

Environment-resistive Remote Terminal NXR-series IO-Link Master Unit for EtherNet/IP™

NXR-ILM08C-EIT

CSM_NXR-ILM08C-EIT_DS_E_2_2

**Streamline commissioning and maintenance of production equipment.
Simple, easy, and quick - Reduce Availability Loss and Quality Loss!**

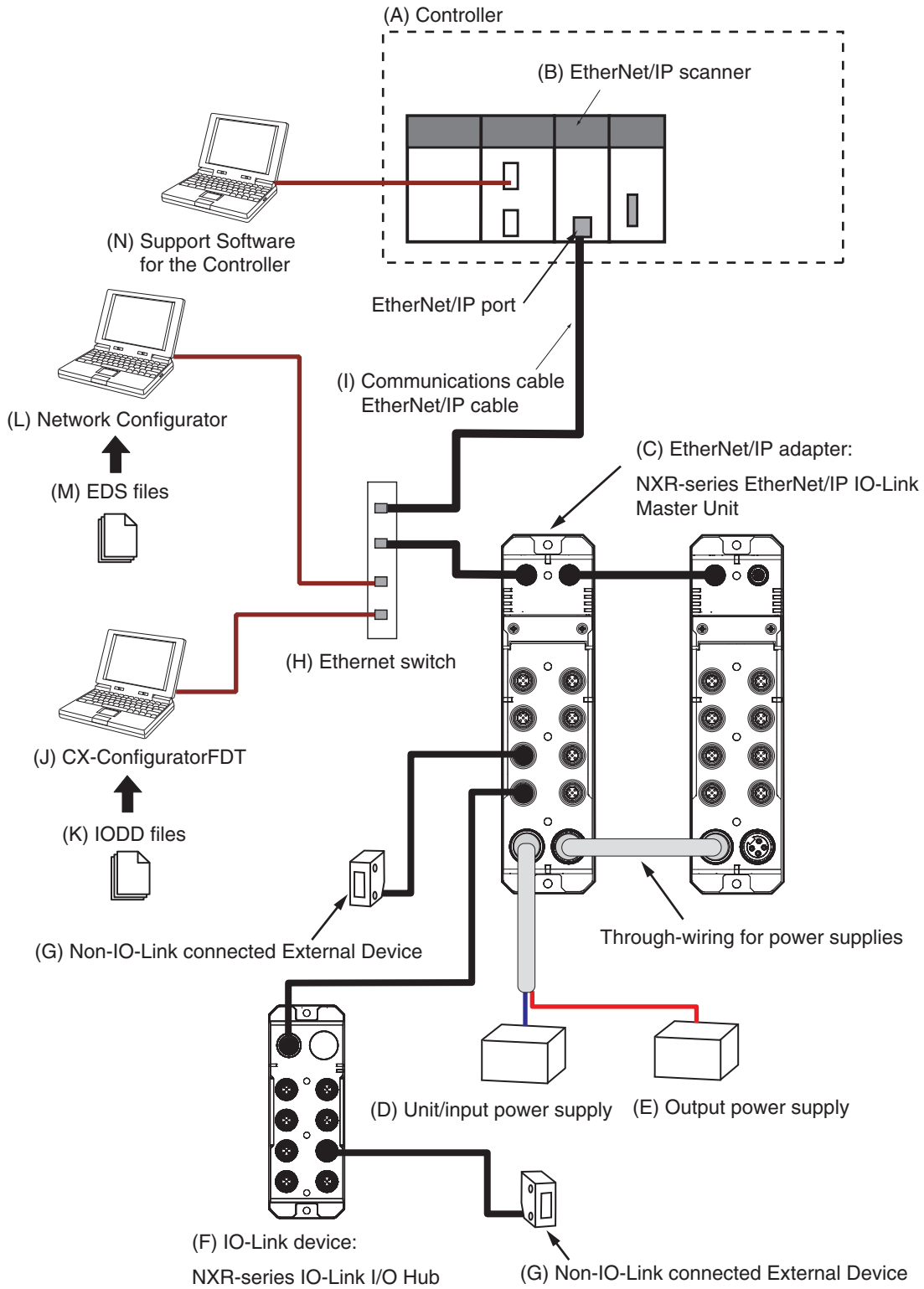


Features

- IP67 protection
- Replacement without software
- Ethernet cable diagnostics
 - Reports approximate locations of disconnections or short circuits in Ethernet cables
- Communication quality of EtherNet/IP
 - Records the total number of received FCS errors which allows checking communication quality
- Communication quality of IO-Link
 - Records the total number of lost frames which allows checking communication quality
- Location of short circuits
 - Detects and protects from short circuits in connection to IO-Link devices or standard devices
- Power supply voltage monitoring
 - Monitors power supply voltage for the unit and inputs and power supply voltage for outputs
- Power OUT connector for through-wiring for power supply
- Built-in L2 switching hub for through-wiring for Ethernet

System Configuration

System Configuration



The components are described in the table below.

| Letter | Name | Function |
|--------|--|--|
| (A) | Controller | This is an OMRON CPU Unit or a controller from another company, connected to the IO-Link Master Unit through an EtherNet/IP adapter. |
| (B) | EtherNet/IP scanner | The EtherNet/IP scanner monitors the status of the connections with EtherNet/IP adapters and exchanges I/O data with EtherNet/IP adapters through the EtherNet/IP network. It refers to the <i>originator</i> when opening a connection. |
| (C) | EtherNet/IP adapter: NXR-series IO-Link Master Unit for EtherNet/IP | The NXR-series IO-Link Master Unit for EtherNet/IP is an EtherNet/IP adapter that provides IO-Link master functions. You can connect IO-Link devices and non-IO-Link connected external devices to the NXR-series IO-Link Master Unit for EtherNet/IP. It exchanges data with IO-Link devices through IO-Link communications. |
| (D) | Unit/input power supply | The Unit/input power supply provides power to the IO-Link Master Unit for operation and interface with input devices. Connect an external power supply to the power supply connector (input). |
| (E) | Output power supply | The output power supply provides power for interface with output devices. Connect an external power supply to the power supply connector (input). |
| (F) | IO-Link device: NXR-series IO-Link I/O Hub | The IO-Link device is a sensor, actuator, or other device that performs IO-Link communications with the IO-Link master. It exchanges data with the NXR-series IO-Link Master Unit for EtherNet/IP in IO-Link communications. You can connect non-IO-Link connected external devices to the NXR-series IO-Link I/O Hub. |
| (G) | Non-IO-Link connected External Device | The non-IO-Link connected external device is a sensor, actuator, or other device that handles ON/OFF signals that are not supported by IO-Link. |
| (H) | Ethernet switch | This is a relay device that connects multiple nodes. |
| (I) | Communications cable EtherNet/IP cable | Use a double-shielded cable with aluminum tape and braiding of category 5 (100BASE-TX) or higher, and use straight wiring. |
| (J) | CX-ConfiguratorFDT | The CX-ConfiguratorFDT is the Support Software to configure and monitor IO-Link devices that are connected to the IO-Link Master Unit. |
| (K) | IODD files | These files contain IO-Link device definitions. |
| (L) | Network Configurator | The Network Configurator is the Support Software to configure an EtherNet/IP network. For the IO-Link Master Unit, it is used for the following purposes. <ul style="list-style-type: none"> Setting the device parameters of the IO-Link Master Unit Setting the connection between the EtherNet/IP scanner and the IO-Link Master Unit |
| (M) | EDS files | The EDS files contain information that is unique to the IO-Link Master Unit. You can load EDS files into the Network Configurator or other Support Software for EtherNet/IP network setup to easily allocate data and view or change settings. |
| (N) | Support Software for the Controller | The Support Software is used to configure the Controller and EtherNet/IP scanner, create user programs, and perform monitoring, and troubleshooting. The Support Software depends on the Controller that you use. |

