NXR Series Remote IO with IO-LINK

OMRON Automation Americas

Outline

- NXR Portfolio Summary
- NXR EtherCAT®
- NXR EtherNet/IP™
- Product Specs

EtherNet/IP

EtherCAT®

NXR Series Portfolio

IO-Link Masters

EtherCAT

EtherNet/IP

NEW

IO-Link Hubs

Input/Output

Input Only

- Hubs connect to the master via one cable.
- Up to 8 Hubs can be connected to one Master.
- Hubs used to expand digital IO at a lower cost

NXR-ILM08C-ECT

The NXR EtherCAT® is the go-to remote IO product to complement Sysmac, because it is one product that is easy to configure and maintain and can support multiple different OT or IT applications.

Problem

IO-Link Master has to be configured manually with a PC, by a trained technician

Challenge: Skilled Labor shortage

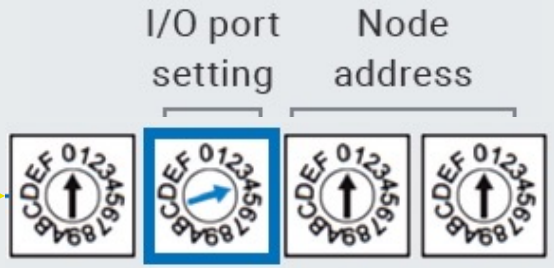
IO-Link Master Configuration

- Causing increased downtime because maintenance requires trained engineers to be onsite with a PC and Software.

- Setup/installation of IO-Link masters requires trained engineers to be onsite with a PC and software

Solution: Quick Switch Feature

Reduce costly downtime by performing maintenance without a PC



Setting all I/O ports at once

Port setting is completed by setting the switches to a pre-set pattern for each port.

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																

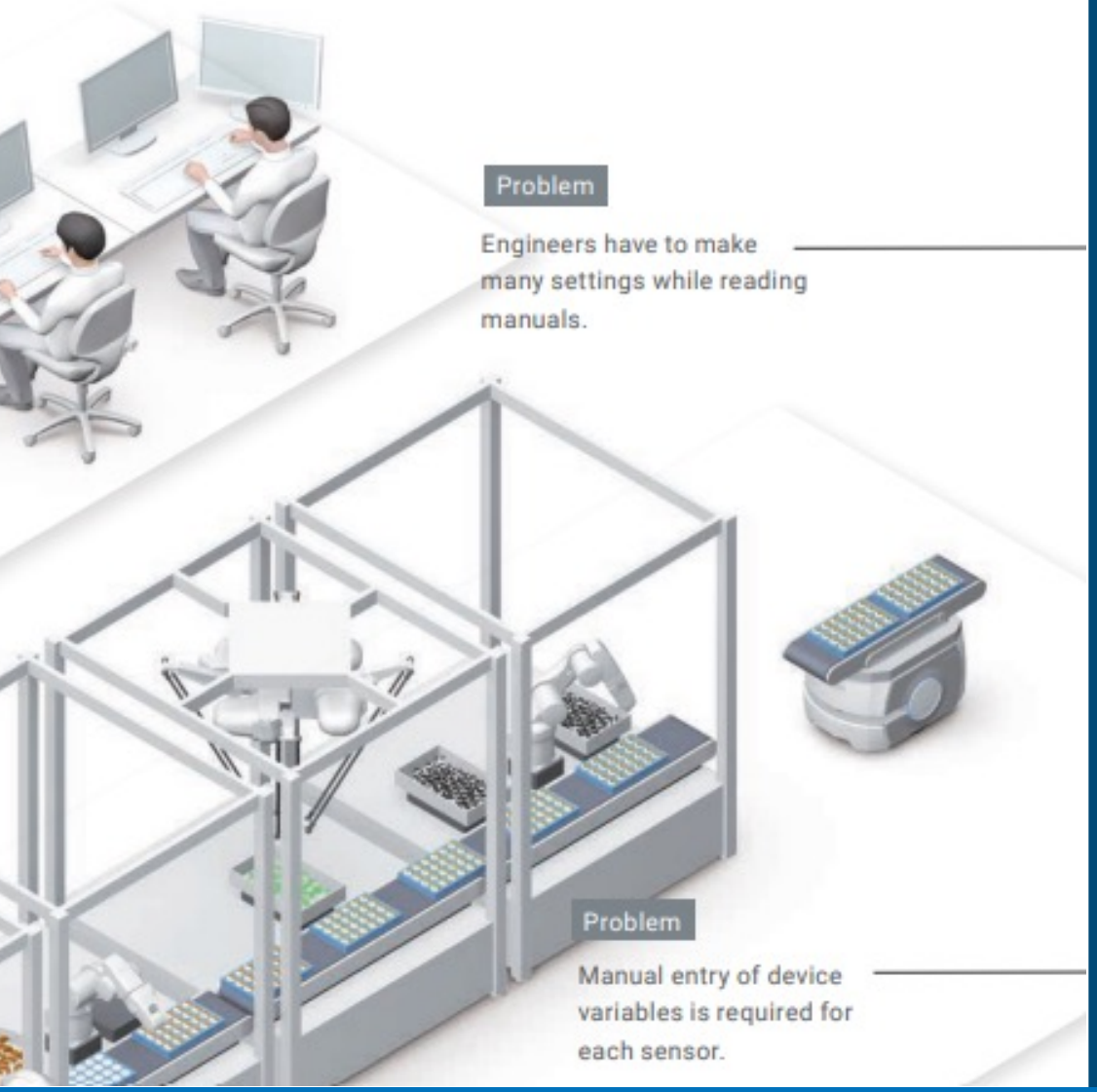
Digital input Digital output IO-Link Set using software

