

Environment-resistive Remote Terminal NXR-series IO-Link Master Unit for EtherCAT®

NXR-ILM08C-ECT

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



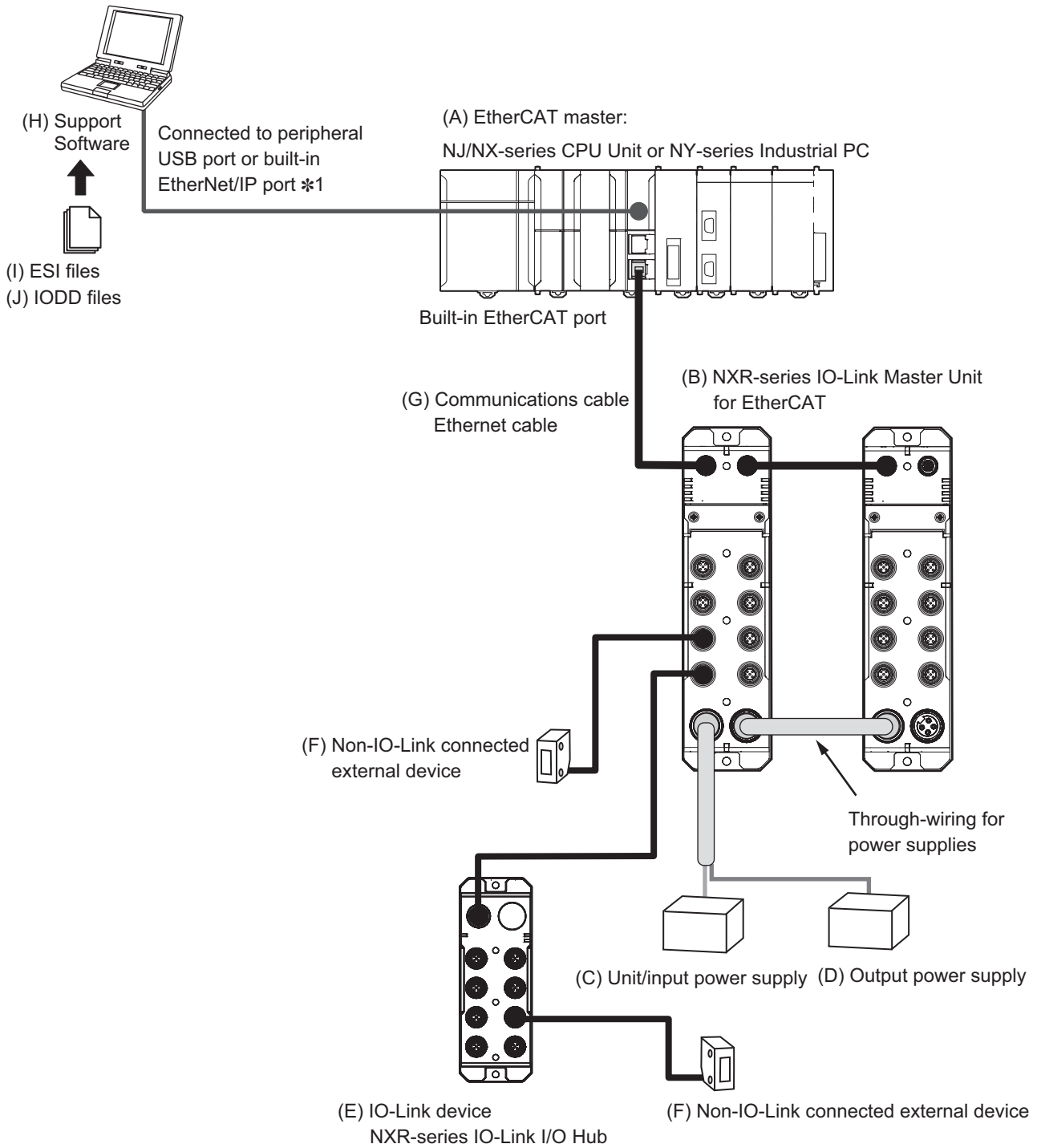
Features

- IP67 protection
- Commissioning and Replacement without software
 - I/O port quick settings eliminates the need for software
- 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

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System Configuration

An example of a system configuration for an NXR-series IO-Link Master Unit for EtherCAT is shown below. The example uses an NJ/NX-series CPU Unit and an NY-series Industrial PC.



*1. The connection method depends on the model of the NJ/NX-series CPU Unit or NY-series Industrial PC.