Applicable Support Software

The following table shows support software that can be used in the system configured with the NXR-series EtherNet/IP IO-Link Master Unit. For versions of support software, refer to Version Information on page 11.

| IO-Link Master Unit connected to | | Purposes and support software | | | |
|--------------------------------------|---|------------------------------------|---------------------------------------|--|--|
| Controller | EtherNet/IP Scanner | Creating user programs | Setting connections | Setting device parameters of IO-Link Master Unit | Setting and monitoring connected IO-Link devices |
| NJ/NX-series CPU Unit | Built-in EtherNet/IP port on an NJ/NX-series CPU Unit or CJ1W-EIP21 | Sysmac Studio | Sysmac Studio or Network Configurator | Network Configurator | CX-ConfiguratorFDT |
| CJ/CP/CS-series CPU Unit | <ul style="list-style-type: none"> EtherNet/IP unit CJ1W-EIP21 or CS1W-EIP21 CJ-series CPU unit Built-in EtherNet/IP port | CX-Programmer | Network Configurator | | |
| Controller from another manufacturer | EtherNet/IP Scanner from another manufacturer | Software from another manufacturer | Software from another manufacturer | | |

NXR-ILM08C-EIT

Ordering Information

Applicable standards

Refer to the OMRON website (www.ia.omron.com) or ask your OMRON representative for the most recent applicable standards for each model.

NXR-series IO-Link Master Unit for EtherNet/IP™

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

NXR-series IO-Link I/O Hub

| Product name | Number of IO-Link ports | Input/Output | Degree of protection | I/O connection terminals | Model |
|-----------------|-------------------------|---------------------------|----------------------|---------------------------------|----------------|
| IO-Link I/O Hub | 8 | 16 digital inputs | IP67 | M12 connector A-cording, female | NXR-ID166C-IL2 |
| | | 16 digital inputs/outputs | | | NXR-CD166C-IL2 |

Software

How to Select Required Support Software for Your Controller

The required Support Software depends on the Controller to connect. Please check the following table when purchasing the Support Software.

| Item | Omron PLC System | Omron Machine Automation Controller System |
|------------|-----------------------------------|--|
| Controller | CJ-series | NJ/NX-series |
| Software | FA Integrated Tool Package CX-One | Automation Software Sysmac Studio |

FA Integrated Tool Package CX-One

| Product name | Specifications | Specifications | | Model |
|---|--|--------------------|-------|----------------|
| | | Number of licenses | Media | |
| FA Integrated Tool Package CX-One Ver.4.□ | <p>The CX-One is a comprehensive software package that integrates Support Software for OMRON PLCs and components.</p> <p>CX-One runs on the following OS. Windows XP (Service Pack 3 or higher, 32-bit version) / Windows Vista (32-bit/64-bit version) / Windows 7 (32-bit/64-bit version) / Windows 8 (32-bit/64-bit version) / Windows 8.1 (32-bit/64-bit version) / Windows 10 (32-bit/64-bit version)</p> <p>CX-One Version 4.□ includes CX-Programmer Ver.9.□ For details, refer to the <i>CX-One catalog</i> (Cat. No. R134)</p> | 1 license *1 | DVD | CXONE-AL01D-V4 |

*1 Multi licenses (3, 10, 30, or 50 licenses) and DVD media without licenses are also available for the CX-One.

Automation Software Sysmac Studio

Please purchase a DVD and required number of licenses the first time you purchase the Sysmac Studio. DVDs and licenses are available individually. Each model of licenses does not include any DVD.

| Product name | Specifications | Specifications | | Model |
|---|---|--------------------|----------------------------|----------------------------|
| | | Number of licenses | Media | |
| Sysmac Studio Standard Edition Ver.1.□□ | <p>The Sysmac Studio is the software that provides an integrated environment for setting, programming, debugging and maintenance of machine automation controllers including NJ/NX-series CPU Units, NY-series Industrial PC, EtherCAT Slaves, and HMI.</p> <p>Sysmac Studio runs on the following OS. Windows 7 (32-bit/64-bit version) / Windows 8 (32-bit/64-bit version) / Windows 8.1 (32-bit/64-bit version) / Windows 10 (32-bit/64-bit version) *1</p> <p>The Sysmac Studio Standard Edition DVD includes Support Software to set up EtherNet/IP Units, DeviceNet slaves, Serial Communications Units, and Support Software for creating screens on HMIs (CX-Designer). For details, refer to your OMRON website.</p> | - | Sysmac Studio (32 bit) DVD | SYSMAC-SE200D |
| | | | (Media only) | Sysmac Studio (64 bit) DVD |
| | | 1 license *2 | - | SYSMAC-SE201L |

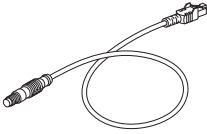
*1. SYSMAC-SE200D-64 runs on Windows 10 (64 bit).

*2. Multi licenses are available for the Sysmac Studio (3, 10, 30, or 50 licenses).

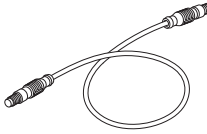
EtherNet/IP Communications Cables

Ethernet communications cables to connect the IO-Link master unit.

Connection Cables between IO-Link Master Unit and EtherNet/IP Scanner with RJ45 Connectors

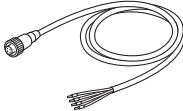
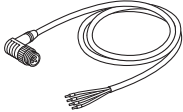


| Name and appearance | Manufacturer | Specification | No. of cable conductors | Connector | Cable connection direction | Cable length | Model |
|--|--------------|-----------------------------------|-------------------------|-----------------|----------------------------|--------------|---------------|
| Industrial Ethernet Connectors with Cable  | HARTING K.K. | M12 plug (D-coding, male) to RJ45 | 4 | Screw connector | Straight/straight | 0.5 m | 72MDm4Rm4005K |
| | | | | | | 1 m | 72MDm4Rm4010K |
| | | | | | | 2 m | 72MDm4Rm4020K |
| | | | | | | 3 m | 72MDm4Rm4030K |
| | | | | | | 5 m | 72MDm4Rm4050K |
| | | | | | | 10 m | 72MDm4Rm4100K |

Connection Cables between IO-Link Master Units

| Name and appearance | Manufacturer | Specification | No. of cable conductors | Connector | Cable connection direction | Cable length | Model |
|--|--------------|--|-------------------------|-----------------|----------------------------|--------------|----------------|
| Industrial Ethernet Connectors with Cable  | HARTING K.K. | M12 plug (D-coding, male) to M12 plug (D-coding, male) | 4 | Screw connector | Straight/straight | 0.5 m | 72MDm4MDm4005K |
| | | | | | | 1 m | 72MDm4MDm4010K |
| | | | | | | 2 m | 72MDm4MDm4020K |
| | | | | | | 3 m | 72MDm4MDm4030K |
| | | | | | | 5 m | 72MDm4MDm4050K |
| | | | | | | 10 m | 72MDm4MDm4100K |

