

NEW

Proximity Sensors

DC 3-Wire Models

E2E NEXT Series

OMRON

9 mm

[Quadruple distance model of M12 sized]

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** ^[M12]
mm^{*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

Quadruple distance model

9 mm [M12]

Triple distance model

6 mm [M12]

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

4 mm [M12]

Single distance model

2 mm [M12]



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.

Previous models

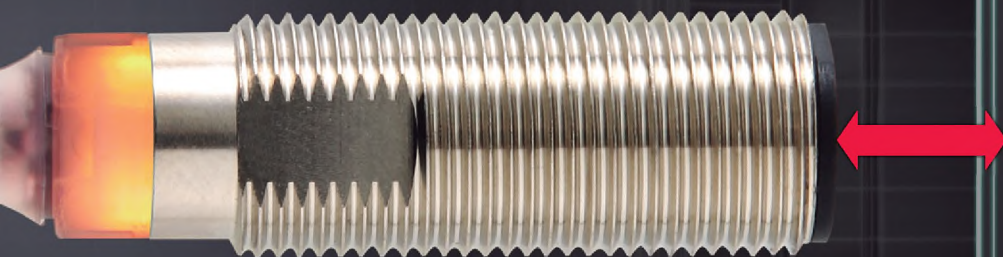


E2E NEXT

Exceptional
sensing range*

9 mm
[Quadruple distance
models of M12 sized]

* Based on December 2018 OMRON investigation.



Stable detection without collision

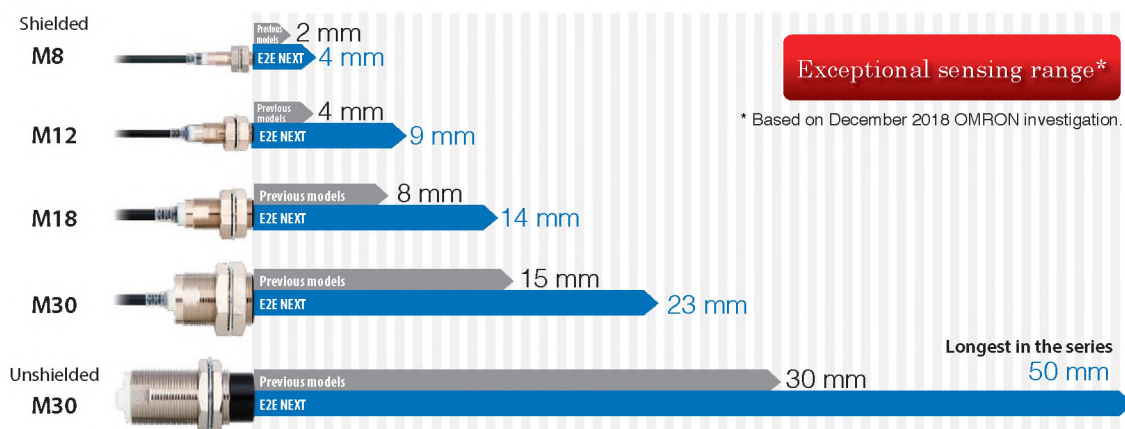
Allows for more spacious design with less risk of contact

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.

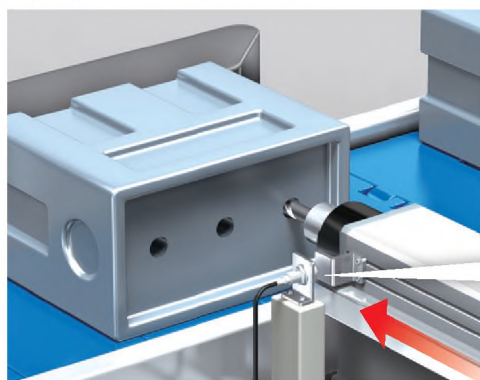


■ Approximately double the sensing distance of previous models

Sensing distance comparisons (Quadruple distance models)



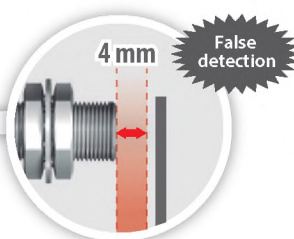
Less false detection even when a stationary gets away from the sensor due to equipment vibration



