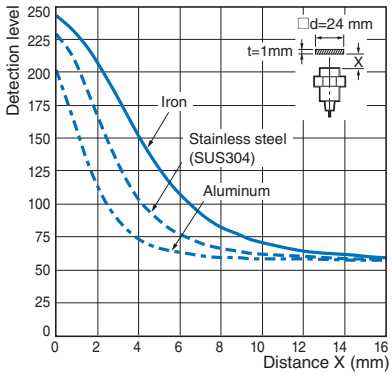
## Unshielded

### Double distance model

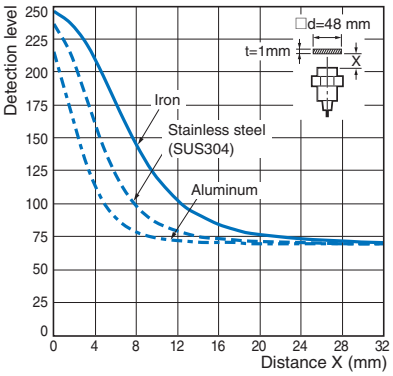
#### Size: M8 E2E-X4M□8



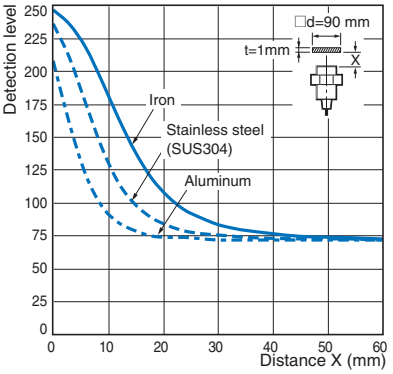

#### Size: M12 E2E-X8M□12




#### Size: M18 E2E-X16M□18

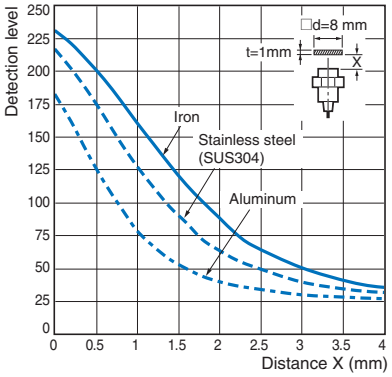



#### Size: M30 E2E-X30M□30

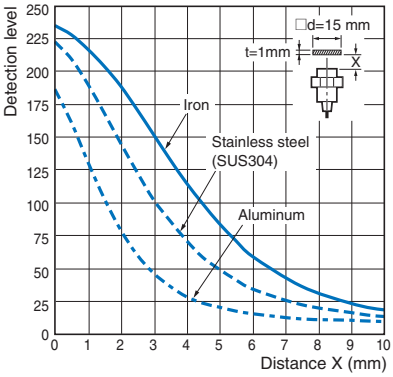



### Single distance model

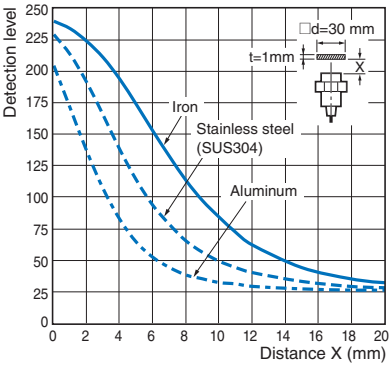
#### Size: M8 E2E-X2M□8



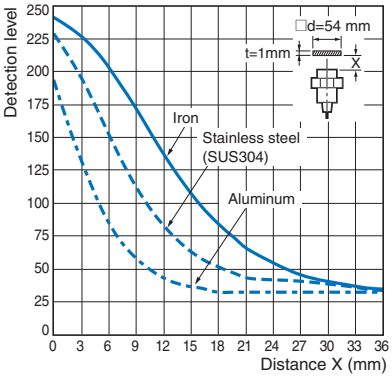

#### Size: M12 E2E-X5M□12




#### Size: M18 E2E-X10M□18



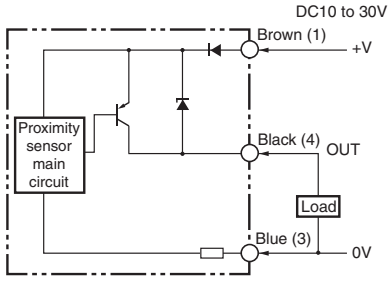
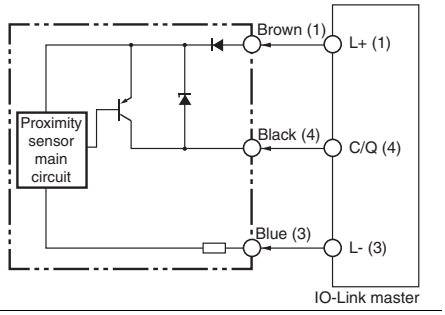
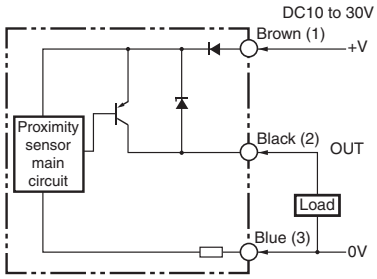
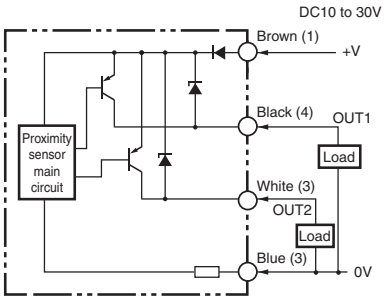
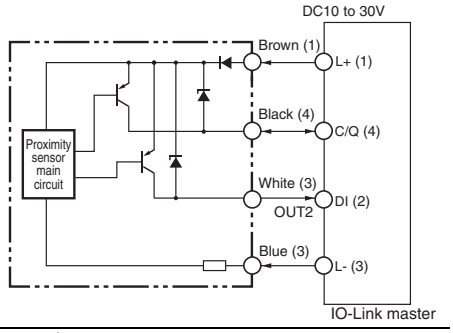

#### Size: M30 E2E-X18M□30



# I/O Circuit Diagrams/Timing charts

## DC 3-Wire

**PNP output**

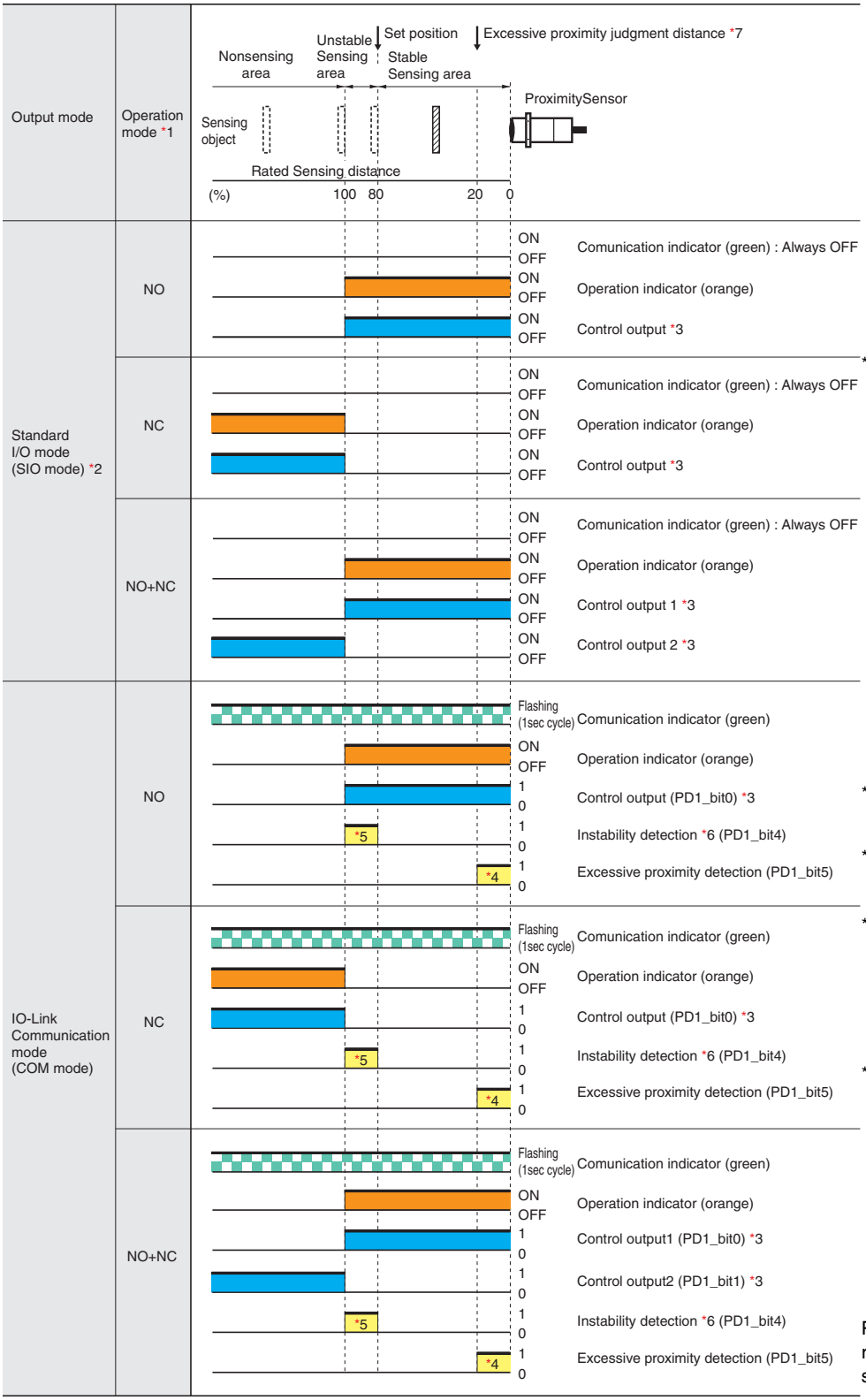
| Operation mode | Model | Output circuit | |
|---|---|---|---|
| | | Standard I/O mode (SIO mode) When using as a general | IO-Link Communication mode (COM mode) When using the Sensor connected to IO-Link Master Unit * |
| NO | E2E(Q)-□B1 |  |  |
| NC | E2E(Q)-□B2 |  <br>Note: M8 (3-pin) Connector: (1)(4)(3) | --- |
| NO+NC | E2E(Q)-□B3 |  |  |

* In the IO-Link mode, the cord between the IO-Link master and sensor must have a length of 20 m or less.

### Connector Pin Arrangement

| M12 Connector<br>M12 Smartclick Connector | M8 (4-pin) Connector | M8 (3-pin) Connector |
|---|---|---|
|  |  |  |

## PNP output



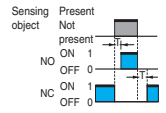

Please contact your OMRON sales representative regarding assignment of data.

*1. For models with IO-Link, the operation mode can be changed by the IO-Link communications.

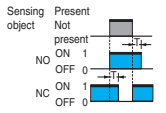
*2. If using a model with IO-Link as a general sensor or using a model without IO-Link, it operates in the standard I/O mode (SIO mode).

*3. The timer function of the control output can be set up by the IO-Link communications. (It is able to select ON delay, OFF delay, or one-shot function and select a timer time of 1 to 16,383ms (T).)

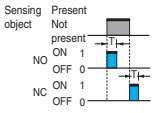
**ON delay**




**OFF delay**




**One shot**




*4. The excessive proximity diagnosis function can be selected by the IO-Link communications.

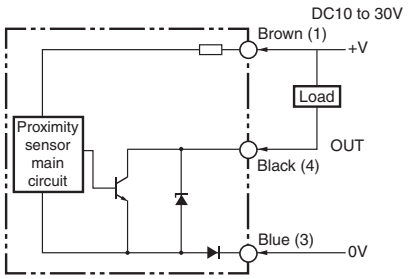
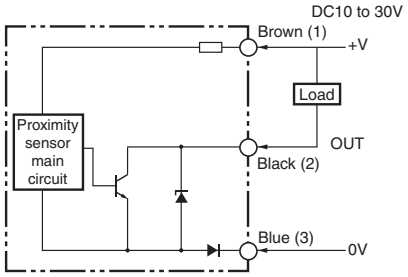
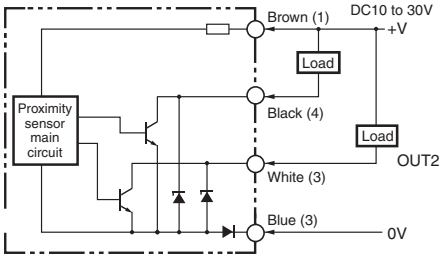
*5. The instability detection diagnosis can be selected by the IO-Link communications.

*6. The judgment time for the instability detection diagnosis can be selected by the IO-Link communications. (For the ON delay timer function, the setting can be selected from 0 (invalid), 10, 50, 100, 300, 500, or 1000 ms.)

*7. The judgment distance of the excessive proximity diagnosis function can be selected by the IO-Link communications. (The distance can be selected as a combination of the material of the object detected, such as iron, aluminum, or SUS and the judgment distance of approximately 10, 20, or 30%. However, it is not allowed to select a combination of aluminum and 30%.)

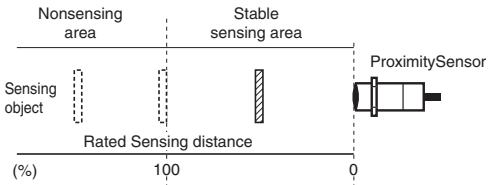
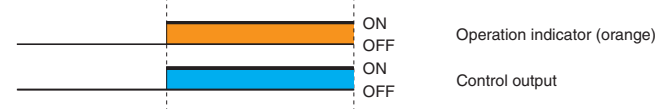
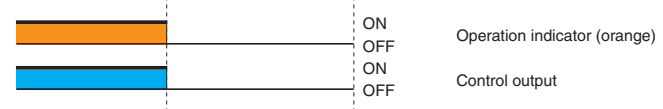
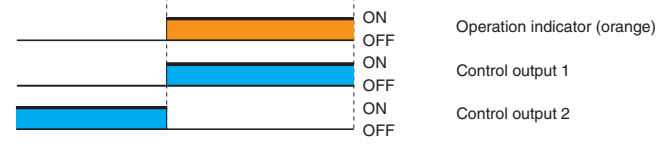
Please contact your OMRON sales representative regarding the IO-Link setup file (IODD file).

## NPN output

| Operation mode | Model | Output circuit |
|---|---|---|
| NO | E2E(Q)-□C1 |  |
| NC | E2E(Q)-□C2 |  <br>Note: M8 (3-pin) Connector: (1)(4)(3) |
| NO+NC | E2E(Q)-□C3 |  |

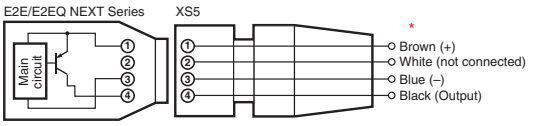
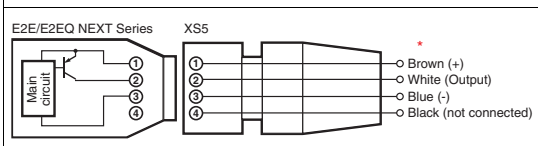
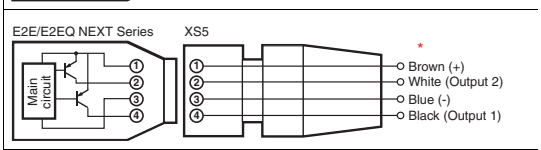
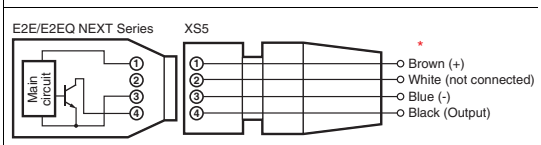
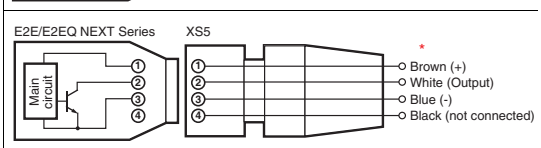
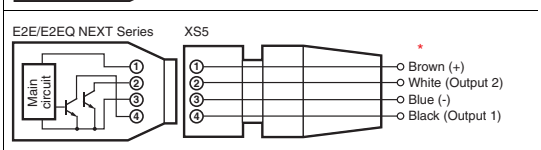
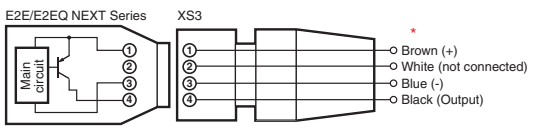
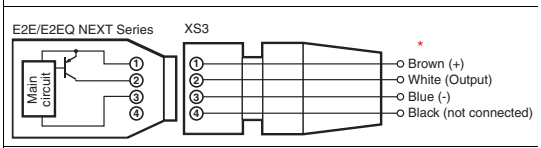
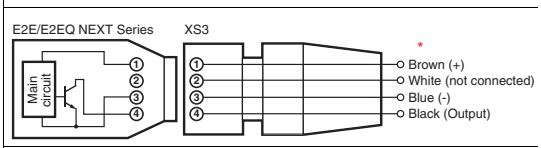
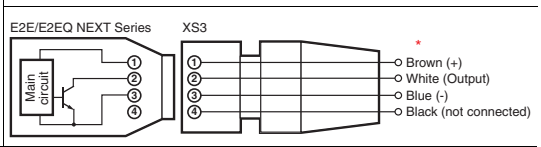
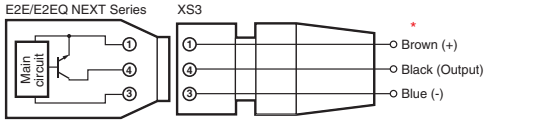
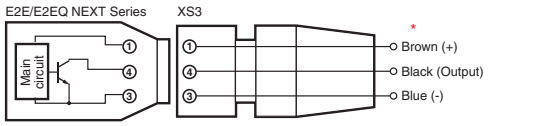
## Connector Pin Arrangement

| M12 Connector<br>M12 Smartclick Connector | M8 (4-pin) Connector | M8 (3-pin) Connector |
|---|---|---|
|  |  |  |

| Operation mode | |
|---|---|
| |  |
| NO |  |
| NC |  |
| NO+NC |  |

# Connections for Sensor I/O Connectors

## DC 3-Wire

| Proximity Sensor | | | | Sensor I/O Connectors | |
|---|---|---|---|---|---|
| Types | Output | Operation mode | Model | Model | Connections * |
| DC 3-Wire (M12 Connector/ M12 Smartclick Connector) | PNP | NO | E2E(Q)-X□B1□- M1TJ/ M1 | XS5F-D421-□80-X□<br>XS5F-D42□-□80-F<br>XS5W-D421-□81-X□<br>XS5W-D42□-□81-F<br>**Note:** For details of the connector, refer to *XS5 NEXT Series* on page 87 refer to *XS5 Series* on page 94 |  |
| | | NC | E2E(Q)-X□B2□-M1TJ/M1 | |  |
| | | NO+NC | E2E(Q)-X□B3□-M1TJ/M1 | |  |
| | NPN | NO | E2E(Q)-X□C1□-M1TJ/M1 | |  |
| | | NC | E2E(Q)-X□C2□-M1TJ/M1 | |  |
| | | NO+NC | E2E(Q)-X□C3□-M1TJ/M1 | |  |
| DC 3-Wire (M8 Connector, 4-pin) | PNP | NO | E2E(Q)-X□B1□-M3 | XS3W-M8PVC4□<br>XS3F-M8PVC4□<br>**Note:** For details of the connector, refer to *XS3W-M8/ XS3F-M8 Series* on page 102. |  |
| | | NC | E2E(Q)-X□B2□-M3 | |  |
| | NPN | NO | E2E(Q)-X□C1□-M3 | |  |
| | | NC | E2E(Q)-X□C2□-M3 | |  |
| DC 3-Wire (M8 Connector, 3-pin) | PNP | NO | E2E(Q)-X□B1□-M5 | XS3W-M8PVC3□<br>XS3F-M8PVC3□<br>**Note:** For details of the connector, refer to *XS3W-M8/ XS3F-M8 Series* on page 102. |  |
| | | NC | E2E(Q)-X□B2□-M5 | | |
| | NPN | NO | E2E(Q)-X□C1□-M5 | |  |
| | | NC | E2E(Q)-X□C2□-M5 | | |

**Note:** Different from Proximity Sensor wire colors.

* If the XS5W Series or XS3W Series Connector which has a socket and plug on the cable ends is connected to the Sensor, this part will be a plug.

# Safety Precautions

**Be sure to read the precautions for all models in the website at: http://www.ia.omron.com/.**

## Warning Indications

| | |
|---|---|
| ⚠ WARNING | **Warning level**<br>Indicates a potentially hazardous situation which, if not avoided, will result in minor or moderate injury, or may result in serious injury or death. Additionally there may be significant property damage. |
| **Precautions for Safe Use** | Supplementary comments on what to do or avoid doing, to use the product safely. |
| **Precautions for Correct Use** | Supplementary comments on what to do or avoid doing, to prevent failure to operate, malfunction or undesirable effect on product performance. |

## Meaning of Product Safety Symbols

| | |
|---|---|
|  | **General prohibition**<br>Indicates the instructions of unspecified prohibited action. |
|  | **Caution, explosion**<br>Indicates the possibility of explosion under specific conditions. |

**⚠ WARNING**

**This product is not designed or rated for ensuring safety of persons either directly or indirectly. Do not use it for such purposes.**

**Otherwise, explosion may result. Never use the product with an AC power supply.**

## Precautions for Safe Use

The following precautions must be observed to ensure safe operation.

1. Do not use the product in environments subject to flammable or explosive gases.
2. Do not attempt to disassemble, repair, or modify the product.
3. Do not use a voltage that exceeds the rated operating voltage range.
   Applying a voltage that is higher than the operating voltage range may result in explosion or fire.
4. Be sure that the power supply polarity and other wiring is correct. Incorrect wiring may cause explosion or fire.
5. If the power supply is connected directly without a load, the internal elements may explode or burn.
6. Be sure to insert a load when connecting the power supply.

## Precautions for Correct Use

Do not use the product in any atmosphere or environment that exceeds the ratings.

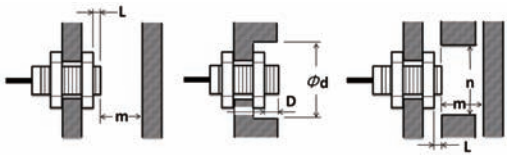
### Operating Environment

1. Do not install the Sensor in the following locations.
   (1) Outdoor locations directly subject to sunlight, rain, snow, waterdroplets, or oil.
   (2) Locations subject to atmospheres with chemical vapors, inparticular solvents and acids.
   (3) Locations subject to corrosive gases.
2. The Sensor may malfunction if used near ultrasonic cleaning equipment, high-frequency equipment, transceivers, cellular phones, inverters, or other devices that generate a high-frequency electric field. Please refer to the Precautions for Correct Use on the OMRON website (www.ia.omron.com) for typical measures.
3. Laying the Proximity Sensor wiring in the same conduit or duct as high-voltage wires or power lines may result in incorrect operation and damage due to induction. Wire the Sensor using a separate conduit or independent conduit.
4. Never use thinner or other solvents. Otherwise, the Sensor surface may be dissolved.
5. The following conditions shall be observed if you use the product under an environment using cutting oil that may affect product's life and/or performance.
   • Usage under the cutting oil condition designated by the specification
   • Usage under the cutting oil dilution ratio recommended by its manufacturer
   • Usage in oil or water is prohibited
   Impact on the product life may differ depending on the oil you use. Before using the cutting oil, make sure that it should not cause deterioration or degradation of sealing components.
6. When turning on the power by influence of temperature environment, an outputmis-pulse sometimes occurs. After the sensor has passed for 300 msec after turning on, please use in the stable state.
7. The sensor is adjusted with a high degree of accuracy, so do not use in the environment with sudden temperature change.
8. Operation check is performed using an OMRON's IO-Link master. If using an IO-Link master from another company, perform the operation check in advance.

## Design

### Influence of Surrounding Metal

When mounting the Proximity Sensor using a nut, only use the provided nut. And ensure that the minimum distances given in the following table are maintained.
When mounting the Proximity Sensor using a nut, only use the provided nut. Nuts that are supplied along with each Sensor are different. Refer to Dimensions for details on shapes.