Power Supply Cables

Power supply cables to connect the IO-Link master unit

| Name and appearance | Manufacturer | Specification | No. of cable conductors | Connector | Cable connection direction | Cable length | Model |
|--|--------------|---|-------------------------|-----------------|----------------------------|--------------|---------------|
| Connector with Cable (Socket on One End, Straight)  | HARTING K.K. | 7/8 inch socket (female) to discrete wire | 4 | Screw connector | Straight | 1 m | 72MNf4010 |
| | | | | | | 2 m | 72MNf4020 |
| | | | | | | 5 m | 72MNf4050 |
| | | | | | | 10 m | 72MNf4100 |
| Connector with Cable (Socket on One End, Right-angle)  | | | | | Right-angle | 1 m | 72MNfL4010 |
| | | | | | | 2 m | 72MNfL4020 |
| | | | | | | 5 m | 72MNfL4050 |
| | | | | | | 10 m | 72MNfL4100 |
| Connectors with Cable (Socket on One End, Plug on Other End, Straight)  | | | | | Straight | 1 m | 72MNf4MNm4010 |
| | | | | | | 2 m | 72MNf4MNm4020 |
| | | | | | | 5 m | 72MNf4MNm4050 |
| | | | | | | 10 m | 72MNf4MNm4100 |
| Connectors with Cable (Socket on One End, Plug on Other End, Right-angle)  | Right-angle | 1 m | 72MNfL4MNmL4010 | | | | |
| | | 2 m | 72MNfL4MNmL4020 | | | | |
| | | 5 m | 72MNfL4MNmL4050 | | | | |
| | | 10 m | 72MNfL4MNmL4100 | | | | |


Contact HARTING K.K. for details.

NXR-ILM08C-EIT

I/O Cables

- Conversion Cable


The following cable converts connections from an IO-Link device or non-IO-Link connected external device with an M8 plug.

| Name and appearance | Manufacturer | Specification | No. of cable conductors | Connector | Cable connection direction | Cable length | Model |
|--|--------------|--|-------------------------|---|----------------------------|--------------|------------------------|
|  <p>XS3W Socket and Plug on Cable Ends (M8 (Socket)/M12 (Plug))</p> | OMRON | M8 socket (A-coding, female) to M12 plug (A-coding, male), DC type | 4 | (M8) screw connector, (M12) Smartclick connector *1 | Straight | 0.2 m | XS3W-M42C-4C2-A |

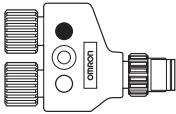
*1. Connectors for the IO-Link Master Unit are not Smartclick connector. Use a torque wrench for the I/O cable to tighten the connector. The Smartclick connector of the I/O cable can also be used as a screw connector.

- Direct connection or extension Cables

Extension cables, which connect an IO-Link device or standard external device with an M12 plug, can also be used to connect directly to an IO-Link device with an M12 plug.

| Name and appearance | Manufacturer | Specification | No. of cable conductors | Connector | Cable connection direction | Cable length | Model |
|---|--------------|---|-------------------------|-----------------|----------------------------|--------------|------------------------|
|  <p>XS2W Socket and Plug on Cable Ends (M12 (Socket)/M12 (Plug))</p> | OMRON | M12 socket (A-coding, female) to M12 plug (A-coding, male), DC type | 4 | Screw connector | Straight/straight | 1 m | XS2W-D421-C81-F |
| | | | | | | 2 m | XS2W-D421-D81-F |
| | | | | | | 3 m | XS2W-D421-E81-F |
| | | | | | | 5 m | XS2W-D421-G81-F |
| | | | | | | 10 m | XS2W-D421-J81-F |

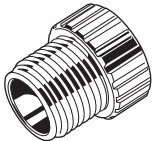
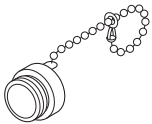
- Branching

| Name and appearance | Manufacturer | Specification | No. of cable conductors | Connector | Cable connection direction | Cable length | Model |
|---|--------------|---------------|-------------------------|-------------------------|----------------------------|--------------|--------------------|
|  <p>XS5R Y-Joint Plug/Socket Connector</p> | OMRON | M12 | --- | Smartclick Connector *1 | --- | --- | XS5R-D426-1 |

*1. Connectors for the IO-Link Master Unit are not Smartclick connector. Use a torque wrench for the I/O cable to tighten the connector.

Waterproof Cover for Connectors

A waterproof cover for unused M12 connectors. When you use this waterproof cover, you can maintain the IP67 protective structure.

| Name and appearance | Manufacturer | Specification | Connector | Model |
|--|--------------|---------------|-----------------|-------------------|
|  <p>M12 Waterproof Cover</p> | OMRON | M12 | Screw connector | XS2Z-22 |
|  <p>7/8 inch Waterproof Cover</p> | Molex | 7/8 inch | Screw connector | 1302011110 |

General Specifications

| Item | | Specification |
|-------------------------|--|--|
| Degree of protection | | IP67 |
| Operating environment | Ambient operating temperature | -10 to 55°C |
| | Ambient operating humidity | 25% to 85% (with no condensation) |
| | Ambient operating atmosphere | Must be free from corrosive gases. |
| | Storage temperature | -25 to 65°C |
| | Storage humidity | 25% to 85% (with no condensation) |
| | Altitude | 2,000 m max. |
| | Pollution degree | 3 or less: Conforms to IEC 61010-2-201. |
| | Noise immunity | 2 kV on power supply line (Conforms to IEC 61000-4-4.) |
| | Overvoltage category | Category II: Conforms to IEC 61010-2-201. |
| | EMC immunity level | Zone B |
| | Vibration resistance | 10 to 60 Hz with amplitude of 0.35 mm, 60 to 150 Hz and 50 m/s ² for 80 minutes each in X, Y, and Z directions. |
| | Shock resistance | 150 m/s ² , 3 times each in 6 directions along X, Y, and Z axes |
| | Dielectric strength | 600 VAC (between isolated circuits) |
| Insulation resistance | 20 MΩ min. (between isolated circuits) | |
| Applicable standards *1 | | cULus: Listed (UL61010-2-201) EU: EN 61131-2, RCM KC: KC Registration EAC IO-Link conformance EtherNet/IP conformance |

*1. Refer to the OMRON website (www.ia.omron.com) or ask your OMRON representative for the most recent applicable standards for each model.

EtherNet/IP Communications Specifications

| Item | | Specification |
|---------------------------------|---|--|
| Communications protocols | | EtherNet/IP protocol <ul style="list-style-type: none"> • Implicit messages (Class1) • Explicit messages (Class 3, UCMM) |
| Modulation | | Baseband |
| Link speed | | 10 Mbps or 100 Mbps |
| Ethernet physical layer | | 100BASE-TX or 10BASE-T (100BASE-TX is recommended.) *1 |
| Ethernet switch | | Layer-2 switch |
| Transmission media | | Category 5 or higher twisted-pair cable (Recommended cable: double shielded cable with aluminum tape and braiding) |
| Transmission distance | | 100 m or less (Distance between nodes and between hub and node) |
| Topology | | Line, Star, Tree, Ring |
| Number of connected Units | | <ul style="list-style-type: none"> • Line, Star No restrictions • Tree There is no restrictions in the number of cascade connections when an Ethernet switch is used. • Ring Dependent on the ring supervisor specifications. |
| EtherNet/IP tag data links | Number of connections | 5 *2 |
| | Packet interval (RPI) | 1 to 10,000 ms |
| | Allowed communications bandwidth per Unit | 4,000 pps |
| Explicit messages | Class 3 (number of connections) | 5 *2 However, the maximum number of connections per originator is 2 |
| | UCMM (unconnected) | Supported *2 |
| EtherNet/IP I/O connection size | | Input: 296 bytes max. (including input data, status, and unused areas) Output: 258 bytes max. (including output data and unused areas) |
| Support functions | Supported services | Tag data link, CIP message communications, automatic clock adjustment (NTP/SNTP client), BOOTP client, DHCP client |
| | IP address duplication detection | Provided |
| | Run/Idle header | Supported *3 |
| | QuickConnect | Supported |
| | DLR | Ring nodes supported |

*1. If tag data links are used, use 100BASE-TX.