Maintenance Time	Cost of Downtime
2 hours *	$800K*

Maintenance Time	Cost of Downtime
15 Minutes *	$100K*

*Estimated

Challenge: Labor Shortage



IO-Link Device Configuration

- Each IO-Link Device needs to be added manually one by one
- Multiple settings in the software need to be set before use
- Human errors caused by manual data entry

Solution: Simple and fast IO-Link configuration with Sysmac Studio

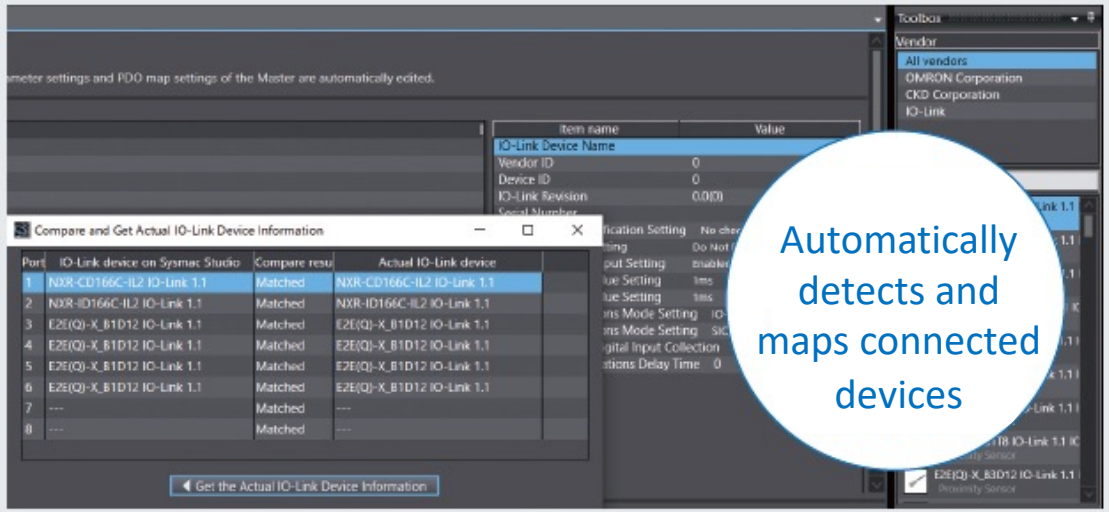
Before

- Go online with the PLC (Master Connected)
- Add each device to master **one by one**
- Reference Device manual for PDO I/O Data map
- Fill in I/O Map **one by one**
- Map PDO Data **One by one**
- Set backup parameters **one by one**
- Transfer settings to device

