

Environment-resistive Remote Terminal NXR Series
IO-Link Master Unit for EtherNet/IP™ or EtherCAT®

OMRON

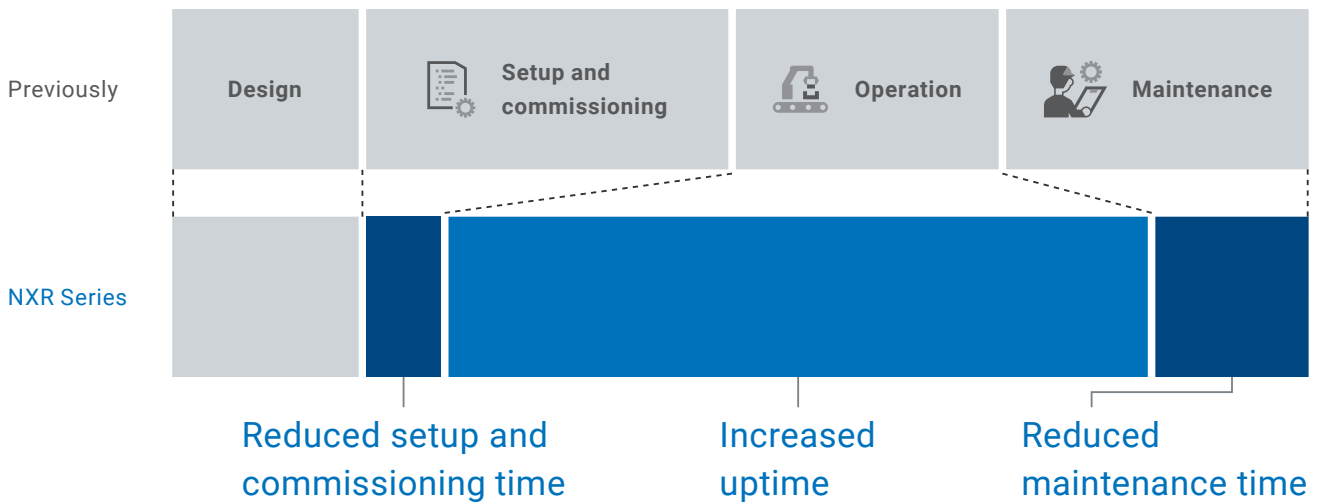
Easy way to adopt IoT for production equipment IP67 Remote Terminal



Streamline commissioning and maintenance efforts and stabilize operation

Since conventional commissioning and maintenance methods via field networks are insufficient for modern manufacturing sites, some problems, such as increase in MTTR and commissioning time, are arising.

As a solution to these problems, OMRON analyzed unnecessary and inefficient work in production processes, and developed NXR Series that comes equipped with various functions to save time and ensure uninterrupted operation.



Setup and commissioning

Simple and quick setup and commissioning P.4



Operation

Stable operation by visualizing communication quality P.6



Maintenance

Short MTTR by easy replacement and quick recovery P.6

Features of NXR Environment-resistive Remote Terminal

No control panel required thanks to IP67 protection

Network

- NR-ILM08C-EIT
- EtherNet/IP
- NR-ILM08C-ECT
- EtherCAT

I/O connector

- NR-ID166C-IL2
- NR-CD166C-IL2
- LED indicator: Color universal design
- Enlarged view of I/O connector