*2. The maximum number of connections is 10 when tag data links (Class 1), Class 3, and UCMM are used simultaneously.

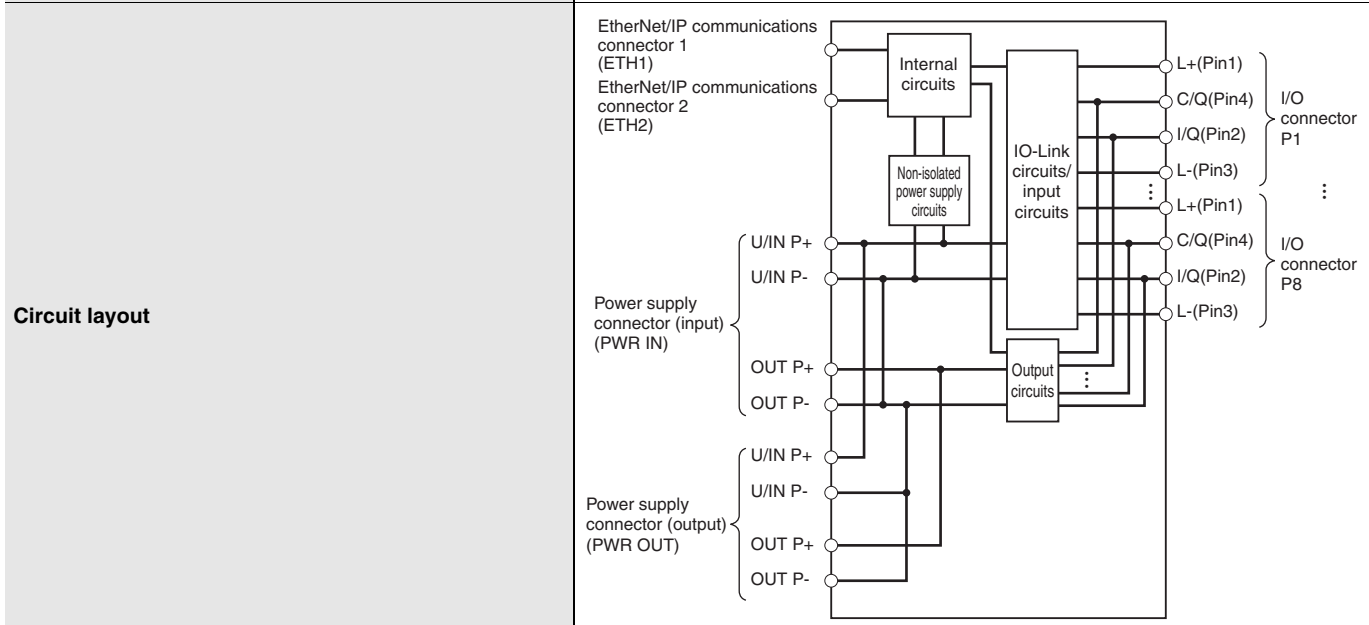
*3. You can configure output retention, clear, and other settings during Idle. Refer to the *NXR-series IO-Link Master Unit for EtherNet/IP™ User's Manual* (Cat.No.W619) for details.

Unit Specifications

| Item | | Specification |
|---|--------------------------|---|
| IO-Link specifications | IO-Link connector type | Class A |
| | Communications protocol | IO-Link protocol |
| | Number of ports | 8 |
| | Baud rate | COM1: 4.8 kbps COM2: 38.4 kbps COM3: 230.4 kbps |
| | Topology | 1:1 |
| | Compliant standards | <ul style="list-style-type: none"> IO-Link Interface and System Specification Version 1.1.2 *1 IO-Link Test Specification Version 1.1.2 |
| | Cable specifications | <ul style="list-style-type: none"> Cable type : Unshielded Cable length : 20 m max. Electrostatic capacity between lines : 3 nF max. Loop resistance : 6 Ω max. |
| Unit/input power supply voltage | | 24 VDC (20.4 to 26.4 VDC) |
| Output power supply voltage | | 24 VDC (20.4 to 26.4 VDC) |
| Maximum power supply current | | 9 A Sum of Unit/input power supply current and output power supply current |
| Number of connected Units when supplying power with through-wiring | | No restrictions if power supply specifications are met. |
| Mounting method | | Mounting with M5 screws |
| Mounting strength | | 100 N |
| Installation orientation and restrictions | | Installation orientation: 6 possible orientations Restrictions: No restrictions |
| Connector types | | <ul style="list-style-type: none"> EtherNet/IP communications connectors : M12 (D-coding, female) × 2 Power supply connectors : 7/8 inch (male) × 1, 7/8 inch (female) × 1 I/O connectors : M12 (A-coding, female) × 8 |
| Connector strength | | 30 N Applicable to all connectors |
| Screw tightening torque | | <ul style="list-style-type: none"> EtherNet/IP communications connectors and I/O connectors (M12 screw) : 0.5 to 0.6 N·m Power supply connectors (7/8 inch screw) : 1.5 to 1.7 N·m Unit mounting (M5 screw) : 1.47 to 1.96 N·m Rotary switch cover (M3 screw) : 0.4 to 0.6 N·m Waterproof covers for EtherNet/IP communications connectors (M12 screw) : 0.5 to 0.6 N·m Waterproof covers for power supply connectors (7/8 inch screw) : 1.5 to 1.7 N·m |
| Maximum port current | | 4 A/port Total available current between pin 1 and pin 4 |
| Device power supply *2 in IO-Link Mode or SIO (DI) Mode | Power supply used | Unit/input power supply |
| | Rated voltage | 24 VDC (20.4 to 26.4 VDC) |
| | Maximum load current | 2 A/pin |
| | Short-circuit protection | Provided *3 |
| | Short-circuit detection | Provided *3 |
| Digital inputs for pin 4 or digital inputs for pin 2 (in SIO (DI) Mode) | Power supply used | Unit/input power supply |
| | Rated voltage | 24 VDC (20.4 to 26.4 VDC) |
| | Internal I/O common | PNP |
| | Input current | <ul style="list-style-type: none"> Digital inputs for pin 2: 3.0 mA (at 24 VDC) Digital inputs for pin 4: 6.3 mA (at 24 VDC) |
| | ON voltage/ON current | <ul style="list-style-type: none"> Digital inputs for pin 2: 15 VDC min., 2 mA min. Digital inputs for pin 4: 15 VDC min., 3 mA min. |
| | OFF voltage/OFF current | 5 VDC max., 1 mA max. |
| | ON/OFF response time | 1.0 ms max. |
| | Input filter time | No filter, 0.25 ms, 0.5 ms, 1 ms (default), 2 ms, 4 ms, 8 ms, 16 ms, 32 ms, 64 ms, 128 ms, 256 ms |
| | Short-circuit protection | Provided *3 |
| Short-circuit detection | Provided *3 | |

NXR-ILM08C-EIT

| Item | Specification | |
|---|---|---------------------------|
| Digital outputs for pin 4 or digital outputs for pin 2 (in SIO (DO) Mode) | Power supply used | Output power supply |
| | Internal I/O common | PNP |
| | Output type | Open-drain |
| | Rated voltage | 24 VDC (20.4 to 26.4 VDC) |
| | Maximum load current | 2 A/pin |
| | Leakage current | 0.1 mA max. |
| | Residual voltage | 1.5 V max. |
| | ON/OFF response time | 1.0 ms max. |
| | Short-circuit protection | Provided *4 |
| | Short-circuit detection | Provided *4 |
| Current consumption | Unit/input power supply | 50 mA |
| | Output power supply | 100 mA |
| Weight | 440 g | |
| Dimensions | 240 × 24.2 × 62 mm (W × H × D) (The height is 38 mm when the connectors are included.) | |
| Isolation method | No isolation | |



*1. IO-Link PREOPERATE is not supported.