After

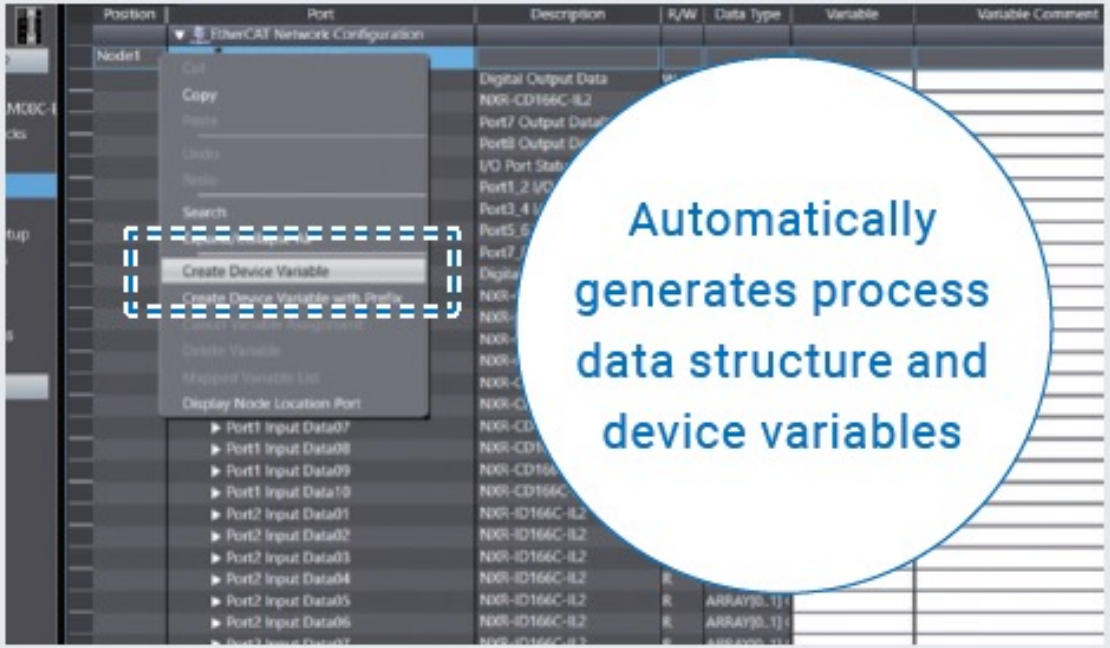
- Go online with the PLC (Master Connected)
- Click “Compare connected devices” Then Click OK!

Automatic!