Spindle presence detection

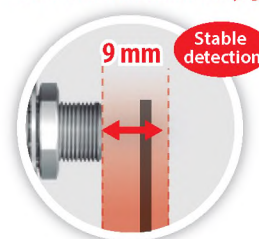
Previous models

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

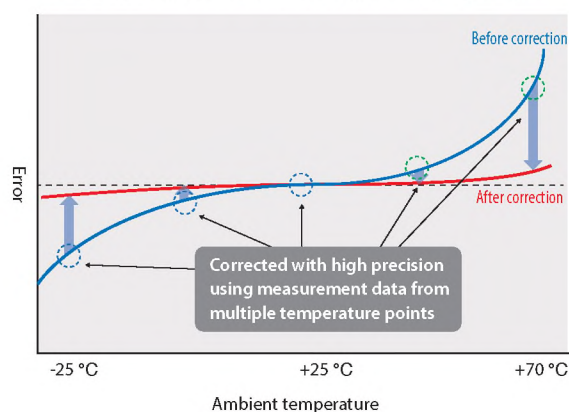
PROX3 hybrid circuitry with Thermal Distance Control 2 eliminates ambient temperature influence to enable extended sensing ranges.

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

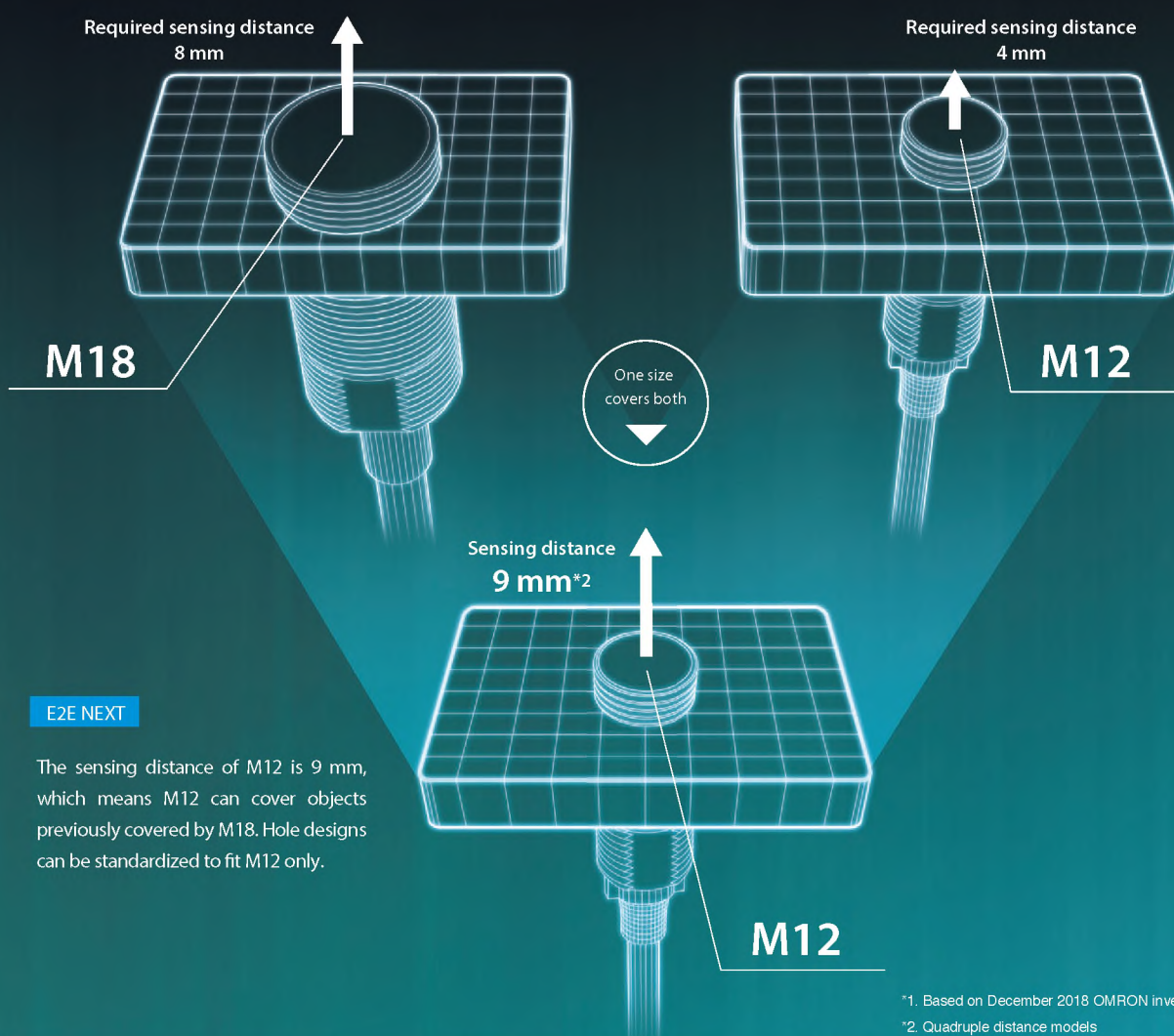
Exceptional sensing range^{*1}

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.

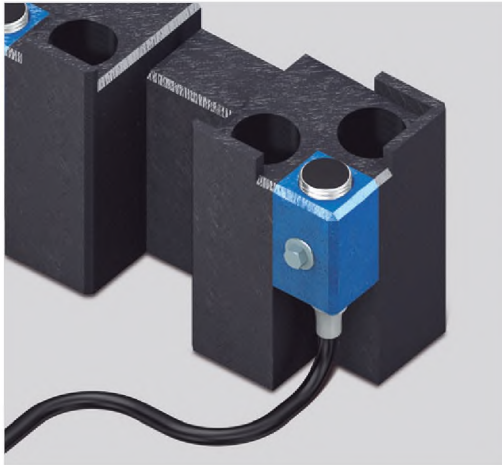


Four types of M12 size sensors are available to meet the need for variable sensing distances for different installation sites.