*2. Used as a power supply for IO-Link devices or non-IO-Link input devices. Supplies power from the Unit/input power supply of the IO-Link Master Unit to external devices through I/O connectors.

*3. Detects a short-circuit that occurred between pin 1 and pin 3 to protect the IO-Link Master Unit.

*4. Detects a short-circuit that occurred between pin 2 and pin 3 and between pin 4 and pin 3 to protect the IO-Link Master Unit.

Version Information

The following table shows the relationship between the unit versions of the IO-Link Master Unit and CPU unit, and the corresponding support software versions.

Connecting with NJ/NX CPU Unit

NX-series CPU Unit

| IO-Link Master Unit | | Corresponding versions | | | |
|---------------------|--------------|------------------------|---------------|----------------------|--------------------|
| Model | Unit version | CPU unit version | Sysmac Studio | Network Configurator | CX-ConfiguratorFDT |
| NXR-ILM08C-EIT | Ver.1.1 | Ver.1.14 | Ver.1.40 | Ver.3.69 | Ver.2.54 |
| | Ver.1.0 | | | | |

NJ-series CPU Unit

| IO-Link Master Unit | | Corresponding versions | | | | |
|---------------------|--------------|------------------------|------------|---------------|----------------------|--------------------|
| Model | Unit version | CPU unit version | CJ1W-EIP21 | Sysmac Studio | Network Configurator | CX-ConfiguratorFDT |
| NXR-ILM08C-EIT | Ver.1.1 | Ver.1.14 | Ver.2.1 | Ver.1.40 | Ver.3.69 | Ver.2.54 |
| | Ver.1.0 | | | | | |

Connecting with CS/CJ/CP CPU Unit

CS1G/CS1H/CJ1M * CPU Unit

* Final order entry date for CJ1M: The end of March, 2021

| IO-Link Master Unit | | Corresponding versions | | | |
|---------------------|--------------|------------------------|---------------------------|----------------------|--------------------|
| Model | Unit version | CPU unit version | CS1W-EIP21/ CJ1W-EIP21 | Network Configurator | CX-ConfiguratorFDT |
| NXR-ILM08C-EIT | Ver.1.1 | Ver.3.0 | Ver.2.1 | Ver.3.69 | Ver.2.54 |
| | Ver.1.0 | | | | |

CJ2H-CPU6□/CJ2M-CPU1□/CP1H CPU Unit

| IO-Link Master Unit | | Corresponding versions | | | |
|---------------------|--------------|------------------------|------------|----------------------|--------------------|
| Model | Unit version | CPU unit version | CJ1W-EIP21 | Network Configurator | CX-ConfiguratorFDT |
| NXR-ILM08C-EIT | Ver.1.1 | Ver.3.0 | Ver.2.1 | Ver.3.69 | Ver.2.54 |
| | Ver.1.0 | | | | |

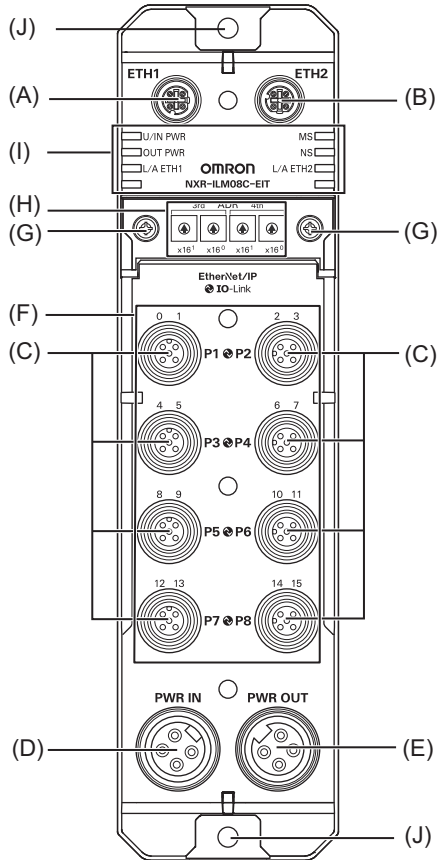
CJ2H-CPU6□-EIP CPU Unit

| IO-Link Master Unit | | Corresponding versions | | | |
|---------------------|--------------|------------------------|------------|----------------------|--------------------|
| Model | Unit version | CPU unit version | CJ1W-EIP21 | Network Configurator | CX-ConfiguratorFDT |
| NXR-ILM08C-EIT | Ver.1.1 | Ver.1.5 | Ver.2.1 | Ver.3.69 | Ver.2.54 |
| | Ver.1.0 | | | | |

CJ2M-CPU3□ CPU Unit

| IO-Link Master Unit | | Corresponding versions | | | |
|---------------------|--------------|------------------------|------------|----------------------|--------------------|
| Model | Unit version | CPU unit version | CJ1W-EIP21 | Network Configurator | CX-ConfiguratorFDT |
| NXR-ILM08C-EIT | Ver.1.1 | Ver.1.5 | Ver.2.1 | Ver.3.69 | Ver.2.54 |
| | Ver.1.0 | | | | |

External Interface



| Letter | Name | Function |
|--------|--|---|
| (A) | EtherNet/IP communications connector 1 | The connector for EtherNet/IP port 1. <ul style="list-style-type: none"> M12 connector (D-coding, female) Connect a communications cable. |
| (B) | EtherNet/IP communications connector 2 | The connector for EtherNet/IP port 2. <ul style="list-style-type: none"> M12 connector (D-coding, female) Connect a communications cable. |
| (C) | I/O connectors | The connectors for connecting IO-Link devices or non-IO-Link connected external devices. They are called "ports." <ul style="list-style-type: none"> M12 connectors (A-coding, female) Connect I/O cables. |
| (D) | Power supply connector (input) | The connector for supplying Unit/input power and output power. <ul style="list-style-type: none"> 7/8 inch connector (male) Connect the power supply cable to an external power supply. |
| (E) | Power supply connector (output) | The connector for supplying Unit/input power and output power from the local node to another node. Use this connector when the power supply method is power supply with through-wiring. <ul style="list-style-type: none"> 7/8 inch connector (female) Connect the power supply cable to an additional IO-Link Master Unit. |
| (F) | I/O indicators | The indicators that show the I/O status of pin 4/pin 1 and pin 2 for each port. |
| (G) | Cover mounting holes | The screw holes for mounting the rotary switch cover. They are provided in two locations. The above figure shows the holes when the cover is mounted with screws. |
| (H) | Rotary switches | The switches for setting the IP address. |
| (I) | Status indicators | The indicators that show the current operating status of the Unit. |
| (J) | Unit mounting holes | The holes for mounting the Unit. They are provided in two locations. Mount the Unit with M5 screws. |