(Unit: mm)

#### Shielded

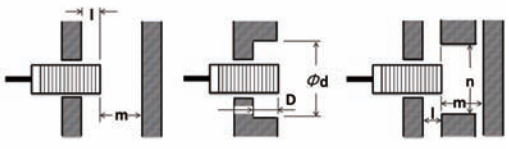
| Type | Model | L | d | D | m | n |
|---|---|---|---|---|---|---|
| Quadruple distance model | E2E-X4□8 | 3 | 30 | 3 | 12 | 20 |
| | E2E-X9□12 | 2 | 40 | 2 | 27 | 30 |
| | E2E-X14□18 | 2 | 60 | 2 | 42 | 70 |
| | E2E-X23□30 | 2 | 100 | 2 | 69 | 100 |
| Triple distance model/ Spatter-resistant Triple distance model | E2E(Q)-X3□8 | 0 | 20 | 0 | 9 | 18 |
| | E2E(Q)-X6□12 | 0 | 20 | 0 | 18 | 20 |
| | E2E(Q)-X12□18 | 0 | 50 | 0 | 36 | 54 |
| | E2E(Q)-X22□30 | 0 | 70 | 0 | 66 | 90 |
| Double distance model/ Spatter-resistant Double distance model | E2E(Q)-X2□8 | 0 | 8 | 0 | 4.5 | 12 |
| | E2E(Q)-X4□12 | 0 | 18 | 0 | 12 | 18 |
| | E2E(Q)-X8□18 | 0 | 27 | 0 | 24 | 27 |
| | E2E(Q)-X15□30 | 0 | 45 | 0 | 45 | 45 |
| Single distance model/ Spatter-resistant Single distance model | E2E(Q)-X1R5□8 | 0 | 8 | 0 | 4.5 | 12 |
| | E2E(Q)-X2□12 | 0 | 12 | 0 | 8 | 18 |
| | E2E(Q)-X5□18 | 0 | 18 | 0 | 20 | 27 |
| | E2E(Q)-X10□30 | 0 | 30 | 0 | 40 | 45 |

#### Unshielded

| Models | Model | L | d | D | m | n |
|---|---|---|---|---|---|---|
| Quadruple distance model | E2E-X8M□8 | 12 | 40 | 12 | 24 | 40 |
| | E2E-X16M□12 | 21 | 70 | 21 | 48 | 80 |
| | E2E-X30M□18 | 46 | 130 | 46 | 90 | 110 |
| | E2E-X50M□30 | 60 | 200 | 60 | 150 | 180 |
| Triple distance model | E2E-X6M□8 | 10 | 30 | 10 | 18 | 30 |
| | E2E-X10M□12 | 16 | 50 | 16 | 30 | 50 |
| | E2E-X20M□18 | 31 | 90 | 31 | 60 | 80 |
| | E2E-X40M□30 * | 50 | 170 | 50 | 120 | 140 |
| Double distance model | E2E-X4M□8 | 9 | 24 | 9 | 8 | 24 |
| | E2E-X8M□12 | 11 | 40 | 11 | 20 | 40 |
| | E2E-X16M□18 | 21 | 70 | 21 | 48 | 70 |
| | E2E-X30M□30 | 40 | 120 | 40 | 90 | 120 |
| Single distance model | E2E-X2M□8 | 6 | 24 | 6 | 8 | 24 |
| | E2E-X5M□12 | 11 | 40 | 11 | 20 | 36 |
| | E2E-X10M□18 | 18 | 55 | 18 | 40 | 54 |
| | E2E-X18M□30 | 25 | 90 | 25 | 70 | 90 |

* If you use the model E2E-X40M□30, the panel thickness (t) is 4 mm or less.

When the Proximity Sensor is mounted in metal, ensure that the minimum distances given in the following table are maintained.




(Unit: mm)

#### Shielded

| Models | Model | l | d | D | m | n |
|---|---|---|---|---|---|---|
| Quadruple distance model | E2E-X4□8 | 4 | 30 | 4 | 12 | 20 |
| | E2E-X9□12 | 6 | 40 | 6 | 27 | 30 |
| | E2E-X14□18 | 7 | 60 | 7 | 42 | 70 |
| | E2E-X23□30 | 9 | 100 | 9 | 69 | 100 |
| Triple distance model/ Spatter-resistant Triple distance model | E2E(Q)-X3□8 | 2 | 20 | 2 | 9 | 18 |
| | E2E(Q)-X6□12 | 4 | 20 | 4 | 18 | 20 |
| | E2E(Q)-X12□18 | 4 | 50 | 4 | 36 | 54 |
| | E2E(Q)-X22□30 | 8 | 70 | 8 | 66 | 90 |
| Double distance model/ Spatter-resistant Double distance model | E2E(Q)-X2□8 | 0 | 8 | 0 | 4.5 | 12 |
| | E2E(Q)-X4□12 | 2.4 | 18 | 2.4 | 12 | 18 |
| | E2E(Q)-X8□18 | 3.6 | 27 | 3.6 | 24 | 27 |
| | E2E(Q)-X15□30 | 6 | 45 | 6 | 45 | 45 |
| Single distance model/ Spatter-resistant Single distance model | E2E(Q)-X1R5□8 | 0 | 8 | 0 | 4.5 | 12 |
| | E2E(Q)-X2□12 | 0 | 12 | 0 | 8 | 18 |
| | E2E(Q)-X5□18 | 0 | 18 | 0 | 20 | 27 |
| | E2E(Q)-X10□30 | 0 | 30 | 0 | 40 | 45 |

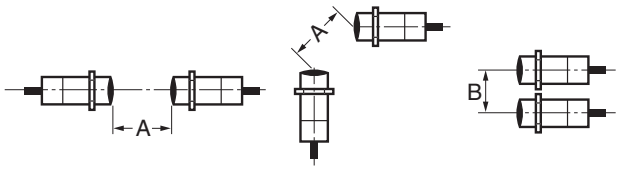
#### Unshielded

| Models | Model | l | d | D | m | n |
|---|---|---|---|---|---|---|
| Quadruple distance model | E2E-X8M□8 | 15 | 40 | 15 | 24 | 40 |
| | E2E-X16M□12 | 25 | 70 | 25 | 48 | 80 |
| | E2E-X30M□18 | 50 | 130 | 50 | 90 | 110 |
| | E2E-X50M□30 | 65 | 200 | 65 | 150 | 180 |
| Triple distance model | E2E-X6M□8 | 13 | 30 | 13 | 18 | 30 |
| | E2E-X10M□12 | 20 | 50 | 20 | 30 | 50 |
| | E2E-X20M□18 | 35 | 90 | 35 | 60 | 80 |
| | E2E-X40M□30 * | 55 | 170 | 55 | 120 | 140 |
| Double distance model | E2E-X4M□8 | 12 | 24 | 12 | 8 | 24 |
| | E2E-X8M□12 | 15 | 40 | 15 | 20 | 40 |
| | E2E-X16M□18 | 25 | 70 | 25 | 48 | 70 |
| | E2E-X30M□30 | 45 | 120 | 45 | 90 | 120 |
| Single distance model | E2E-X2M□8 | 6 | 24 | 6 | 8 | 24 |
| | E2E-X5M□12 | 15 | 40 | 15 | 20 | 36 |
| | E2E-X10M□18 | 22 | 55 | 22 | 40 | 54 |
| | E2E-X18M□30 | 30 | 90 | 30 | 70 | 90 |

* If you use the model E2E-X40M□30, the panel thickness (t) is 4 mm or less.

## Mutual Interference

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




(Unit: mm)

### Shielded

| Models | Model | Item | |
|---|---|---|---|
| | | A | B |
| Quadruple distance model | E2E-X4□8 | 40 | 20 |
| | E2E-X9□12 | 60 | 35 |
| | E2E-X14□18 | 90 | 50 |
| | E2E-X23□30 | 150 | 90 |
| Triple distance model/ Spatter-resistant Triple distance model | E2E(Q)-X3□8 | 25 | 20 |
| | E2E(Q)-X6□12 | 40 | 30 |
| | E2E(Q)-X12□18 | 70 | 45 |
| | E2E(Q)-X22□30 | 150 | 90 |
| Double distance model/ Spatter-resistant Double distance model | E2E(Q)-X2□8 | 20 | 15 |
| | E2E(Q)-X4□12 | 30 | 20 |
| | E2E(Q)-X8□18 | 60 | 35 |
| | E2E(Q)-X15□30 | 110 | 90 |
| Single distance model/ Spatter-resistant Single distance model | E2E(Q)-X1R5□8 | 20 | 15 |
| | E2E(Q)-X2□12 | 30 | 20 |
| | E2E(Q)-X5□18 | 50 | 35 |
| | E2E(Q)-X10□30 | 100 | 70 |

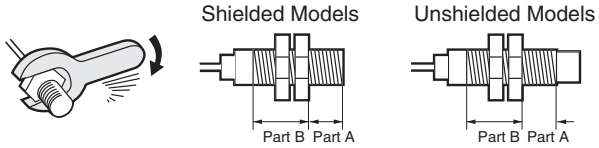
### Unshielded

| Models | Model | Item | |
|---|---|---|---|
| | | A | B |
| Quadruple distance model | E2E-X8M□8 | 80 | 60 |
| | E2E-X16M□12 | 160 | 120 |
| | E2E-X30M□18 | 360 | 300 |
| | E2E-X50M□30 | 700 | 480 |
| Triple distance model | E2E-X6M□8 | 80 | 60 |
| | E2E-X10M□12 | 120 | 100 |
| | E2E-X20M□18 | 200 | 120 |
| | E2E-X40M□30 | 380 | 300 |
| Double distance model | E2E-X4M□8 | 80 | 60 |
| | E2E-X8M□12 | 120 | 100 |
| | E2E-X16M□18 | 200 | 120 |
| | E2E-X30M□30 | 350 | 300 |
| Single distance model | E2E-X2M□8 | 80 | 60 |
| | E2E-X5M□12 | 120 | 100 |
| | E2E-X10M□18 | 200 | 110 |
| | E2E-X18M□30 | 300 | 200 |

## Mounting

### Tightening Force

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




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

**2.** The following strengths assume washers are being used.

#### Quadruple distance model, Triple distance model, Spatter-resistant Triple distance model

| Size | Shielded | Part A | | Part B |
|---|---|---|---|---|
| | | Dimension (mm) | Torque | Torque |
| M8 | Shielded | 9 | 4 N·m | 10 N·m |
| | Unshielded | 3 | | |
| M12 | Shielded | 16 | 6 N·m | 15 N·m |
| | Unshielded | 9 | | |
| M18 | Shielded | 16 | 15 N·m | 60 N·m (30 N·m *) |
| | Unshielded | 3 | | |
| M30 | Shielded | 23 | 40 N·m | 80 N·m |
| | Unshielded | 8 | | |

* If using the E2EQ (M18), refer to this torque value.

#### Double distance model, Single distance model, Spatter-resistant Triple distance model, Spatter-resistant Single distance model

| Size | Shielded | Part A | | Part B |
|---|---|---|---|---|
| | | Dimension (mm) | 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 (100 N·m *) | |

* If using the E2EQ (M30), refer to this torque value.

# Dimensions

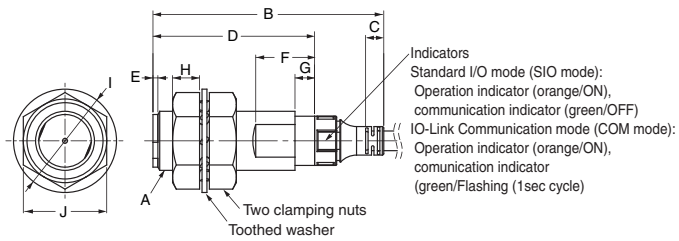
(Unit: mm)
Tolerance class IT16 applies to dimensions in this data sheet unless otherwise specified.

## Sensors

PREMIUM Model

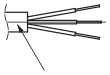
## E2E/E2EQ NEXT Series
## (Quadruple distance/Triple distance/Spatter-resistant, Triple distance model)
### DC 3-Wire

### Pre-wired Model/Pre-wired Connector Model
### Shielded/Unshielded




**Pre-wired Models**

(Operation mode: NO, NC Type)

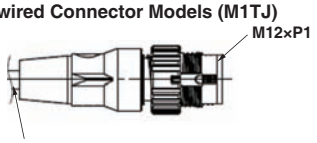


Vinyl-insulated round cable with
3 conductors
M8, M12 size: 4-dia.
M18, M30 size: 6-dia.
(Conductor cross section:
0.2 mm² (AWG24),
Insulator diameter: 1.05 mm),
Standard length: 2 m

(Operation mode: NO+NC Type)

Vinyl-insulated round cable with
4 conductors
M12 size: 4.3-dia.
M18/M30 size: 6-dia.
(Conductor cross section: 0.2 mm²
(AWG24),
Insulator diameter: 1.05 mm),
Standard length: 2 m

**Pre-wired Connector Models (M1TJ)**




(Operation mode: NO, NC Type)
Vinyl-insulated round cable with
3 conductors
M8, M12 size: 4-dia.
M18, M30 size: 6-dia.
(Conductor cross section:
0.2 mm² (AWG24),
Insulator diameter: 1.05 mm),
Standard length: 0.3 m

(Operation mode: NO+NC Type)
Vinyl-insulated round cable with
4 conductors
M12 size: 4.3-dia.
M18, M30 size: 6-dia.
(Conductor cross section: 0.2 mm²
(AWG24),
Insulator diameter: 1.05 mm),
Standard length: 0.3 m

**Shielded**

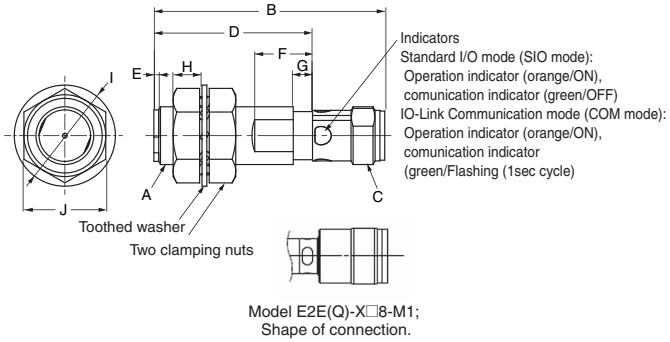
| Model | A | B | C | D | E | F | G* | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|
| E2E(Q)-X□8 | M8XP1 | 37.8 | 4.4 | 26 | 1 | 10 | 4 | 4 | 15 | 13 |
| E2E(Q)-X□12 | M12XP1 | 47.1 | 3.7 | 33 | 1 | 12 | 4 | 5.5 | 21 | 17 |
| E2E(Q)-X□18 | M18XP1 | 55.3 | 8.5 | 38 | 1 | 12 | 4 | 6 | 29 | 24 |
| E2E(Q)-X□30 | M30XP1.5 | 60.3 | 8.3 | 43 | 1 | 12 | 4 | 7 | 42 | 36 |
| E2E-X□L8 | M8XP1 | 47.8 | 4.4 | 36 | 1 | 10 | --- | 4 | 15 | 13 |
| E2E-X□L12 | M12XP1 | 69.1 | 3.7 | 55 | 1 | 12 | --- | 5.5 | 21 | 17 |
| E2E-X□L18 | M18XP1 | 77.3 | 8.5 | 60 | 1 | 12 | --- | 6 | 29 | 24 |
| E2E-X□L30 | M30XP1.5 | 82.3 | 8.3 | 65 | 1 | 12 | --- | 7 | 42 | 36 |

**Unshielded**

| Model | A | B | C | D | E | F | G* | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|
| E2E-X□M□8 | M8XP1 | 37.8 | 4.4 | 26 | 6 | 8 | --- | 3 | 15 | 13 |
| E2E-X□M□12 | M12XP1 | 47.1 | 3.7 | 33 | 7 | 10 | --- | 4 | 21 | 17 |
| E2E-X□M□L8 | M8XP1 | 47.8 | 4.4 | 36 | 6 | 8 | --- | 3 | 15 | 13 |
| E2E-X□M□L12 | M12XP1 | 69.1 | 3.7 | 55 | 7 | 10 | --- | 4 | 21 | 17 |
| E2E-X□M□L18 | M18XP1 | 77.3 | 8.5 | 60 | 13 | 12 | --- | 4 | 29 | 24 |
| E2E-S05S12□ | M30XP1.5 | 82.3 | 8.3 | 65 | 15 | 10 | --- | 5 | 42 | 36 |
| E2E-S05S12□ | M30X1.5 | 97.3 | 8.3 | 80 | 15 | 12 | --- | 5 | 42 | 36 |

* Mounting part of sensor lock O-ring (Y92E-J□S□) ---: Out of a subject.

### Connector Models
### (M12 Connector, M8 (4-pin) Connector and M8 (3-pin) Connector)
### Shielded/Unshielded




Model E2E(Q)-X□8-M1;
Shape of connection.

**Shielded**

| Model | A | B | C | D | E | F | G* | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|
| E2E(Q)-X□8-M3/M5 | M8XP1 | 39 | M8XP1 | 26 | 1 | 10 | 4 | 4 | 15 | 13 |
| E2E(Q)-X□8-M1 | M8XP1 | 43 | M12XP1 | 26 | 1 | 10 | 4 | 4 | 15 | 13 |
| E2E(Q)-X□12-M1 | M12XP1 | 48 | M12XP1 | 33 | 1 | 12 | 4 | 5.5 | 21 | 17 |
| E2E(Q)-X□18-M1 | M18XP1 | 53 | M12XP1 | 38 | 1 | 12 | 4 | 6 | 29 | 24 |
| E2E(Q)-X□30-M1 | M30XP1.5 | 58 | M12XP1 | 43 | 1 | 12 | 4 | 7 | 42 | 36 |
| E2E-X□L8-M3/M5 | M8XP1 | 49 | M8XP1 | 36 | 1 | 10 | --- | 4 | 15 | 13 |
| E2E-X□L8-M1 | M8XP1 | 53 | M12XP1 | 36 | 1 | 10 | --- | 4 | 15 | 13 |
| E2E-X□L12-M1 | M12XP1 | 70 | M12XP1 | 55 | 1 | 12 | --- | 5.5 | 21 | 17 |
| E2E-X□L18-M1 | M18XP1 | 75 | M12XP1 | 60 | 1 | 12 | --- | 6 | 29 | 24 |
| E2E-X□L30-M1 | M30XP1.5 | 80 | M12XP1 | 65 | 1 | 12 | --- | 7 | 42 | 36 |

**Unshielded**

| Model | A | B | C | D | E | F | G* | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|
| E2E-X□M□8-M3/M5 | M8XP1 | 39 | M8XP1 | 26 | 6 | 8 | --- | 3 | 15 | 13 |
| E2E-X□M□8-M1 | M8XP1 | 43 | M12XP1 | 26 | 6 | 8 | --- | 3 | 15 | 13 |
| E2E-X□M□12-M1 | M12XP1 | 48 | M12XP1 | 33 | 7 | 10 | --- | 4 | 21 | 17 |
| E2E-X□M□L8-M3/M5 | M8XP1 | 49 | M8XP1 | 36 | 6 | 8 | --- | 3 | 15 | 13 |
| E2E-X□M□L8-M1 | M8XP1 | 53 | M12XP1 | 36 | 6 | 8 | --- | 3 | 15 | 13 |
| E2E-X□M□L12-M1 | M12XP1 | 70 | M12XP1 | 55 | 7 | 10 | --- | 4 | 21 | 17 |
| E2E-X□M□L18-M1 | M18XP1 | 75 | M12XP1 | 60 | 13 | 12 | --- | 4 | 29 | 24 |
| E2E-X40M□L30-M1 | M30XP1.5 | 80 | M12XP1 | 65 | 15 | 10 | --- | 5 | 42 | 36 |
| E2E-X50M□L30-M1 | M30XP1.5 | 95 | M12XP1 | 80 | 15 | 12 | --- | 5 | 42 | 36 |

* Mounting part of sensor lock O-ring (Y92E-J□S□) ---:Out of a subject.

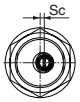
**Mounting Hole Dimensions**


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

**Angle R of the Bending Wire**


| Dimensions | R (mm) |
|---|---|
| M8 | 12 |
| M12 | |
| M18 | 18 |
| M30 | |

**Wire pullout position**

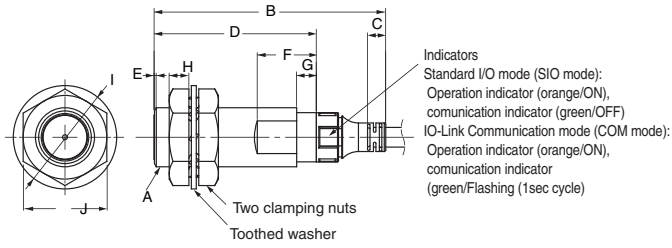



| Dimensions | Sc (mm) |
|---|---|
| M8 | - (0) |
| M12 | |
| M18 | 2.5 |
| M30 | |

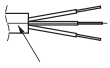
BASIC Model

# E2E/E2EQ NEXT Series
## (Double distance/Single distance/Spatter-resistant, Double distance/Single distance model)
### DC 3-Wire

### Pre-wired Model/Pre-wired Connector Model
### Shielded/Unshielded




**Pre-wired Models**
(Operation mode: NO, NC Type)

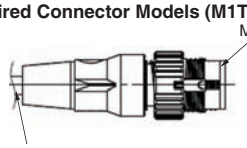


Vinyl-insulated round cable with
3 conductors
M8, M12 size: 4-dia.
M18, M30 size: 6-dia.
(Conductor cross section:
0.2 mm² (AWG24),
Insulator diameter: 1.05 mm),
Standard length: 2 m

(Operation mode: NO+NC Type)

Vinyl-insulated round cable with
4 conductors
M12 size: 4.3-dia.
M18, M30 size: 6-dia.
(Conductor cross section: 0.2 mm²
(AWG24),
Insulator diameter: 1.05 mm),
Standard length: 2 m

**Pre-wired Connector Models (M1TJ)**




(Operation mode: NO, NC Type)

Vinyl-insulated round cable with
3 conductors
M8, M12 size: 4-dia.
M18, M30 size: 6-dia.
(Conductor cross section:
0.2 mm² (AWG24),
Insulator diameter: 1.05 mm),
Standard length: 0.3 m

(Operation mode: NO+NC Type)

Vinyl-insulated round cable with
4 conductors
M12 size: 4.3-dia.
M18, M30 size: 6-dia.
(Conductor cross section: 0.2 mm²
(AWG24),
Insulator diameter: 1.05 mm),
Standard length: 0.3 m

**Shielded**

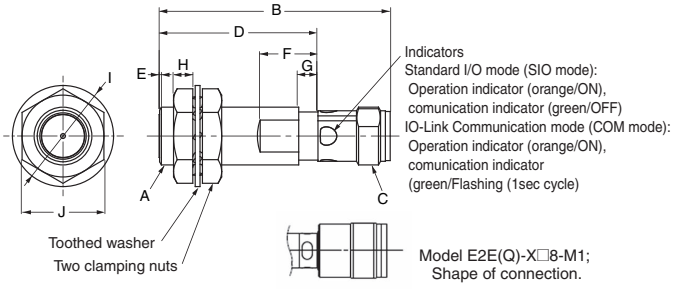
| Model | A | B | C | D | E | F *1 | G *2 | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|
| E2E(Q)-X□8 | M8XP1 | 37.8 | 4.4 | 26 | --- | 10 (8) | 4 | 3 | 15 | 13 |
| E2E(Q)-X□12 | M12XP1 | 47.1 | 3.7 | 33 | --- | 12 (10) | 4 | 4 | 21 | 17 |
| E2E(Q)-X□18 | M18XP1 | 55.3 | 8.5 | 38 | --- | 12 (10) | 4 | 4 | 29 | 24 |
| E2E(Q)-X□30 | M30XP1.5 | 60.3 | 8.3 | 43 | --- | 12 (10) | 4 | 5 | 42 | 36 |
| E2E-X□L8 | M8XP1 | 47.8 | 4.4 | 36 | --- | 8 | --- | 3 | 15 | 13 |
| E2E-X□L12 | M12XP1 | 69.1 | 3.7 | 55 | --- | 10 | --- | 4 | 21 | 17 |
| E2E-X□L18 | M18XP1 | 77.3 | 8.5 | 60 | --- | 10 | --- | 4 | 29 | 24 |
| E2E-X□L30 | M30XP1.5 | 82.3 | 8.3 | 65 | --- | 10 | --- | 5 | 42 | 36 |

**Unshielded**

| Model | A | B | C | D | E *3 | F | G *2 | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|
| E2E-X□M□8 | M8XP1 | 37.8 | 4.4 | 26 | 6 | 8 | --- | 3 | 15 | 13 |
| E2E-X□M□12 | M12XP1 | 47.1 | 3.7 | 33 | 7 | 10 | --- | 4 | 21 | 17 |
| E2E-X□M□18 | M18XP1 | 55.3 | 8.5 | 38 | 10 | 10 | --- | 4 | 29 | 24 |
| E2E-X□M□30 | M30XP1.5 | 60.3 | 8.3 | 43 | 13 | 10 | --- | 5 | 42 | 36 |
| E2E-X□M□L8 | M8XP1 | 47.8 | 4.4 | 36 | 6 | 8 | --- | 3 | 15 | 13 |
| E2E-X□M□L12 | M12XP1 | 69.1 | 3.7 | 55 | 7 | 10 | --- | 4 | 21 | 17 |
| E2E-X□M□L18 | M18XP1 | 77.3 | 8.5 | 60 | 10 | 10 | --- | 4 | 29 | 24 |
| E2E-X□M□L30 | M30XP1.5 | 82.3 | 8.3 | 65 | 130 (15) | 10 | --- | 5 | 42 | 36 |

*1. If using the E2EQ, refer to ( ) dimensions.
*2. Mounting part of sensor lock O-ring (Y92E-J□S□) ---: Out of a subject.
*3. When using X30M□30, refer to (15).