Power supply connector

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

IO-Link Master Unit

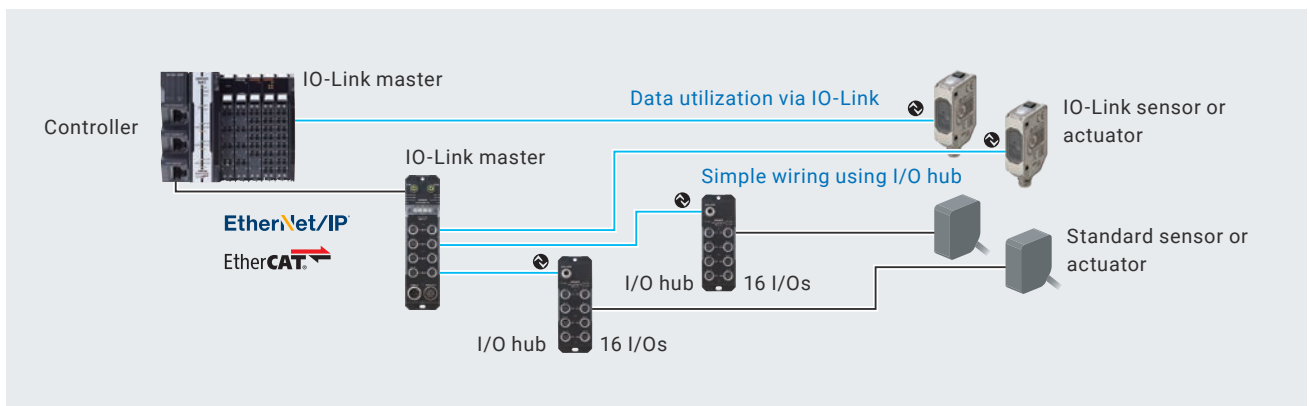
- Selectable by setting
- 8 IO-Link ports
- 16 digital inputs/outputs

IO-Link I/O Hub

- 16 digital inputs or 16 digital inputs/outputs

Data utilization with reduced wiring

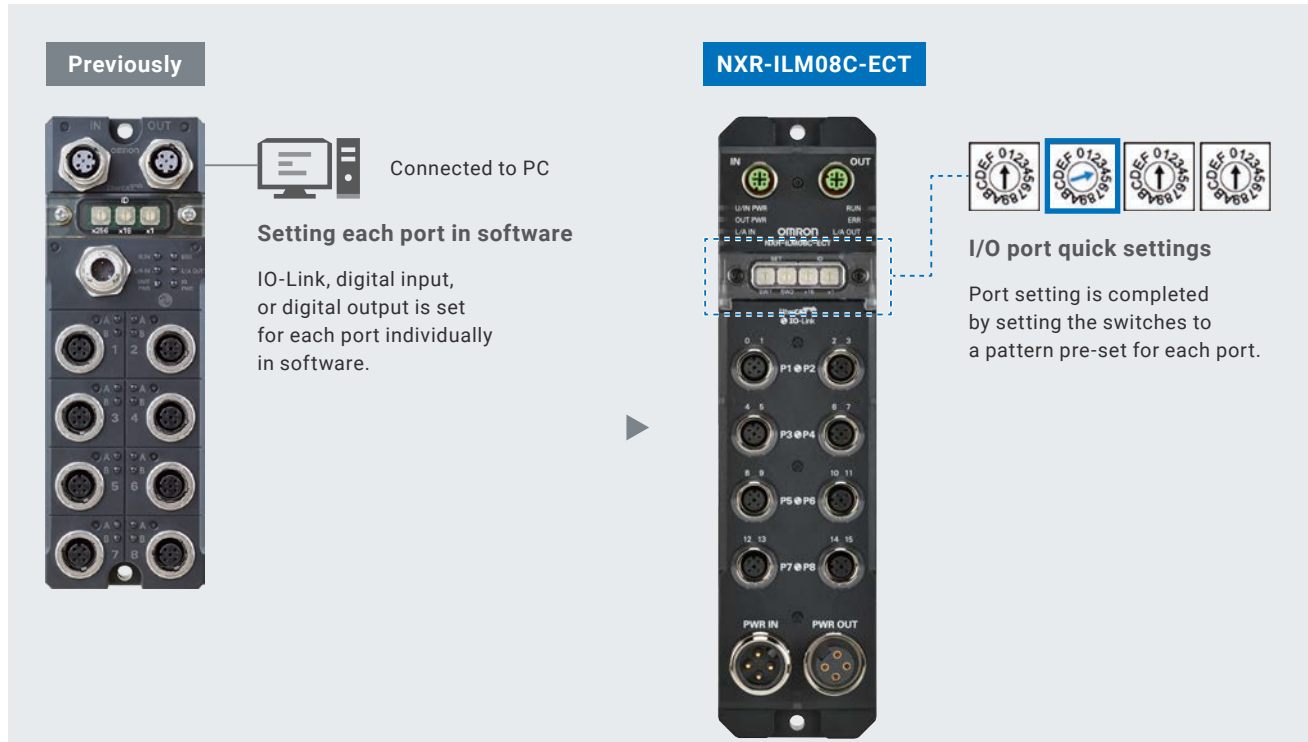
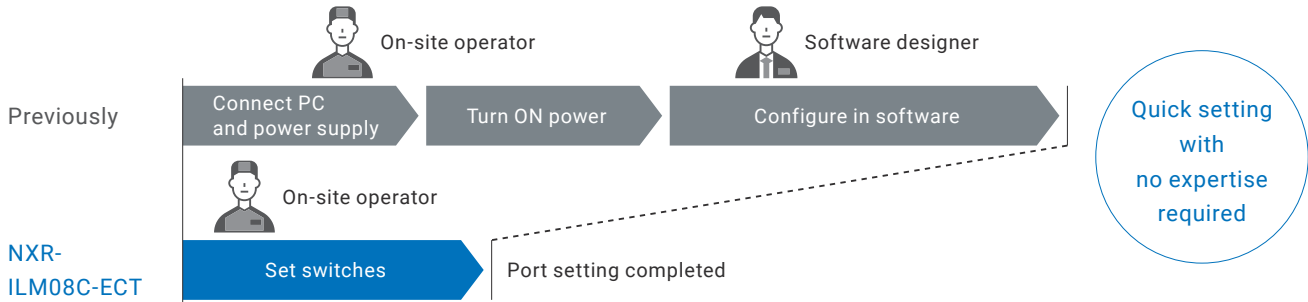
Adding the IO-Link I/O hub simplifies wiring while providing the capability of data utilization.