NXR-ILM08C-EIT

Wiring Example for I/O connectors

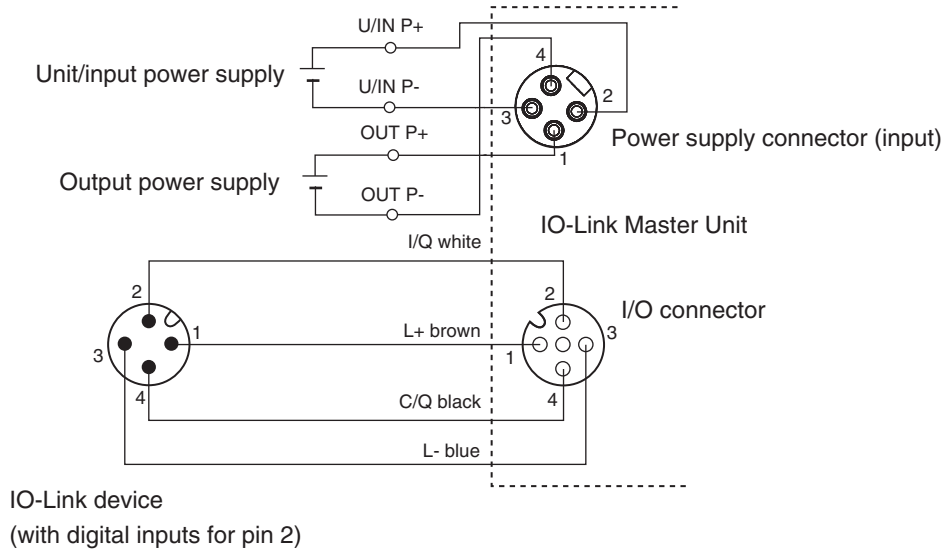
Wiring Example for IO-Link Devices

Wiring Example for IO-Link Devices (with Digital Inputs for Pin 2)

A wiring example for an IO-Link device with digital inputs for pin 2 is shown below.

In this example, the port is used in the following communications modes.

Pin 4: IO-Link Mode, pin 2: SIO (DO) Mode

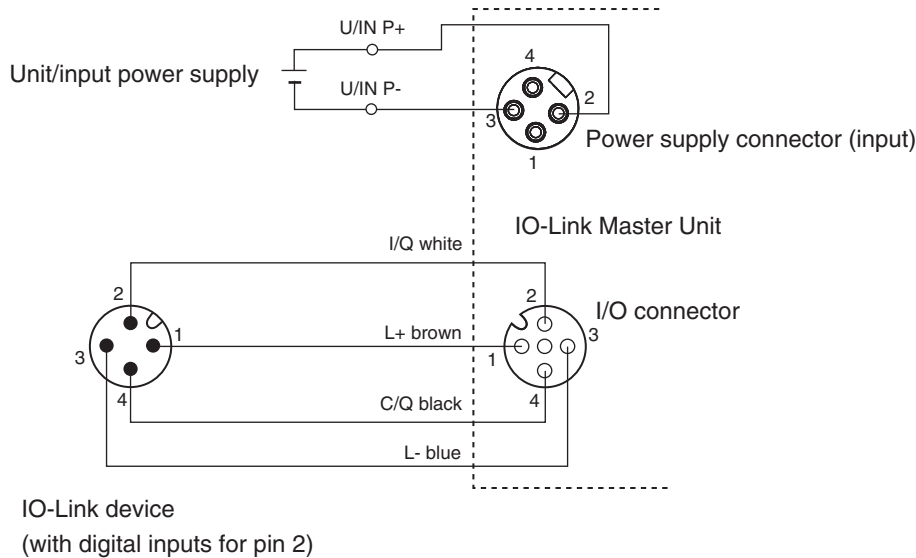


Wiring Example for IO-Link Devices (with Digital Outputs for Pin 2)

A wiring example for an IO-Link device with digital outputs for pin 2 is shown below.

In this example, the port is used in the following communications modes.

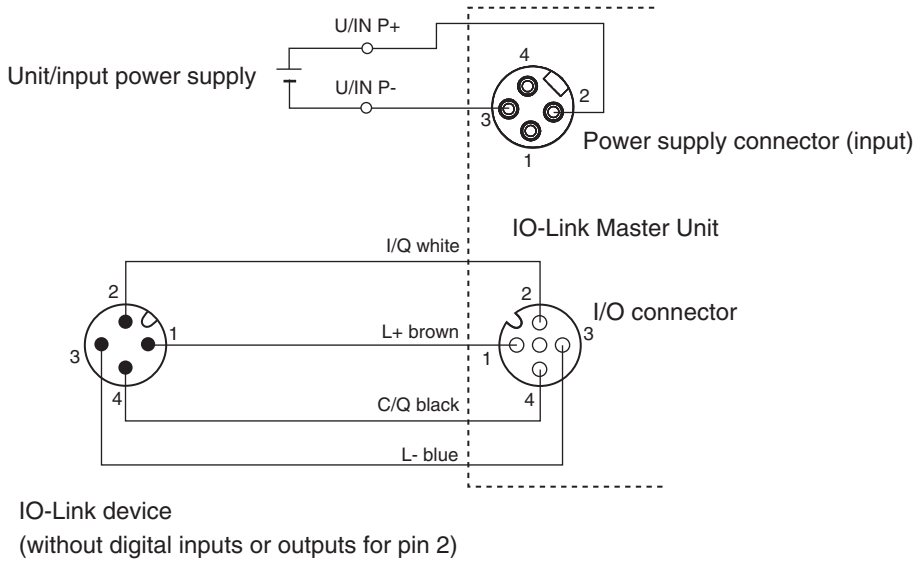
Pin 4: IO-Link Mode, pin 2: SIO (DI) Mode



Wiring Example for IO-Link Devices (without Digital Inputs and Outputs for Pin 2)

A wiring example for an IO-Link device without digital inputs and outputs for pin 2 is shown below. In this example, the port is used in the following communications modes.

Pin 4: IO-Link Mode, pin 2: Disabled

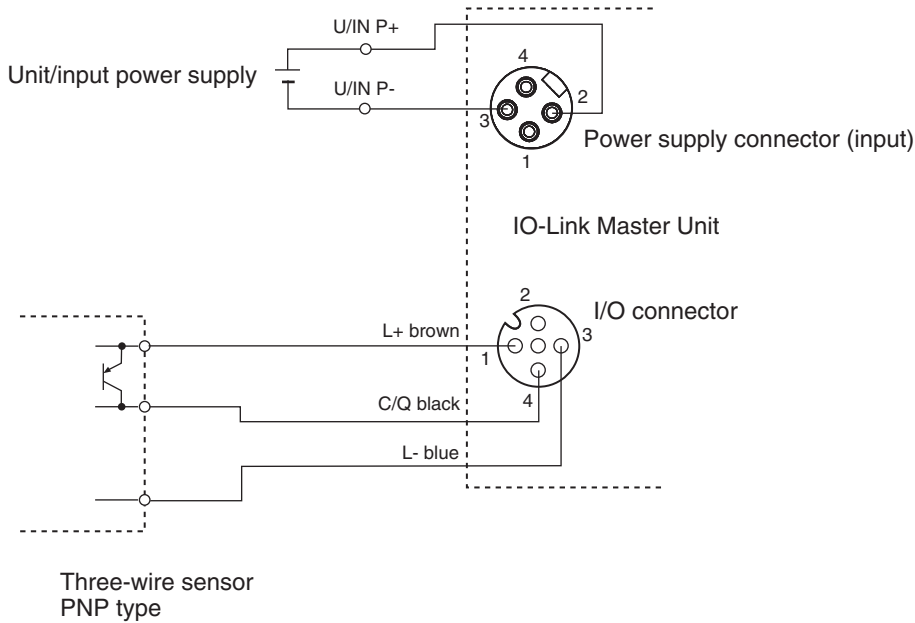


Wiring Example for Non-IO-Link Input Devices

Wiring Example for Three-wire Sensors

In this example, the port is used in the following communications modes.

