

## NXR-S series Simple Logic Safety I/O Block for CIP Safety

# NXR-SXD1204□-CST

**One safety I/O block for every machine – standardized, scalable, and easy to deploy**

- As a safety I/O Block, the setup, startup, and operation management have all been simplified to maximize the reduction in person hours
- As a CIP Safety™ target device, it realizes the integration of distributed control and centralized management
- As a functional safety product, it is designed to follow the evolution of standards and achieve sustainable global expansion

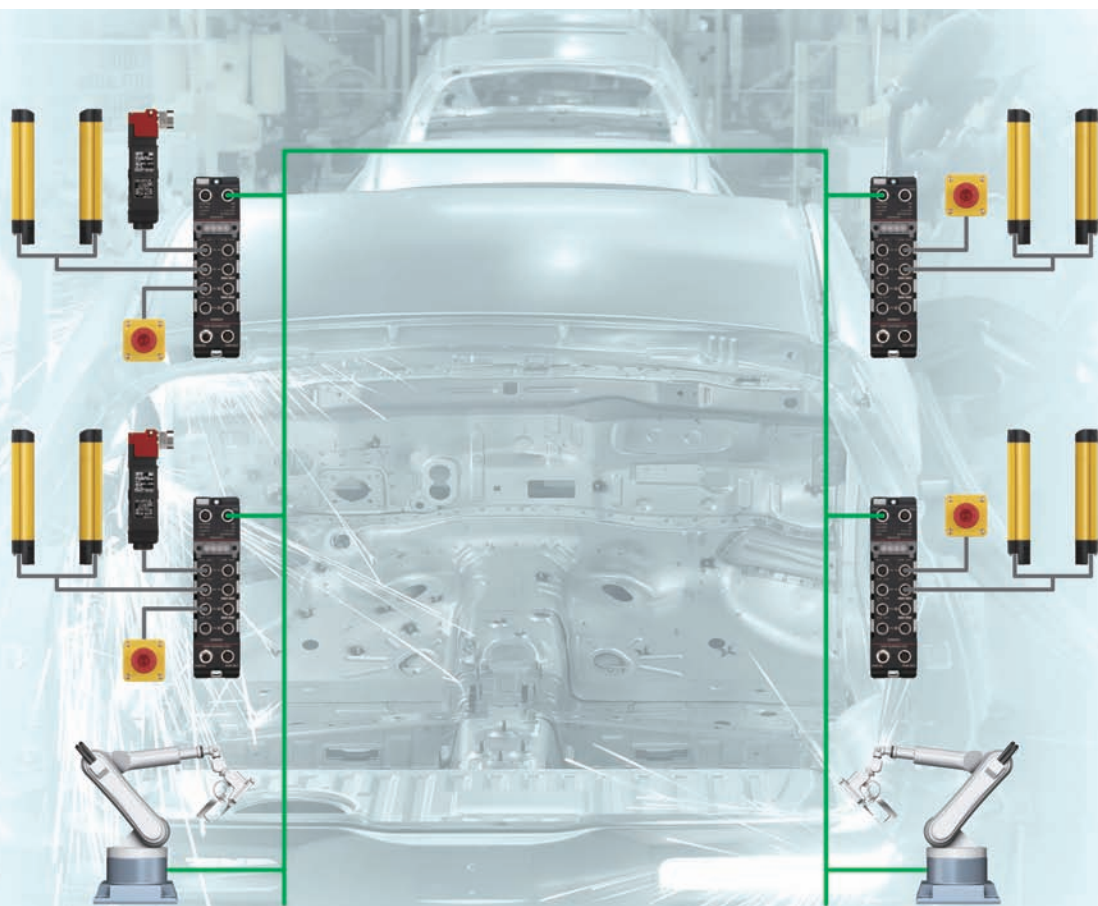


For safety certification, please refer to the OMRON website.



Be sure to read the Common Precautions for Safety Warning at the following URL: <http://www.ia.omron.com/>.  
Be sure to read the following user's manual for other details required for correct use of the Safety CPU Unit.