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.



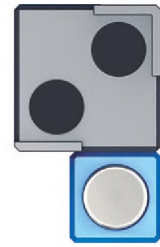
Previous models

Proximity sensors could not be installed due to limited space.

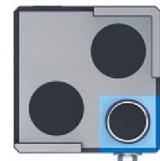
E2E NEXT

They can be installed due to limited space.

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



M18

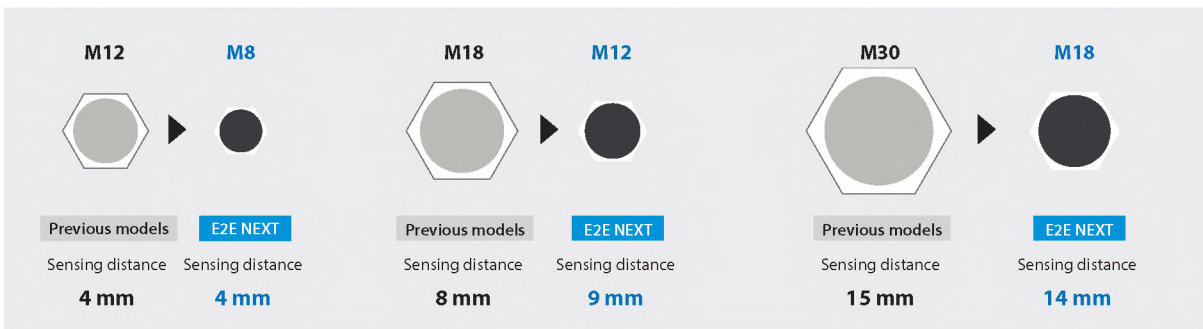


M12

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)



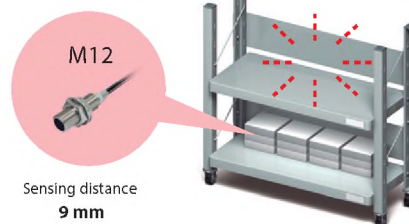
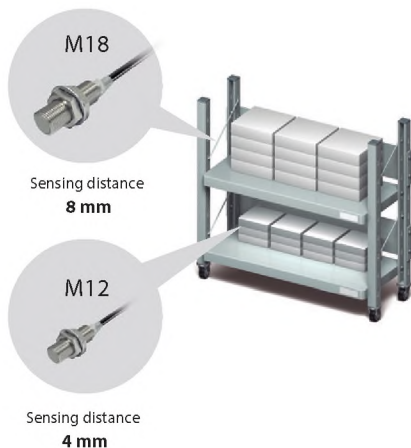
Unifying the model types to reduce the number of parts kept in inventory.