The description of each item is given below.

| Letter | Item | Description |
|--------|---|--|
| (A) | EtherCAT master | The EtherCAT master manages the EtherCAT network, monitors the status of the slaves, and exchanges I/O data with the slaves. |
| (B) | NXR-series IO-Link Master Unit for EtherCAT | A device that outputs the data that is received from the EtherCAT master to a connected external device and sends the data that is input from a connected external device to the EtherCAT master through the EtherCAT network. The NXR-series IO-Link Master Unit for EtherCAT is an EtherCAT slave 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 EtherCAT. It exchanges data with IO-Link devices through IO-Link communications. |
| (C) | 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). *1 |
| (D) | 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). *1 |
| (E) | 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. The NXR-series IO-Link I/O Hub is an OMRON IO-Link device. It exchanges data with the NXR-series IO-Link Master Unit for EtherCAT in IO-Link communications. You can connect non-IO-Link connected external devices to the NXR-series IO-Link I/O Hub. |
| (F) | 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. |
| (G) | Communications cable | Use a double-shielded cable with aluminum tape and braiding of category 5 (100BASE-TX) or higher, and use straight wiring. |
| (H) | Support Software *2 | The Support Software configures and monitors the Controller, IO-Link Master Unit, and IO-Link devices. The Support Software depends on the Controller that you use. OMRON provides the following Support Software. <ul style="list-style-type: none"> • Sysmac Studio: The Support Software for configuring the EtherCAT master and IO-Link Master Unit, creating user programs, monitoring, troubleshooting, and configuring the IO-Link master. • CX-ConfiguratorFDT: The Support software for configuring and monitoring IO-Link devices that are connected to the IO-Link Master Unit. |
| (I) | ESI (EtherCAT Slave Information) files | The ESI files contain information that is unique to EtherCAT slaves in XML format. You can load an ESI file into the EtherCAT master Configuration Software to easily allocate slave process data and make other settings. The ESI files for OMRON EtherCAT slaves are already installed in the Sysmac Studio. You can update the Sysmac Studio to get the ESI files for the most recent models. |
| (J) | IODD files | These files contain IO-Link device definitions. The IODD files for OMRON's IO-Link devices are automatically installed when you install the CX-ConfiguratorFDT. OMRON IO-Link device files are available for download from the OMRON website. |

*1. You can use through-wiring to supply power from the Unit/input power supply and output power supply to other IO-Link Master Units. It is also possible to supply power directly to each Unit. Refer to *Power Supply System* on page 20 for details on the power supply system.

*2. Refer to *Applicable Support Software* on page 4 for details on the Support Software used for systems with IO-Link Master Units.

Applicable Support Software

The following table shows support software that can be used in the system configured with the NXR-series EtherCAT IO-Link Master Unit. The Support Software used depends on the scope of the applicable system. For versions of support software, refer to *Version Information* on page 13.

| Destination to which IO-Link Master Unit is connected | | Applicable Support Software | | | |
|---|---|-------------------------------|-------------------------------|--------------------------------|--|
| Controller | EtherCAT master | Creating the user program | Setting the PDO mapping | Setting up IO-Link Master Unit | Setting and monitoring IO-Link devices |
| NJ/NX-series CPU Unit or NY-series Industrial PC | Built-in EtherCAT ports on NJ/NX-series CPU Unit or NY-series Industrial PC | Sysmac Studio | Sysmac Studio | Sysmac Studio | CX-ConfiguratorFDT |
| Controller from another company | EtherCAT master from another company | Software from another company | Software from another company | Software from another company | *1 |

*1. From the controller from another company, make settings through message communications. Or use a commercially-available IO-Link USB master to make settings from the CX-ConfiguratorFDT. For the commercially available IO-Link USB master, the following models are recommended.

| Model | Manufacturer |
|----------------------|---------------|
| USB-2-IOL-0002 | TURCK |
| IO-Link-Master02-USB | Pepperl+Fuchs |

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 EtherCAT

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

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-coding, female | NXR-ID166C-IL2 |
| | | 16 digital inputs/outputs | | | NXR-CD166C-IL2 |

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.□□ | 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. The Sysmac Studio Standard Edition DVD includes CX-ConfiguratorFDT to set up IO-Link devices. | --- (Media only) | Sysmac Studio (32 bit) DVD | SYSMAC-SE200D |
| | | | Sysmac Studio (64 bit) DVD | SYSMAC-SE200D-64 |
| | 1 license *1 | --- | SYSMAC-SE201L | |

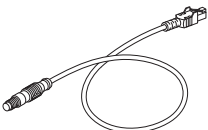
Note: For details, refer to the Sysmac Studio Ver.1.□□ datasheet, visit your local OMRON website.

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

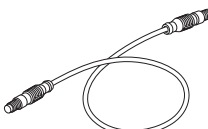
EtherCAT Communications Cables

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

Connection Cables between IO-Link Master Unit and EtherCAT Master or EtherCAT Slave with RJ45 Connectors

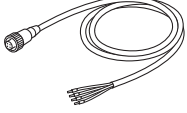
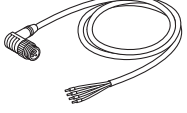

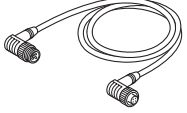
| Name and appearance | Manufacturer | Specification | No. of cable conductors | Connector | Cable connection direction | Cable length | Model |
|--|--------------|-----------------------------------|-------------------------|-----------------|----------------------------|--------------|-------------------------|
| Industrial Ethernet Connectors with Cable  | OMRON | M12 plug (D-coding, male) to RJ45 | 4 | Screw connector | Straight/straight | 0.5 m | XS2W-T421-BMC-SS |
| | | | | | | 1 m | XS2W-T421-CMC-SS |
| | | | | | | 2 m | XS2W-T421-DMC-SS |
| | | | | | | 3 m | XS2W-T421-EMC-SS |
| | | | | | | 5 m | XS2W-T421-GMC-SS |
| | | | | | | 10 m | XS2W-T421-JMC-SS |