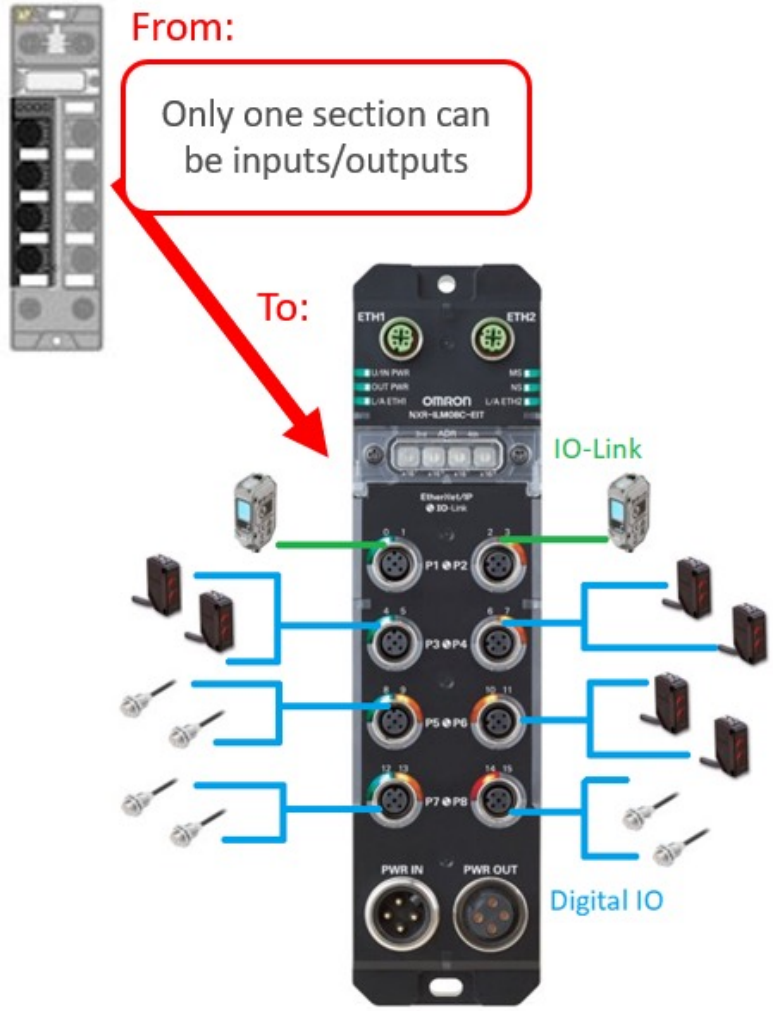


Automatically detects and maps connected devices

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



Automatically generates process data structure and device variables



Each Port: Up to 1 IO-Link, 2 Digital Inputs, 2 Digital Outputs, or a mix

Challenge: Configurability restriction

There is often a need to mix standard digital and IO-Link on one block

- Causing: multiple different models for different application needs
- Causing: the need to stock multiple different models

Solution:

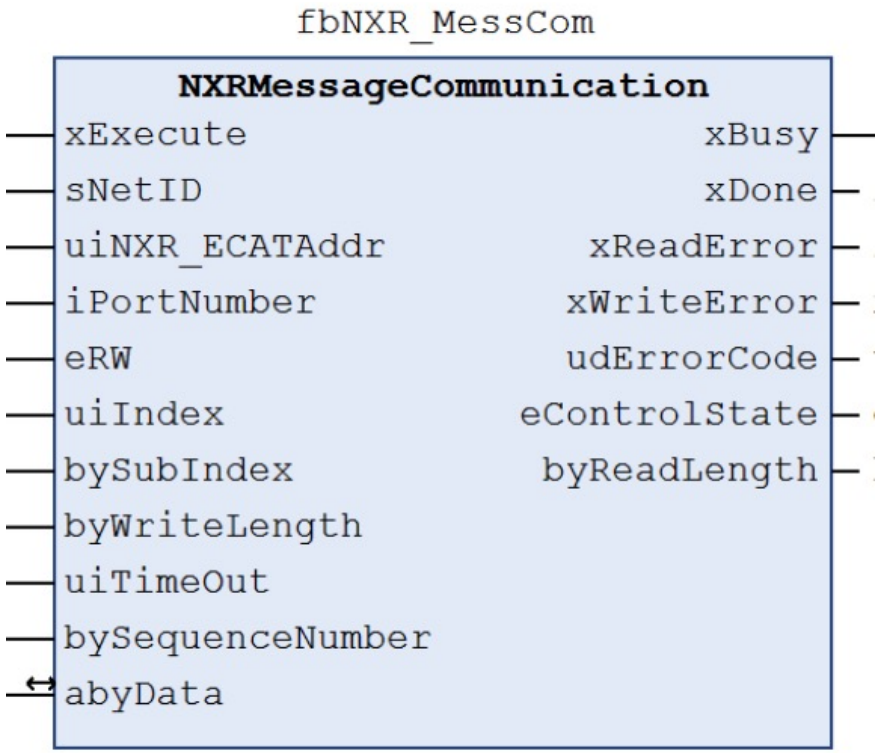
Full port flexibility makes it easier to implement IO-Link

Available on both EtherCAT® and EtherNet/IP™ Models

NXR EtherCAT® Value – With Beckhoff Function Block

Configure IO-Link Devices in TwinCAT easily without needing separate software

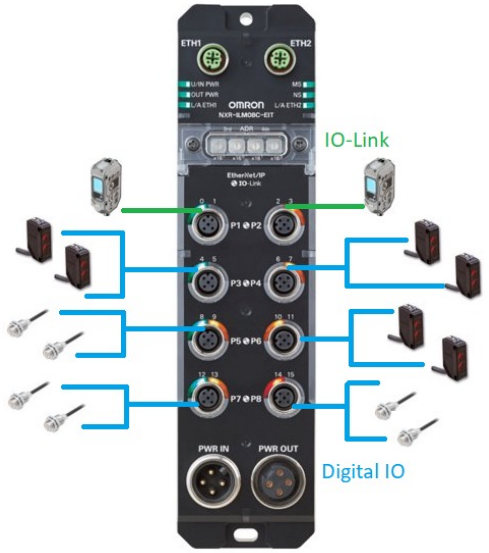
- Reduces configuration time when using the NXR EtherCAT® with a Beckhoff Controller
- Allows users to configure on the fly and automate configuration
- Non-Cyclic Communication (CoE)
- Read and Write to IO-Link Devices



