OMRON

A Ruggedized Remote Terminal that Simplifies IIoT Adoption

IO-Link   **EtherNet/IP**
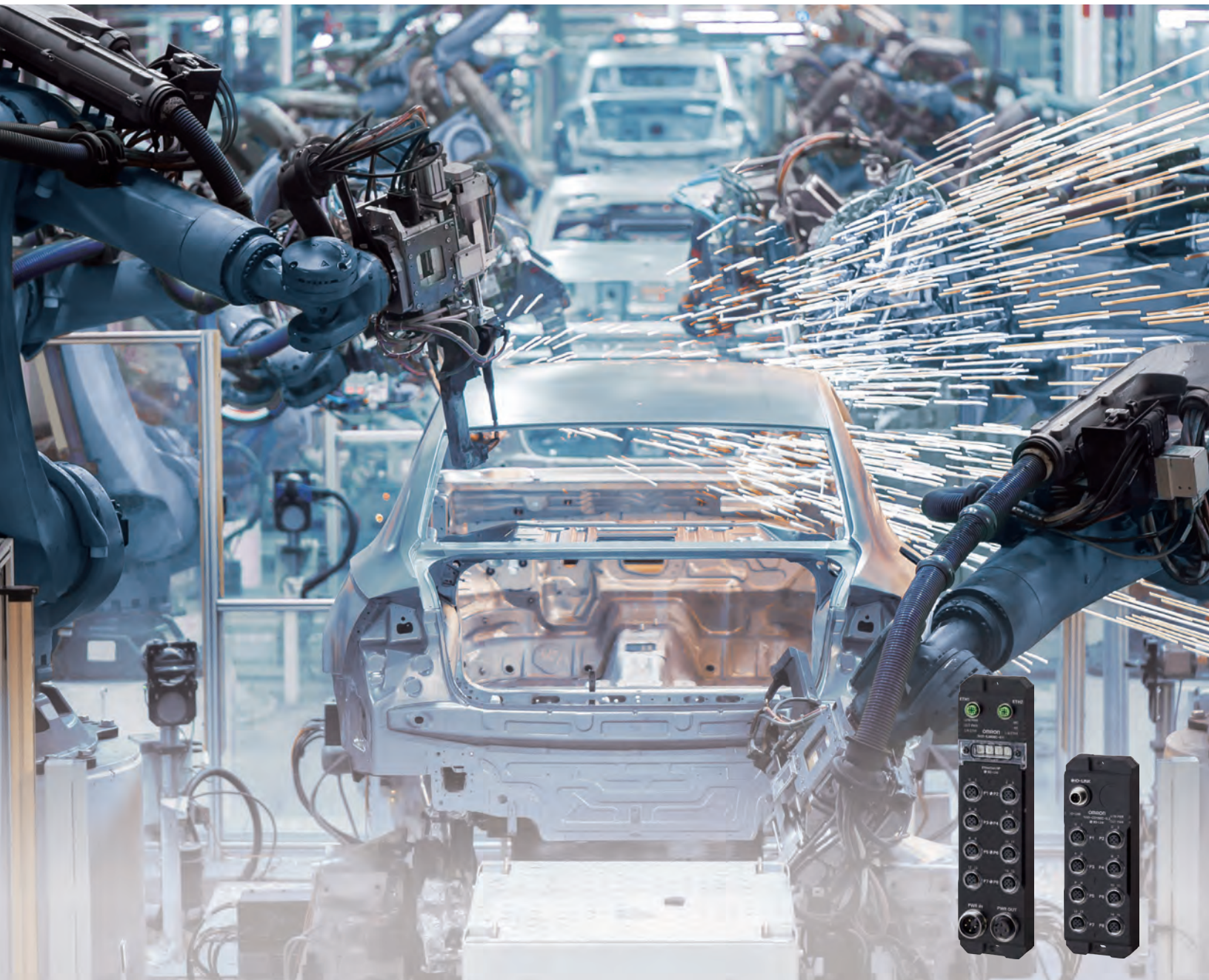
Reduce commissioning and maintenance time by 90%[1]

Manufacturers are increasingly adopting modern networking technologies to address the chronic shortage of engineers with the right skill sets. Since conventional methods don't always work, production floors are seeing a rise in certain problems such as an increase in mean time to repair (MTTR). The NXR addresses these issues by means of time-saving functions that Omron developed after thoroughly analyzing production processes to determine which tasks were unnecessary and inefficient.

| From | Design | Setup and commissioning | Operation | Maintenance |

To

Simple and quick setup and commissioning
Reduced by 90 %[1]