## System Configuration Example



EtherNet/IP  
EtherNet/IP & CIP Safety

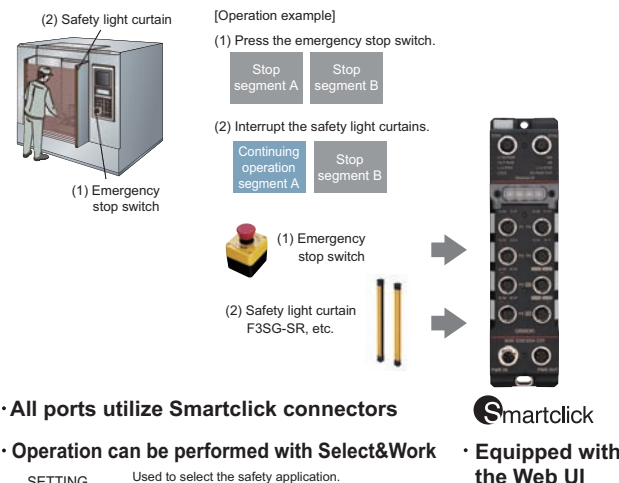


Hardware cabling

## Features

**As a safety I/O Block, the setup, startup, and operation management have all been simplified to reduce person hours**

- Single-cable connection for both power and safety signals for light curtains  
Smartclick design ensures proper fastening  
- no torque wrench needed
- Built-in pre-defined, add-on user-defined \*1, and logic functions simplify design and commissioning  
- no specialized expertise required.
- No need for dedicated software, built-in Web UI enables troubleshooting and unit replacement, etc.



SETTING

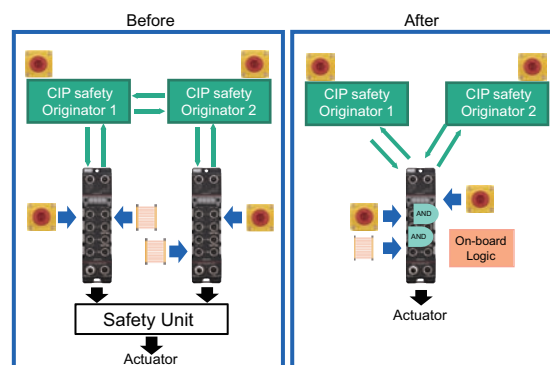
SW1 SW2

Used to select the safety application.  
Operation is performed when the values of SW1 and SW2 are the same.

| SW1 = SW2 (hexadecimal) | Operating mode           |
|-------------------------|--------------------------|
| =0                      | Remote I/O mode          |
| 1 to 3                  | Fixed application        |
| 4 to 7                  | Reserved                 |
| 8                       | IP address indication    |
| 9 to D                  | Add-on application       |
| E                       | Wiring checking function |
| F                       | User-defined application |

**As a CIP Safety target device, it supports the integration of distributed control and centralized management**

- System flexibility and manageability co-exist through the utilization of various communication types (Type1, Type2a, Type2b \*2) depending on the startup, operation, and modification phase
- In addition to IO Block parameters, logic (user-defined) can be set automatically by Type1, thus integrating distributed control by targets and centralized management by originators
- A single NXR-S can communicate with multiple originators over CIP Safety, simplifying the architecture by eliminating redundant safety devices and reducing the number of NXR-S units required.



**As a functional safety product, it is designed to evolve with global safety standards and support long-term worldwide deployment.**

- Compliance with evolving International Safety Standards IEC 61508 and ISO 13849-1: 2023 (4th edition)
- Compliance with North American Standards  
Compliance with UL FSPC, etc.
- Compliance with European Standards  
Meets the Machinery Directive, etc.



\*1 User-defined logic requires Sysmac Studio.

\*2 Type1: A Type1 SafetyOpen has all of the data necessary for the configuration of a safety device.

Type2a: When a target receives a Type2 SafetyOpen (no configuration data) accompanied by a non-zero Safety Configuration ID (SCID), it shall compare it against the SCID of the configuration and only accept the connection if they match.