EtherCAT®

Contact your OMRON Account Manager or Field Application Engineer for details

NXR-ILM08C-ECT Value Summary



Fully configurable Ports

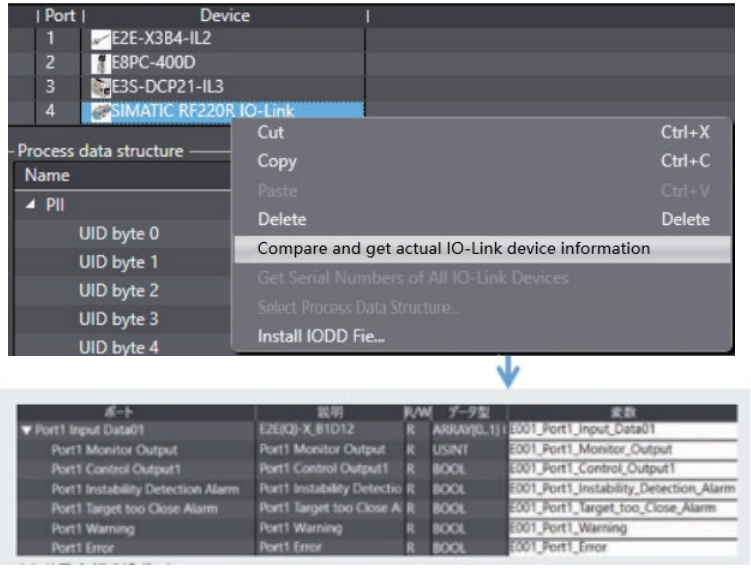
- No restrictions on #IO
- 16 Digital IO or 8 IO-Link

EtherCAT EtherNet/IP

PC-Less maintenance and setup

- No PC or special tools required
- **Engineers not needed onsite to setup or maintain**

EtherCAT



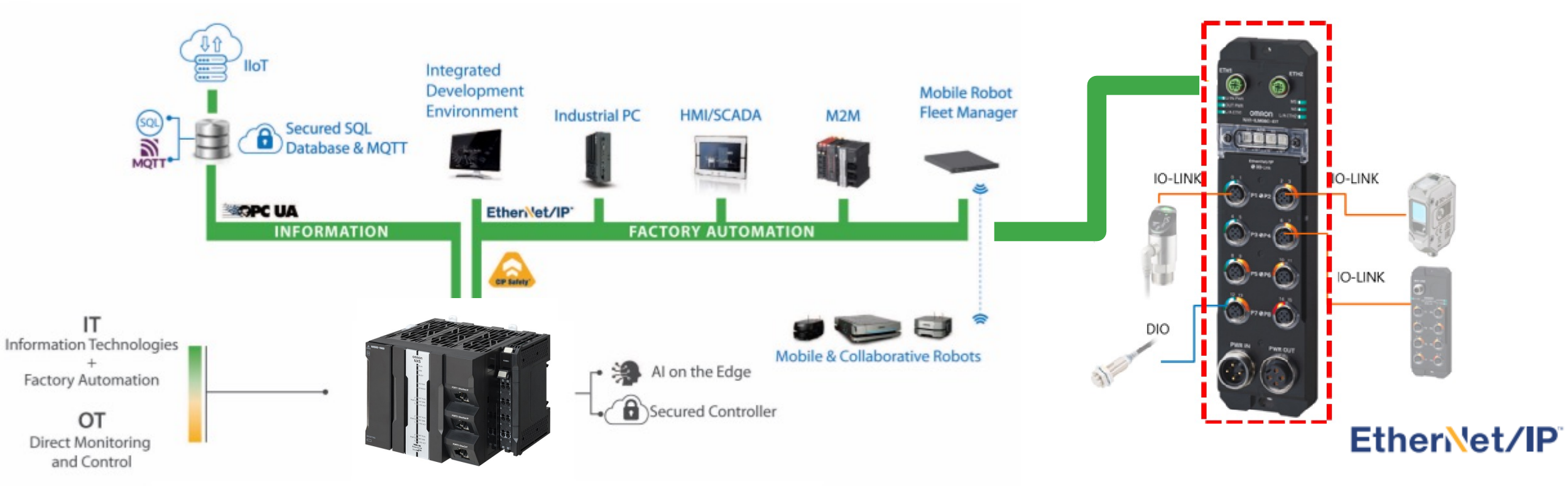
Easiest to configure IO-Link on the market!