Stable operation by visualizing communication quality

Short MTTR by easy replacement and quick recovery
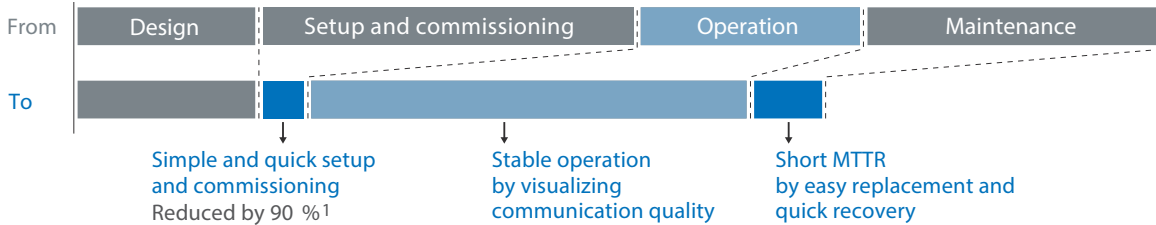
IP67 Remote Terminal
No control panel required

EtherNet/IP
· Built-in L2 switching hub

Network

LED indicator:
Color universal design

Enlarged view of I/O connector

IO-Link

Selectable by setting
· 8 IO-Link ports
· 16 digital inputs/outputs

I/O connector

IO-Link

· 16 digital inputs
or
· 16 digital inputs/outputs

7/8-inch connector
· I/O power supply, unit power supply
· Through-wiring

Power supply connector

IO-Link Master Unit

IO-Link I/O Hub

A user-friendly system that reduces wiring
IO-Link hub simplifies wiring and increases data utilization capabilities.

IO-Link master

Controller

Data utilization via IO-Link

IO-Link sensor or actuator

EtherNet/IP

IO-Link master

Simple wiring using I/O hub

Standard sensor or actuator

I/O hub   16 I/Os

I/O hub   16 I/Os

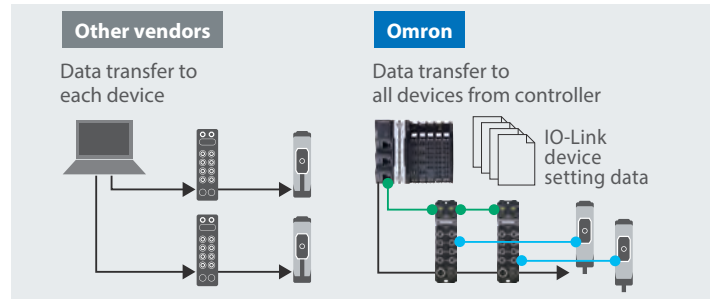[1] Compared with Omron's NX Series in May 2020.
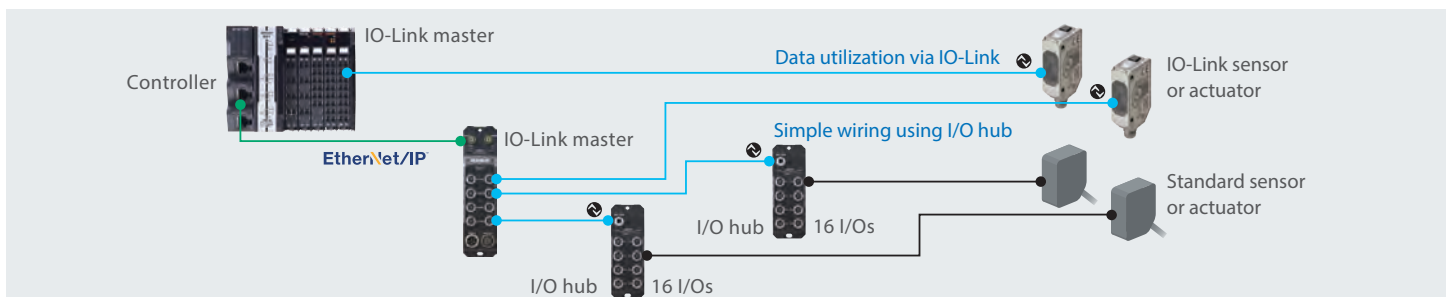
Simple and quick setup and commissioning

NXR setup time is reduced by 90%[1] thanks to the configuration tool's automatic setting of IO-Link parameters and the ability to transfer remote terminal and IO-Link device settings from the controller.

[1] Compared with Omron's NX Series in May 2020.

① Select the device

② Click the OK button
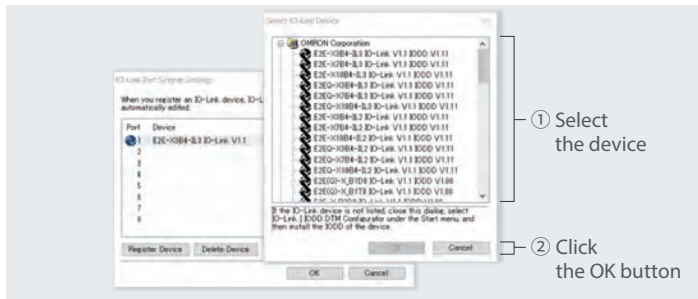
Select devices to update all parameters at the same time. Simple configuration prevents human errors.