Type2b: When a target receives a Type2 SafetyOpen (no configuration data) accompanied by a zero value SCID, it skips the check.

## Ordering Information

### Environment-resistive Remote Terminal NXR-S series Simple Logic Safety I/O Block for CIP Safety

| No. | Communications protocol | Maximum number of connections | Number of safety inputs/outputs |                        |                   | Number of I/O Block ports |                     |                  | Unit version | Model            |
|-----|-------------------------|-------------------------------|---------------------------------|------------------------|-------------------|---------------------------|---------------------|------------------|--------------|------------------|
|     |                         |                               | Number of inputs                | Number of test outputs | Number of outputs | Safety input ports        | Safety output ports | Safety I/O ports |              |                  |
| [1] | CIP Safety              | 5                             | 12                              | 12                     | 4                 | 5 pins × 6 ports          | 5 pins × 2 ports    | 0                | Ver. 1.00    | NXR-SXD1204-CST  |
|     |                         |                               |                                 |                        |                   | 5 pins × 4 ports          | 0                   | 8 pins × 2 ports |              | NXR-SXD1204B-CST |

#### Accessories

Identification marker: 1 sheet (10 pcs)

## Specifications

The general specifications, communication specifications, safety specifications, and unit specifications of the safety I/O Block are as follows.

### General Specifications

| Item                       |                               | Specifications                                                                                                                                                                                                               |
|----------------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Degree of protection       |                               | IP67                                                                                                                                                                                                                         |
| Operating environment      | Ambient operating temperature | -10 to 55°C                                                                                                                                                                                                                  |
|                            | Ambient operating humidity    | 25% to 85% (with no condensation)                                                                                                                                                                                            |
|                            | 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 <sup>2</sup><br>80 min each in X, Y, and Z directions                                                                                                        |
|                            | Shock resistance              | 150 m/s <sup>2</sup> , 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)                                                                                                                                                                                       |
| Conformance to standards * | TÜV Rheinland                 | <ul style="list-style-type: none"> <li>• EN 61508 parts 1-3</li> <li>• EN ISO 13849-1</li> <li>• EN ISO 13849-2</li> <li>• EN IEC 61131-2</li> <li>• IEC 61326-3-1</li> <li>• EN 60529</li> <li>• EN 61131-6</li> </ul>      |
|                            | UL                            | <ul style="list-style-type: none"> <li>• NRAQ/NRAQ7</li> <li>• UL 61010-1 and UL 61010-2-201</li> <li>• CSA C22.2 No. 61010-1 and CSA C22.2 No. 61010-2-201</li> <li>• FSPC (IEC 61508 parts 1-3 and ISO 13849-1)</li> </ul> |
|                            | ODVA                          | <ul style="list-style-type: none"> <li>• CIP Safety on EtherNet/IP</li> <li>• EtherNet/IP</li> </ul>                                                                                                                         |
|                            | Other                         | <ul style="list-style-type: none"> <li>• EU: EN 61131-2, RCM</li> <li>• UKCA</li> <li>• KC: KC Registration</li> <li>• Machinery Directive or Machinery Regulation</li> </ul>                                                |

\* For safety certification, please refer to the OMRON website.