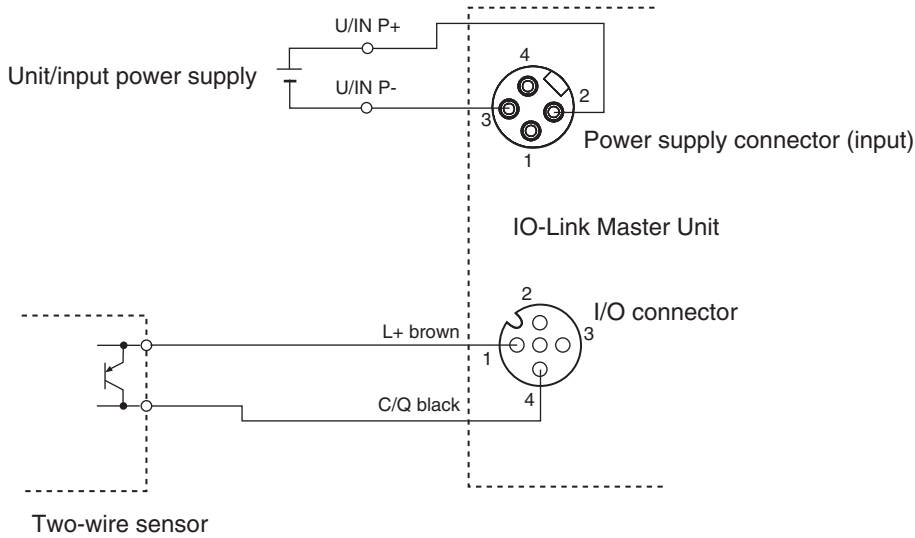
Pin 4: SIO (DI) Mode, pin 2: Disabled



Wiring Example for Two-wire Sensors

In this example, the port is used in the following communications modes.

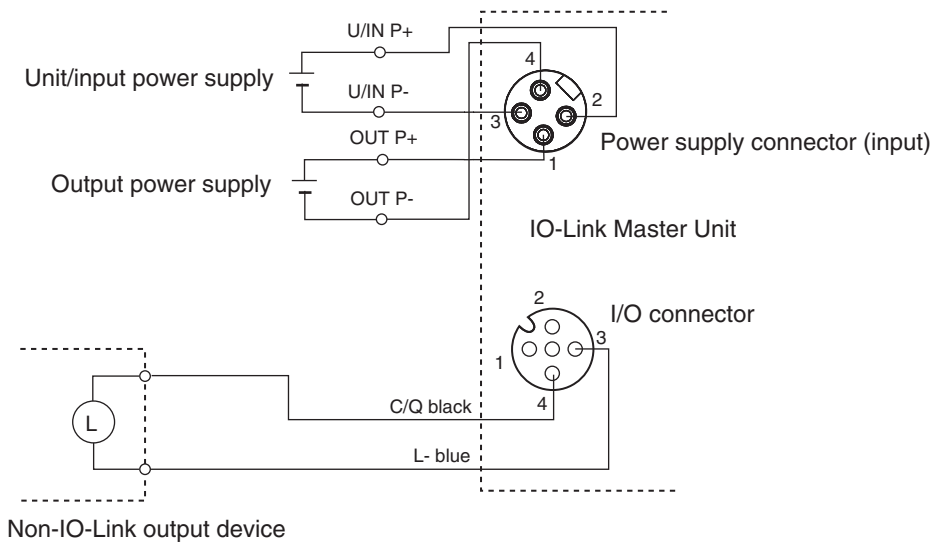
Pin 4: SIO (DI) Mode, pin 2: Disabled



Wiring Example for Non-IO-Link Output Devices

A wiring example between the IO-Link Master Unit and a non-IO-Link output device is shown below. In this example, the port is used in the following communications modes.

Pin 4: SIO (DO) Mode, pin 2: Disabled

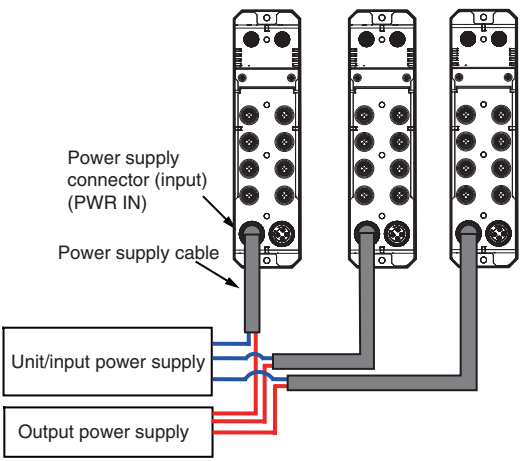


NXR-ILM08C-EIT

Power Supply System

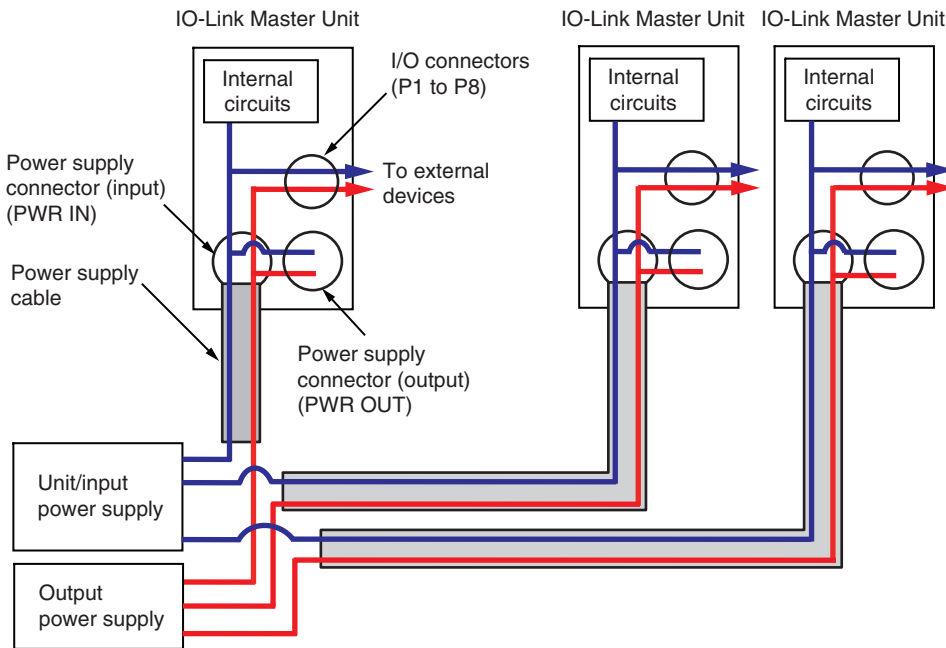
There are two methods to supply power to IO-Link Master Units as shown below.