### Connector Models
### (M12 Connector, M8 (4-pin) Connector and M8 (3-pin) Connector)
### Shielded/Unshielded




**Shielded**

| Model | A | B | C | D | E | F *1 | G *2 | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|
| E2E(Q)-X□30 X□8-M3/M5 | M8XP1 | 39 | M8XP1 | 26 | --- | 10 (8) | 4 | 3 | 15 | 13 |
| E2E(Q)-X□8-M1 | M8XP1 | 43 | M12XP1 | 26 | --- | 10 (8) | 4 | 3 | 15 | 13 |
| E2E(Q)-X□12-M1 | M12XP1 | 48 | M12XP1 | 33 | --- | 12 (10) | 4 | 4 | 21 | 17 |
| E2E(Q)-X□18-M1 | M18XP1 | 53 | M12XP1 | 38 | --- | 12 (10) | 4 | 4 | 29 | 24 |
| E2E(Q)-X□30-M1 | M30XP1.5 | 58 | M12XP1 | 43 | --- | 12 (10) | 4 | 5 | 42 | 36 |
| E2E-X□L8-M3/M5 | M8XP1 | 49 | M8XP1 | 36 | --- | 8 | --- | 3 | 15 | 13 |
| E2E-X□L8-M1 | M8XP1 | 53 | M12XP1 | 36 | --- | 8 | --- | 3 | 15 | 13 |
| E2E-X□L12-M1 | M12XP1 | 70 | M12XP1 | 55 | --- | 10 | --- | 4 | 21 | 17 |
| E2E-X□L18-M1 | M18XP1 | 75 | M12XP1 | 60 | --- | 10 | --- | 4 | 29 | 24 |
| E2E-X□L30-M1 | M30XP1.5 | 80 | M12XP1 | 65 | --- | 10 | --- | 5 | 42 | 36 |

**Unshielded**

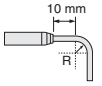
| Model | A | B | C | D | E *3 | F | G *2 | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|
| E2E-X□M□8-M3/M5 | M8XP1 | 39 | M8XP1 | 26 | 6 | 8 | --- | 3 | 15 | 13 |
| E2E-X□M□8-M1 | M8XP1 | 43 | M12XP1 | 26 | 6 | 8 | --- | 3 | 15 | 13 |
| E2E-X□M□12-M1 | M12XP1 | 48 | M12XP1 | 26 | 7 | 10 | --- | 4 | 21 | 17 |
| E2E-X□M□18-M1 | M18XP1 | 53 | M12XP1 | 38 | 10 | 10 | --- | 4 | 29 | 24 |
| E2E-X□M□30-M1 | M30XP1.5 | 58 | M12XP1 | 43 | 13 | 10 | --- | 5 | 42 | 36 |
| E2E-X□M□L8-M3-M5 | M8XP1 | 49 | M8XP1 | 36 | 6 | 8 | --- | 3 | 15 | 13 |
| E2E-X□M□L8-M1 | M8XP1 | 53 | M12XP1 | 36 | 6 | 8 | --- | 3 | 15 | 13 |
| E2E-X□M□L12-M1 | M12XP1 | 70 | M12XP1 | 55 | 7 | 10 | --- | 4 | 21 | 17 |
| E2EX□M□L18-M1 | M18XP1 | 75 | M12XP1 | 60 | 10 | 10 | --- | 4 | 29 | 24 |
| E2E-X□M□L30-M1 | M30XP1.5 | 80 | M12XP1 | 65 | 130 (15) | 10 | --- | 5 | 42 | 36 |

*1. If using the E2EQ, refer to ( ) dimensions.
*2. Mounting part of sensor lock O-ring (Y92E-J□S□) ---: Out of a subject.
*3. When using X30M□30, refer to (15).

**Mounting Hole Dimensions**

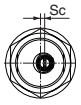

| Dimensions | F (mm) |
|---|---|
| M8 | 8.5 dia. $^{+0.5}_{0}$ |
| M12 | 12.5 dia. $^{+0.5}_{0}$ |
| M18 | 18.5 dia. $^{+0.5}_{0}$ |
| M30 | 30.5 dia. $^{+0.5}_{0}$ |

**Angle R of the Bending Wire**




| Dimensions | R (mm) |
|---|---|
| M8 | 12 |
| M12 | |
| M18 | 18 |
| M30 | |

**Wire pullout position**

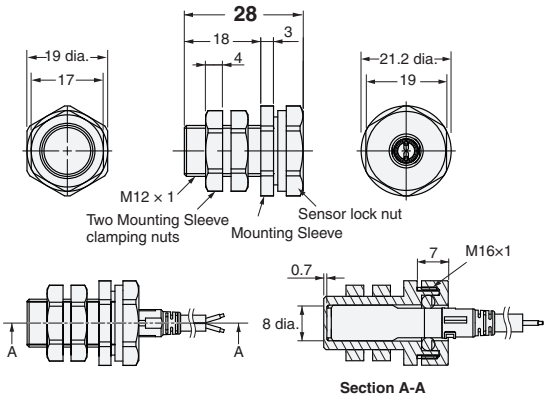



| Dimensions | Sc (mm) |
|---|---|
| M8 | - (0) |
| M12 | |
| M18 | 2.5 |
| M30 | |

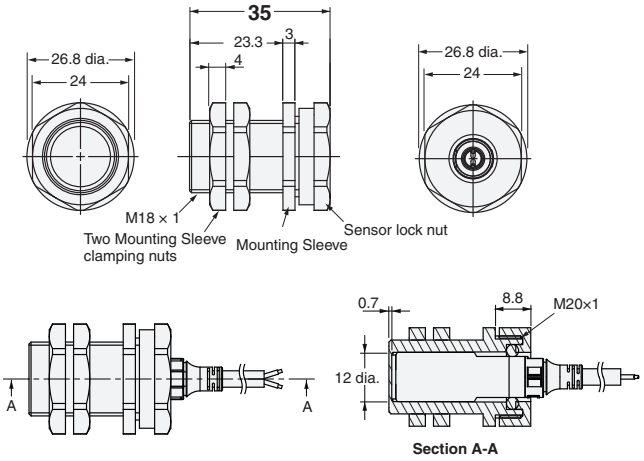
## Accessories (Sold Separately)

### e-jig (Mounting Sleeves)

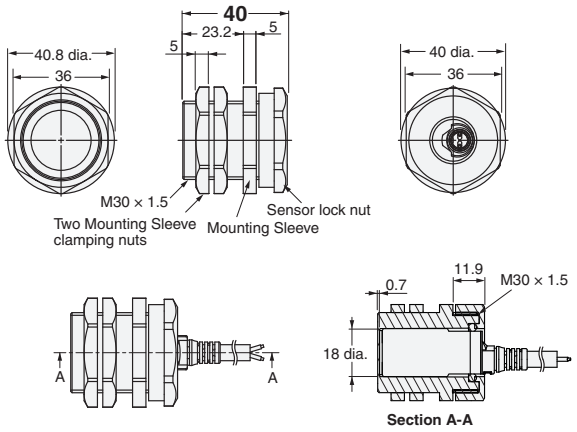
**Y92E-J8S12**




**Y92E-J12S18**




**Y92E-J18S30**




### Material

| | |
|---|---|
| **Mounting Sleeve** | Polyetheretherketone (PEEK) / Polybutylene terephthalate (PBT) |
| **Mounting Sleeve clamping nut** | Polybutylene terephthalate (PBT) |
| **Sensor lock nut** | Polybutylene terephthalate (PBT) |
| **Sensor lock O-ring** | Material combining HNBR and fluororubber |

### Tightening Force

| Model | Torque | |
|---|---|---|
| | Mounting Sleeve clamping nut | Sensor lock nut |
| **Y92E-J8S12** | 0.6 N•m | 0.6 N•m |
| **Y92E-J12S18** | 1.2 N•m | 1.2 N•m |
| **Y92E-J18S30** | 5 N•m | 3.5 N•m |

## Long-distance Detection Prevents Unexpected Facility Stoppages

- The world's longest sensing distance*1
  Nearly double the sensing distance of previous
- With high-brightness LED, the indicator is visible anywhere from 360°.
- Only 10 Seconds*2 to Replace a Proximity Sensor with the "e-jig" (Mounting Sleeve).
- Cables with enhanced oil resistance enabled 2-year oil resistance*3.
- UL certification (UL60947-5-2) and CSA certification (CSA C22.2 UL60947-5-2-14)

*1. Based on July 2017 OMRON investigation.
*2. Time required to adjust the distance when installing a Sensor. Based on OMRON investigation.
*3. Refer to page 72 and 74 for details. However, E2EQ series is excluded.

Be sure to read *Safety Precautions* on page 80.

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

## E2E/E2EQ NEXT Series Model Number Legend

### DC 2-wire

E2E (1) - X (2) (3) D (4) (5) (6) - (7) - (8) (9) - (10) (11)

| No. | Classification | Code | Meaning |
|---|---|---|---|
| (1) | Case | Blank | Without spatter-resistant coating |
| | | Q | With spatter-resistant coating |
| (2) | Sensing distance | Number | Sensing distance (Unit: mm) (R: Indication of decimal point) |
| (3) | Shielding | Blank | Shielded Models |
| | | M | Unshielded Models |
| (4) | Operation mode | 1 | Normally open (NO) |
| | | 2 | Normally closed (NC) |
| (5) | Body size | Blank | Standard |
| | | L | Long Body |
| (6) | Size (Omitted for the Single distance type.) | 8 | M8 |
| | | 12 | M12 |
| | | 18 | M18 |
| | | 30 | M30 |
| (7) | Connecting method | Blank | Pre-wired Models |
| | | M1TGJ | M12 Pre-wired Smartclick Connector Models |
| | | M1TGJR | M12 Pre-wired Smartclick Connector Models (Robot (bending-resistant) PVC cable) |
| (8) | Polarity | Blank | Polarity |
| | | T | No polarity |
| (9) | Cable specifications * | Blank | Standard PVC cable |
| | | R | Robot (bending-resistant) PVC cable |
| (10) | New model | Blank | Other than Single distance model (Pre-wired Models) |
| | | N | Single distance model (Applicable only to Pre-wired Models) |
| (11) | Cable length | Number M | Cable length |

* (9) is only shown in the model number of Pre-wired Models.

**Note: 1.** 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.
**2.** Size description of the number 7 is not included in the Single-distance type.

# Ordering Information

## Sensors

**E2E NEXT Series (Triple distance model)**
**DC 2-wire [Refer to *Dimensions* on page 82.]**
**Shielded Models *1**

| Size (Sensing distance) | Connection method | Polarity | Model | |
|---|---|---|---|---|
| | | | Operation mode: NO | Operation mode: NC |
| M8 (3 mm) | Pre-wired (2 m) *2 *3 | Yes | E2E-X3D18 2M | E2E-X3D28 2M |
| | | No | E2E-X3D18-T 2M | E2E-X3D28-T 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) *4 | Yes | E2E-X3D18-M1TGJ 0.3M | E2E-X3D28-M1TGJ 0.3M |
| | | No | E2E-X3D18-M1TGJ-T 0.3M | E2E-X3D28-M1TGJ-T 0.3M |
| M12 (7 mm) | Pre-wired (2 m) *2 *3 | Yes | E2E-X7D112 2M | E2E-X7D212 2M |
| | | No | E2E-X7D112-T 2M | E2E-X7D212-T 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) *4 | Yes | E2E-X7D112-M1TGJ 0.3M | E2E-X7D212-M1TGJ 0.3M |
| | | No | E2E-X7D112-M1TGJ-T 0.3M | E2E-X7D212-M1TGJ-T 0.3M |
| M18 (11 mm) | Pre-wired (2 m) *2 *3 | Yes | E2E-X11D118 2M | E2E-X11D218 2M |
| | | No | E2E-X11D118-T 2M | E2E-X11D218-T 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) *4 | Yes | E2E-X11D118-M1TGJ 0.3M | E2E-X11D218-M1TGJ 0.3M |
| | | No | E2E-X11D118-M1TGJ-T 0.3M | E2E-X11D218-M1TGJ-T 0.3M |
| M30 (20 mm) | Pre-wired (2 m) *2 *3 | Yes | E2E-X20D130 2M | E2E-X20D230 2M |
| | | No | E2E-X20D130-T 2M | E2E-X20D230-T 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) *4 | Yes | E2E-X20D130-M1TGJ 0.3M | E2E-X20D230-M1TGJ 0.3M |
| | | No | E2E-X20D130-M1TGJ-T 0.3M | E2E-X20D230-M1TGJ-T 0.3M |

**Unshielded Models**

| Size (Sensing distance) | Connection method | Polarity | Model | |
|---|---|---|---|---|
| | | | Operation mode: NO | Operation mode: NC |
| M8 (6 mm) | Pre-wired (2 m) *2 *3 | Yes | E2E-X6MD18 2M | E2E-X6MD28 2M |
| | | No | E2E-X6MD18-T 2M | E2E-X6MD28-T 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) *4 | Yes | E2E-X6MD18-M1TGJ 0.3M | E2E-X6MD28-M1TGJ 0.3M |
| | | No | E2E-X6MD18-M1TGJ-T 0.3M | E2E-X6MD28-M1TGJ-T 0.3M |
| M12 (10 mm) | Pre-wired (2 m) *2 *3 | Yes | E2E-X10MD112 2M | E2E-X10MD212 2M |
| | | No | E2E-X10MD112-T 2M | E2E-X10MD212-T 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) *4 | Yes | E2E-X10MD112-M1TGJ 0.3M | E2E-X10MD212-M1TGJ 0.3M |
| | | No | E2E-X10MD112-M1TGJ-T 0.3M | E2E-X10MD212-M1TGJ-T 0.3M |
| M18 (20 mm) | Pre-wired (2 m) *2 *3 | Yes | E2E-X20MD1L18 2M | E2E-X20MD2L18 2M |
| | | No | E2E-X20MD1L18-T 2M | E2E-X20MD2L18-T 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) *4 | Yes | E2E-X20MD1L18-M1TGJ 0.3M | E2E-X20MD2L18-M1TGJ 0.3M |
| | | No | E2E-X20MD1L18-M1TGJ-T 0.3M | E2E-X20MD2L18-M1TGJ-T 0.3M |
| M30 (40 mm) | Pre-wired (2 m) *2 *3 | Yes | E2E-X40MD1L30 2M | E2E-X40MD2L30 2M |
| | | No | E2E-X40MD1L30-T 2M | E2E-X40MD2L30-T 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) *4 | Yes | E2E-X40MD1L30-M1TGJ 0.3M | E2E-X40MD2L30-M1TGJ 0.3M |
| | | No | E2E-X40MD1L30-M1TGJ-T 0.3M | E2E-X40MD2L30-M1TGJ-T 0.3M |

*1. When embedding the Proximity Sensor in metal, refer to *Influence of Surrounding Metal* on page 81.
*2. Models with 5-m cable length are also available with "5M" suffix. (Example: E2E-X3D18 5M)
*3. Models with 2-m and 5-m robot (bending-resistant) cables are also available with "-R" in the model number. (Example: E2E-X3D18-R 2M/E2E-X3D18-R 5M)
*4. Models with M12 Pre-wired Smartclick Connectors and robot (bending-resistant) cables are also available with "R" in the model number. (Example: E2E-X3D18-M1TGJR 0.3M/E2E-X3D18-M1TGJR-T 0.3M)

# Sensors

## E2EQ NEXT Series (Spatter-resistant Triple distance model)

### DC 2-wire [Refer to *Dimensions* on page 84.]

**Shielded Models *1**

| Size (Sensing distance) | Connection method | Polarity | Model | |
|---|---|---|---|---|
| | | | Operation mode: NO | Operation mode: NC |
| M8 (3 mm) | Pre-wired (2 m) *2 | Yes | E2EQ-X3D18 2M | E2EQ-X3D28 2M |
| | | No | E2EQ-X3D18-T 2M | E2EQ-X3D28-T 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | Yes | E2EQ-X3D18-M1TGJ 0.3M | E2EQ-X3D28-M1TGJ 0.3M |
| | | No | E2EQ-X3D18-M1TGJ-T 0.3M | E2EQ-X3D28-M1TGJ-T 0.3M |
| M12 (7 mm) | Pre-wired (2 m) *2 | Yes | E2EQ-X7D112 2M | E2EQ-X7D212 2M |
| | | No | E2EQ-X7D112-T 2M | E2EQ-X7D212-T 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | Yes | E2EQ-X7D112-M1TGJ 0.3M | E2EQ-X7D212-M1TGJ 0.3M |
| | | No | E2EQ-X7D112-M1TGJ-T 0.3M | E2EQ-X7D212-M1TGJ-T 0.3M |
| M18 (11 mm) | Pre-wired (2 m) *2 | Yes | E2EQ-X11D118 2M | E2EQ-X11D218 2M |
| | | No | E2EQ-X11D118-T 2M | E2EQ-X11D218-T 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | Yes | E2EQ-X11D118-M1TGJ 0.3M | E2EQ-X11D218-M1TGJ 0.3M |
| | | No | E2EQ-X11D118-M1TGJ-T 0.3M | E2EQ-X11D218-M1TGJ-T 0.3M |
| M30 (20 mm) | Pre-wired (2 m) *2 | Yes | E2EQ-X20D130 2M | E2EQ-X20D230 2M |
| | | No | E2EQ-X20D130-T 2M | E2EQ-X20D230-T 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) | Yes | E2EQ-X20D130-M1TGJ 0.3M | E2EQ-X20D230-M1TGJ 0.3M |
| | | No | E2EQ-X20D130-M1TGJ-T 0.3M | E2EQ-X20D230-M1TGJ-T 0.3M |

*1. When embedding the Proximity Sensor in metal, refer to *Influence of Surrounding Metal* on page 81.
*2. Models with 5-m cable length are also available with "5M" suffix. (Example: E2EQ-X3D18 5M)

## E2E NEXT Series (Single distance model)

### DC 2-wire [Refer to *Dimensions* on page 85.]

**Shielded Models**

| Size (Sensing distance) | Connection method | Polarity | Model | |
|---|---|---|---|---|
| | | | Operation mode: NO | Operation mode: NC |
| M8 (1.5 mm) | Pre-wired (2 m) *2 *3 | Yes | E2E-X1R5D1-N 2M | E2E-X1R5D2-N 2M |
| | | No | E2E-X1R5D1-T-N 2M | E2E-X1R5D2-T-N 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) *4 | Yes | E2E-X1R5D1-M1TGJ 0.3M | E2E-X1R5D2-M1TGJ 0.3M |
| | | No | E2E-X1R5D1-M1TGJ-T 0.3M | E2E-X1R5D2-M1TGJ-T 0.3M |
| M12 (2.5 mm) | Pre-wired (2 m) *2 *3 | Yes | E2E-X2R5D1-N 2M | E2E-X2R5D2-N 2M |
| | | No | E2E-X2R5D1-T-N 2M | E2E-X2R5D2-T-N 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) *4 | Yes | E2E-X2R5D1-M1TGJ 0.3M | E2E-X2R5D2-M1TGJ 0.3M |
| | | No | E2E-X2R5D1-M1TGJ-T 0.3M | E2E-X2R5D2-M1TGJ-T 0.3M |
| M18 (5 mm) | Pre-wired (2 m) *2 *3 | Yes | E2E-X5D1-N 2M | E2E-X5D2-N 2M |
| | | No | E2E-X5D1-T-N 2M | E2E-X5D2-T-N 2M |
| | M12 Pre-wired Smartclick Connector (0.3 m) *4 | Yes | E2E-X5D1-M1TGJ 0.3M | E2E-X5D2-M1TGJ 0.3M |
| | | No | E2E-X5D1-M1TGJ-T 0.3M | E2E-X5D2-M1TGJ-T 0.3M |

*1. Models with 5-m cable length are also available with "5M" suffix. (Example: E2E-X1R5D1-N 5M)
*2. Models with 2-m and 5-m robot (bending-resistant) cables are also available with "-R" in the model number. (Example: E2E-X1R5D1-R-N 2M/E2E-X1R5D1-R-N 5M)
*3. Models with M12 Smartclick connector model robot (bending-resistant) cables are also available with "R" in the model number. (Example: E2E-X1R5D1-M1TGJR 0.3M/E2E-X1R5D1-M1TGJR-T 0.3M)

## Accessories (Sold Separately)

### Sensor I/O Connectors

**(Models for Pre-wired Connectors) A Sensor I/O Connector is not provided with the Sensor. It must be ordered separately as required.**

**Round Oil-resistant Connectors XS5 NEXT series**

| Appearance | Cable Specification | Type | Cable diameter (mm) | Cable Connection Direction | Cable length (m) | Sensor I/O Connector model number | Applicable Proximity Sensor model number |
|---|---|---|---|---|---|---|---|
| M12 Smartclick Connector<br>Straight type<br>  | Oil-resistant PVC cable | Sockets on One Cable End | 6 dia. | Straight | 1 | **XS5F-D421-C80-X** | E2E-X□D□-M1TGJ(R)(-T)<br>E2EQ-X□D□-M1TGJ(-T) |
| | | | | | 2 | **XS5F-D421-D80-X** | |
| | | | | | 3 | **XS5F-D421-E80-X** | |
| | | | | | 5 | **XS5F-D421-G80-X** | |
| | | | | | 10 | **XS5F-D421-J80-X** | |
| | Oil-resistant PVC robot cable | Sockets on One Cable End | 6 dia. | Straight | 1 | **XS5F-D421-C80-XR** | |
| | | | | | 2 | **XS5F-D421-D80-XR** | |
| | | | | | 3 | **XS5F-D421-E80-XR** | |
| | | | | | 5 | **XS5F-D421-G80-XR** | |
| | | | | | 10 | **XS5F-D421-J80-XR** | |
| | Oil-resistant PVC cable | Socket and Plug on Cable Ends | 6 dia. | Straight (Socket)/ Straight (Plug) | 1 | **XS5W-D421-C81-X** | |
| | | | | | 2 | **XS5W-D421-D81-X** | |
| | | | | | 3 | **XS5W-D421-E81-X** | |
| | | | | | 5 | **XS5W-D421-G81-X** | |
| | | | | | 10 | **XS5W-D421-J81-X** | |
| | Oil-resistant PVC robot cable | Socket and Plug on Cable Ends | 6 dia. | Straight (Socket)/ Straight (Plug) | 1 | **XS5W-D421-C81-XR** | |
| | | | | | 2 | **XS5W-D421-D81-XR** | |
| | | | | | 3 | **XS5W-D421-E81-XR** | |
| | | | | | 5 | **XS5W-D421-G81-XR** | |
| | | | | | 10 | **XS5W-D421-J81-XR** | |

**Note:** For details of the connector, refer to *XS5 NEXT Series* on page 87.

**Round Water-resistant Connectors XS5 series**

| Appearance | Cable Specification | Type | Cable diameter (mm) | Cable Connection Direction | Cable length (m) | Sensor I/O Connector model number | Applicable Proximity Sensor model number |
|---|---|---|---|---|---|---|---|
| M12 Smartclick Connector<br>Straight type<br>  <br>Right-angle type<br>  | PVC robot cable | Sockets on One Cable End | 6 dia. | Straight | 1 | **XS5F-D421-C80-F** | E2E-X□D□-M1TGJ(R)(-T)<br>E2EQ-X□D□-M1TGJ(-T) |
| | | | | | 2 | **XS5F-D421-D80-F** | |
| | | | | | 3 | **XS5F-D421-E80-F** | |
| | | | | | 5 | **XS5F-D421-G80-F** | |
| | | | | | 10 | **XS5F-D421-J80-F** | |
| | | | | Right-angle | 1 | **XS5F-D422-C80-F** | |
| | | | | | 2 | **XS5F-D422-D80-F** | |
| | | | | | 3 | **XS5F-D422-E80-F** | |
| | | | | | 5 | **XS5F-D422-G80-F** | |
| | | | | | 10 | **XS5F-D422-J80-F** | |
| | | Socket and Plug on Cable Ends | 6 dia. | Straight (Socket)/ Straight (Plug) | 1 | **XS5W-D421-C81-F** | |
| | | | | | 2 | **XS5W-D421-D81-F** | |
| | | | | | 3 | **XS5W-D421-E81-F** | |
| | | | | | 5 | **XS5W-D421-G81-F** | |
| | | | | | 10 | **XS5W-D421-J81-F** | |
| | | | | Right-angle (Socket)/ Right-angle (Plug) | 2 | **XS5W-D422-D81-F** | |
| | | | | | 5 | **XS5W-D422-G81-F** | |
| | | | | Straight (Socket)/ Right-angle (Plug) | 2 | **XS5W-D423-D81-F** | |
| | | | | | 5 | **XS5W-D423-G81-F** | |
| | | | | Right-angle (Socket)/ Straight (Plug) | 2 | **XS5W-D424-D81-F** | |
| | | | | | 5 | **XS5W-D424-G81-F** | |

**Note:** For details of the connector, refer to *XS5 Series* on page 94.

## Sensor I/O Connectors Oil resistance performance of mating combination

| E2E NEXT Series Pre-wired Connector Models | Applicable connector Model | |
|---|---|---|
| | XS5 NEXT series | XS5 series |
| E2E-X□D□-M1TGJ(R)(-T) | 2 years of oil resistance* | Water-resistant (IP67) |

* Applicable cutting oil type: specified in JIS K 2241:2000
2 years of oil resistance indicates the median value of the product design and the oil-resistance performance criterion result (=Typical value).
Products to be shipped will have around 2 years of oil resistance, but will very depending on the product.