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  | OMRON | M12 plug (D-coding, male) to M12 plug (D-coding, male) | 4 | Screw connector | Straight/straight | 0.5 m | XS2W-T421-BM2-SS |
| | | | | | | 1 m | XS2W-T421-CM2-SS |
| | | | | | | 2 m | XS2W-T421-DM2-SS |
| | | | | | | 3 m | XS2W-T421-EM2-SS |
| | | | | | | 5 m | XS2W-T421-GM2-SS |
| | | | | | | 10 m | XS2W-T421-JM2-SS |

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)  | 7/8 inch socket (female) to 7/8 inch plug (male) | 4 | Screw connector | 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 | |

Note: 1. Contact HARTING K.K. for details.

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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 UKCA IO-Link conformance EtherCAT conformance |

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

EtherCAT Communications Specifications

| Item | Specification |
|-----------------------------|--|
| Communications protocols | EtherCAT protocol |
| Modulation | Baseband |
| Link speed | 100 Mbps |
| Physical layer | 100BASE-TX (IEEE802.3) |
| Connectors | M12 (D-coding, female) x 2 (shielded) CN IN: EtherCAT input CN OUT: EtherCAT output |
| Topology | Depends on the specifications of the EtherCAT master *1*2 |
| Transmission media | Category 5 or higher twisted-pair cable (Recommended cable: doubleshielded cable with aluminum tape and braiding) |
| Transmission distance | Distance between nodes (slaves): 50 m or less |
| Noise immunity | Conforms to IEC 61000-4-4, 1 kV or more |
| Node address setting method | Setting with hexadecimal ID switch or Configuration Software |
| Node address range *3 | <ul style="list-style-type: none"> Setting with hexadecimal ID switch: 01 to FF hex (1 to 255) Setting with Configuration Software: 0001 to FFFF hex (1 to 65,535) |
| Indicators | L/A IN (Link/Activity IN) x 1 L/A OUT (Link/Activity OUT) x 1 RUN x 1 ERR x 1 |
| Process data | Variable PDO mapping |
| PDO size/node | Input: 1 to 270 bytes Output: 2 to 258 bytes |
| Mailbox | Emergency messages, SDO requests, and SDO responses |
| Synchronization type | Free-Run Mode (Asynchronous) |

*1. The IO-Link Master Unit conforms to the EtherCAT standards. Confirm the specifications of the connected EtherCAT master for the supported topology. Note that the IO-Link Master Unit supports the ring topology.

*2. For the ring topology, the minimum value of the supported communications cycle is 125 μ s. Allowing the IO-Link Master Unit to operate with a shorter communications cycle than the minimum value may cause the loss of EtherCAT communications frames or a communications stop.

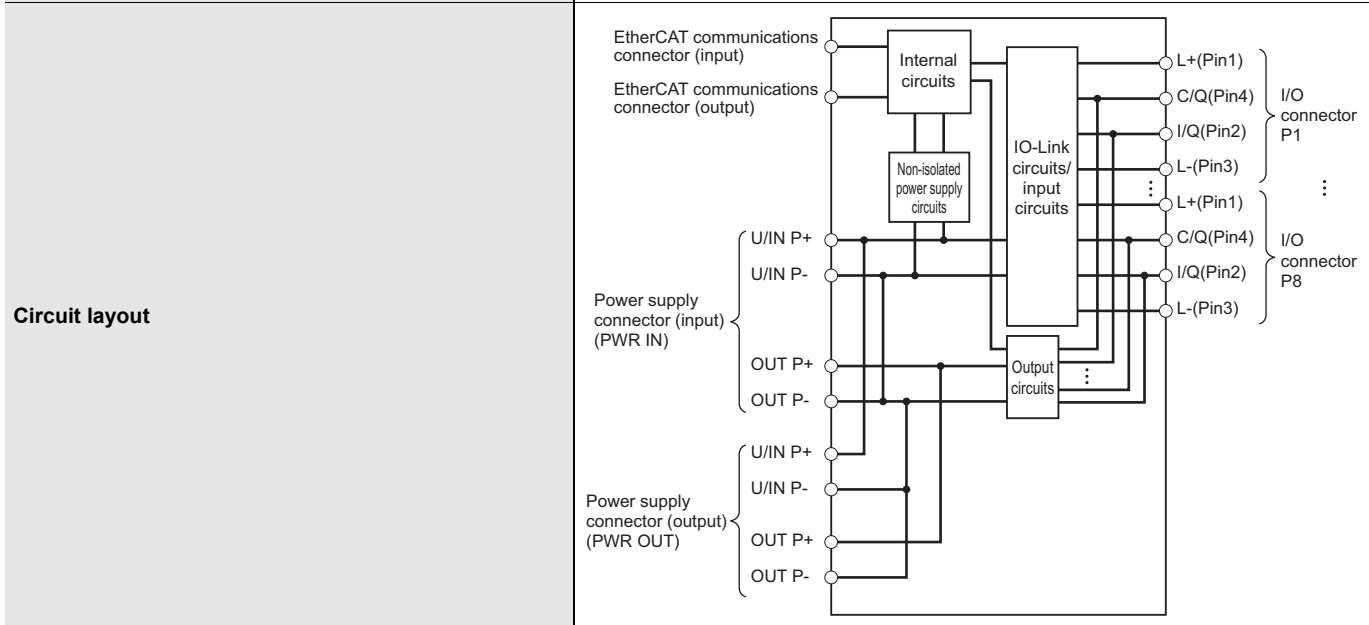
*3. The setting range of the node address depends on the specifications of the connected EtherCAT master. Check the specifications of the EtherCAT master for the supported node address setting range of the EtherCAT master.