Previous models

Two models (M12 and M18) stocked

E2E NEXT

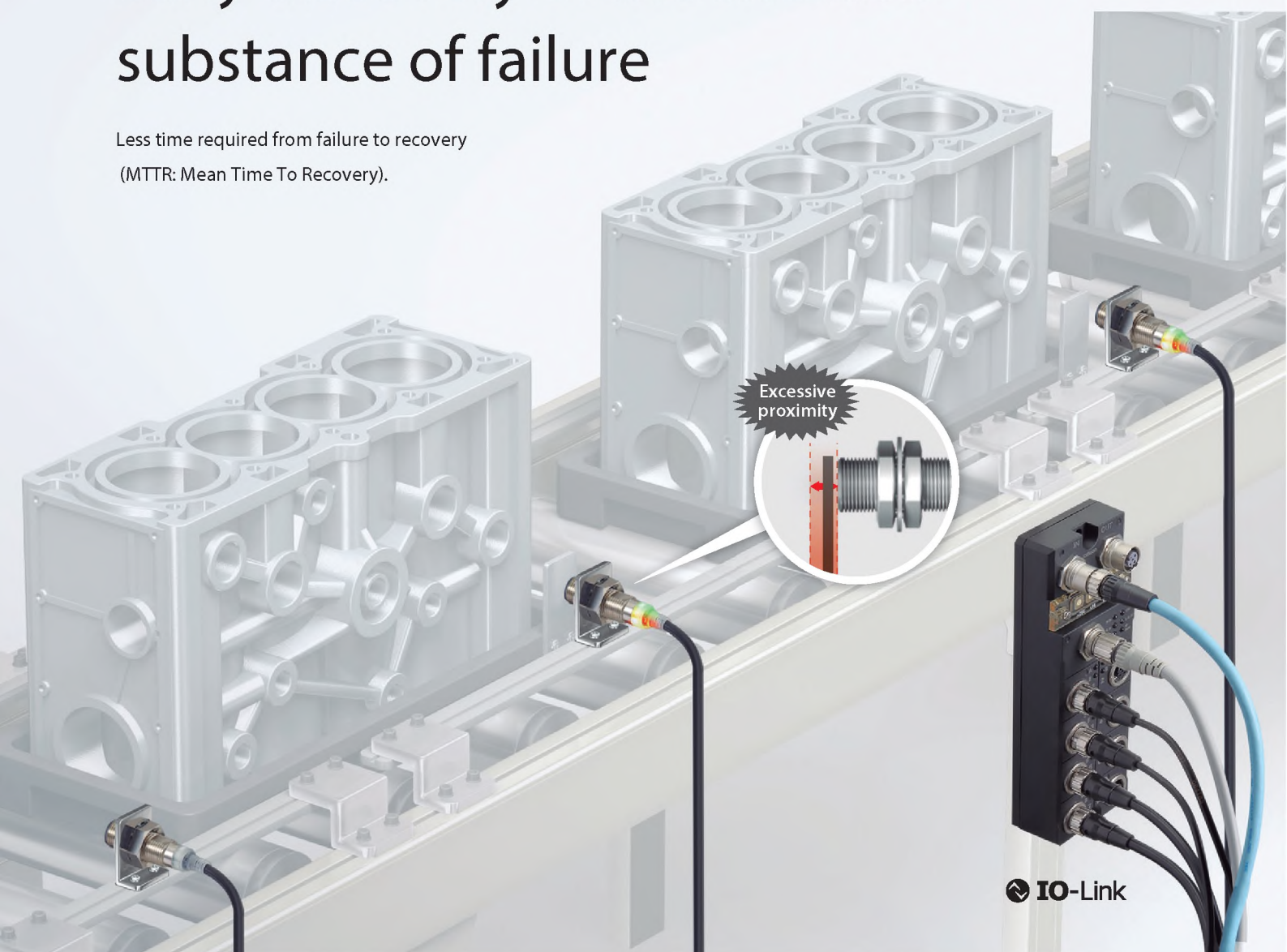
The extended range of the new sensors allows you to reduce the sensor size from M18 down to M12.