## e-jig (Mounting Sleeves) [Refer to Dimensions on page 86.]

A Mounting Bracket is not provided with the Sensor. It must be ordered separately as required.

| Appearance | Model | Applicable Sensors |
|---|---|---|
|  | Y92E-J8S12 | E2E NEXT M8 Shielded Sensors |
| | Y92E-J12S18 | E2E NEXT M12 Shielded Sensors |
| | Y92E-J18S30 | E2E NEXT M18 Shielded Sensors |

**Note:** Not applicable for E2EQ NEXT Series (spatter-resistant) models.

# E2E/E2EQ NEXT Series

# Ratings and Specifications

## E2E NEXT Series (Triple distance model)

### DC 2-wire

| Size | | M8 | | M12 | | M18 | | M30 | |
|---|---|---|---|---|---|---|---|---|---|
| Shielded | | Shielded | Unshielded | Shielded | Unshielded | Shielded | Unshielded | Shielded | Unshielded |
| Item | Model | E2E-X3D□ | E2E-X6MD□ | E2E-X7D□ | E2E-X10MD□ | E2E-X11D□ | E2E-X20MD□ | E2E-X20D□ | E2E-X40MD□ |
| Sensing distance | | 3 mm ±10% | 6 mm ±10% | 7 mm ±10% | 10 mm ±10% | 11 mm ±10% | 20 mm ±10% | 20 mm ±10% | 40 mm ±10% |
| Setting distance *1 | | 0 to 2.4 mm | 0 to 4.8 mm | 0 to 5.6 mm | 0 to 8 mm | 0 to 8.8 mm | 0 to 16 mm | 0 to 16 mm | 0 to 32 mm |
| Differential travel | | 15% max. of sensing distance | | | | | | | |
| Detectable object | | Ferrous metal (The sensing distance decreases with non-ferrous metal. Refer to *Engineering Data* on page 75.) | | | | | | | |
| Standard sensing object | | Iron, 9 × 9 × 1 mm | Iron, 18 × 18 × 1 mm | Iron, 21 × 21 × 1 mm | Iron, 30 × 30 × 1 mm | Iron, 33 × 33 × 1 mm | Iron, 60 × 60 × 1 mm | Iron, 60 × 60 × 1 mm | Iron, 120 × 120 × 1 mm |
| Response frequency *2 | | 350 Hz | 250 Hz | 350 Hz | 200 Hz | 250 Hz | 200 Hz | 200 Hz | 50 Hz |
| Power supply voltage | | 10 to 30 VDC, (including 10% ripple (p-p)) | | | | | | | |
| Leakage current | | 0.8 mA max. | | | | | | | |
| Control output | Load current | 3 to 100 mA | | | | | | | |
| | Residual voltage | Polarity: 3 V max. (Load current: 100 mA, Cable length: 2 m)<br>No polarity: 5 V max. (Load current: 100 mA, Cable length: 2 m) | | | | | | | |
| Indicator | | D1 Models: Operation indicator (orange), Setting indicator (green)<br>D2 Models: Operation indicator (orange) | | | | | | | |
| Operation mode | | D1 Models: NO<br>D2 Models: NC Refer to the timing charts under *I/O Circuit Diagrams* on page 78 for details. | | | | | | | |
| Protection circuits | | Surge suppressor, Load short-circuit protection | | | | | | | |
| Ambient temperature range | | Operating: -25 to 70°C, Storage: -40 to 85°C (with no icing or condensation) | | | | | | | |
| Ambient humidity range | | Operating and Storage: 35% to 95% (with no condensation) | | | | | | | |
| Temperature influence | | ±10% max. of sensing distance at 23°C in the temperature range of -25 to 70°C | | | | ±20% 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 | ±20% 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-carrying parts and case | | | | | | | |
| Vibration resistance (destruction) | | 10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions | | | | | | | |
| Shock resistance (destruction) | | 500 m/s$^2$ 10 times each in X, Y, and Z directions | | 1,000 m/s$^2$ 10 times each in X, Y, and Z directions | | | | | |
| Degree of protection | | Pre-wired Models/Pre-wired Connector Models: IP67 (IEC 60529), IP67G *3 (JIS C 0920 Annex 1) Passed OMRON's Oil-resistant Component Evaluation Standards *4 (Cutting oil type: specified in JIS K 2241:2000, Temperature: 35 °C max.) and ISO 20653 (old standard: DIN 40050 PART9) IP69K | | | | | | | |
| Connecting method | | Pre-wired Models (Standard cable length: 2 m) and 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. 150 g | Approx. 180 g | Approx. 210 g |
| | Pre-wired Connector Models | Approx. 30 g | | Approx. 40 g | | Approx. 70 g | Approx. 90 g | Approx.110 g | Approx. 140 g |
| Materials | Case | Nickel-plated brass | Stainless steel (SUS303) | Nickel-plated brass | | | | | |
| | Sensing surface | Polybutylene terephthalate (PBT) | | | | | | | |
| | Clamping nuts | Nickel-plated brass | | | | | | | |
| | Toothed washer | Zinc-plated iron | | | | | | | |
| | Cable | Vinyl chloride (PVC) | | | | | | | |
| Accessories | | Instruction manual, Clamping nuts, Toothed washer | | | | | | | |

*1. Use the Sensor 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. The IP67G is the degree of protection which is defined according to the JIS (Japanese Industrial Standards).
The IP67 indicates the same level of protection as defined by the IEC, and the G indicates that a device has resistance to oil.
*4. The Oil-resistant Component Evaluation Standards are OMRON's own durability evaluation standards.
2-year oil resistance indicates the median value of the product design and the oil-resistance performance criterion result (=Typical value).
The Pre-wired Connector Model verifies 2 years of oil resistance when mating with Round Oil-resistant Connectors XS5 NEXT series correctly.
The degree of protection is not satisfied with the part where cable wires are uncovered for the Pre-wired Models.

## E2EQ NEXT Series (Spatter-resistant Triple distance model)
## DC 2-wire

| Item | Size | M8 | M12 | M18 | M30 |
|---|---|---|---|---|---|
| | Shielded | Shielded | | | |
| | Model | E2EQ-X3D□ | E2EQ-X7D□ | E2EQ-X11D□ | E2EQ-X20D□ |
| Sensing distance | | 3 mm ±10% | 7 mm ±10% | 11 mm ±10% | 20 mm ±10% |
| Setting distance *1 | | 0 to 2.4 mm | 0 to 5.6 mm | 0 to 8.8 mm | 0 to 16 mm |
| Differential travel | | 15% max. of sensing distance | | | |
| Detectable object | | Ferrous metal (The sensing distance decreases with non-ferrous metal. Refer to *Engineering Data* on page 75.) | | | |
| Standard sensing object | | Iron, 9 × 9 × 1 mm | Iron, 21 × 21 × 1 mm | Iron, 33 × 33 × 1 mm | Iron, 60 × 60 × 1 mm |
| Response frequency *2 | | 250 Hz | 250 Hz | 250 Hz | 200 Hz |
| Power supply voltage | | 10 to 30 VDC, (including 10% ripple (p-p)) | | | |
| Leakage current | | 0.8 mA max. | | | |
| Control output | Load current | 3 to 100 mA | | | |
| | Residual voltage | Polarity: 3 V max. (Load current: 100 mA, Cable length: 2 m)<br>No polarity: 5 V max. (Load current: 100 mA, Cable length: 2 m) | | | |
| Indicator | | D1 Models: Operation indicator (orange), Setting indicator (green)<br>D2 Models: Operation indicator (orange) | | | |
| Operation mode | | D1 Models: NO<br>D2 Models: NC Refer to the timing charts under *I/O Circuit Diagrams* on page 78 for details. | | | |
| Protection circuits | | Surge suppressor, Load short-circuit protection | | | |
| Ambient temperature range | | Operating: -25 to 70°C, Storage: -40 to 85°C (with no icing or condensation) | | | |
| Ambient humidity range | | Operating and Storage: 35% to 95% (with no condensation) | | | |
| Temperature influence | | ±10% max. of sensing distance at 23°C in the temperature range of -25 to 70°C | | ±20% 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-carrying parts and case | | | |
| Vibration resistance (destruction) | | 10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions | | | |
| Shock resistance (destruction) | | 500 m/s² 10 times each in X, Y, and Z directions | 1,000 m/s² 10 times each in X, Y, and Z directions | | |
| Degree of protection | | Pre-wired Models/Pre-wired Connector Models: IP67 (IEC 60529) and IP67G *3 (JIS C 0920 Annex 1) | | | |
| Connecting method | | Pre-wired Models (Standard cable length: 2 m) and Pre-wired Connector Models (Standard cable length: 0.3 m) | | | |
| Weight (packed state) | Pre-wired Models | Approx. 60 g | Approx. 70 g | Approx. 150 g | Approx. 210 g |
| | Pre-wired Connector Models | Approx. 30 g | Approx. 40 g | Approx. 90 g | Approx. 140 g |
| Materials | Case | Fluororesin coating (Base material: brass) | | | |
| | Sensing surface | Fluororesin | | | |
| | Clamping nuts | Fluororesin coating (Base material: brass) | | | |
| | Toothed washer | Zinc-plated iron | | | |
| | Cable | Vinyl chloride (PVC) | | | |
| Accessories | | Instruction manual, Clamping nuts, Toothed washer | | | |

*1. Use the Sensor 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. The IP67G is the degree of protection which is defined according to the JIS (Japanese Industrial Standards).
The IP67 indicates the same level of protection as defined by the IEC, and the G indicates that a device has resistance to oil.

## E2E NEXT Series (Single distance model)
## DC 2-wire

| Item | | Size | M8 | M12 | M18 |
|---|---|---|---|---|---|
| | | Shielded | Shielded | | |
| | | Model | E2E-X1R5D□ | E2E-X2R5D□ | E2E-X5D□ |
| Sensing distance | | | 1.5 mm ±10% | 2.5 mm ±10% | 5 mm ±10% |
| Setting distance *1 | | | 0 to 1.2 mm | 0 to 2 mm | 0 to 4 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 75.) | | |
| Standard sensing object | | | Iron, 10 × 10 × 1 mm | Iron, 12 × 12 × 1 mm | Iron, 18 × 18 × 1 mm |
| Response frequency *2 | | | 250 Hz | 250 Hz | 250 Hz |
| Power supply voltage | | | 10 to 30 VDC, (including 10% ripple (p-p)) | | |
| Leakage current | | | 0.8 mA max. | | |
| Control output | Load current | | 3 to 100 mA | | |
| | Residual voltage | | Polarity: 3 V max. (Load current: 100 mA, Cable length: 2 m)<br>No polarity: 5 V max. (Load current: 100 mA, Cable length: 2 m) | | |
| Indicator | | | D1 Models: Operation indicator (orange), Setting indicator (green)<br>D2 Models: Operation indicator (orange) | | |
| Operation mode | | | D1 Models: NO<br>D2 Models: NC Refer to the timing charts under *I/O Circuit Diagrams* on page 78 for details. | | |
| Protection circuits | | | Surge suppressor, Load short-circuit protection | | |
| Ambient temperature range | | | Operating: -25 to 70°C, Storage: -40 to 85°C (with no icing or condensation) | | |
| Ambient humidity range | | | Operating and Storage: 35% to 95% (with no condensation) | | |
| Temperature influence | | | ±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-carrying parts and case | | |
| Vibration resistance (destruction) | | | 10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions | | |
| Shock resistance (destruction) | | | 500 m/s$^2$ 10 times each in X, Y, and Z directions | 1,000 m/s$^2$ 10 times each in X, Y, and Z directions | |
| Degree of protection | | | Pre-wired Models/Pre-wired Connector Models: IP67 (IEC 60529), IP67G *3 (JIS C 0920 Annex 1) Passed OMRON's Oil-resistant Component Evaluation Standards *4 (Cutting oil type: specified in JIS K 2241:2000, Temperature: 35°C max.) and ISO 20653 (old standard: DIN 40050 PART9) IP69K | | |
| Connecting method | | | Pre-wired Models (Standard cable length: 2 m) and 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 |
| | Pre-wired Connector Models | | Approx. 30 g | Approx. 40 g | Approx. 70 g |
| Materials | Case | | Stainless steel (SUS303) | Nickel-plated brass | |
| | Sensing surface | | Polybutylene terephthalate (PBT) | | |
| | Clamping nuts | | Nickel-plated brass | | |
| | Toothed washer | | Zinc-plated iron | | |
| | Cable | | Vinyl chloride (PVC) | | |
| Accessories | | | Instruction manual, Clamping nuts, Toothed washer | | |

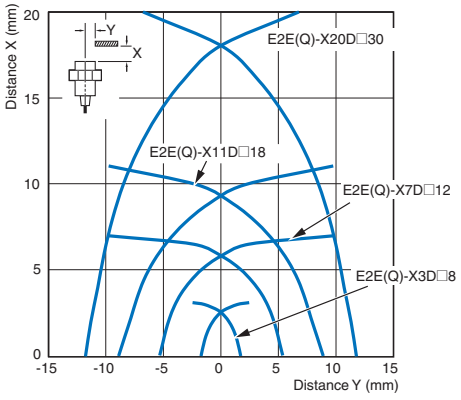
*1. Use the Sensor within the range in which the setting indicator (green LED) is ON (except D2 Models).
*2. The response frequency is an average value. Measurement conditions are as follows: standard sensing object, a distance of twice the standard.
*3. The IP67G is the degree of protection which is defined according to the JIS (Japanese Industrial Standards).
The IP67 indicates the same level of protection as defined by the IEC, and the G indicates that a device has resistance to oil.
*4. The Oil-resistant Component Evaluation Standards are OMRON's own durability evaluation standards.
2-year oil resistance indicates the median value of the product design and the oil-resistance performance criterion result (=Typical value).
The Pre-wired Connector Model verifies 2 years of oil resistance when mating with Round Oil-resistant Connectors XS5 NEXT series correctly.
The degree of protection is not satisfied with the part where cable wires are uncovered for the Pre-wired Models.

# Engineering Data (Reference Value)

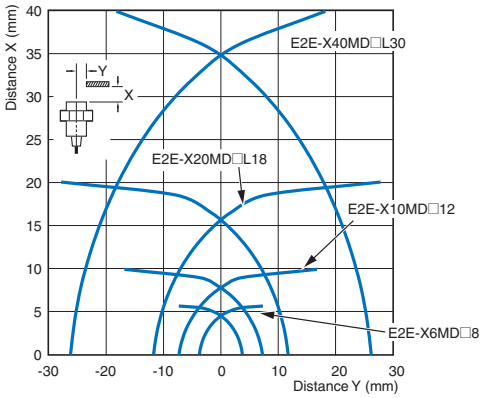
## Sensing Area

### Triple distance model, Spatter-resistant Triple distance model

**Shielded Models**
**E2E(Q)-X□D□**

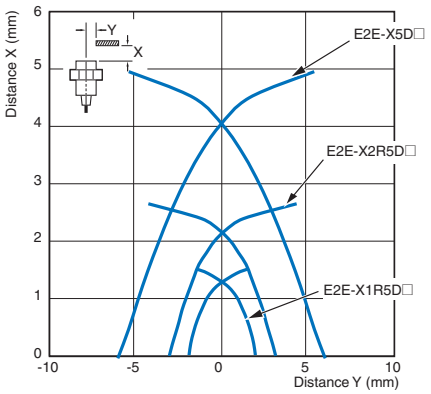



**Unshielded Models**
**E2E-X□MD□**




### Single distance model

**Shielded Models**
**E2E-X1R5D□/-X2R5D□/-X5D□**

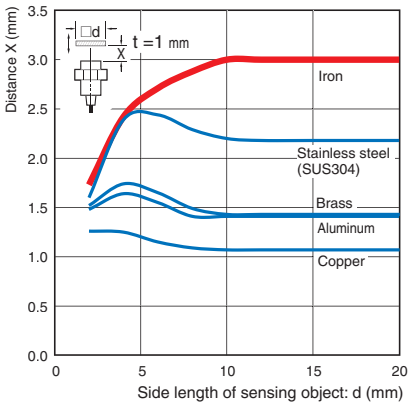


## Influence of Sensing Object Size and Materials

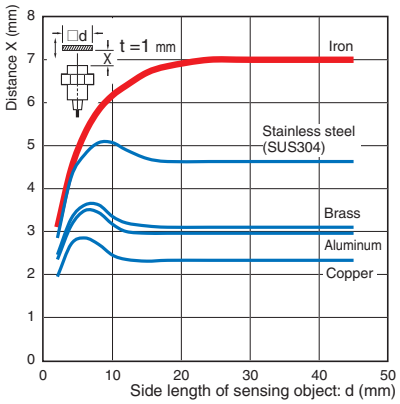
### Triple distance model, Spatter-resistant Triple distance model

#### Shielded Models

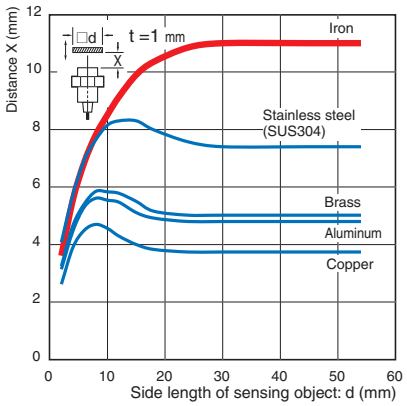
**E2E(Q)-X3D□8**



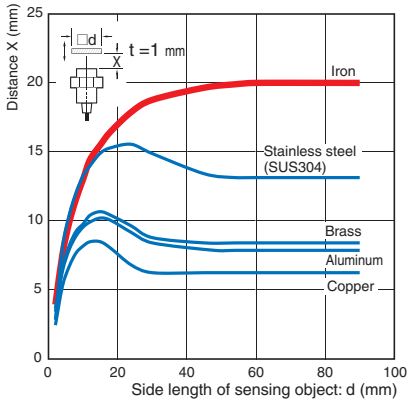

**E2E(Q)-X7D□12**




**E2E(Q)-X11D□18**

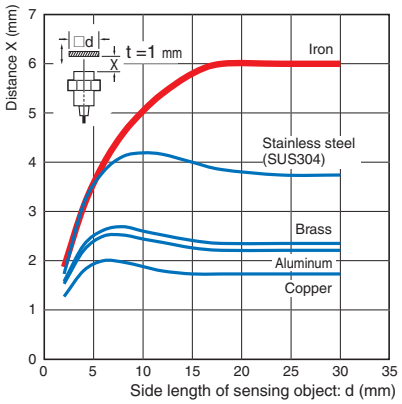



**E2E(Q)-X20D□30**

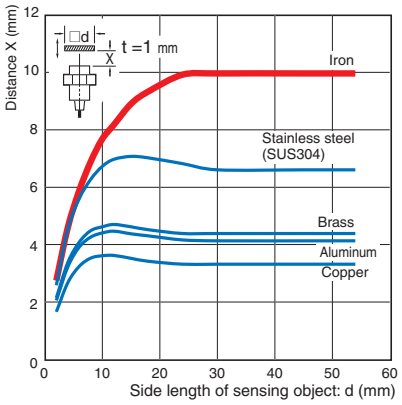



#### Unshielded Models

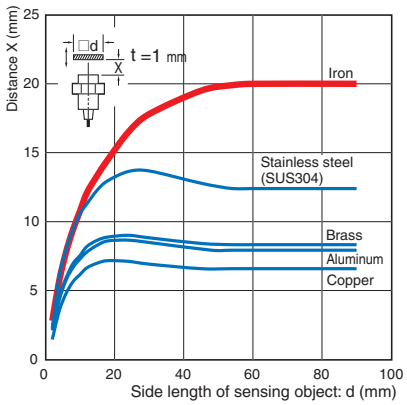
**E2E-X6MD□8**



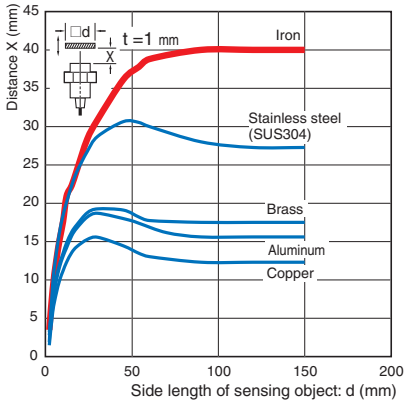

**E2E-X10MD□12**




**E2E-X20MD□L18**



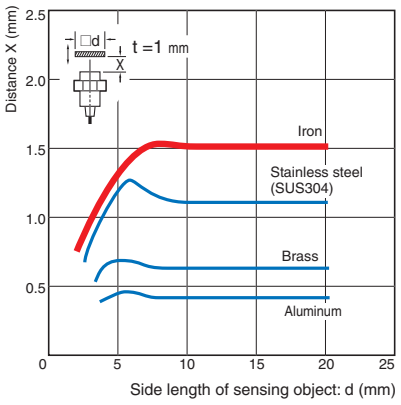

**E2E-X40MD□L30**



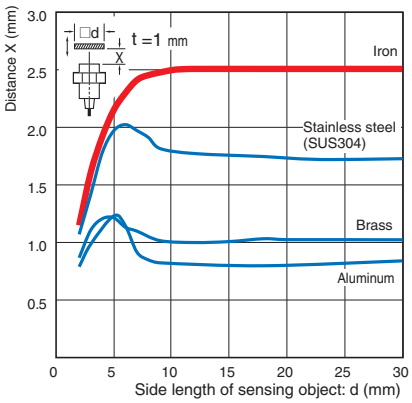

### Single distance model

#### Shielded Models

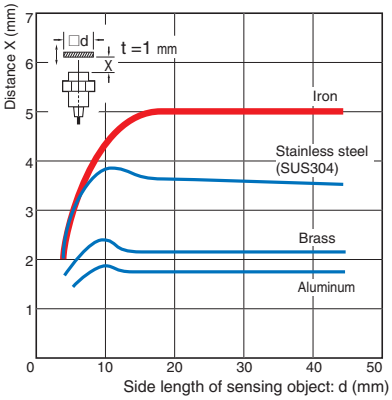
**E2E-X1R5D□**




**E2E-X2R5D□**



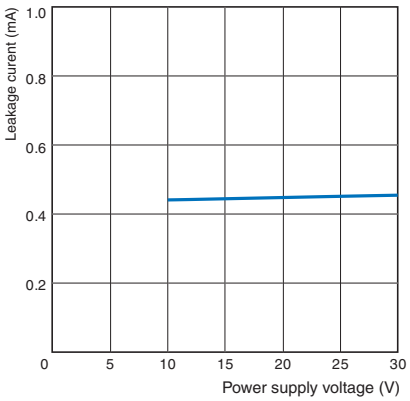

**E2E-X5D□**



## Leakage Current

**Triple distance model, Spatter-resistant Triple distance model, Single distance model**

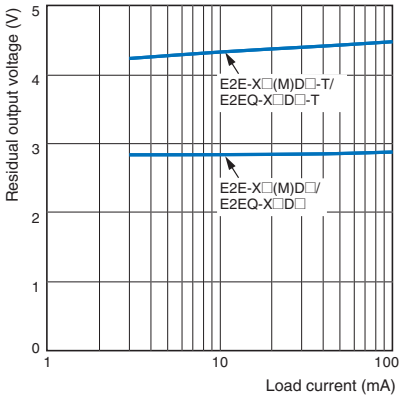
**E2E-X□(M)D□(-T)/E2EQ-X□D□(-T)**




## Residual Output Voltage

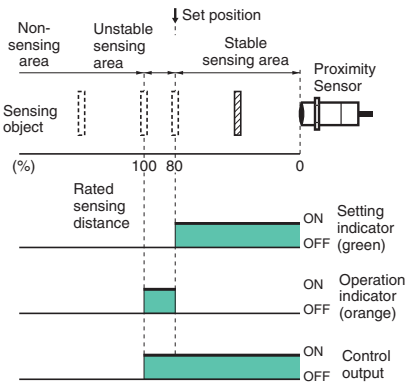
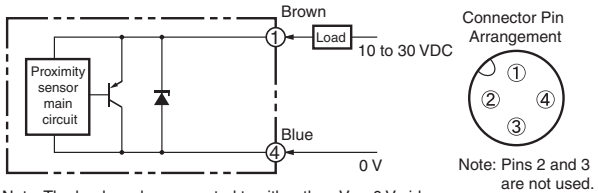
**Triple distance model, Spatter-resistant Triple distance model, Single distance model**

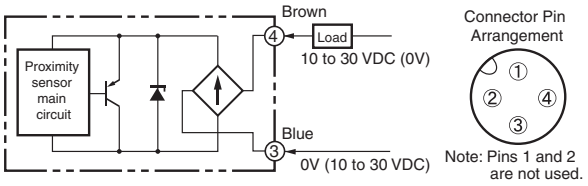
**E2E-X□(M)D□(-T)/E2EQ-X□D□(-T)**

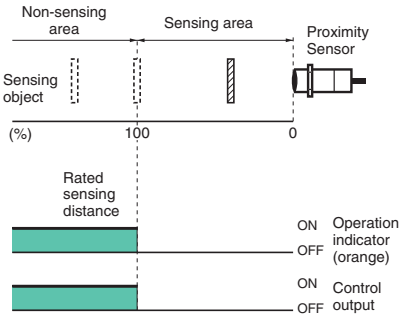
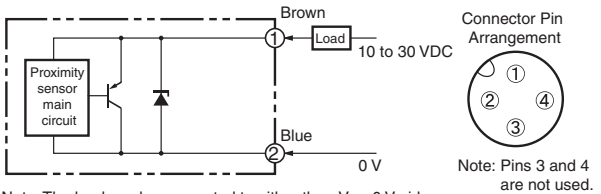


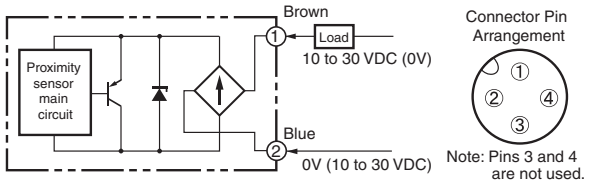
# I/O Circuit Diagrams

## 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">NO</td><td>E2E(Q)-X□D1□</td><td rowspan="2"> 
</td><td> 

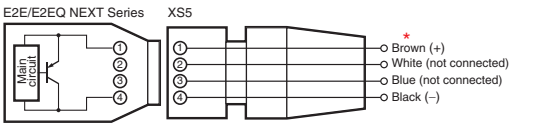
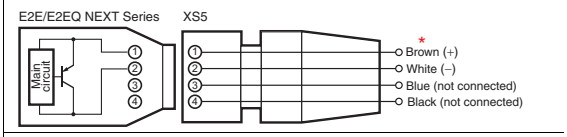
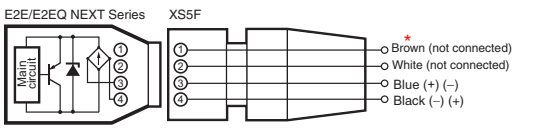
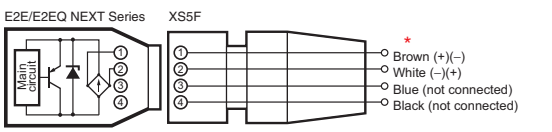
Note: The load can be connected to either the +V or 0 V side.</td></tr>
<tr><td>E2E(Q)-X□D1□-T</td><td> 

Note1. The load can be connected to either the +V or 0 V side.<br>2. The E2E□-X□D1□(-M1TGJ)-T has no polarity. There is no need to be concerned about the polarity of brown and blue wires, or pins 3 and 4.</td></tr>
<tr><td rowspan="2">NC</td><td>E2E(Q)-X□D2□</td><td rowspan="2"> 
</td><td> 

Note: The load can be connected to either the +V or 0 V side.</td></tr>
<tr><td>E2E(Q)-X□D2□-T</td><td> 

Note1. The load can be connected to either the +V or 0 V side.<br>2. The E2E□-X□D1□(-M1TGJ)-T has no polarity. There is no need to be concerned about the polarity of brown and blue wires, or pins 1 and 2.</td></tr>
</table>

# Connections to Sensor I/O Connectors

| Proximity Sensor | | | | Sensor I/O Connector model number | Connections |
|---|---|---|---|---|---|
| Type | Polarity | Operation mode | Model | | |
| DC 2-wire (Smartclick Connector) | Yes | NO | E2E-X□D1□-M1TGJ<br>E2EQ-X□D1□-M1TGJ | XS5F-D421-□80-X□<br>XS5F-D42□-□80-F<br>XS5W-D421-□81-X□<br>XS5W-D42□-□81-F<br>**Note:** For details of the connector, refer to *XS5 NEXT Series* on page 87. *XS5 Series* on page 94. |  |
| | No | NC | E2E-X□D2□-M1TGJ<br>E2EQ-X□D2□-M1TGJ | |  |
| | Yes | NO | E2E-X□D1□-M1TGJ-T<br>E2EQ-X□D1□-M1TGJ-T | |  |
| | No | NC | E2E-X□D2□-M1TGJ-T<br>E2EQ-X□D2□-M1TGJ-T | |  |

**Note:** Different from Proximity Sensor wire colors.
* If the XS5W Series Connector which has a socket and plug on the cable ends is connected to the Sensor, this part will be a plug.