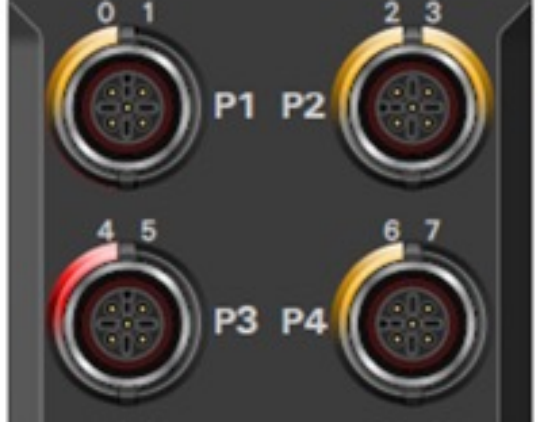
- Automatic IO-Link device scanning
- Automatic IO-Link IO and PDO mapping (saves engineering time!)

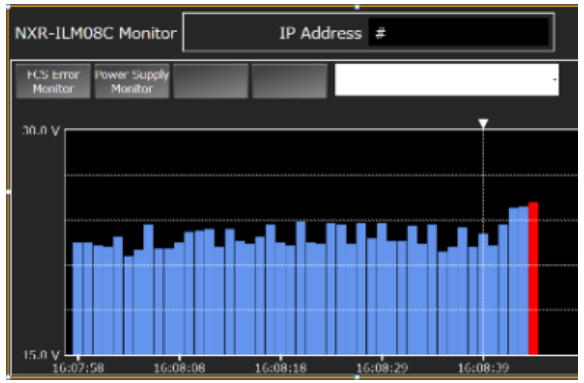
EtherCAT

NXR-ILM08C-EIT

The NXR EtherNet/IP™ is perfect for applications with large data requirements, or for third party connectivity. The NXR EtherNet/IP™ compliments OMRON's IT solution from the cloud down the field device.