New standards for usability | Early error detection

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

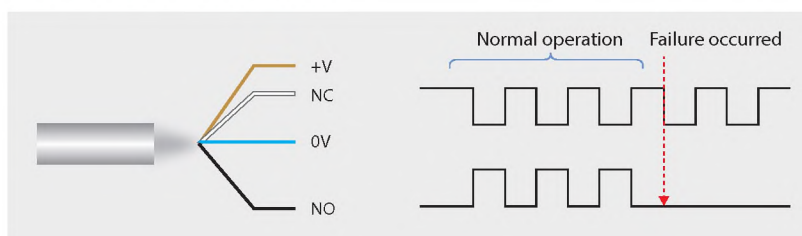
Less time required from failure to recovery
(MTTR: Mean Time To Recovery).



Detects sensor failures through two output types, NO and NC

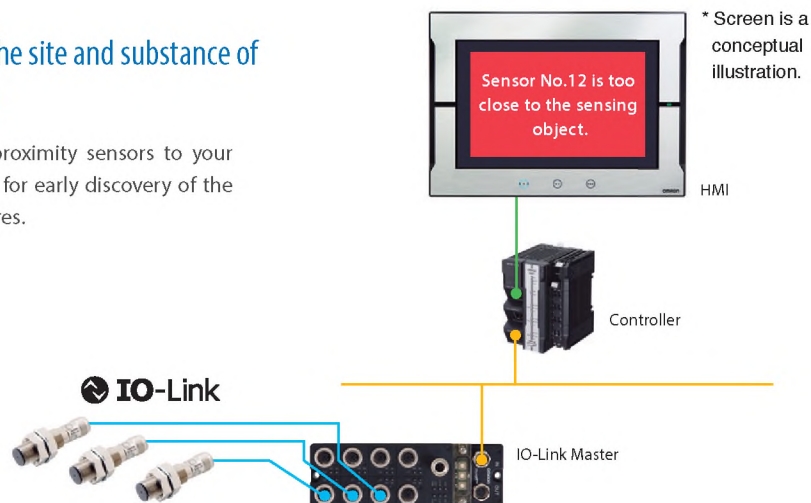
Enables failure discovery by wiring two outputs, NO and NC.

When NO cable is disconnected



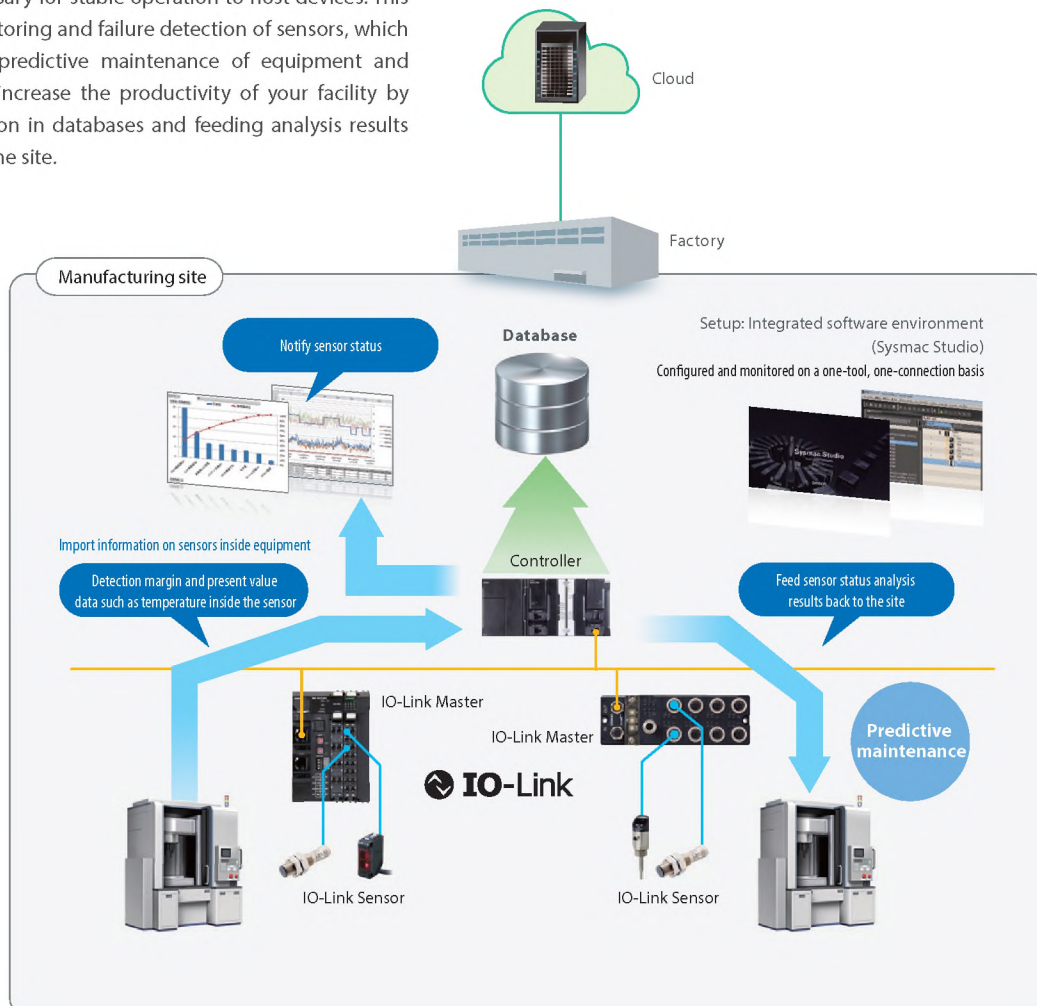
Enables real-time identification of the site and substance of sensor failure from a single location