## Safety Precautions

**Be sure to read the precautions for all models in the website at: http://www.ia.omron.com/.**

### Warning Indications

| | |
|---|---|
| **⚠WARNING** | **Warning level**<br>Indicates a potentially hazardous situation which, if not avoided, will result in minor or moderate injury, or may result in serious injury or death. Additionally there may be significant property damage. |
| **Precautions for Safe Use** | Supplementary comments on what to do or avoid doing, to use the product safely. |
| **Precautions for Correct Use** | Supplementary comments on what to do or avoid doing, to prevent failure to operate, malfunction or undesirable effect on product performance. |

### Meaning of Product Safety Symbols

| | |
|---|---|
|  | **General prohibition**<br>Indicates the instructions of unspecified prohibited action. |
|  | **Caution, explosion**<br>Indicates the possibility of explosion under specific conditions. |

**⚠ WARNING**

**This product is not designed or rated for ensuring safety of persons either directly or indirectly.**
**Do not use it for such purposes.**

**Risk of explosion.**
**Do not connect sensor to AC power supply.**

### Precautions for Safe Use

The following precautions must be observed to ensure safe operation.

1. Do not use the product in an environment where flammable or explosive gas is present.
2. Do not attempt to disassemble, repair, or modify the product.
3. Do not use a voltage that exceeds the rated operating voltage range. Applying a voltage that is higher than the operating voltage range may result in damage or burnout.
4. Be sure that the power supply polarity and other wiring is correct. Incorrect wiring may cause explosion or burnout.
5. If the power supply is connected directly without a load, the internal elements may explode or burn. Be sure to insert a load when connecting the power supply.
6. Dispose of this product as industrial waste.

### Precautions for Correct Use

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

**● Operating Environment**

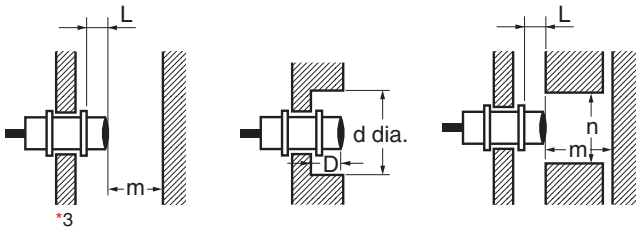
1. Do not install the product in the following locations.
   Doing so may result in product failure or malfunction.
   (1) Outdoor locations directly subject to sunlight, rain, snow, water droplets, or oil.
   (2) Locations subject to atmospheres with chemical vapors, in particular solvents and acids.
   (3) Locations subject to corrosive gases.
2. The Sensor may malfunction if used near ultrasonic cleaning equipment, high-frequency equipment, transceivers, cellular phones, inverters, or other devices that generate a high-frequency electric field. Please refer to the Precautions for Correct Use on the OMRON website (www.ia.omron.com) for typical measures.
3. Laying the Proximity Sensor wiring in the same conduit or duct as high-voltage wires or power lines may result in incorrect operation and damage due to induction. Wire the Sensor using a separate conduit or independent conduit.
4. Never use thinner or other solvents. Otherwise, the Sensor surface may be dissolved.
5. The following conditions shall be observed if you use the product under an environment using cutting oil that may affect product's life and/or performance.
   - Usage under the cutting oil condition designated by the specification
   - Usage under the cutting oil dilution ratio recommended by its manufacturer
   - Usage in oil or water is prohibited

   Impact on the product life may differ depending on the oil you use. Before using the cutting oil, make sure that it should not cause deterioration or degradation of sealing components.

## ● Design

### Influence of Surrounding Metal

When mounting the Proximity Sensor using a nut, only use the provided nut. And ensure that the minimum distances given in the following table are maintained.



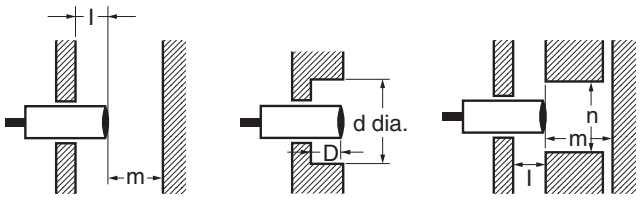

(Unit: mm)

| Type | | Item | M8 | M12 | M18 | M30 |
|---|---|---|---|---|---|---|
| Triple distance model/ Spatter-resistant Triple distance model E2E(Q)-X□D□(-T) *1 | Shielded | L | 0 | 0 | 0 | 0 |
| | | d | 20 | 20 | 50 | 70 |
| | | D | 2 | 4 | 4 | 8 |
| | | m | 9 | 18 | 33 | 60 |
| | | n | 18 | 20 | 54 | 90 |
| Triple distance model E2E-X□MD□(-T) *2 | Unshielded | L | 10 | 16 | 31 | 50 *3 |
| | | d | 30 | 50 | 90 | 170 |
| | | D | 13 | 20 | 35 | 55 |
| | | m | 18 | 30 | 60 | 120 |
| | | n | 30 | 50 | 80 | 140 |
| Single distance model E2E-X□R5D□(-T) E2E-X5D□(-T) *2 | Shielded | L | 0 | 0 | 0 | --- |
| | | d | 8 | 12 | 18 | |
| | | D | 0 | 0 | 0 | |
| | | m | 4.5 | 8 | 20 | |
| | | n | 12 | 18 | 27 | |

**Note:** Nuts that are supplied along with each Sensor (*1, *2) are different. Refer to *Dimensions* for details on shapes.

*3. If you use the M30 Triple distance model of Unshielded Model, the panel thickness (t) is 4 mm or less.

When the Proximity Sensor is mounted in metal, ensure that the minimum distances given in the following table are maintained.

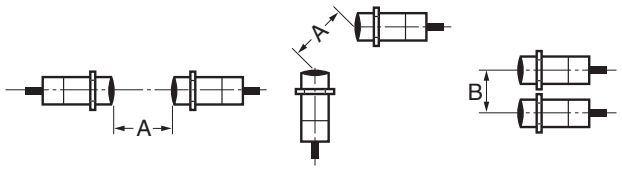



(Unit: mm)

| Type | | Item | M8 | M12 | M18 | M30 |
|---|---|---|---|---|---|---|
| Triple distance model/ Spatter-resistant Triple distance model E2E(Q)-X□D□(-T) | Shielded | l | 2 | 4 | 4 | 8 |
| | | d | 20 | 20 | 50 | 70 |
| | | D | 2 | 4 | 4 | 8 |
| | | m | 9 | 18 | 33 | 60 |
| | | n | 18 | 20 | 54 | 90 |
| Triple distance model E2E-X□MD□(-T) | Unshielded | l | 13 | 20 | 35 | 55 |
| | | d | 30 | 50 | 90 | 170 |
| | | D | 13 | 20 | 35 | 55 |
| | | m | 18 | 30 | 60 | 120 |
| | | n | 30 | 50 | 80 | 140 |
| Single distance model E2E-X□R5D□(-T) E2E-X5D□(-T) | Shielded | l | 0 | 0 | 0 | --- |
| | | d | 8 | 12 | 18 | |
| | | D | 0 | 0 | 0 | |
| | | m | 4.5 | 8 | 20 | |
| | | n | 12 | 18 | 27 | |

## ● Mutual Interference

When the Proximity Sensor is embedded in metal, ensure that the minimum distances given in the following table are maintained.



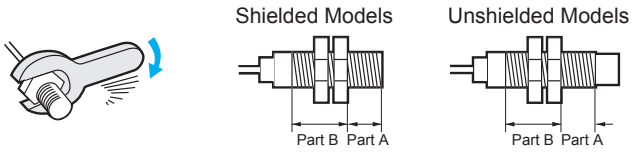

(Unit: mm)

| Type | | Item | M8 | M12 | M18 | M30 |
|---|---|---|---|---|---|---|
| Triple distance model/ Spatter-resistant Triple distance model E2E(Q)-X□D□(-T) | Shielded | A | 25 | 40 | 70 | 140 |
| | | B | 20 | 30 | 45 | 70 |
| Triple distance model E2E-X□MD□(-T) | Unshielded | A | 80 | 120 | 200 | 380 |
| | | B | 60 | 100 | 120 | 280 |
| Single distance model E2E-X□R5D□(-T) E2E-X5D□(-T) | Shielded | A | 20 | 30 | 50 | --- |
| | | B | 15 | 20 | 35 | |

## ● Mounting

### Tightening Force

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




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

**2.** The following strengths assume washers are being used.

### Triple distance model

| Model | | Part A | | Part B |
|---|---|---|---|---|
| | | Dimension (mm) | Torque | Torque |
| M8 | Shielded | 9 | 4 N·m | 10 N·m |
| | Unshielded | 3 | | |
| M12 | Shielded | 16 | 6 N·m | 15 N·m |
| | Unshielded | 9 | | |
| M18 | Shielded | 16 | 15 N·m | 60 N·m |
| | Unshielded | 3 | | |
| M30 | Shielded | 23 | 40 N·m | 80 N·m |
| | Unshielded | 8 | | |

### Spatter-resistant Triple distance model

| Model | Part A | | Part B |
|---|---|---|---|
| | Dimension (mm) | Torque | Torque |
| M8 | 9 | 4 N·m | 10 N·m |
| M12 | 16 | 6 N·m | 15 N·m |
| M18 | 16 | 15 N·m | 30 N·m |
| M30 | 23 | 40 N·m | 80 N·m |

### Single distance model

| Model | Part A | | Part B |
|---|---|---|---|
| | Dimension (mm) | Torque | Torque |
| M8 | 9 | 9 N·m | 12 N·m |
| M12 | --- | 30 N·m | |
| M18 | | 70 N·m | |

## Dimensions

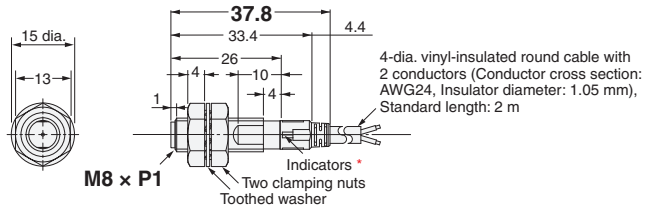
(Unit: mm)
Tolerance class IT16 applies to dimensions in this data sheet unless otherwise specified.

# Sensors
# E2E NEXT Series (Triple distance model)
# DC 2-wire

### Pre-wired Models Shielded

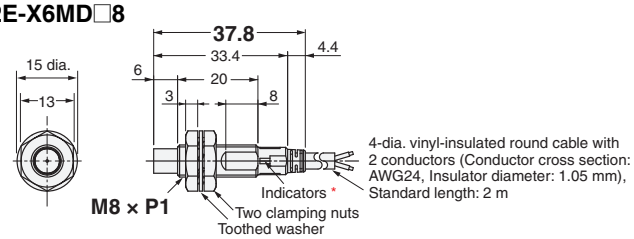
### Pre-wired Models Unshielded

### E2E-X3D□8



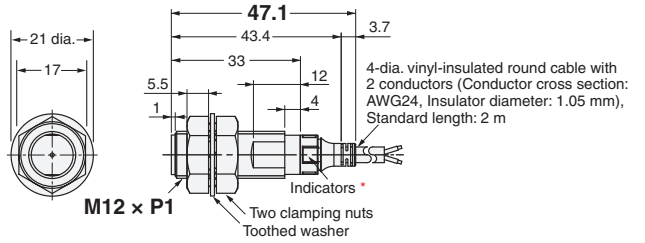

* D1 Models: Operation indicator (Orange), Setting indicator (Green)
D2 Models: Operation indicator (Orange)

### E2E-X6MD□8



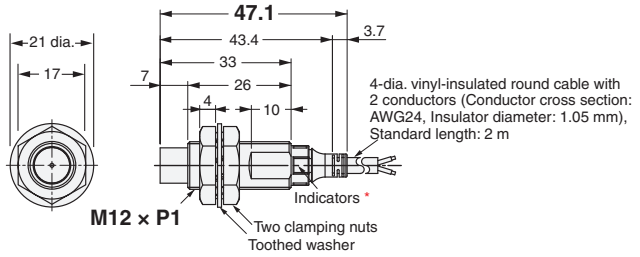

* D1 Models: Operation indicator (Orange), Setting indicator (Green)
D2 Models: Operation indicator (Orange)

### E2E-X7D□12



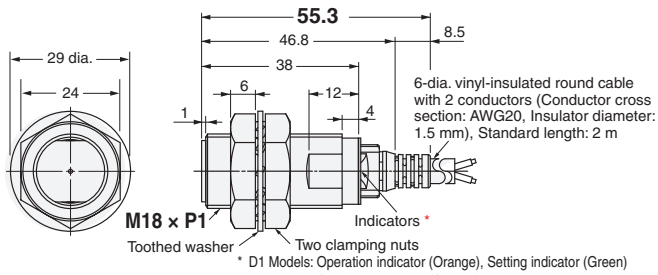

* D1 Models: Operation indicator (Orange), Setting indicator (Green)
D2 Models: Operation indicator (Orange)

### E2E-X10MD□12



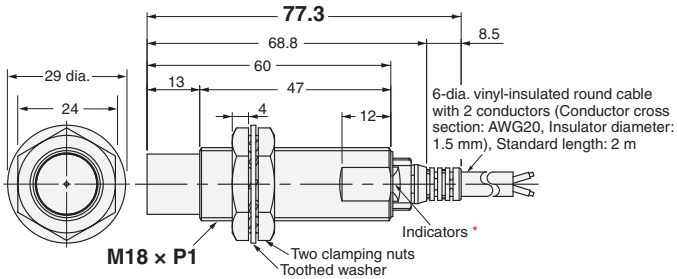

* D1 Models: Operation indicator (Orange), Setting indicator (Green)
D2 Models: Operation indicator (Orange)

### E2E-X11D□18



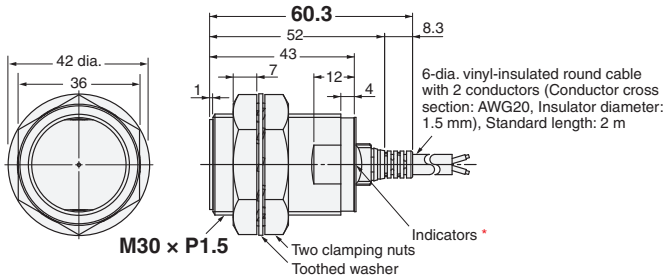

* D1 Models: Operation indicator (Orange), Setting indicator (Green)
D2 Models: Operation indicator (Orange)

### E2E-X20MD□L18



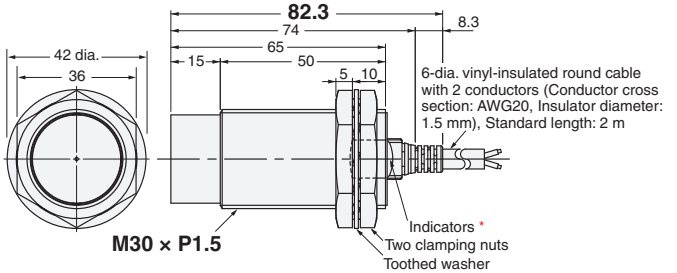

* D1 Models: Operation indicator (Orange), Setting indicator (Green)
D2 Models: Operation indicator (Orange)

### E2E-X20D□30



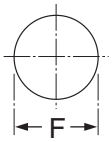

* D1 Models: Operation indicator (Orange), Setting indicator (Green)
D2 Models: Operation indicator (Orange)

### E2E-X40MD□L30



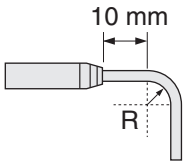

* D1 Models: Operation indicator (Orange), Setting indicator (Green)
D2 Models: Operation indicator (Orange)

### Mounting Hole Dimensions



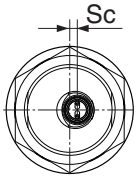

| Dimensions | F (mm) |
|---|---|
| M8 | 8.5 dia. $^{+0.5}_{0}$ |
| M12 | 12.5 dia. $^{+0.5}_{0}$ |
| M18 | 18.5 dia. $^{+0.5}_{0}$ |
| M30 | 30.5 dia. $^{+0.5}_{0}$ |

### Angle R of the Bending Wire




| Dimensions | R (mm) |
|---|---|
| M8 | 12 |
| M12 | |
| M18 | 18 |
| M30 | |

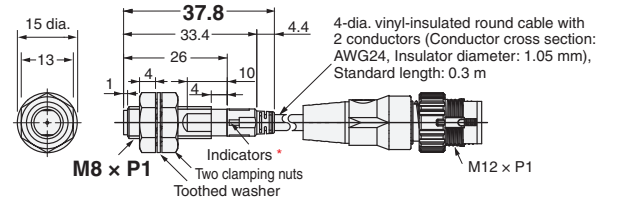
### Wire pullout position




| Dimensions | Sc (mm) |
|---|---|
| M8 | - (0) |
| M12 | |
| M18 | 2.5 |
| M30 | |

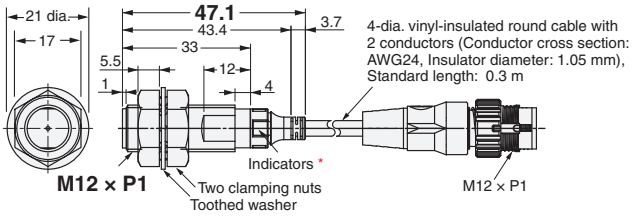
## Pre-wired Connector Models Shielded

### E2E-X3D□8-M1TGJ



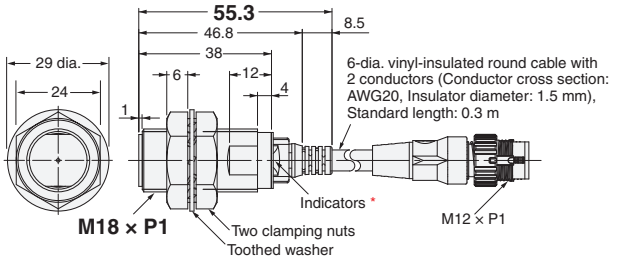

* D1 Models: Operation indicator (Orange), Setting indicator (Green)
D2 Models: Operation indicator (Orange)

### E2E-X7D□12-M1TGJ



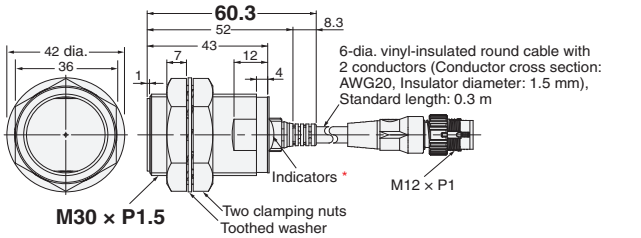

* D1 Models: Operation indicator (Orange), Setting indicator (Green)
D2 Models: Operation indicator (Orange)

### E2E-X11D□18-M1TGJ




* D1 Models: Operation indicator (Orange), Setting indicator (Green)
D2 Models: Operation indicator (Orange)

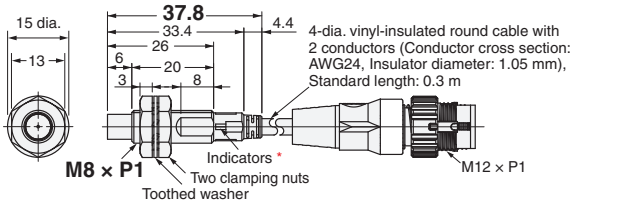
### E2E-X20D□30-M1TGJ




* D1 Models: Operation indicator (Orange), Setting indicator (Green)
D2 Models: Operation indicator (Orange)

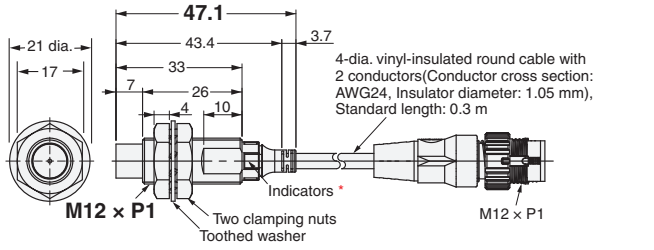
## Pre-wired Connector Models Unshielded

### E2E-X6MD□8-M1TGJ



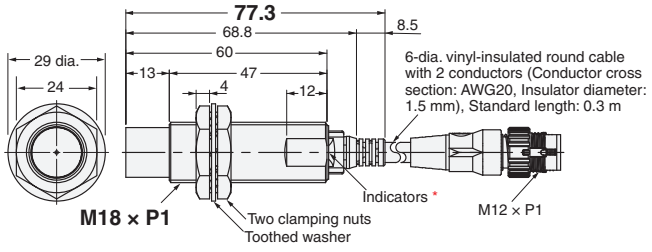

* D1 Models: Operation indicator (Orange), Setting indicator (Green)
D2 Models: Operation indicator (Orange)

### E2E-X10MD□12-M1TGJ



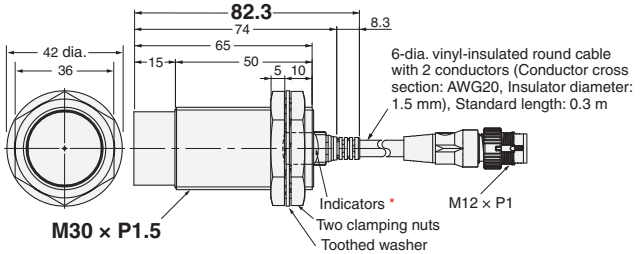

* D1 Models: Operation indicator (Orange), Setting indicator (Green)
D2 Models: Operation indicator (Orange)

### E2E-X20MD□L18-M1TGJ



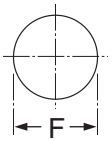

* D1 Models: Operation indicator (Orange), Setting indicator (Green)
D2 Models: Operation indicator (Orange)

### E2E-X40MD□L30-M1TGJ



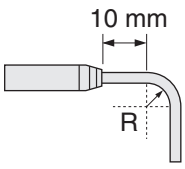

* D1 Models: Operation indicator (Orange), Setting indicator (Green)
D2 Models: Operation indicator (Orange)