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 Version1.1.2 IO-Link Test Specification Version1.1.2 |
| | 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"> EtherCAT 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"> EtherCAT 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 EtherCAT 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 *1 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 *2 |
| | Short-circuit detection | Provided *2 |
| 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 *2 |
| Short-circuit detection | Provided *2 | |

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| 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 *3 |
| | Short-circuit detection | Provided *3 |
| Current consumption | Unit/input power supply | 60 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. 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.

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

*3. 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.

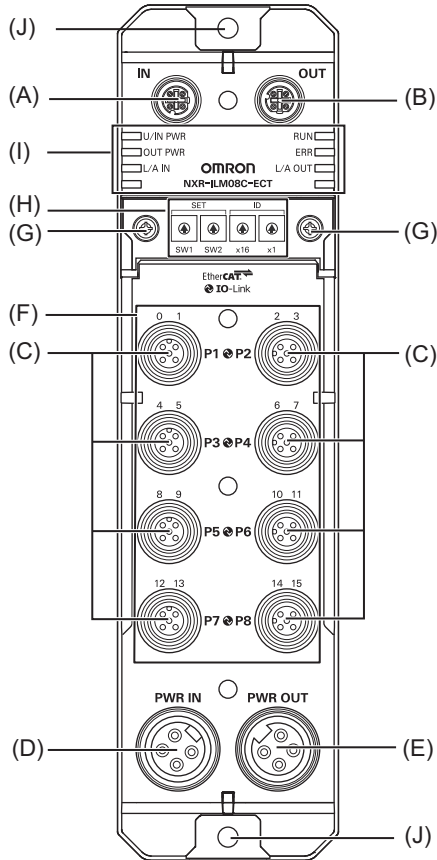
Version Information

The following table describes the relationship between the unit version of the IO-Link Master Units and the versions of the Support Software. With a combination of the following unit version or later and the following version or higher, you can use all of the functions that are supported by that unit version of the IO-Link Master Unit.

| Unit version | Corresponding version of Support Software | |
|--------------|---|--|
| | Sysmac Studio | CX-ConfiguratorFDT |
| Ver.1.0 | Ver.1.57 | Ver. 3.01, or Ver. 2.59 with automatic update as of January 2024 applied |

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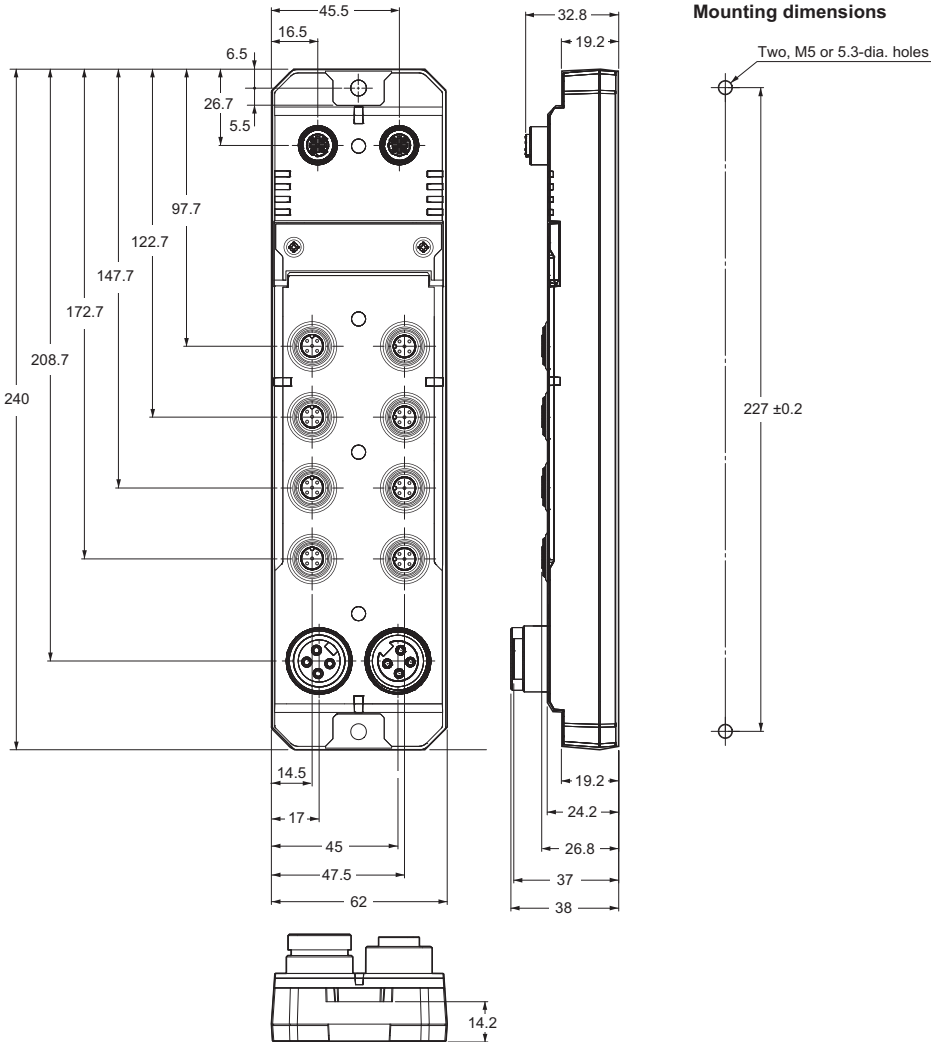
External Interface