Simple and quick setup and commissioning

Setup without software designer intervention **EtherCAT**

On-site operators can make port settings for the IO-Link master unit simply by setting the rotary switches to a pre-set pattern, reducing setup time and software designers' workload.



Port setting table of NXR-ILM08C-ECT

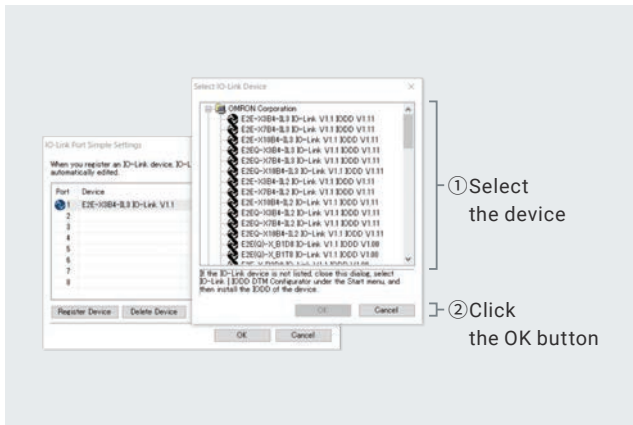
Port	Pin No.	Set switches															
		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
1	4	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	2	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2	4	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	2	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
3	4	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	2	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
4	4	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	2	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
5	4	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	2	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
6	4	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	2	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
7	4	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	2	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
8	4	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	2	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Digital input
 Digital output
 IO-Link
 Set using software