### Mounting Hole Dimensions



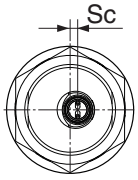

| Dimensions | F (mm) |
|---|---|
| M8 | 8.5 dia. $^{+0.5}_{0}$ |
| M12 | 12.5 dia. $^{+0.5}_{0}$ |
| M18 | 18.5 dia. $^{+0.5}_{0}$ |
| M30 | 30.5 dia. $^{+0.5}_{0}$ |

### Angle R of the Bending Wire




| Dimensions | R (mm) |
|---|---|
| M8 | 12 |
| M12 | |
| M18 | 18 |
| M30 | |

### Wire pullout position

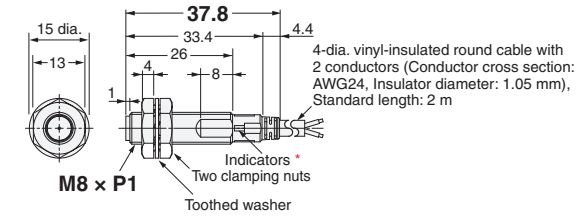



| Dimensions | Sc (mm) |
|---|---|
| M8 | - (0) |
| M12 | |
| M18 | 2.5 |
| M30 | |

# Sensors
# E2EQ NEXT Series (Spatter-resistant Triple distance model)
# DC 2-wire

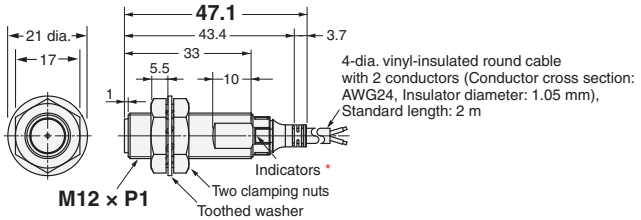
## Pre-wired Models
## Shielded

### E2EQ-X3D□8



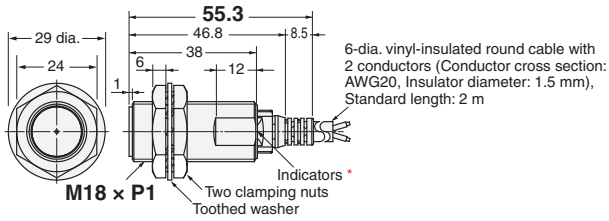

* D1 Models: Operation indicator (Orange), Setting indicator (Green)
D2 Models: Operation indicator (Orange)

### E2EQ-X7D□12



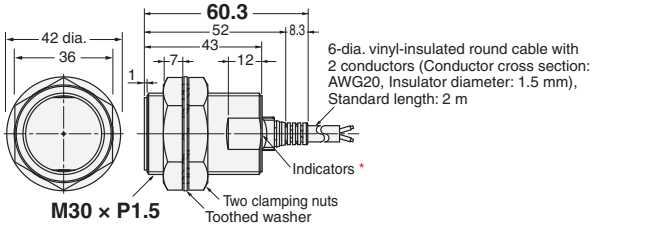

* D1 Models: Operation indicator (Orange), Setting indicator (Green)
D2 Models: Operation indicator (Orange)

### E2EQ-X11D□18




* D1 Models: Operation indicator (Orange), Setting indicator (Green)
D2 Models: Operation indicator (Orange)

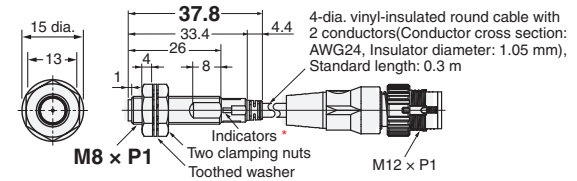
### E2EQ-X20D□30




* D1 Models: Operation indicator (Orange), Setting indicator (Green)
D2 Models: Operation indicator (Orange)

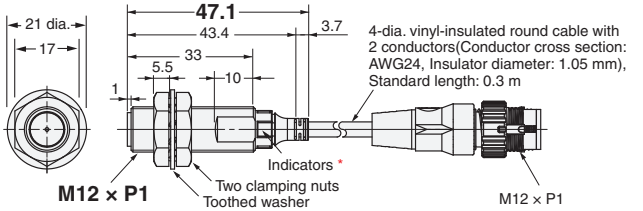
## Pre-wired Connector Models
## Shielded

### E2EQ-X3D□8-M1TGJ



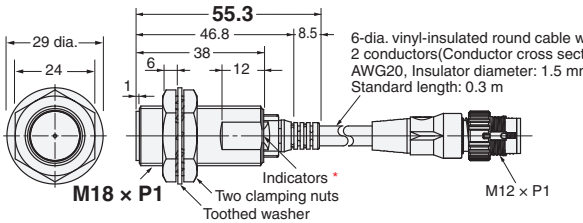

* D1 Models: Operation indicator (Orange), Setting indicator (Green)
D2 Models: Operation indicator (Orange)

### E2EQ-X7D□12-M1TGJ



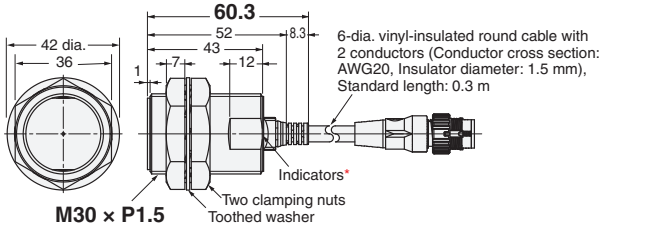

* D1 Models: Operation indicator (Orange), Setting indicator (Green)
D2 Models: Operation indicator (Orange)

### E2EQ-X11D□18-M1TGJ




* D1 Models: Operation indicator (Orange), Setting indicator (Green)
D2 Models: Operation indicator (Orange)

### E2EQ-X20D□30-M1TGJ

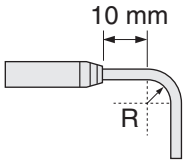



* D1 Models: Operation indicator (Orange), Setting indicator (Green)
D2 Models: Operation indicator (Orange)

### Mounting Hole Dimensions

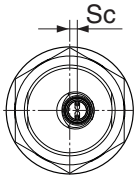

| Dimensions | F (mm) |
|---|---|
| M8 | 8.5 dia. $^{+0.5}_{0}$ |
| M12 | 12.5 dia. $^{+0.5}_{0}$ |
| M18 | 18.5 dia. $^{+0.5}_{0}$ |
| M30 | 30.5 dia. $^{+0.5}_{0}$ |

### Angle R of the Bending Wire




| Dimensions | R (mm) |
|---|---|
| M8 | 12 |
| M12 | |
| M18 | 18 |
| M30 | |

### Wire pullout position

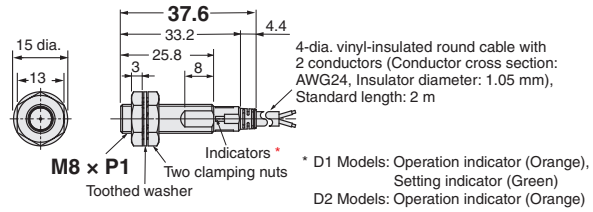



| Dimensions | Sc (mm) |
|---|---|
| M8 | - (0) |
| M12 | |
| M18 | 2.5 |
| M30 | |

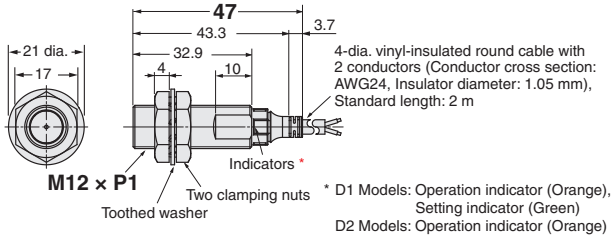
# Sensors
## E2E NEXT Series (Single distance model)
## DC 2-wire

### Pre-wired Models
### Shielded

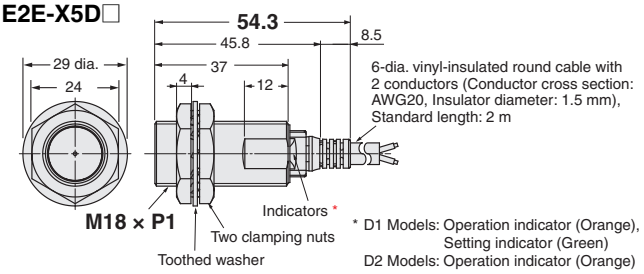
#### E2E-X1R5D□




#### E2E-X2R5D□

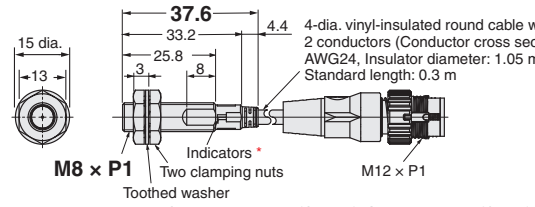



#### E2E-X5D□

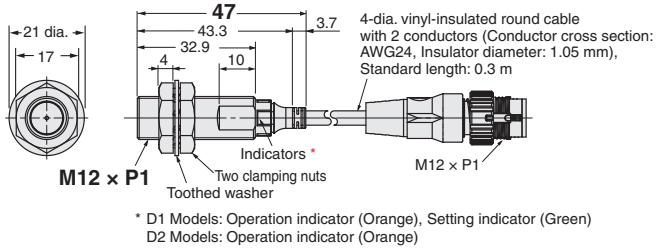



### Pre-wired Connector Models
### Shielded

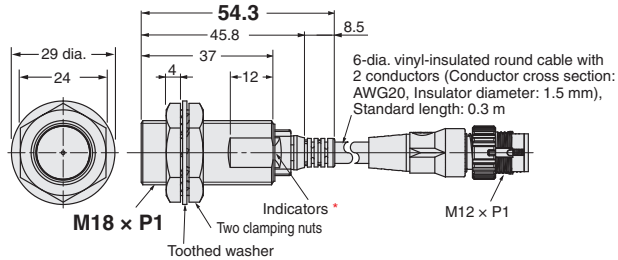
#### E2E-X1R5D□-M1TGJ



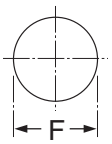

#### E2E-X2R5D□-M1TGJ




#### E2E-X5D□-M1TGJ

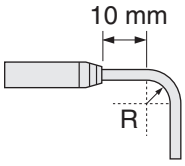



### Mounting Hole Dimensions



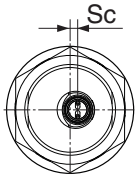

| Dimensions | F (mm) |
|---|---|
| M8 | 8.5 dia. $^{+0.5}_{0}$ |
| M12 | 12.5 dia. $^{+0.5}_{0}$ |
| M18 | 18.5 dia. $^{+0.5}_{0}$ |
| M30 | 30.5 dia. $^{+0.5}_{0}$ |

### Angle R of the Bending Wire




| Dimensions | R (mm) |
|---|---|
| M8 | 12 |
| M12 | |
| M18 | 18 |
| M30 | |

### Wire pullout position

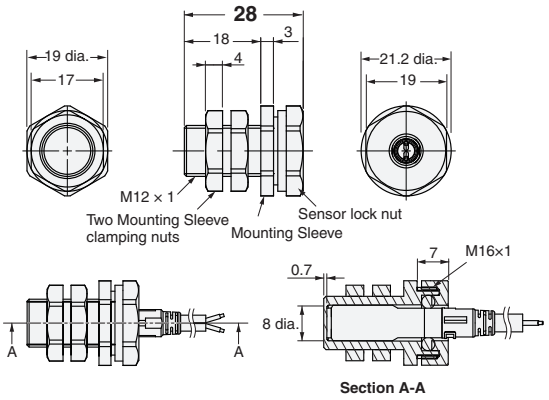



| Dimensions | Sc (mm) |
|---|---|
| M8 | - (0) |
| M12 | |
| M18 | 2.5 |
| M30 | |

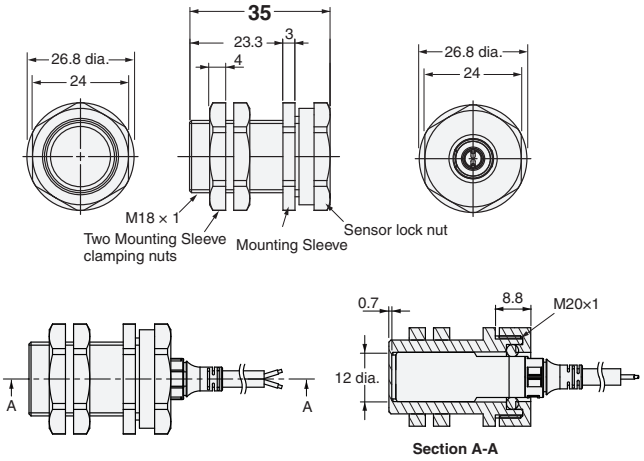
## Accessories (Sold Separately)

### e-jig (Mounting Sleeves)

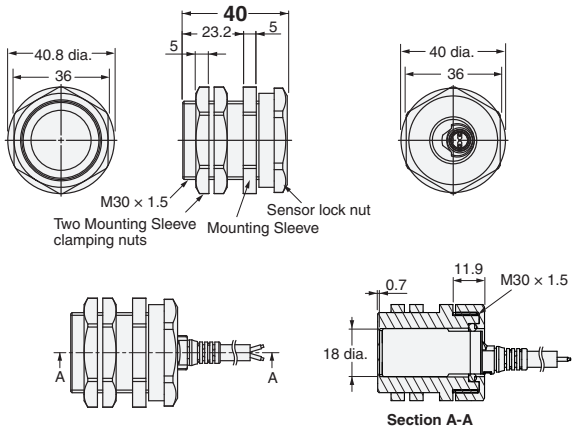
**Y92E-J8S12**




**Y92E-J12S18**




**Y92E-J18S30**




### Material

| | |
|---|---|
| **Mounting Sleeve** | Polyetheretherketone (PEEK) / Polybutylene terephthalate (PBT) |
| **Mounting Sleeve clamping nut** | Polybutylene terephthalate (PBT) |
| **Sensor lock nut** | Polybutylene terephthalate (PBT) |
| **Sensor lock O-ring** | Material combining HNBR and fluororubber |

### Tightening Force

| Model | Torque | |
|---|---|---|
| | Mounting Sleeve clamping nut | Sensor lock nut |
| **Y92E-J8S12** | 0.6 N•m | 0.6 N•m |
| **Y92E-J12S18** | 1.2 N•m | 1.2 N•m |
| **Y92E-J18S30** | 5 N•m | 3.5 N•m |

# XS5 NEXT Series



## Round Oil-resistive Smartclick Connectors for E2E NEXT Series proximity sensors, that are Resistant to Oil, and that Reduce Installation Work


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

- Uses unique OMRON technology*1 and the same PVC cable with increased oil resistance as the E2E NEXT Series proximity sensors. Oil-resistance performance values of 2 years*2 when used in combination with E2E NEXT Series proximity sensors.
- Oil-resistant robot cables for use with moving parts such as loaders and cableveyors *NEW*
- OMRON's unique lock mechanism (Smartclick) that is compatible with round M12 connectors.
- Simply insert the Connectors, then turn them approximately 1/8 of a turn to lock.
- A positive click indicates locking.
- IP67, IP69K degree of protection.
- UL approved products.

*1. Patent pending (as of July, 2018)
*2. Covered types of oil: Cutting oil specified in JIS K 2241:2000
The oil-resistance performance value (2 years) indicates the median value (=Typ) at product design, and in evaluation testing results of oil-resistance performance. Shipped products will show some variance around this 2 year value in actual usage.

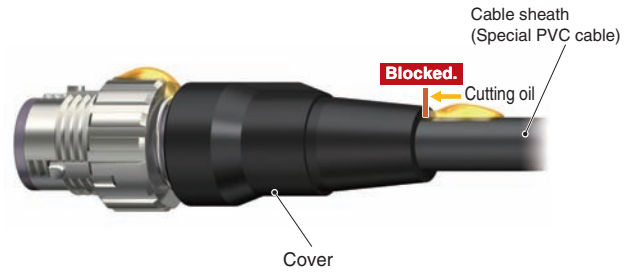
## Features

### Better Cable Oil Resistance, and Improved Overall Oil Resistance with New Rubber Material in Mating Sections

The XS5 NEXT Series uses a special PVC cable that limits deterioration of the cable sheath due to both water-soluble and water-insoluble cutting oil. Omron's proprietary molding technique prevents cutting oil intrusion from mating sections. Moreover, using the same new HNBR/fluoride rubber as in oil-resistant components of connector mating sections helps improve the overall oil resistance.

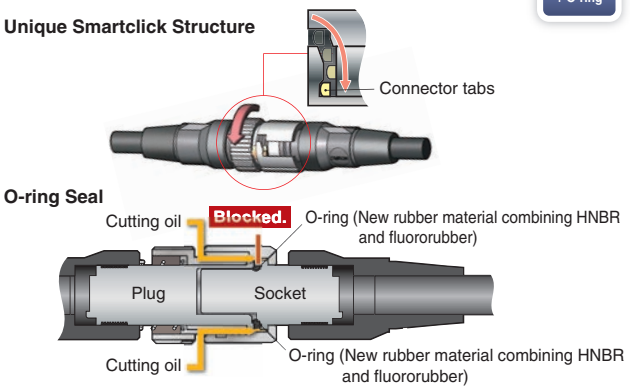
#### Special PVC Cable + Molding Sealing Method

Special Cable / Molded Seal




#### Smartclick Structure + O-ring

Smartclick + O-ring



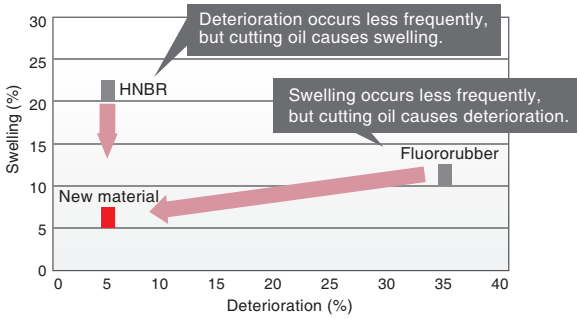

Patented

#### New Rubber Material Combining and Fluororubber

New Rubber Material

Hydrogenated nitrile butadiene rubber (HNBR), which provides superior resistance to oil, was blended with fluororubber in a unique OMRON compound to develop a new rubber that provides superior resistance to both swelling and deterioration due to cutting oil.
It is used in seals for joints and moving sections that prevent ingress to prevent deterioration and destruction of the seal due to cutting oil, resulting in increased oil resistance performance.

**This new material combines the benefits of HNBR and fluororubber**



## P67G quality and Omron's Oil Resistance Component Evaluation System for two years of proven oil resistant capability

Oil resistance: 2 years*

| IP67G | |
|---|---|
| Oil type | N3 (water-insoluble cutting oil) |
| Evaluation time | 48 hours |
| Evaluation temperature | Room temperature |
| Dilution concentration | --- |
| Criteria | Appearance and performance |

(Illustration)

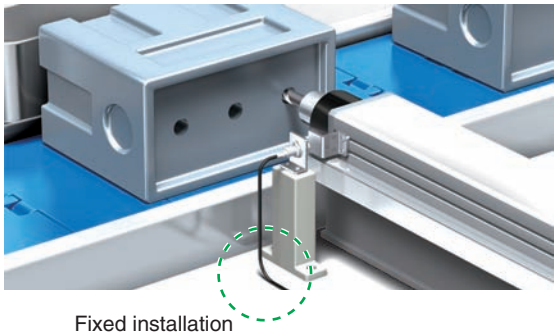
| OMRON's Oil-resistant Component Evaluation Standards | |
|---|---|
| Oil type | A1 (water-soluble cutting oil) |
| Evaluation time | 1,000 hours of machining |
| Evaluation temperature | 55 °C |
| Dilution concentration | Undiluted |
| Criteria | Appearance, performance, and no label text loss |

(Illustration)

* Applicable oil types: specified in JIS K 2241:2000
"2-year oil resistance" refers to median values (=Typical values) of the product designs and the oil-resistance performance evaluation results. Products to be shipped will have around 2 years of oil resistance; actual oil resistance will vary depending on the product.

## Varied product lineup to suit the application

**Fixed Parts** **XS5□-D421-□8□-X**



Fixed installation

**Moving Parts** **XS5□-D421-□8□-XR** *NEW*

Installation with moving parts such as loaders and cableveyors

# Model Number Structure

## Model Number Legend

Use this legend when determining the product specifications from the model number. When ordering, use a model number from the table in **Ordering Information**.

**XS5□-D 4 2 1 - □ 8 □ - X□**
1 2 3 4 5 6 7 8 9

1. **Type**
   W: Connectors connected to cable, socket and plug on cable ends
   F: Connectors connected to cable, socket on one cable end
2. **Mating Section Form**
   D: A-coding (for DC sensor)
3. **Connector Poles**
   4: 4 poles
4. **Contact Plating**
   2: Gold plating
5. **Cable Connection Direction**
   XS5W 1: Straight (Socket)/Straight (Plug)
   XS5F 1: Straight
6. **Cable Length**
   C: 1 m
   D: 2 m
   E: 3 m
   G: 5 m
   J: 10 m
7. **Connections (Numbers inside circles are terminal numbers)**
   8: ① Brown, ② White, ③ Blue, ④ Black
8. **Connectors on One End/Both Ends**
   0: Sockets on One Cable End
   1: Socket and Plug on Cable Ends
9. **Cable Specifications**
   X: Oil-resistant PVC cable
   XR: Oil-resistant PVC robot cable

# Ordering Information

## Connectors

| Type | Cable outer diameter (mm) | Cable specifications | Cable length (m) | Model | UL |
|---|---|---|---|---|---|
| Socket and Plug on Cable Ends | 6 dia. | Oil-resistant PVC cable | 1 | **XS5W-D421-C81-X** | UL2238 certified (File no. E207683) |
| | | | 2 | **XS5W-D421-D81-X** | |
| | | | 3 | **XS5W-D421-E81-X** | |
| | | | 5 | **XS5W-D421-G81-X** | |
| | | | 10 | **XS5W-D421-J81-X** | |
| | 6 dia. | Oil-resistant PVC robot cable | 1 | **XS5W-D421-C81-XR** | |
| | | | 2 | **XS5W-D421-D81-XR** | |
| | | | 3 | **XS5W-D421-E81-XR** | |
| | | | 5 | **XS5W-D421-G81-XR** | |
| | | | 10 | **XS5W-D421-J81-XR** | |
| Sockets on One Cable End | 6 dia. | Oil-resistant PVC cable | 1 | **XS5F-D421-C80-X** | |
| | | | 2 | **XS5F-D421-D80-X** | |
| | | | 3 | **XS5F-D421-E80-X** | |
| | | | 5 | **XS5F-D421-G80-X** | |
| | | | 10 | **XS5F-D421-J80-X** | |
| | 6 dia. | Oil-resistant PVC robot cable | 1 | **XS5F-D421-C80-XR** | |
| | | | 2 | **XS5F-D421-D80-XR** | |
| | | | 3 | **XS5F-D421-E80-XR** | |
| | | | 5 | **XS5F-D421-G80-XR** | |
| | | | 10 | **XS5F-D421-J80-XR** | |

## Accessories (Sold Separately)

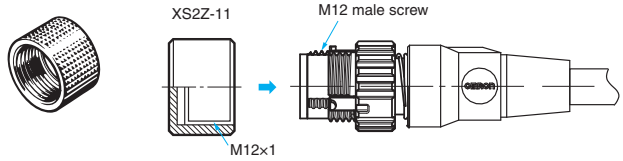
### Connector Covers

#### Water-resistive Covers

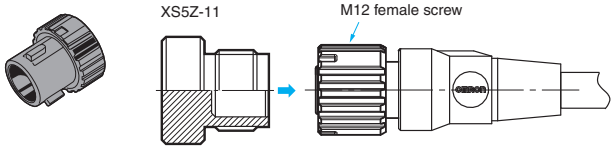
| Model | Material | Suitable connector | | Remarks |
|---|---|---|---|---|
| | | Model | Mounting portion | |
| **XS2Z-11** | Brass/nickel plated | XS5W | M12 male screw | This provides IP67 levels of protection.<br>When mounting the Water-resistive Cover to a Connector, be sure to apply a torque range between 0.39 and 0.49 N·m to tighten the Water-resistive Cover. |
| **XS5Z-11** | PBT | XS5F/XS5W | M12 female screw | This provides IP67 levels of protection.<br>This uses the Smart click mechanism. There's no need to keep track of locking torque. |

#### Water-resistive Covers

**XS2Z-11**




**XS5Z-11**

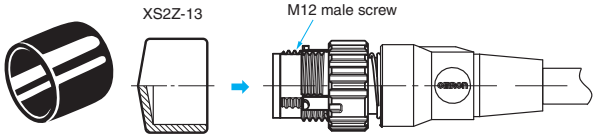



#### Dust Covers

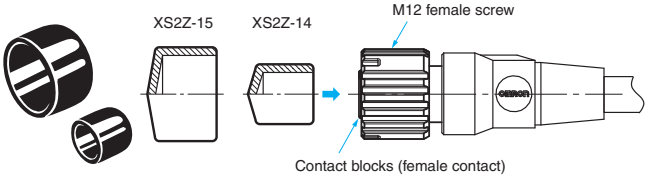
| Model | Material | Suitable connector | | Remarks |
|---|---|---|---|---|
| | | Model | Mounting portion | |
| **XS2Z-13** | Rubber/black | XS5W | M12 male screw | The Dust Cover is for dust prevention and does not ensure IP67 degree of protection.<br>When mounting the Dust Cover to a connector, be sure to press the Dust Cover onto the Connector until the Connector is fully inserted into the Dust Cover. |
| **XS2Z-14** | | XS5F/XS5W | Contact blocks (female contact) | |
| **XS2Z-15** | | | M12 female screw | |

#### Dust Covers

**XS2Z-13**




**XS2Z-15/XS2Z-14**



# Ratings and Specifications

| | |
|---|---|
| **Rated current** | 4 A |
| **Rated voltage** | 250 VDC |
| **Contact resistance (connector)** | 40 mΩ max. (at 20 mV max., 100 mA max.) |
| **Insulation resistance** | 1,000 MΩ min. (at 500 VDC) *1 |
| **Dielectric strength (connector)** | 1,500 VAC for 1 minute (leakage current: 1 mA max.) |
| **Degree of protection** | IP67 (IEC60529)<br>IP69K (ISO20653 (formerly DIN Standard 40050 PART9))<br>OMRON's Oil-resistant Component Evaluation Standards *2<br>(Cutting oil type JIS K 2241:2000-specification cutting oil, at 35°C or below) |
| **Insertion tolerance** | 50 times |
| **Lock strength** | Tensile: 100 N/15 s, Torsion: 1 N·m/15 s |
| **Cable holding strength** | Tensile: 100 N/15 s, Torsion: 1 N·m/15 s |
| **Lock operating force** | 0.1 to 0.25 N·m |
| **Ambient operating temperature range** | -25 to +70°C *3 |
| **Ambient humidity range** | 20 to 85%RH |

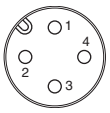
**✻1.** State at shipping.
**✻2.** "OMRON's Oil-resistant Component Evaluation Standards" are OMRON's own durability evaluation standards.
Protection performance with oil-resistive connector (XS5F/W-X) correctly mated.
This performance does not apply if an oil-resistive connector (XS5F/W-X) is missing, and cord wiring is exposed.
**✻3.** Use the robot cable within a temperature range of 0 to 70°C to avoid the wire breakage when moving.