| Letter | Name | Function |
|--------|--|--|
| (A) | EtherCAT communications connector (input) | The connector for EtherCAT port (input). • M12 connector (D-coding, female) Connect a communications cable. |
| (B) | EtherCAT communications connector (output) | The connector for EtherCAT port (output). • 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." • M12 connectors (A-coding, female) Connect I/O cables. |
| (D) | Power supply connector (input) | The connector for supplying Unit/input power and output power. • 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. • 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 Explicit Device ID and for the I/O port quick settings. |
| (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. |

Dimensions

(Unit: mm)



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Wiring Example for I/O connectors

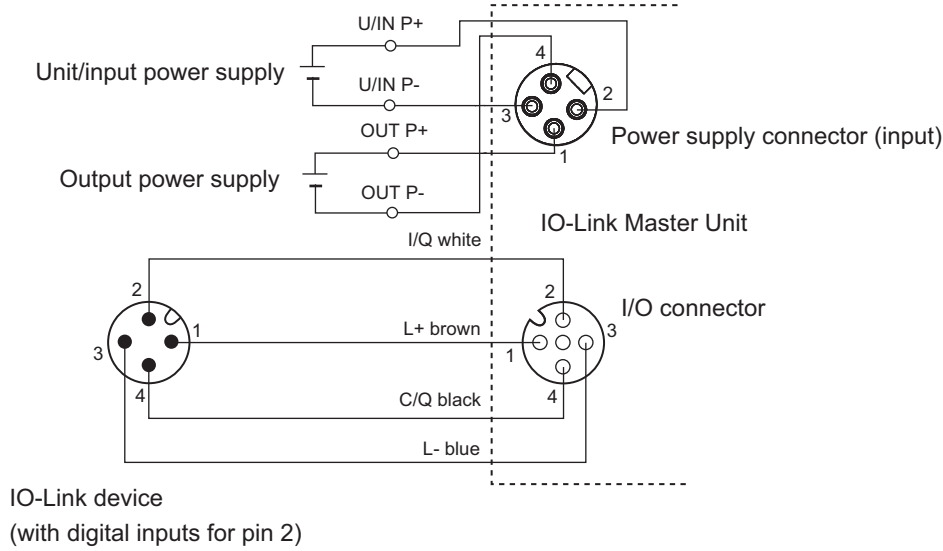
Wiring Example for IO-Link Devices

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

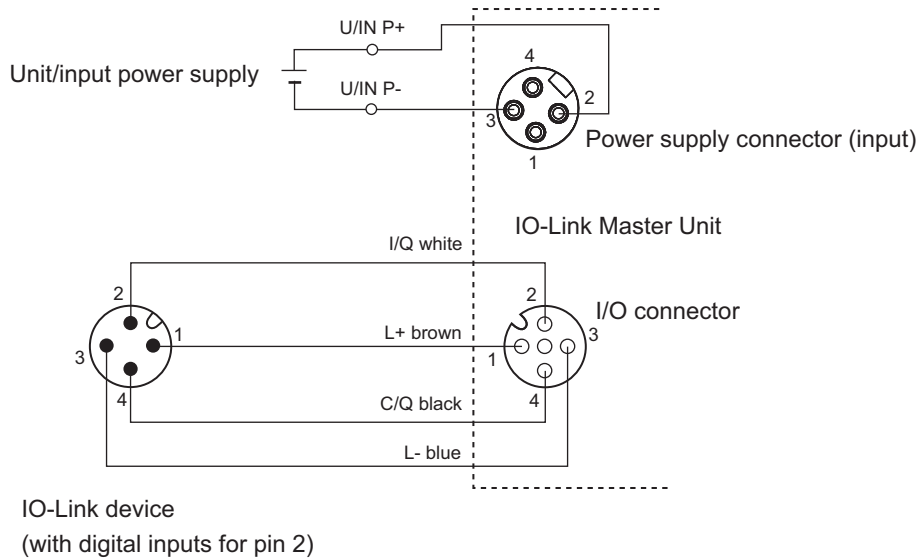


Wiring Example for IO-Link Devices (with Digital Outputs for Pin 2)

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.