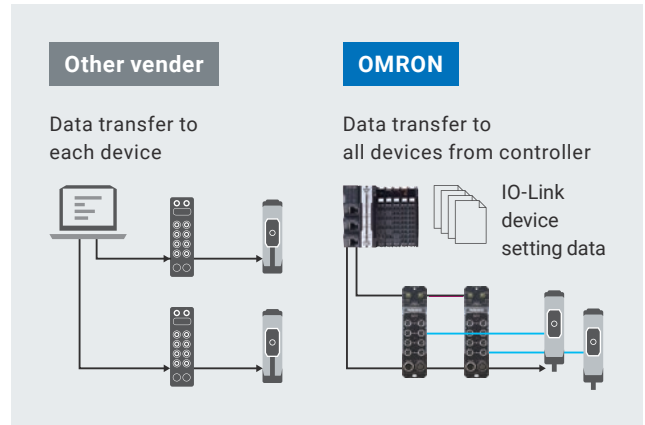
Batch device setting using CX-ConfiguratorFDT

Automatic setting of IO-Link parameters on the configuration tool and transfer of remote terminal and IO-Link device settings from the controller significantly reduce setup time by 90%*1.

*1. Compared with OMRON's NX Series in August 2025.



Just select devices to update all parameters at the same time. Simple configuration prevents human errors.



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

Easy and accurate configuration using Sysmac Studio

Configuration settings of connected actual IO-Link devices can be verified and obtained in Sysmac Studio.

In addition, the process data structure and device variables of the set devices can be generated automatically, reducing programming time. This can save you configuration time while preventing human errors.

Verifies and gets device parameters at a time

Automatically generates process data structure and device variables

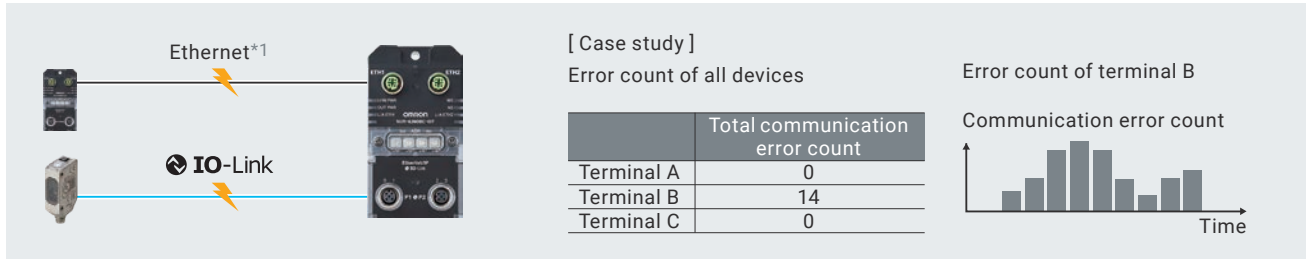
Port	Description	R/W	Data Type	Variable
▼ Port1 Input Data01	E2E(Q)-X_B1D12	R	ARRAY[0..1]	#001_Port1_Input_Data01
Port1 Monitor Output	Port1 Monitor Output	R	USINT	#001_Port1_Monitor_Output
Port1 Control Output1	Port1 Control Output1	R	BOOL	#001_Port1_Control_Output1
Port1 Instability Detection Alarm	Port1 Instability Detection	R	BOOL	#001_Port1_Instability_Detection_Alarm
Port1 Target too Close Alarm	Port1 Target too Close Alar	R	BOOL	#001_Port1_Target_too_Close_Alarm
Port1 Warning	Port1 Warning	R	BOOL	#001_Port1_Warning
Port1 Error	Port1 Error	R	BOOL	#001_Port1_Error

I/O port of sensor

Variables generated by selecting Create Device Variable from menu

Stable operation by visualizing communication quality

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.



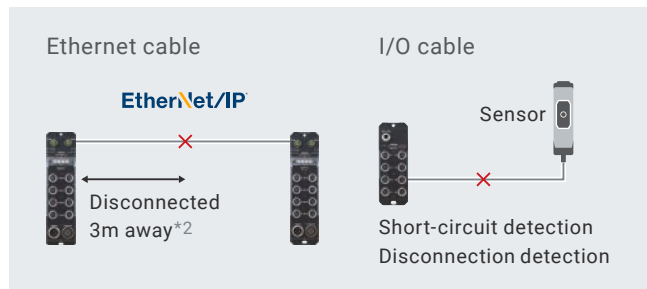
*1. The NJ/NX CPU Units and NY Industrial PCs support EtherCAT.