## Materials and Finishes

| Model | XS5F/W-X | XS5F/W-XR |
|---|---|---|
| **Item** | **Oil-resistant PVC cable** | **Oil-resistant PVC robot cable** |
| **Contacts** | Copper alloy/Gold plating | |
| **Fixtures** | Zinc alloy/Nickel plating | |
| **Fixtures (Lock)** * | Stainless | |
| **Pin block** | PBT resin | |
| **O-ring** | Material combining HNBR and fluororubber | |
| **Cover** | PBT resin | |
| **Cable** | UL 758 (AWM) 6 mm dia.<br>AWG20 | UL 758 (AWM) 6 mm dia.<br>AWG21 |

✻ Only plug

## Connector Pinout Diagram (from Mating Side)

| Item | No. of poles | 4 poles |
|---|---|---|
| **A-coding (For DC sensors)** | **Male (plug) contacts** |  |
| | **Female (socket) contacts** |  |

## Connection Combinations

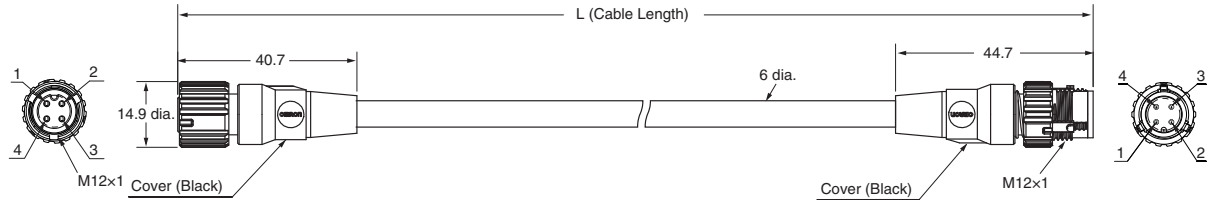
| Socket | Plug: OMRON model No. | Smartclick Plug Connectors: XS5H, XS5G, XS5W (plug side), XS5R (plug side), XS5M * | M12 Plug Connectors: XS2H, XS2G, XS2W (plug side), XS2R (plug side), XS2M * |
|---|---|---|---|
| **Smartclick Socket Connectors** | **XS5F, XS5C XS5W (socket side), XS5R (socket side), XS5P** * | ⊙ | ❍ |
| **M12 Socket Connectors** | **XS2F, XS2C, XS2W (socket side), XS2R (socket side), XS2P** * | ❍ | ❍ |

✻XS2P/XS5P and XS5M, XS2M cannot mate with each other.
**Note:** ⊙: Connected by twisting.
❍: Connected by screwing.

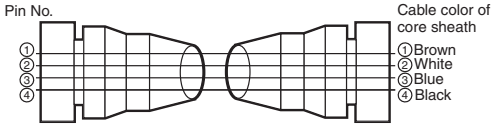
## Dimensions

(Unit: mm)

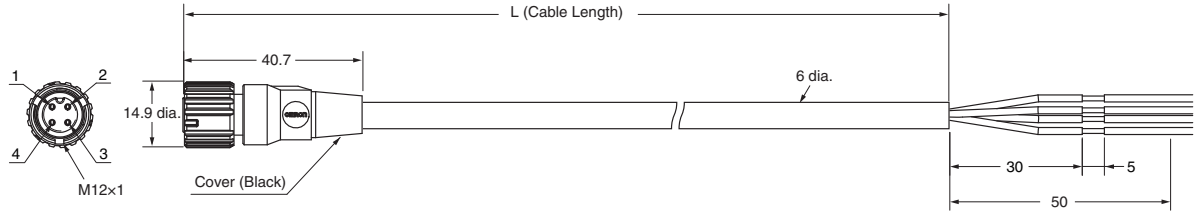
Both end connector type
XS5W-D421-□81-X
XS5W-D421-□81-XR



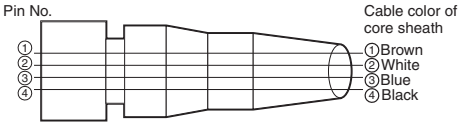

Wiring Diagram for 4 Cores




One end connector type
XS5F-D421-□80-X
XS5F-D421-□80-XR




Wiring Diagram for 4 Cores



# Safety Precautions

## Meaning of Display

| | |
|---|---|
| **Precautions for Safe Use** | Supplementary comments on what to do or avoid doing, to use the product safely. |
| **Precautions for Correct Use** | Supplementary comments on what to do or avoid doing, to prevent failure to operate, malfunction, or undesirable effects on product performance. |

## Precautions for Safe Use

### Degree of Protection

Do not use the product if its protective capabilities have been compromised, such as through swelling or cracks to housing or seal materials.
If products in this state continue to be used, then cutting oil or other contaminants may enter the product, leading to breakages or damage from fire.

### Connector Connection and Disconnection

- When connecting or disconnecting Connectors, be sure to hold the Connectors by hand.
- Do not hold the cable when disconnecting Connectors.
  Check the alignment using the slot in the polarity key.
- Do not wiring the Connector when your hands are wet. Malfunctions or device damage may occur when power is supplied to a device.
- When mating Connectors, be sure to insert the plug all the way to the back of the socket before attempting to lock the Connectors.
  After you lock a Connector, always confirm that it is mated properly.
- Do not use tools of any sort to mate the Connectors. Always use your hands. Pliers or other tools may damage the Connectors.
- When you replace a Connector, make sure that there is no liquid, cutting oil, or other foreign matter on the mating surfaces before you mate the Connector.

### Disposal

Dispose of this product as industrial waste.

## Precautions for Correct Use

- Do not use the Connectors in an atmosphere or environment that exceeds the specifications.
- Always turn OFF the power supply before wiring. Failure to turn OFF the power supply may lead to electric shock or damage to devices.
- As usage in environments in which cutting oil is used may impact service life and performance, ensure the following requirements are met.
  - Usage with cutting oil requirements as defined in specifications.
  - Usage at a dilution ratio as recommended by cutting oil manufacturers.
  - Usage immersed in oil or water is prohibited.

  The cutting oil used may have a different impact on product service life. Ensure that the product is used only after confirming with the customer that there has been no deformation or deterioration of seal material from the cutting oil.
- The mating coupler will impact the oil-resistance performance values (years). Confirm mating of the couplers before use.

### Mating Combinations

| | XS5□R | XS5□-X/XR | Other XS5/ XS2 Series |
|---|---|---|---|
| **XS5□R** | Oil-resistance performance values 4 years | Oil-resistance performance values 2 years | Water-resistance |
| **XS5□-X/XR** | Oil-resistance performance values 2 years | Oil-resistance performance values 2 years | Water-resistance |
| **Other XS5/XS2 Series** * | Water-resistance | Water-resistance | Water-resistance |

✻ Oil-resistant (polyurethane) cable products (XS5F-P, XS5H-P, XS5W-P) as well as oil-resistant (polyurethane) robot cables (XS5F-PR, XS5W-PR) are excluded. Please consult with OMRON for details of these products.

- Environments with corrosive gases and high temperature and humidity can cause bad connections and damage through corrosion, leading to degraded performance, therefore do not use these products in such environments.
- Do not pull on the Connectors or cables with excessive force.
- Do not step on or place any objects on the Connectors. Doing so may damage the Connectors.
- Lay the cable where it will not be stepped on to prevent the wires in the cable from being disconnected and to protect the Connectors from being damaged. If the cable must be placed where it will be stepped on, install a protective cover.
- At installation, if not installing sensors or switches, and not mating plug connectors, then use water-resistant covers (XS5Z-11, XS2Z-11) or dust-resistant covers (XS2Z-13/14/15) in order to ensure correct connector mating.

### Wiring

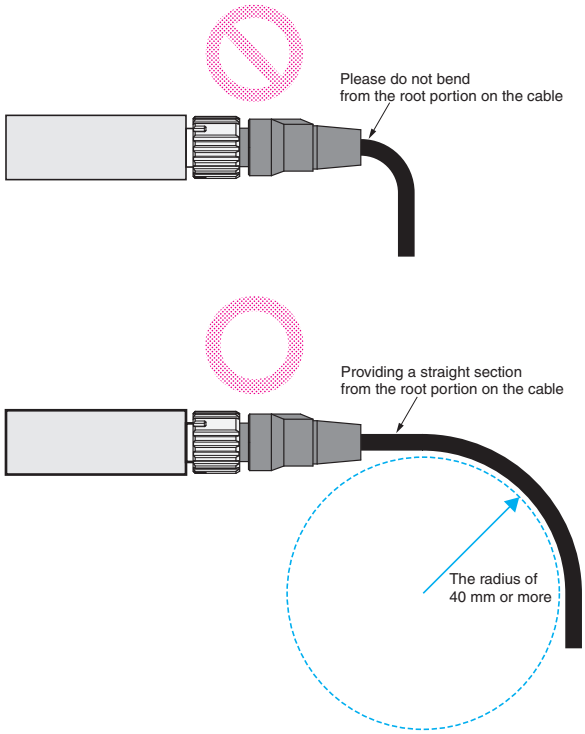
- Do not wire cables in environments in which the cable terminal sections will be subject to fluids such as water or cutting oil.
- When wiring cables, ensure this is carried out in accordance with the wiring diagram.
- Lay the cables so that external force is not applied to the Connectors. Otherwise, the degree of protection (IP67G) may not be achieved.

### Degree of Protection (IP67)

- The degree of protection of Connectors (IP67) is not for a fully watertight structure. Do not use the Connectors underwater.
- Do not step on or place any objects on the Connectors. Doing so may damage the Connectors.

**Setup**

- Do not install the Connectors with a load placed directly on the joint or at the point where the wires connect to the Connector. The Connector may be damaged or the wires in the cable may be disconnected.
- If bending cables, ensure that these use a minimum bend radius of 40 mm.

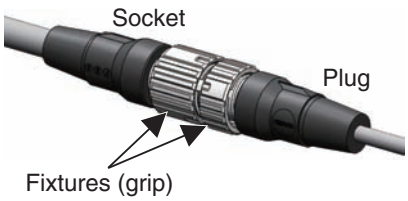



# Connecting

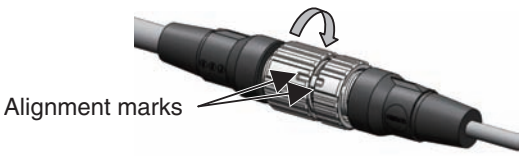
## 1. Connecting the XS5 Plug and Socket

- Align the projection on the plug cover with the polarity key on the socket, then insert the plug all the way in.


- Hold the knurled socket grip, then insert the projection on the plug into the groove of the socket.




- Turn the knurled grips of the socket clockwise approximately 1/8 turn in respect to the plug. A click will indicate that the Connectors are locked. The locking condition can also be confirmed by the alignment marks on the plug and socket.




## 2. Connecting the XS5 and XS2

- Align the projection on the plug cover with the polarity key on the socket, then insert the plug all the way in.
- In the same way as when connecting two XS2 Connectors, screw the knurled grip in the clockwise direction.
- When mating the products to XS2 or other M12 Connectors, tighten the lock to a torque of 0.39 to 0.49 N·m.

# XS5

## Round Water-resistive Smartclick Connectors for E2E NEXT Series proximity sensors that Reduce Installation Work

- A newly developed lock mechanism that is compatible with round M12 connectors.
- Simply insert the Connectors, then turn them approximately 1/8 of a turn to lock.
- A positive click indicates locking.
- IP67 degree of protection.
- UL approved products.

Smartclick

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 100.

## Model Number Structure

### Model Number Legend

Use this legend when determining the product specifications from the model number. When ordering, use a model number from the table in **Ordering Information**.

**XS5□-D 4 2 □ - □ 8 □ - F**
1 2 3 4 5 6 7 8 9

1. **Type**
   W: Connectors connected to cable, socket and plug on cable ends
   F: Connectors connected to cable, socket on one cable end
2. **Mating Section Form**
   D: A-coding (for DC sensor)
3. **Connector Poles**
   4: 4 poles
4. **Contact Plating**
   2: Gold plating
5. **Cable Connection Direction**
   XS5W
   1: Straight (Socket)/Straight (Plug)
   2: Right-angle (Socket)/Right-angle (Plug)
   3: Straight (Socket)/Right-angle (Plug)
   4: Right-angle (Socket)/Straight (Plug)

   XS5F
   1: Straight
   2: Right-angle
6. **Cable Length**
   C: 1 m
   D: 2 m
   E: 3 m
   G: 5 m
   J: 10 m
7. **Connections** (Numbers inside circles are terminal numbers)
   8: ①Brown, ②White, ③Blue, ④ Black
8. **Connectors on One End/Both Ends**
   0: Sockets on One Cable End
   1: Socket and Plug on Cable Ends
9. **Cable Specifications**
   F: Robot cable

# Ordering Information

## Connectors

| Type | Cable outer diameter (mm) | Cable Connection Direction | Cable length (m) | Model | UL |
|---|---|---|---|---|---|
| **Socket and Plug on Cable Ends XS5W** | 6 dia. | Straight (Socket)/Straight (Plug) | 1 | **XS5W-D421-C81-F** | UL2238 certified (File no. E207683) |
| | | | 2 | **XS5W-D421-D81-F** | |
| | | | 3 | **XS5W-D421-E81-F** | |
| | | | 5 | **XS5W-D421-G81-F** | |
| | | | 10 | **XS5W-D421-J81-F** | |
| | | Right-angle (Socket)/Right-angle (Plug) | 2 | **XS5W-D422-D81-F** | |
| | | | 5 | **XS5W-D422-G81-F** | |
| | | Straight (Socket)/Right-angle (Plug) | 2 | **XS5W-D423-D81-F** | |
| | | | 5 | **XS5W-D423-G81-F** | |
| | | Right-angle (Socket)/Straight (Plug) | 2 | **XS5W-D424-D81-F** | |
| | | | 5 | **XS5W-D424-G81-F** | |
| **Sockets on One Cable End XS5F** | 6 dia. | Straight type | 1 | **XS5F-D421-C80-F** | |
| | | | 2 | **XS5F-D421-D80-F** | |
| | | | 3 | **XS5F-D421-E80-F** | |
| | | | 5 | **XS5F-D421-G80-F** | |
| | | | 10 | **XS5F-D421-J80-F** | |
| | | Right-angle type | 1 | **XS5F-D422-C80-F** | |
| | | | 2 | **XS5F-D422-D80-F** | |
| | | | 3 | **XS5F-D422-E80-F** | |
| | | | 5 | **XS5F-D422-G80-F** | |
| | | | 10 | **XS5F-D422-J80-F** | |

# Accessories (Sold Separately)

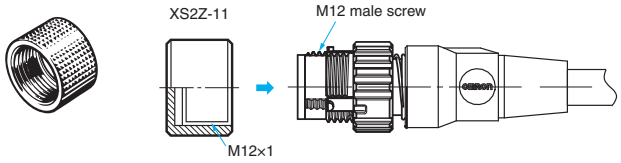
## Connector Covers

### Water-resistive Covers

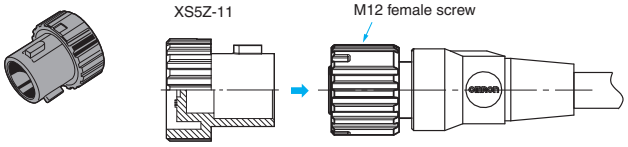
| Model | Material | Suitable connector | | Remarks |
|---|---|---|---|---|
| | | Model | Mounting portion | |
| **XS2Z-11** | Brass/ Nickel plated | XS5W | M12 male screw | This provides IP67 levels of protection.<br>When mounting the Water-resistive Cover to a Connector, be sure to apply a torque range between 0.39 and 0.49 N·m to tighten the Water-resistive Cover. |
| **XS5Z-11** | PBT | XS5F/XS5W | M12 female screw | This provides IP67 levels of protection.<br>This uses the Smart click mechanism. There's no need to keep track of locking torque. |

**Water-resistive Covers**

**XS2Z-11**




**XS5Z-11**

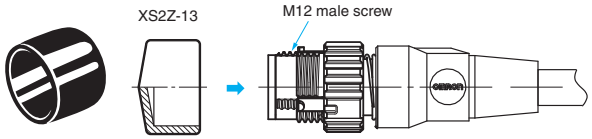



### Dust Covers

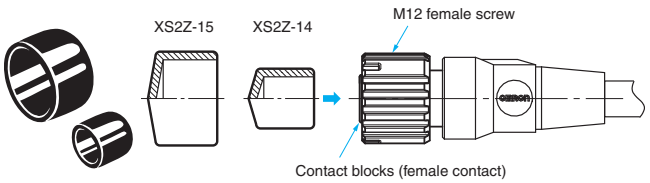
| Model | Material | Suitable connector | | Remarks |
|---|---|---|---|---|
| | | Model | Mounting portion | |
| **XS2Z-13** | Rubber/Black | XS5W | M12 male screw | The Dust Cover is for dust prevention and does not ensure IP67 degree of protection.<br>When mounting the Dust Cover to a connector, be sure to press the Dust Cover onto the Connector until the Connector is fully inserted into the Dust Cover. |
| **XS2Z-14** | | XS5F/XS5W | Contact blocks (female contact) | |
| **XS2Z-15** | | | M12 female screw | |

**Dust Covers**

**XS2Z-13**




**XS2Z-15/XS2Z-14**



# Ratings and Specifications

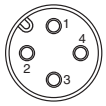
| | |
|---|---|
| **Rated current** | 4 A |
| **Rated voltage** | 250 VDC |
| **Contact resistance (connector)** | 40 mΩ max. (at 20 mV max., 100 mA max.) |
| **Insulation resistance** | 1,000 MΩ min. (at 500 VDC) *1 |
| **Dielectric strength (connector)** | 1,500 VAC for 1 minute (leakage current: 1 mA max.) |
| **Degree of protection** | IP67 (IEC 60529) |
| **Insertion tolerance** | 50 times |
| **Lock strength** | Tensile: 100 N/15 s, Torsion: 1 N·m/15 s |
| **Cable holding strength** | Tensile: 100 N/15 s, Torsion: 1 N·m/15 |
| **Lock operating force** | 0.1 to 0.25 N·m |
| **Ambient operating temperature range** | -25 to 70°C *2 |
| **Ambient humidity range** | 20 to 85%RH |

**✻1.** State at shipping.
**✻2.** Use the robot cable within a temperature range of 0 to 70°C to avoid the wire breakage when moving.

## Materials and Finishes

| Model / Item | XS5W/XS5F |
|---|---|
| **Contacts** | Copper alloy/Gold plating |
| **Fixtures** | Zinc alloy/Nickel plationg |
| **Pin block** | PBT resin |
| **O-ring** | Rubber |
| **Cover** | PBT resin |
| **Cable** | UL13 (CL3), UL758 (AWM), 6 mm dia., AWG20 |

## Connector Pinout Diagram (from Mating Side)

| Item | No. of poles | 4 poles |
|---|---|---|
| **A-coding (For DC sensors)** | **Male (plug) contacts** |  |
| | **Female (socket) contacts** |  |

# Connection

| Socket | Plug: OMRON model No. | Smartclick Plug Connectors: XS5H, XS5G, XS5W (plug side), XS5R (plug side), XS5M * | M12 Plug Connectors: XS2H, XS2G, XS2W (plug side), XS2R (plug side), XS2M * |
|---|---|---|---|
| **Smartclick Socket Connectors** | **XS5F, XS5C, XS5W (socket side), XS5R (socket side), XS5P *** | ⊙ | ❍ |
| **M12 Socket Connectors** | **XS2F, XS2C, XS2W (socket side), XS2R (socket side), XS2P *** | ❍ | ❍ |

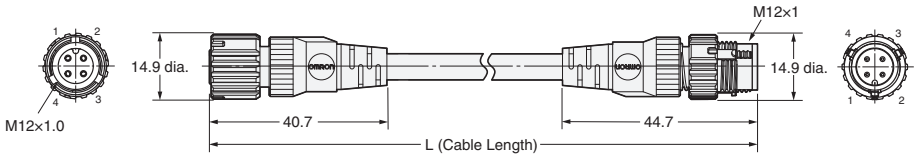
✻ XS2P/XS5P and XS5M, XS2M cannot mate with each other.
**Note:** ⊙: Connected by twisting.
❍: Connected by screwing.

# Dimensions

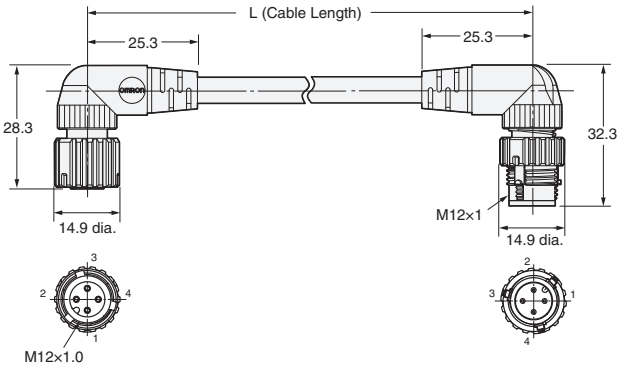
(Unit: mm)

### Socket and Plug on Cable Ends XS5W

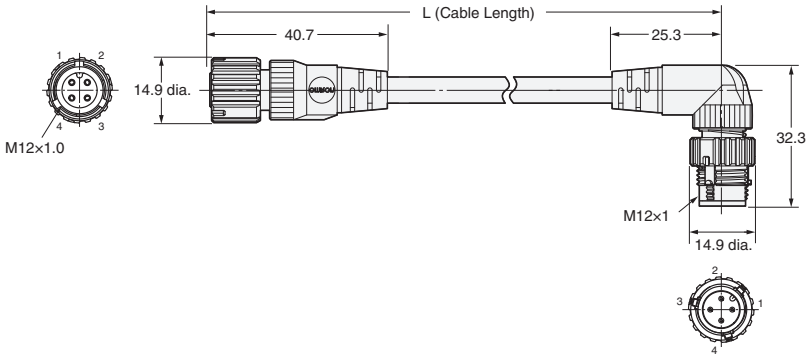
**Straight (Socket)/straight (Plug)**
**XS5W-D421-□81-F**



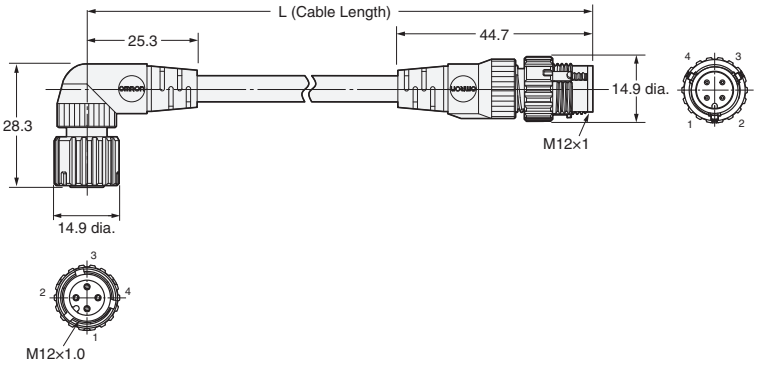

**Right-angle (Socket)/right-angle (Plug)**
**XS5W-D422-□81-F**



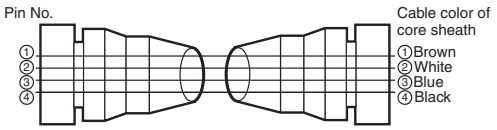

**Straight (Socket)/right-angle (Plug)**
**XS5W-D423-□81-F**




**Right-angle (Socket)/straight (Plug)**
**XS5W-D424-□81-F**

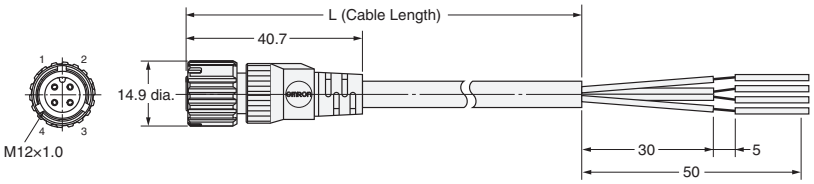



### Wiring Diagram for 4 Cores

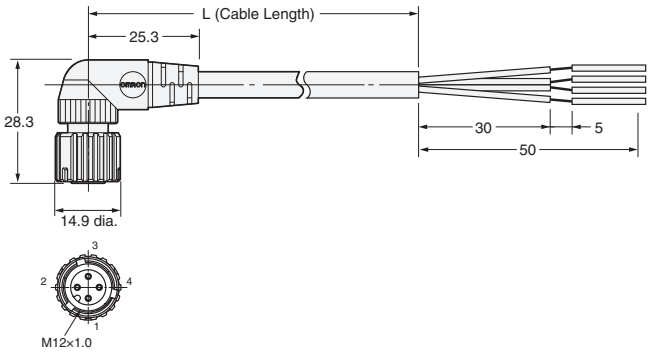


## Sockets on One Cable End XS5F

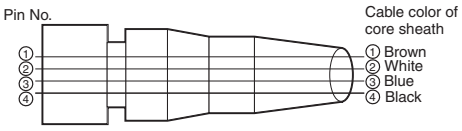
### Straight type
### XS5F-D421-□80-F




### Right-angle type
### XS5F-D422-□80-F




### Wiring Diagram for 4 Cores



# Safety Precautions

## Meaning of Display

| | |
|---|---|
| **Precautions for Safe Use** | Supplementary comments on what to do or avoid doing, to use the product safely. |
| **Precautions for Correct Use** | Supplementary comments on what to do or avoid doing, to prevent failure to operate, malfunction, or undesirable effects on product performance. |

## Precautions for Safe Use

### Degree of Protection

Do not use the product if its protective capabilities have been compromised, such as through swelling or cracks to housing or seal materials.
Breakages or damage from fire may occur when products in this state continue to be used.