## Communications Specifications

| Item                       |                                         | Specifications                                                                                                                          |
|----------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Physical specifications    | Port                                    | Layer-2 switch port                                                                                                                     |
|                            | Physical layer                          | 10BASE-T/100BASE-TX<br>Auto negotiation or fixed settings                                                                               |
|                            | Media access method                     | CSMA/CD                                                                                                                                 |
|                            | Modulation                              | Baseband                                                                                                                                |
|                            | Topology                                | Line, star, tree, ring                                                                                                                  |
|                            | Baud rate                               | 100 Mbps (100BASE-TX)                                                                                                                   |
|                            | 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)                                                                         |
| CIP Safety                 | CIP Safety target                       | Supported                                                                                                                               |
|                            | Maximum number of connections           | 5 (Input 2/Output 3)<br>Input connections can share the same data with up to 8 CIP Safety originators by using Multicast communication. |
|                            | Packet interval                         | 5 to 500 ms                                                                                                                             |
|                            | Maximum data size                       | Input: 9 bytes<br>Output: 3 bytes                                                                                                       |
| EtherNet/IP communications | EtherNet/IP target                      | Supported (Exclusive Owner, Input Only, Listen Only)                                                                                    |
|                            | Maximum number of connections           | 2 (Input 2/Output 0)                                                                                                                    |
|                            | Packet interval                         | 5 to 10,000 ms                                                                                                                          |
|                            | Maximum data size                       | Input: 9 bytes                                                                                                                          |
|                            | DLR                                     | Ring nodes supported                                                                                                                    |
| CIP message communications | Protocol                                | Class3/UCMM                                                                                                                             |
|                            | Maximum number of connections (Class 3) | 5                                                                                                                                       |
|                            | Data size                               | 504 bytes                                                                                                                               |
| CIP communications         | Quick Connect                           | Not supported                                                                                                                           |
| HTTPS communications       | TLS version                             | TLS 1.2 and TLS 1.3 is supported.<br>TLS 1.0, TLS 1.1, and SSL are not supported.                                                       |
|                            | Authentication method                   | Server authentication (X.509) and session authentication by safety password                                                             |

The following table shows whether a communications path encryption function is available, whether enabled or disabled by default, and whether switchable between enable and disable for each external interface.

| External interface |                 | Communications path encryption | Enabled/disabled by default | Whether enable/disable switchable                               |
|--------------------|-----------------|--------------------------------|-----------------------------|-----------------------------------------------------------------|
| Ethernet port      | CIP Safety      | No                             | Enabled                     | Not possible                                                    |
|                    | HTTPS           | Yes                            | Enabled                     | Not possible                                                    |
|                    | SNTP            | No                             | Disabled                    | Possible by Sysmac Studio, Web server function, and CIP message |
|                    | DHCP            | No                             | Disabled                    | Possible by Sysmac Studio, Web server function, and CIP message |
|                    | EtherNet/IP     | No                             | Enabled                     | Not possible                                                    |
|                    | CIP messages    | No                             | Enabled                     | Not possible                                                    |
| Physical interface | Rotary switches | Not applicable                 | Enabled                     | Not possible                                                    |

## Safety Specifications

| Item         | Specifications               |                              |                              |                              |
|--------------|------------------------------|------------------------------|------------------------------|------------------------------|
|              | Safety input                 |                              | Safety output                |                              |
|              | Dual channel                 | Single channel               | Dual channel                 | Single channel               |
| PL           | Up to PL e                   | Up to PL d                   | Up to PL e                   | Up to PL c                   |
| Category     | Up to Cat.4                  | Up to Cat.2                  | Up to Cat.4                  | Up to Cat.2                  |
| Mission Time | 20 years                     | 20 years                     | 20 years                     | 20 years                     |
| SIL          | Up to SIL 3                  | Up to SIL 2                  | Up to SIL 3                  | Up to SIL 1                  |
| PFH          | $4.6 \times 10^{-10}$<br>1/h | $4.6 \times 10^{-10}$<br>1/h | $4.6 \times 10^{-10}$<br>1/h | $4.6 \times 10^{-10}$<br>1/h |

Note: Refer to the *User's Manual* (Man.No.W546) for details.