Direct power supply

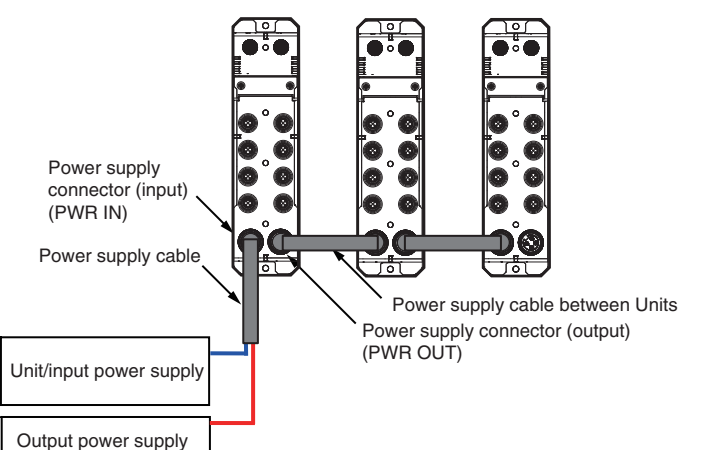
| Description | Feature |
|--|--|
| <p>Connect the external power supplies to the power supply connector (input) of each IO-Link Master Unit. The power supply connector (output) is not used.</p>  | <p>This method does not cause voltage drop in through-wiring cables or due to connection through IO-Link Master Units.</p> |

An example is shown below.

Connect the external power supplies to the power supply connector (input) of each IO-Link Master Unit.



Power supply with through wiring

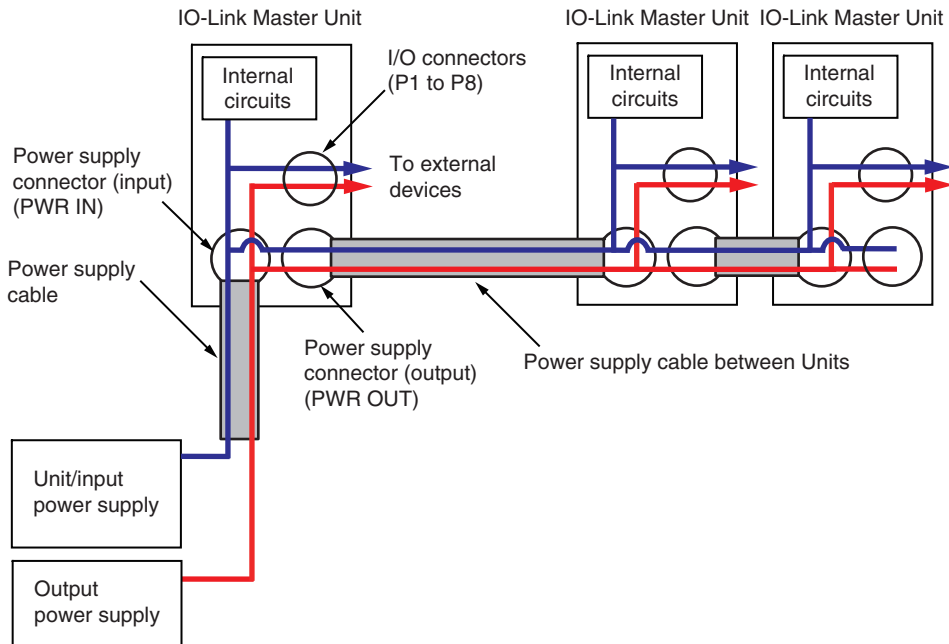
| Description | Feature |
|--|--|
| <p>Connect the external power supplies to the power supply connector (input) of one IO-Link Master Unit. Then, connect the power supply connector (output) of the Unit to the power supply connector (input) of another IO-Link Master Unit with a power supply cable. In this way, supply power with through-wiring between the subsequent Units with power supply cables. The power supply connector (output) is used.</p>  | <p>Through-wiring can reduce the overall length of the power supply cables used in the system.</p> |

An example is shown below.

Connect the external power supplies to the power supply connector (input) of one IO-Link Master Unit.

Then, connect the power supply connector (output) of the Unit to the power supply connector (input) of another IO-Link Master Unit with a power supply cable.

In this way, connect a power supply cable between the subsequent Units with through-wiring one after another.



NXR-ILM08C-EIT

Related Manuals

| Manual | Cat. No | Model | Application | Description |
|--|-----------|--|---|--|
| NXR-series IO-Link Master Unit for EtherNet/IP™ User's Manual | W619 | NXR-ILM08C-EIT | Learning how to use an NXR-series IO-Link Master Unit for EtherNet/IP. | Describes the hardware, setup methods, and functions of the NXR-series IO-Link Master Unit for EtherNet/IP. |
| NXR-series IO-Link I/O Hub User's Manual | W620 | NXR-□□□□□□-IL□ | Learning how to use an NXR-series IO-Link I/O Hub. | Describes the hardware, setup methods, and functions of the NXR-series IO-Link I/O Hub. |
| NJ/NX-series CPU Unit Built-in EtherNet/IP™ Port User's Manual | W506 | NX701-□□□□ NJ501-□□□□ NJ301-□□□□ NJ101-□□□□ NX102-□□□□ NX1P2-□□□□ | Using the built-in EtherNet/IP port on an NJ/NX-series CPU Unit. | Information on the built-in EtherNet/IP port is provided. Information is provided on the basic setup, tag data links, and other features. |
| CS/CJ-series EtherNet/IP™ Units Operation Manual | W465 | CS1W-EIP21 CJ1W-EIP21 CJ2H-CPU6□-EIP CJ2M-CPU3□ | Using the CS/CJ-series EtherNet/IP Unit. | Provides information on operating and installing CS/CJ-series EtherNet/IP Units, including details on basic settings, tag data links, and FINS communications. |
| Sysmac Studio Version 1 Operation Manual | W504 | SYSMAC-SE2□□□□ | Learning about the operating procedures and functions of the Sysmac Studio. | Describes the operating procedures of the Sysmac Studio. |
| NJ/NX-series Instructions Reference Manual | W502 | NX701-□□□□ NJ501-□□□□ NJ301-□□□□ NJ101-□□□□ NX102-□□□□ NX1P2-□□□□ | Learning detailed specifications on the basic instructions of an NJ/NX-series CPU Unit. | The instructions in the instruction set (IEC 61131-3 specifications) are described. |
| IO-Link Sensor Index List | 9541795-1 | E3Z-□8□-IL□ | Learning the vendor IDs, device IDs, I/O data (process data), and objects (service data). | Describes the following details for OMRON's IO-Link sensors. <ul style="list-style-type: none"> • IO-Link physical layer • Device IDs • Process data • Service data • Event functions |
| | 9540292-0 | E2E(Q)-□-IL□ | | |
| | 9539397-1 | E3S-DCP21-IL□ | | |

Sysmac is a trademark or registered trademark of OMRON Corporation in Japan and other countries for OMRON factory automation products. Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. EtherCAT® is a registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany. EtherNet/IP™ is a trademark of ODVA. Other company names and product names in this document are the trademarks or registered trademarks of their respective companies.

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.