### Connector Connection and Disconnection

- When connecting or disconnecting Connectors, be sure to hold the Connectors by hand.
- Do not hold the cable when disconnecting Connectors.
  Check the alignment using the slot in the polarity key.
- Do not wiring the Connector when your hands are wet. Malfunctions or device damage may occur when power is supplied to a device.
- When mating Connectors, be sure to insert the plug all the way to the back of the socket before attempting to lock the Connectors.
  After you lock a Connector, always confirm that it is mated properly.
- Do not use tools of any sort to mate the Connectors. Always use your hands. Pliers or other tools may damage the Connectors.
- When you replace a Connector, make sure that there is no liquid, cutting oil, or other foreign matter on the mating surfaces before you mate the Connector.

### Disposal

Dispose of this product as industrial waste.

## Precautions for Correct Use

- Do not use the Connectors in an atmosphere or environment that exceeds the specifications.
- Always turn OFF the power supply before wiring. Failure to turn OFF the power supply may lead to electric shock or damage to devices.
- Environments with corrosive gases and high temperature and humidity can cause bad connections and damage through corrosion, leading to degraded performance, therefore do not use these products in such environments.
- Do not pull on the Connectors or cables with excessive force.
- Do not step on or place any objects on the Connectors. Doing so may damage the Connectors.
- Lay the cable where it will not be stepped on to prevent the wires in the cable from being disconnected and to protect the Connectors from being damaged. If the cable must be placed where it will be stepped on, install a protective cover.
- At installation, if not installing sensors or switches, and not mating plug connectors, then use water-resistant covers (XS5Z-11, XS2Z-11) or dust-resistant covers (XS2Z-13/14/15) in order to ensure correct connector mating.

### Wiring

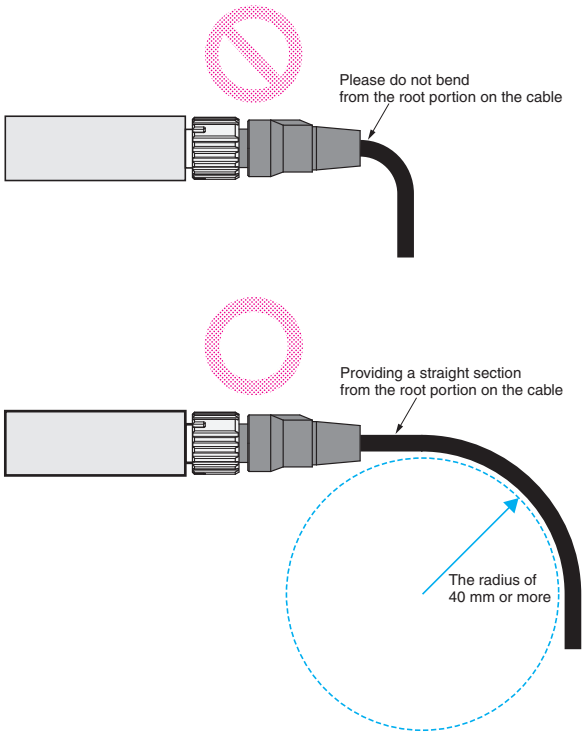
- Do not wire cables in environments in which the cable terminal sections will be subject to fluids such as water or cutting oil.
- When wiring cables, ensure this is carried out in accordance with the wiring diagram.
- Lay the cables so that external force is not applied to the Connectors. Otherwise, the degree of protection (IP67G) may not be achieved.

### Degree of Protection (IP67)

- The degree of protection of Connectors (IP67) is not for a fully watertight structure. Do not use the Connectors underwater.
- Do not step on or place any objects on the Connectors. Doing so may damage the Connectors.

### Setup

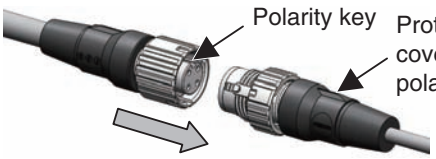
- Do not install the Connectors with a load placed directly on the joint or at the point where the wires connect to the Connector.
  The Connector may be damaged or the wires in the cable may be disconnected.
- If bending cables, ensure that these use a minimum bend radius of 40 mm.



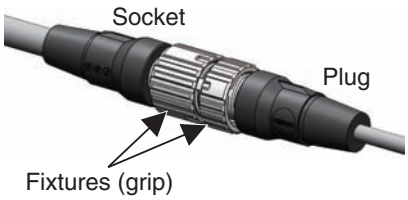
# Connecting

## 1. Connecting the XS5 Plug and Socket

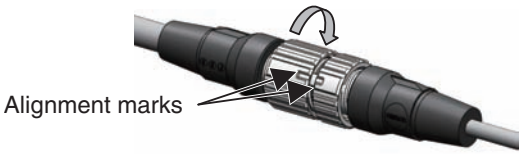
- Align the projection on the plug cover with the polarity key on the socket, then insert the plug all the way in.




- Hold the knurled socket grip, then insert the projection on the plug into the groove of the socket.




- Turn the knurled grips of the socket clockwise approximately 1/8 turn in respect to the plug. A click will indicate that the Connectors are locked. The locking condition can also be confirmed by the alignment marks on the plug and socket.




## 2. Connecting the XS5 and XS2

- Align the projection on the plug cover with the polarity key on the socket, then insert the plug all the way in.
- In the same way as when connecting two XS2 Connectors, screw the knurled grip in the clockwise direction.
- Use your fingers to tighten the Connectors sufficiently.

# XS3W-M8/XS3F-M8

## Small Round Water-resistive Connectors

- Water-resistive, compact connector meets IP67 requirements.
- M8 Screw-on Connectors
- Connectors on both cable ends require no harness work.
- Compliant with IEC61076-2-104
- UL approved products.

⚠ Refer to *Safety Precautions* on page 106.

## Model Number Structure

### Model Number Legend

Use this model number legend to identify products from their model number. Use this model number legend to identify products from their model number. When ordering, use a model number from the table in Ordering Information.

**XS3□ - M 8 P V C □ □ □**

1 2 3 4 5 6

1. **Type**
   W: Socket and Plug on Cable Ends
   F: Sockets on One Cable End

2. **Fastening Method**
   M8: M8 type

3. **Cable Material**
   PVC: PVC Cable

4. **Connector Poles**
   3: 3 poles
   4: 4 poles

5. **Cable Connection Direction**
   XS3W-M8
   SS: Straight (Plug)/Straight (Socket)
   SA: Straight (Plug)/Right-angle (Socket)

   XS3F-M8
   S: Straight
   A: Right-angle

6. **Cable Length**
   2M: 2 m
   5M: 5 m
   10M: 10 m

## Ordering Information

| Type | Cable specifications | Cable outer diameter (mm) | No. of cable cores (Poles) | Cable connection direction | Cable length (m) | Model | UL |
|---|---|---|---|---|---|---|---|
| Socket and Plug on Cable Ends | PVC cable | 5.0 dia. | 3 | Straight (Plug)/ Straight (Socket) | 2 | XS3W-M8PVC3SS2M | UL2238 certified (File no. E207683) |
| | | | | | 5 | XS3W-M8PVC3SS5M | |
| | | | | | 10 | XS3W-M8PVC3SS10M | |
| | | | | Straight (Plug)/ Right-angle (Socket) | 2 | XS3W-M8PVC3SA2M | |
| | | | | | 5 | XS3W-M8PVC3SA5M | |
| | | | | | 10 | XS3W-M8PVC3SA10M | |
| | | | 4 | Straight (Plug)/ Straight (Socket) | 2 | XS3W-M8PVC4SS2M | |
| | | | | | 5 | XS3W-M8PVC4SS5M | |
| | | | | | 10 | XS3W-M8PVC4SS10M | |
| | | | | Straight (Plug)/ Right-angle (Socket) | 2 | XS3W-M8PVC4SA2M | |
| | | | | | 5 | XS3W-M8PVC4SA5M | |
| | | | | | 10 | XS3W-M8PVC4SA10M | |
| Sockets on One Cable End | | | 3 | Straight type | 2 | XS3F-M8PVC3S2M | |
| | | | | | 5 | XS3F-M8PVC3S5M | |
| | | | | | 10 | XS3F-M8PVC3S10M | |
| | | | | Right-angle type | 2 | XS3F-M8PVC3A2M | |
| | | | | | 5 | XS3F-M8PVC3A5M | |
| | | | | | 10 | XS3F-M8PVC3A10M | |
| | | | 4 | Straight type | 2 | XS3F-M8PVC4S2M | |
| | | | | | 5 | XS3F-M8PVC4S5M | |
| | | | | | 10 | XS3F-M8PVC4S10M | |
| | | | | Right-angle type | 2 | XS3F-M8PVC4A2M | |
| | | | | | 5 | XS3F-M8PVC4A5M | |
| | | | | | 10 | XS3F-M8PVC4A10M | |

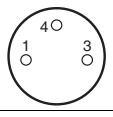
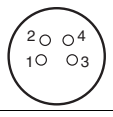
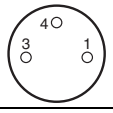
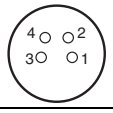
## Ratings and Specifications

| Item / Model | XS3W-M8/XS3F-M8 |
|---|---|
| Rated current | 1 A |
| Rated voltage | 125 VDC |
| Contact resistance (connector) | 40 mΩ max. (20 mV max., 100 mA max.) |
| Insulation resistance | 1,000 MΩ min. (at 500 VDC) |
| Dielectric strength (connector) | 1,000 VAC for 1 min (leakage current: 1 mA max.) |
| Degree of protection | IP67 (IEC60529) |
| Insertion tolerance | 200 times |
| Cable tensile strength | 49 N/15 s |
| Ambient operating temperature range | -10 to 80°C |
| Ambient humidity range | 20 to 85%RH |

### Materials and Finish

| Item / Model | XS3W-M8/XS5F-M8 |
|---|---|
| Contacts | Copper alloy/Gold plating |
| Fixture | Copper alloy/Nickel plating |
| Contact block | PBT resin |
| O-ring | Rubber |
| Cover | PBT resin |
| Cable | 5 mm dia, AWG23, PVC |

### Pin Arrangement (Engaged Side)

| Item | Poles | 3 poles | 4 poles |
|---|---|---|---|
| DC | Male (plug) contacts |  |  |
| | Female (socket) contacts |  |  |

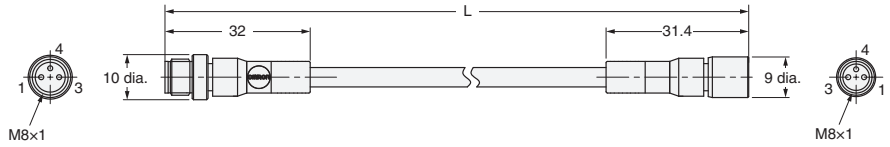
# Dimensions

(Unit: mm)

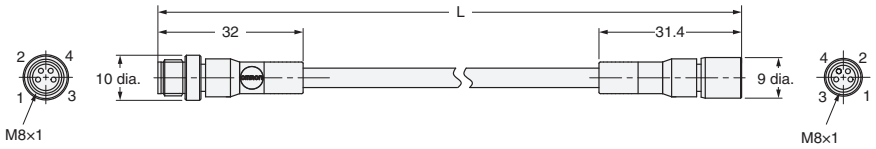
## Connectors on both cable ends XS3W-M8

**Straight (Plug)/Straight (Socket)**

XS3W-M8PCV3SS□M (3 poles)

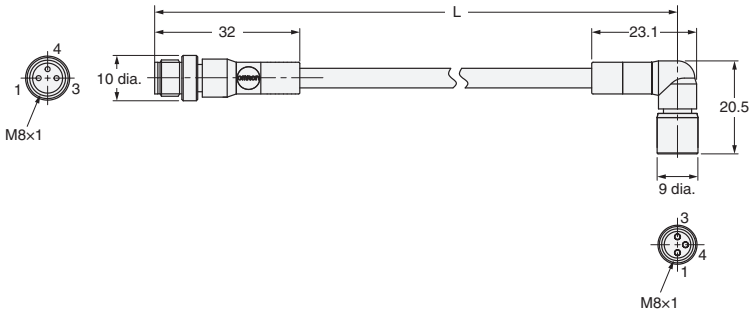



XS3W-M8PCV4SS□M (4 poles)

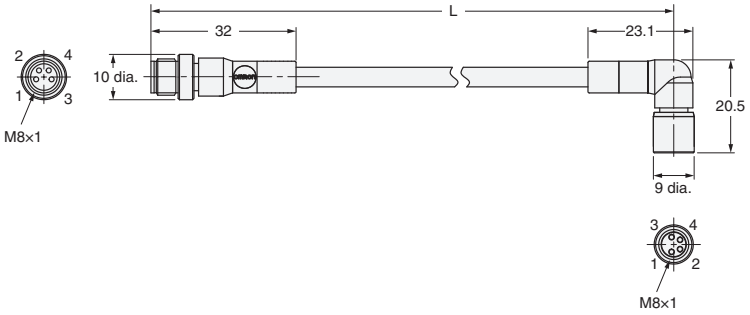



**Straight (Plug)/Right-angle (Socket)**

XS3W-M8PCV3SA□M (3 poles)

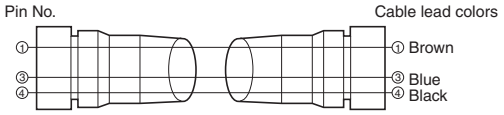



XS3W-M8PCV4SA□M (4 poles)

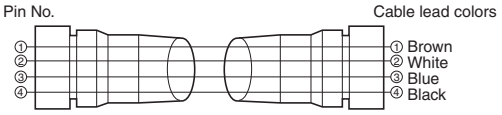



## Wiring Diagram

3 Cores



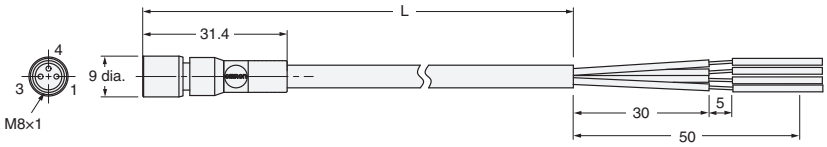

4 Cores



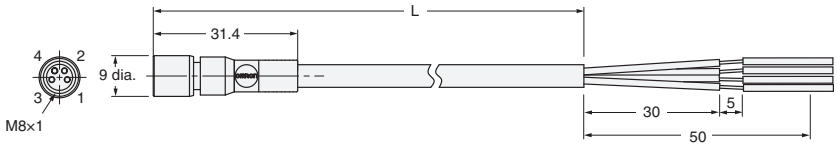
## Connectors on both cable ends XS3F-M8

**Straight Connectors**

XS3F-M8PCV3S□M (3 poles)

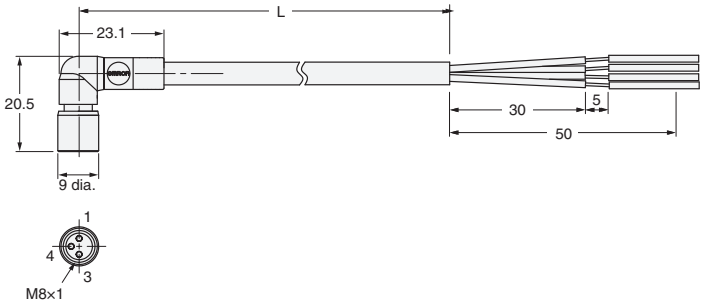



XS3F-M8PCV4S□M (4 poles)

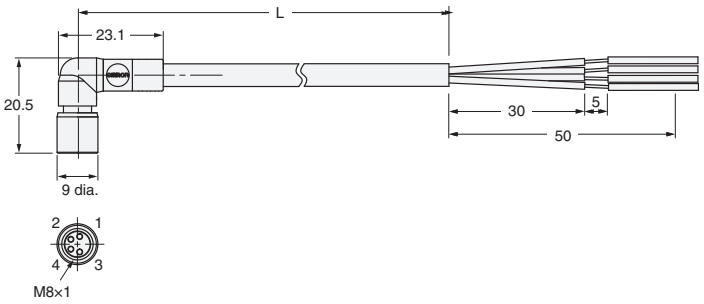



**Right-Angle Connectors**

XS3F-M8PCV3A□M (3 poles)

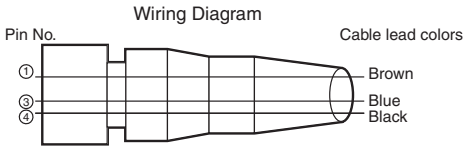



XS3F-M8PCV4A□M (4 poles)

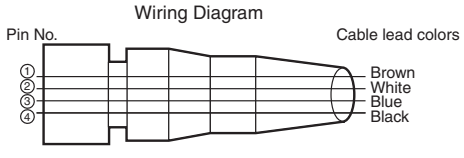



## Wiring Diagram

3 Cores




4 Cores



# Safety Precautions

## Meaning of Display

| | |
|---|---|
| **Precautions for Safe Use** | **Supplementary comments on what to do or avoid doing, to use the product safely.** |
| **Precautions for Correct Use** | **Supplementary comments on what to do or avoid doing, to prevent failure to operate, malfunction, or undesirable effects on product performance.** |

## Precautions for Safe Use

### Disposal

Dispose of this product as industrial waste.

## Precautions for Correct Use

Do not use the product in atmospheres or environments that exceed product ratings.

### Connections

- The XS3 and XS2 Sensor I/O Connectors cannot be connected to each other.
- You cannot mate Connectors that have a different number of poles.
- When using Sensors with Connectors or Limit Switches, use the Sensor I/O Connectors specified in the catalog.

### Connector Connection and Disconnection

- Before connecting or disconnecting Connectors, make sure that no power is being supplied to the Connectors.
- When connecting or disconnecting Connectors, be sure to hold the Connectors by hand. Do not disconnect the Connectors by pulling the cable.
- Do not touch the mating surface of the connectors with wet hands. If there is any water on the Connector or near the Connector, be sure to wipe off the water before connecting or disconnecting the Connector, otherwise the Connector may short-circuit internally or not ensure good insulation.
- Make sure that mating section of any Connector is free of metal dust or power.
- Do not use tools of any sort to mate the Connectors. Always use your hands. Pliers or other tools may damage the Connectors. Be sure to tighten each thread bracket by hand within a torque of 0.2 N·m. If the thread bracket is not tightened securely, the Connector may not maintain its proper degree of protection or the thread bracket may fall off due to vibration.
- When you tighten or loosen a thread bracket, hold onto only the thread bracket.
  If you hold onto the cover or cable, excessive rotational force will be applied to the Connector and may damage it.

### Degree of Protection

- Do not impose external force continuously on the joints of pin blocks and covers, otherwise the Connectors may not keep its proper degree of protection (i.e., IP67).
- The degree of protection of connectors (IP67) is not for a fully watertight structure. Do not use them underwater.
- The Connectors are not oil-resistant. Do not use them where they would be subject to oil.
- If Connectors are used in places with vibration or shock, secure the mating section of each Connector, otherwise the Connectors may be disconnected or fail to maintain their proper degree of protection.
- Connectors are of resin mold construction. Do not impose excessive force on them.

### Storage

Do not store Connectors for long periods of time in the following locations

- Locations subject to dust or high humidity
- Locations subject to ammonia gas or sulfide gas

### Setup

- Do not make any cable bends near the base of the Unit.
- Any bends made must have a minimum radius of 36 mm.

# Terms and Conditions Agreement

## Read and understand this catalog.

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

## Warranties.

(a) Exclusive Warranty. Omron's exclusive warranty is that the Products will be free from defects in materials and workmanship for a period of twelve months from the date of sale by Omron (or such other period expressed in writing by Omron). Omron disclaims all other warranties, express or implied.

(b) Limitations. OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCTS. BUYER ACKNOWLEDGES THAT IT ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE.

Omron further disclaims all warranties and responsibility of any type for claims or expenses based on infringement by the Products or otherwise of any intellectual property right. (c) Buyer Remedy. Omron's sole obligation hereunder shall be, at Omron's election, to (i) replace (in the form originally shipped with Buyer responsible for labor charges for removal or replacement thereof) the non-complying Product, (ii) repair the non-complying Product, or (iii) repay or credit Buyer an amount equal to the purchase price of the non-complying Product; provided that in no event shall Omron be responsible for warranty, repair, indemnity or any other claims or expenses regarding the Products unless Omron's analysis confirms that the Products were properly handled, stored, installed and maintained and not subject to contamination, abuse, misuse or inappropriate modification. Return of any Products by Buyer must be approved in writing by Omron before shipment. Omron Companies shall not be liable for the suitability or unsuitability or the results from the use of Products in combination with any electrical or electronic components, circuits, system assemblies or any other materials or substances or environments. Any advice, recommendations or information given orally or in writing, are not to be construed as an amendment or addition to the above warranty.

See http://www.omron.com/global/ or contact your Omron representative for published information.

## Limitation on Liability; Etc.

OMRON COMPANIES SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE OR STRICT LIABILITY.

Further, in no event shall liability of Omron Companies exceed the individual price of the Product on which liability is asserted.

## Suitability of Use.

Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases.

NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY OR IN LARGE QUANTITIES WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT(S) IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

## Programmable Products.

Omron Companies shall not be responsible for the user's programming of a programmable Product, or any consequence thereof.

## Performance Data.

Data presented in Omron Company websites, catalogs and other materials is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of Omron's test conditions, and the user must correlate it to actual application requirements. Actual performance is subject to the Omron's Warranty and Limitations of Liability.

## Change in Specifications.

Product specifications and accessories may be changed at any time based on improvements and other reasons. It is our practice to change part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Omron's representative at any time to confirm actual specifications of purchased Product.

## Errors and Omissions.

Information presented by Omron Companies has been checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.

**Note: Do not use this document to operate the Unit.**


**OMRON Corporation** **Industrial Automation Company**
**Kyoto, JAPAN**
**Contact: www.ia.omron.com**

***Regional Headquarters***

**OMRON EUROPE B.V.**
Wegalaan 67-69, 2132 JD Hoofddorp
The Netherlands
Tel: (31)2356-81-300/Fax: (31)2356-81-388

**OMRON ELECTRONICS LLC**
2895 Greenspoint Parkway, Suite 200
Hoffman Estates, IL 60169 U.S.A.
Tel: (1) 847-843-7900/Fax: (1) 847-843-7787

**OMRON ASIA PACIFIC PTE. LTD.**
No. 438A Alexandra Road # 05-05/08 (Lobby 2),
Alexandra Technopark,
Singapore 119967
Tel: (65) 6835-3011/Fax: (65) 6835-2711

**OMRON (CHINA) CO., LTD.**
Room 2211, Bank of China Tower,
200 Yin Cheng Zhong Road,
PuDong New Area, Shanghai, 200120, China
Tel: (86) 21-5037-2222/Fax: (86) 21-5037-2200


**Authorized Distributor:**




**CSM_1_5_0819**
**Cat. No. D121-E1-03** 0819(1218)