## Unit Specifications

| Item                                  |                                   | Specifications                                                                                                                                                                                                                                   |                                                                                                                                                                                                    |
|---------------------------------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                       |                                   | NXR-SXD1204-CST                                                                                                                                                                                                                                  | NXR-SXD1204B-CST                                                                                                                                                                                   |
| Unit name                             |                                   | Environment-resistive Remote Terminal NXR-S series Simple Logic Safety I/O Block for CIP Safety                                                                                                                                                  |                                                                                                                                                                                                    |
| Dimensions [mm]                       |                                   | 60 × 240 × 34.2 mm (W × H × D)<br>(The depth is 46.65 mm when the connectors are included.)                                                                                                                                                      |                                                                                                                                                                                                    |
| Mounting method                       |                                   | Mounting with M5 screws                                                                                                                                                                                                                          |                                                                                                                                                                                                    |
| Mounting strength                     |                                   | 100 N                                                                                                                                                                                                                                            |                                                                                                                                                                                                    |
| Mounting orientation and restrictions |                                   | Mounting orientations: Six orientations<br>Restriction: None                                                                                                                                                                                     |                                                                                                                                                                                                    |
| Available connectors                  |                                   | <ul style="list-style-type: none"><li>• EtherNet/IP communications connectors: M12 (D-coding, female)</li><li>• Power supply connectors: M12 (L-coding, female), M12 (L-coding, male)</li><li>• I/O connectors: M12 (A-coding, female)</li></ul> |                                                                                                                                                                                                    |
| Connector strength                    |                                   | 30 N<br>Applicable to all connectors                                                                                                                                                                                                             |                                                                                                                                                                                                    |
| Screw tightening torque               |                                   | <ul style="list-style-type: none"><li>• Unit mounting (M5 screw): 1.47 to 1.96 N·m</li><li>• Rotary switch cover (M3 screw): 0.4 to 0.6 N·m</li></ul>                                                                                            |                                                                                                                                                                                                    |
| Weight                                |                                   | 710 g                                                                                                                                                                                                                                            | 700 g                                                                                                                                                                                              |
| Unit/input power supply voltage       |                                   | 24 VDC (19.2 to 28.8 VDC)                                                                                                                                                                                                                        |                                                                                                                                                                                                    |
| Output power supply voltage           |                                   | 24 VDC (19.2 to 28.8 VDC)                                                                                                                                                                                                                        |                                                                                                                                                                                                    |
| Isolation method                      |                                   | Digital isolator isolation                                                                                                                                                                                                                       |                                                                                                                                                                                                    |
| Isolation inside the Unit             |                                   | Isolate between the Unit/input power supply and output power supply                                                                                                                                                                              |                                                                                                                                                                                                    |
| Insulation resistance                 |                                   | 20 MΩ min. between isolated circuits (at 100 VDC)                                                                                                                                                                                                |                                                                                                                                                                                                    |
| Maximum power supply current          |                                   | 9 A                                                                                                                                                                                                                                              |                                                                                                                                                                                                    |
| Unit current consumption              |                                   | <ul style="list-style-type: none"><li>• Unit/Input power supply: 220 mA</li><li>• Output power supply: 40 mA</li></ul>                                                                                                                           |                                                                                                                                                                                                    |
| Number of safety I/O Block            | Number of safety input terminals  | 12                                                                                                                                                                                                                                               |                                                                                                                                                                                                    |
|                                       | Number of test output terminals   | 12                                                                                                                                                                                                                                               |                                                                                                                                                                                                    |
|                                       | Number of safety output terminals | 4                                                                                                                                                                                                                                                |                                                                                                                                                                                                    |
| Number of I/O ports                   | Safety input port                 | 5 pins × 6 ports                                                                                                                                                                                                                                 | 5 pins × 4 ports                                                                                                                                                                                   |
|                                       | Safety output port                | 4 pins × 2 ports                                                                                                                                                                                                                                 | 0                                                                                                                                                                                                  |
|                                       | Safety I/O Ports                  | 0                                                                                                                                                                                                                                                | 8 pins × 2 ports                                                                                                                                                                                   |
| Number of terminals per I/O port      | Safety input port                 | <ul style="list-style-type: none"><li>• Safety inputs: 2</li><li>• Test outputs: 2</li><li>• Unit/input power supply -: 1</li></ul>                                                                                                              |                                                                                                                                                                                                    |
|                                       | Safety output ports               | <ul style="list-style-type: none"><li>• Safety outputs: 2</li><li>• Output power supply -: 2</li></ul>                                                                                                                                           | ---                                                                                                                                                                                                |
|                                       | Safety I/O Ports                  | ---                                                                                                                                                                                                                                              | <ul style="list-style-type: none"><li>• Safety inputs: 2</li><li>• Test outputs: 2</li><li>• Safety outputs: 2</li><li>• Unit/input power supply -: 1</li><li>• Output power supply -: 1</li></ul> |
| Safety input current                  |                                   | 4.5 mA typical                                                                                                                                                                                                                                   |                                                                                                                                                                                                    |
| Safety input ON voltage               |                                   | 11 VDC min.                                                                                                                                                                                                                                      |                                                                                                                                                                                                    |