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.



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.



New standards for usability | Quick recovery

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

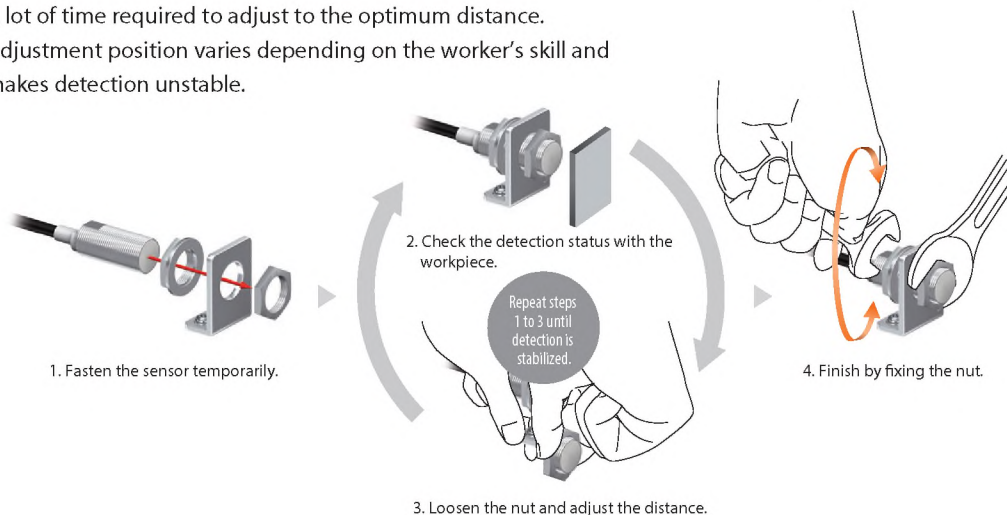


Replacements in as little as 10 seconds* using e-jig

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

Previous models

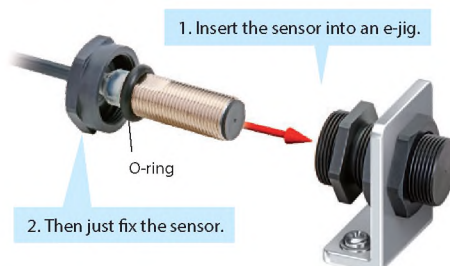
A lot of time required to adjust to the optimum distance.
Adjustment position varies depending on the worker's skill and makes detection unstable.



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

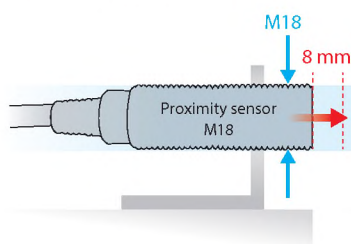
The O-ring blocks the ingress of foreign matter, including cutting oil, into the e-jig and ensures positioning precision (IP67G).

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

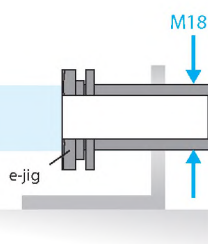
Easily upgrade existing facilities to enable "10-second* proximity sensor replacements"

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.