Other vendors
Data transfer to each device

Omron
Data transfer to all devices from controller

IO-Link device setting data

Configuring all devices at once from the controller eliminates the need to configure each device individually, greatly reducing setup time.

A simple way to monitor network health

Quantified Ethernet and IO-Link communication statuses allow you to find network cabling errors before operation. During operation, the communication statuses can be monitored, making it possible to check the system before it suddenly stops.

Ethernet

IO-Link

[Case study]
Error count of terminal B

Communication error count

Time

Error count of all devices

	Total communication error count
Terminal A	0
Terminal B	14
Terminal C	0

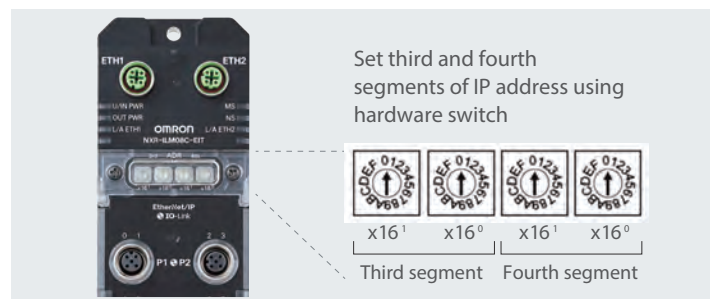# Easy replacement and quick recovery shortens MTTR

I/O cable and communication cable diagnostics

The remote terminal reports approximate locations of disconnections or short circuits in Ethernet cables, and detects disconnections or short circuits in I/O cables.

Ethernet cable

Disconnected 3m away

EtherNet/IP

I/O cable

Sensor

Short-circuit detection

Disconnection detection
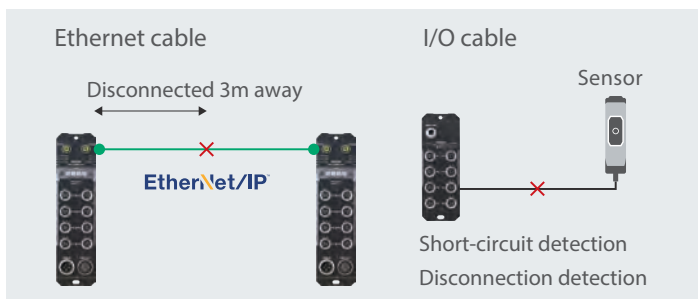
No software needed for replacement

The IP address can be set using the hardware switch, without using special software.

Set third and fourth segments of IP address using hardware switch

$x16^1$ $x16^0$ $x16^1$ $x16^0$

Third segment   Fourth segment

Ordering Information

Product name	Number of IO-Link ports	Degree of protection	Port connection	Model
IO-Link Master Unit for EtherNet/IP	8	IP67	M12 connector (A-cording, female)	NXR-ILM08C-EIT

Product name	Number of inputs/outputs	Degree of protection	I/O connector	Model
IO-Link I/O Hub	16 inputs	IP67	8 M12 connectors (A-cording, female)	NXR-ID166C-IL2
	16 inputs/outputs			NXR-CD166C-IL2

Specifications

Product name	Item		Specification
IO-Link Master Unit for EtherNet/IP	EtherNet/IP communications	Baud rate, Ethernet physical layer	10 Mbps/100 Mbps, 100BASE-TX/10BASE-T
		Ethernet switch	Layer 2 Ethernet switch
		Functions	Communication cable diagnostics
			Network statistical information acquisition
			QuickConnect
			DLR (Device Level Ring), ring node
	IO-Link port	Connector, number of ports	Class A, 8 ports
		Baud rate	COM1: 4.8 kbps, COM2: 38.4 kbps, COM3: 230.4 kbps
	Digital inputs in SIO (DI) Mode	Number of inputs	16
		Short-circuit protection, short-circuit detection	Provided
	Digital outputs in SIO (DI) Mode	Number of outputs	16
		Short-circuit protection, short-circuit detection	Provided

Product name	Item		Specification
IO-Link I/O Hub	IO-Link	Baud rate	COM2: 38.4 kbps
	Digital inputs	Number of inputs	16 (digital input hub), 0 to 16 (digital input/output hub)
		Short-circuit protection, short-circuit detection, disconnection detection	Provided
	Digital outputs	Number of outputs	0 to 16 (digital input/output hub)
		Short-circuit protection, short-circuit detection, disconnection detection	Provided