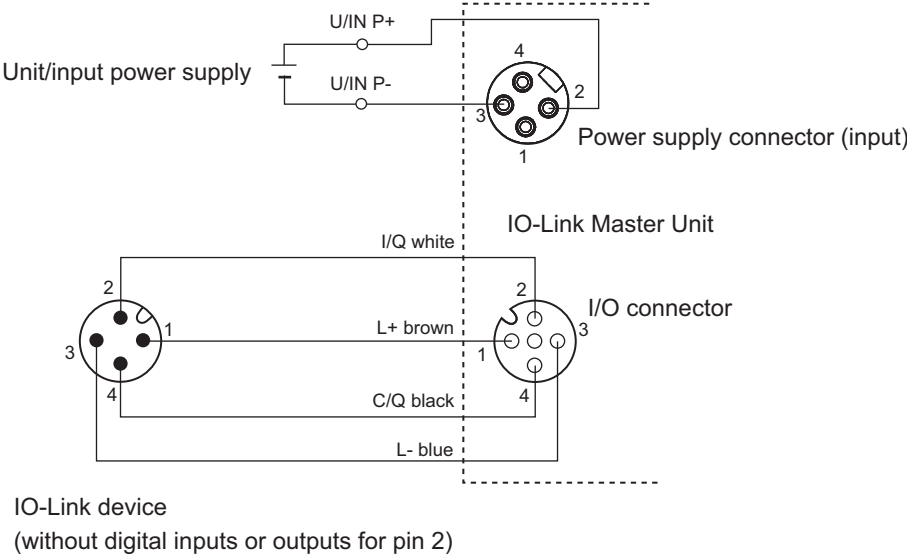
Pin 4: IO-Link Mode, pin 2: SIO (DI) Mode