Short MTTR by easy replacement and quick recovery

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.

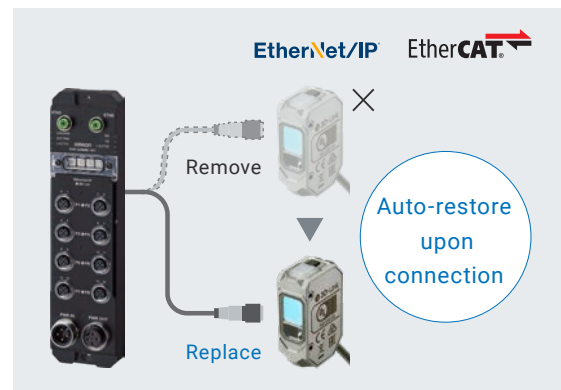
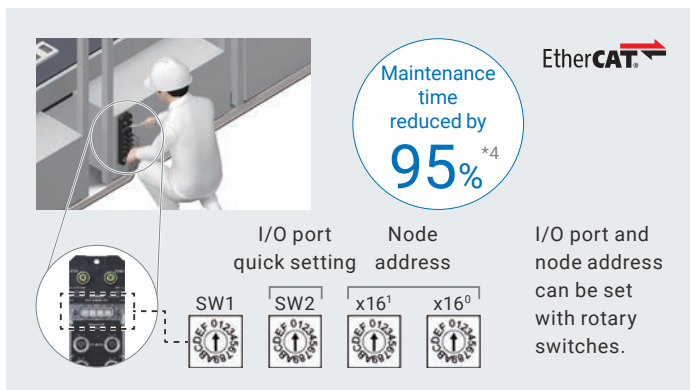


*2. The NXR-ILM08C-EIT IO-Link Master Unit for EtherNet/IP can report approximate locations of problems in Ethernet cables.

Reduced maintenance time during replacements

When an IO-Link master unit fails, replacement can be completed simply by an operator adjusting the switches*3, eliminating the need for software during replacements. The port settings for the NXR-ILM08C-ECT model can be restored in significantly less time, with a 95% reduction*4 compared to using a PC.

IO-Link device parameters can be backed up to the NXR manually or via the controller. Broken sensor parameters are automatically restored when replaced with a new one.



*3. The setting range of I/O port quick setting is the device parameter of NXR-ILM08C-ECT. When replacing an IO-link device with settings other than the default, set the IO-Link device parameters using CX-ConfiguratorFDT.