Benefit: Diagnostic Information

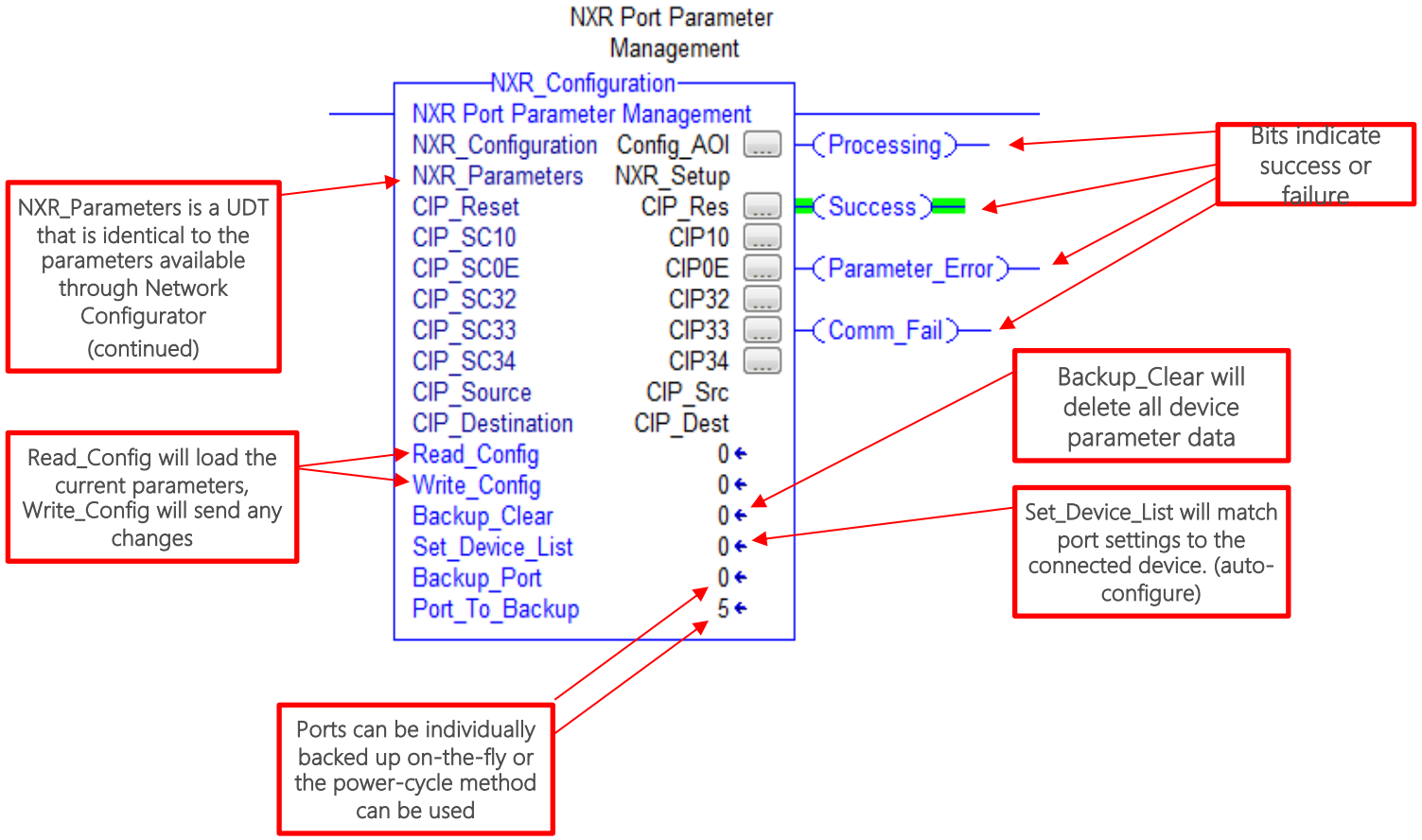
Available on both EtherNet/IP™ and EtherCAT® NXR models

- Short Circuit Detection
- Wire break location detection
- Open Wire detection
- LED indicators for quick status identification
- Input/Output Voltage Monitoring
- Network quality monitoring
- EtherNet/IP™ Ring Network Support for redundancy

- IP Address field settable via dip switches

NXR EtherNet/IP™ Value – With Rockwell AOI (Function Block)

The NXR EtherNet/IP™ can be easily setup in Rockwell with an automatic configuration feature



EtherNet/IP

Contact your OMRON Account Manager or Field Application Engineer for details

Master Key Specifications

Item	NXR-ILM08C-ECT	NXR-ILM08C-EIT
Network Protocol	EtherCAT®	EtherNet/IP™
Protection	IP67	IP67
Standard Bus Connection	M12 (IN/OUT)	M12 (IN/OUT)
IO-Link Ports	8 ports (ClassA ： P1 – P8) (**Field Configurable**)	8 ports (ClassA ： P1 – P8)
Digital IO	16 Inputs/16 Outputs	16 Inputs/16 Outputs
Power port	Standard 7/8 (IN/OUT)	Standard 7/8 (IN/OUT)
Output Power	2A/Port	2A/Port
Output Power Total	9A at one time	9A at one time
NXR-HUB Support	Yes	Yes
Size	240(w)×24.2(H)×62(D)	240(w)×24.2(H)×62(D)

Ordering Information

Unit	Model
EtherCAT® IO-Link Master	NXR-ILM08C-ECT
EtherNet/IP™ IO-Link Master	NXR-ILM08C-EIT
IO-Link Hub	NXR-ID166C-IL2
	NXR-CD166C-IL2

Accessories

Unit	Description	Model
Y Cable Splitter	For connecting two devices to one port	XS5R-D426-1

*Refer to the datasheets or consult your OMRON representative for cable suggestions

Thank You

Name
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