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

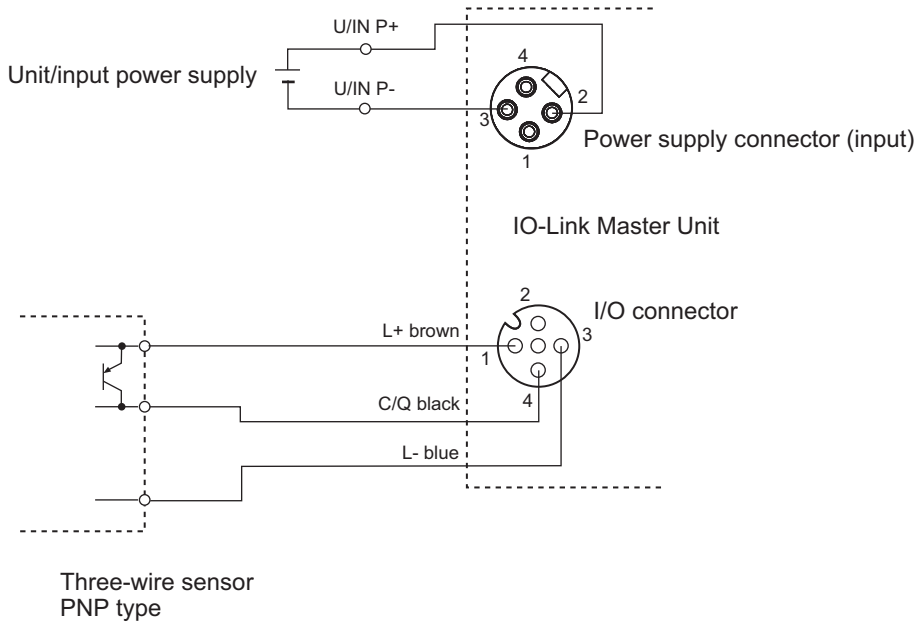


Wiring Example for Non-IO-Link Input Devices

Wiring Example for Three-wire Sensors

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

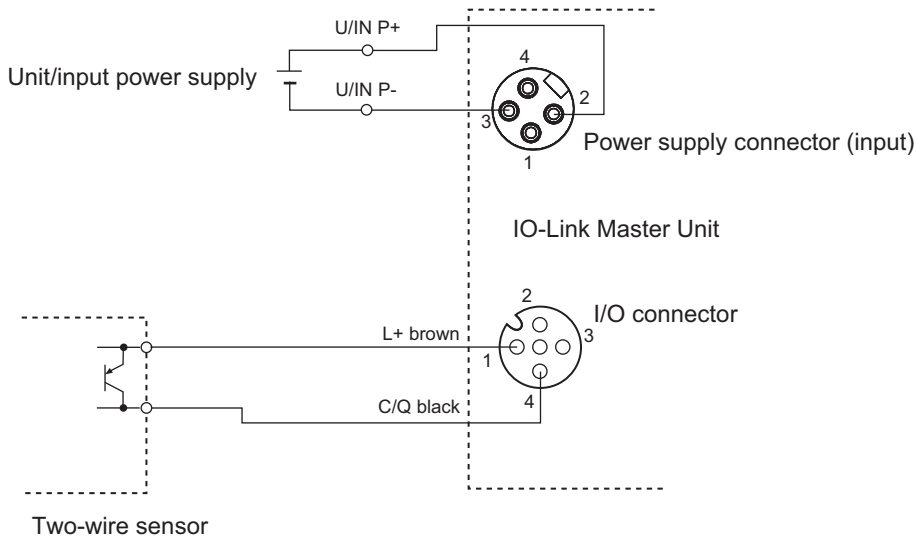
Pin 4: SIO (DI) Mode, pin 2: Disabled



Wiring Example for Two-wire Sensors

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

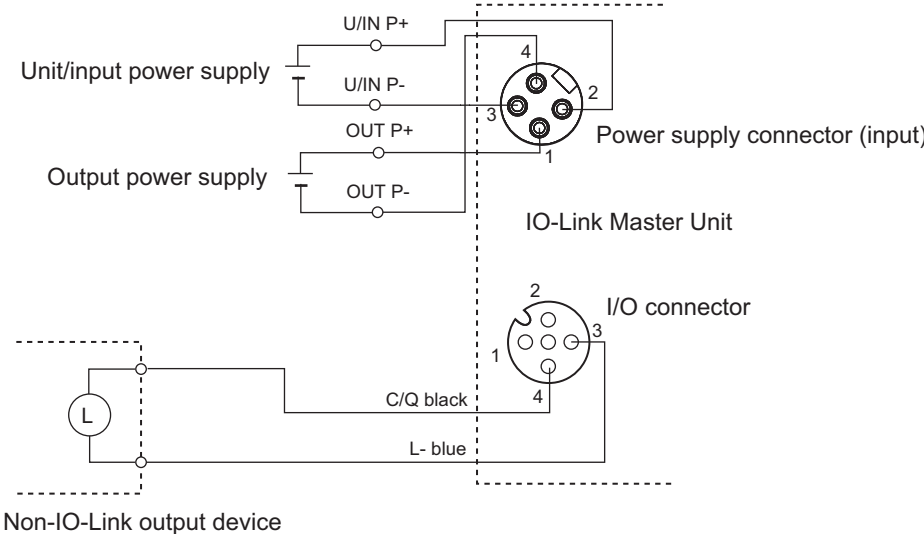
Pin 4: SIO (DI) Mode, pin 2: Disabled



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

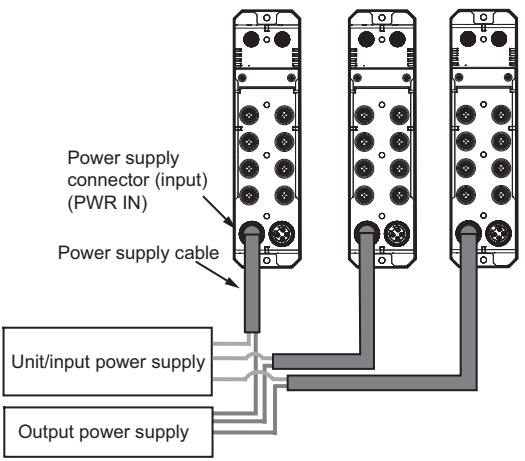


NXR-ILM08C-ECT

Power Supply System

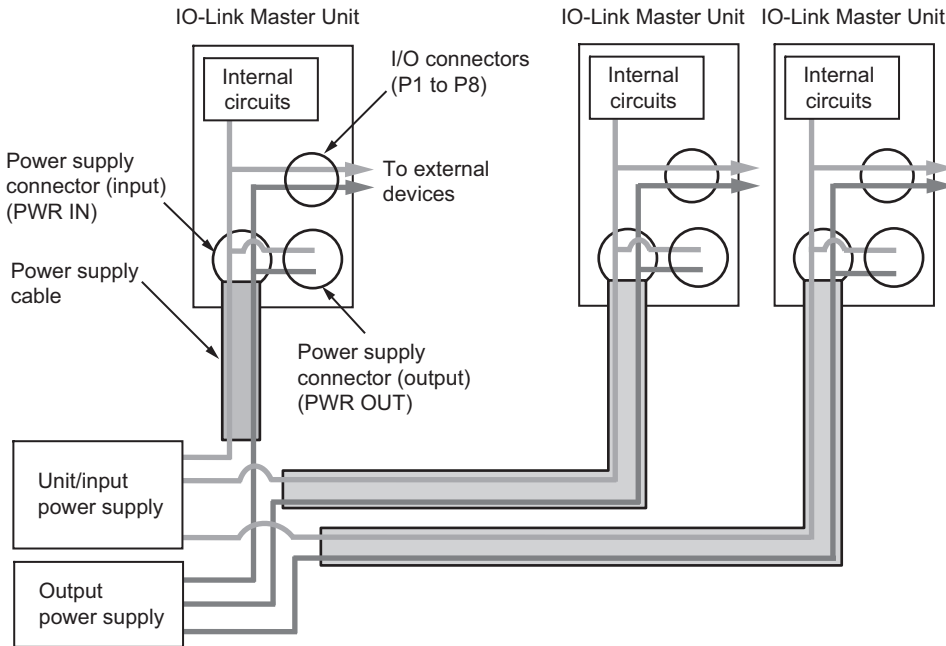
There are two methods to supply power to IO-Link Master Units as shown below.