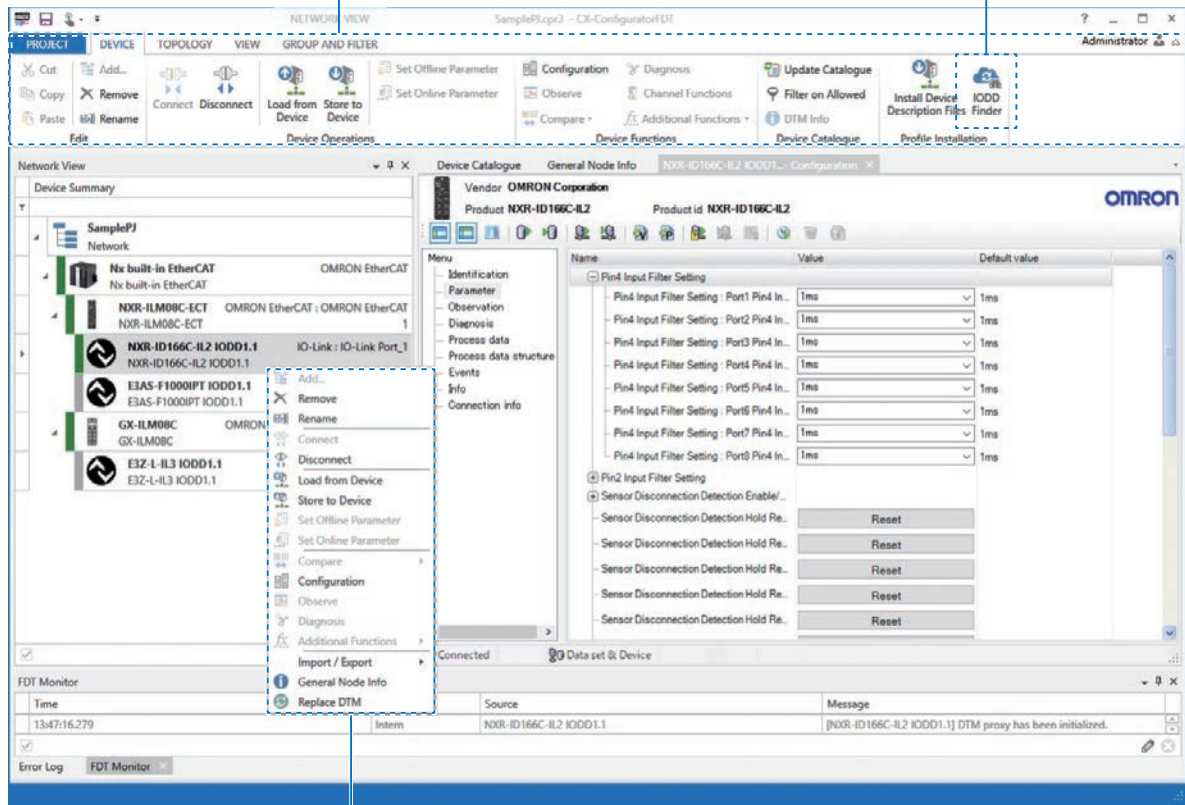
*4. Calculated under our specified conditions in November 2023.

CX-ConfiguratorFDT with improved user interface*5

The updated CX-ConfiguratorFDT provides a familiar user interface in Office 365 and Windows 10. With enhanced usability, this tool enables you to search for and download profiles online using the IODDfinder.

Modern ribbon-based UI design and usability

IODDfinder: Online profile search and download (IO-Link)



Inherited function to generate variables by selecting Create Device Variable from menu

*5. The CX-ConfiguratorFDT is support software used for parameter setting of IO-Link devices.

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-coding, female)	NXR-ILM08C-EIT
IO-Link Master Unit for EtherCAT				NXR-ILM08C-ECT

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-coding, 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	10Mbps/100Mbps, 100BASE-TX/10BASE-T
		Ethernet switch	Layer 2 Ethernet switch
		Functions	Communication cable diagnostics, Network statistical information acquisition, QuickConnect, DLR (Device Level Ring)
	IO-Link port	Connector, number of ports	Class A, 8 ports
		Baud rate	COM1:4.8kbps, COM2:38.4kbps, COM3:230.4kbps
	Digital inputs in SIO (DI) Mode	Number of inputs	16
		Short-circuit protection, short-circuit detection	Provided
	Digital outputs in SIO (DO) Mode	Number of outputs	16
Short-circuit protection, short-circuit detection		Provided	

Product name	Item		Specification
IO-Link Master Unit for EtherCAT	EtherCAT communications	Baud rate, Ethernet physical layer	100 Mbps/100BASE-TX
	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
	Functions		I/O port quick settings, Ring topology(EtherCAT)
	Digital inputs in SIO(DI) Mode	Number of inputs	16
		Short-circuit protection, short-circuit detection	Provided
	Digital inputs in SIO(DO) 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	COM2:38.4kbps
		Number of inputs	16 (digital input hub), 0 to 16 (digital input/output hub)
	Digital inputs	Short-circuit protection, short-circuit detection, disconnection detection	Provided
		Number of outputs	0 to 16 (digital input/output hub)
	Digital outputs	Short-circuit protection, short-circuit detection, disconnection detection	Provided

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