Direct power supply

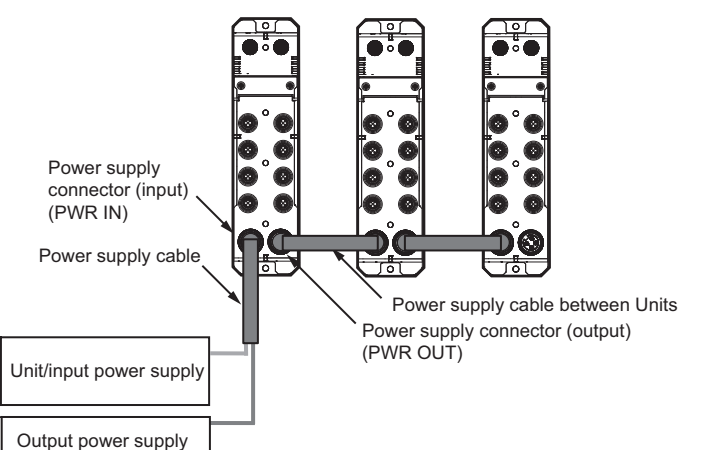
| Description | Feature |
|--|--|
| <p>Connect the external power supplies to the power supply connector (input) of each IO-Link Master Unit. The power supply connector (output) is not used.</p>  | <p>This method does not cause voltage drop in through-wiring cables or due to connection through IO-Link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

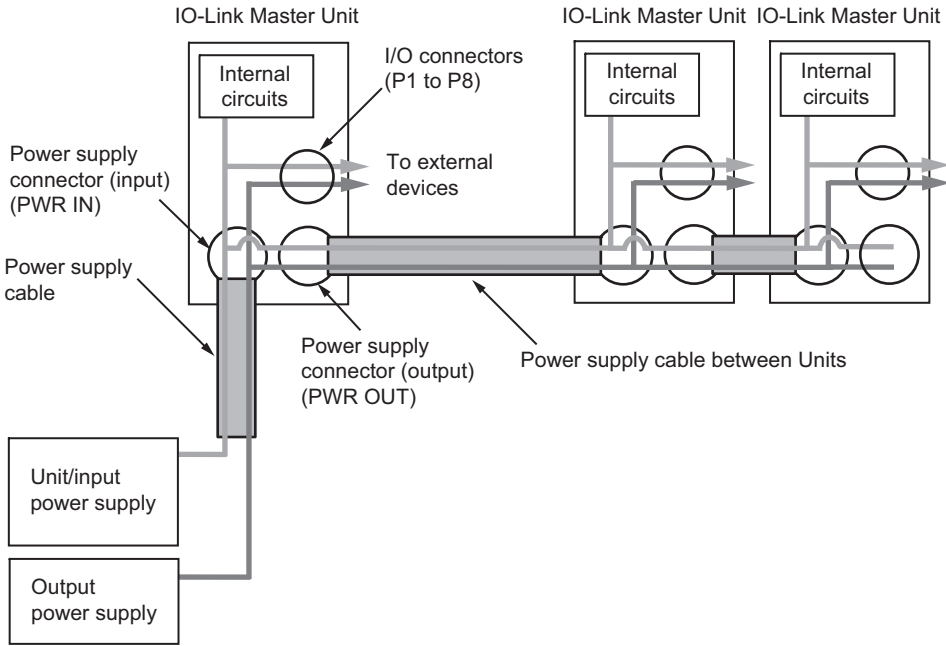


Power supply with through wiring

| 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-ECT

Related Manuals

| Manual | Cat. No | Model | Application | Description |
|--|-----------|--|---|--|
| NXR-series IO-Link Master Unit for EtherCAT User's Manual | W640 | NXR-ILM08C-ECT | Learning how to use an NXR-series IO-Link Master Unit for EtherCAT. | Describes the hardware, setup methods, and functions of the NXR-series IO-Link Master Unit for EtherCAT. |
| 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 EtherCAT Port User's Manual | W505 | NX701-□□□□ NX502-□□□□ NX102-□□□□ NX1P2-□□□□ NJ501-□□□□ NJ301-□□□□ NJ101-□□□□ | Using the built-in EtherCAT port on an NJ/NX-series CPU Unit. | Explains the built-in EtherCAT port. An overview is provided and the configuration, functions, and setup are described. |
| 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-□□□□ NX502-□□□□ NX102-□□□□ NX1P2-□□□□ NJ501-□□□□ NJ301-□□□□ NJ101-□□□□ | 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□ | | |

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