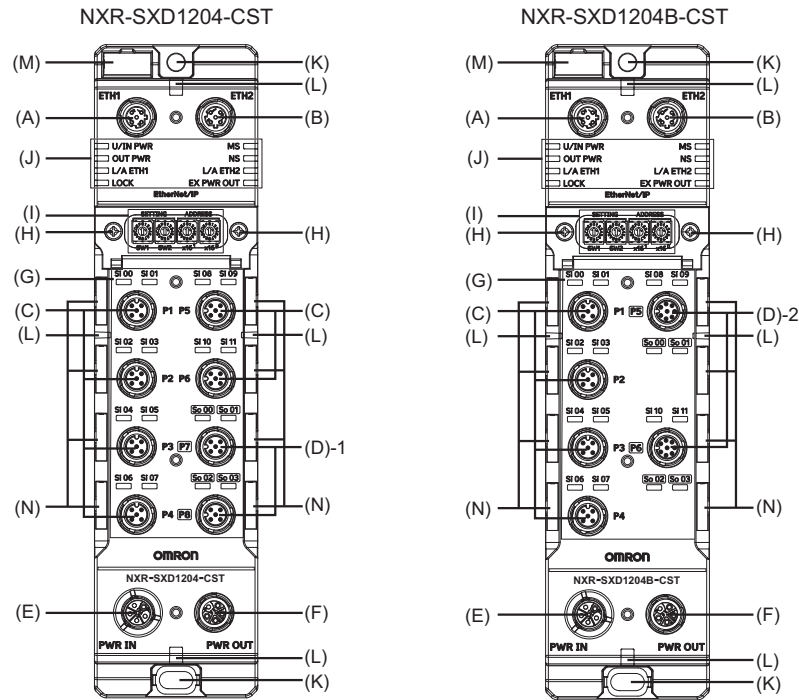
# NXR-SXD1204□-CST

| Item                                 | Specifications                                                         |                        |
|--------------------------------------|------------------------------------------------------------------------|------------------------|
|                                      | NXR-SXD1204-CST                                                        | NXR-SXD1204B-CST       |
| Safety input OFF voltage/OFF current | 5 VDC max./1 mA max.                                                   |                        |
| Test output type                     | Sourcing outputs (PNP)                                                 |                        |
| Test output rated current            | 0.7 A/point                                                            |                        |
| Test output ON residual voltage      | 1.2 V max. (Unit/input power supply + and each output terminal)        |                        |
| Test output leakage current          | 0.1 mA max.                                                            |                        |
| Safety output internal I/O common    | PNP (sourcing outputs)                                                 |                        |
| Safety output maximum load current   | 2.0 A/point 9.0 A/Unit                                                 | 0.7 A/point 9.0 A/Unit |
| Safety output ON residual voltage    | 1.2 V max. (between output power supply + and each output terminal)    |                        |
| Safety output OFF residual voltage   | 2 V max. (between output power supply - and each output terminal)      |                        |
| Safety application function          | Fixed applications, add-on applications, and user-defined applications |                        |

## Part Names and Functions

### Parts and Names

This section describes the names of the parts of the Simple Logic Safety I/O Block.



| Letter | Name                                        | Function                                                                                                                                                                                                                                                                    |
|--------|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (A)    | EtherNet/IP communications connector 1      | The connector for EtherNet/IP port 1.<br>The connector is an M12 connector (D-coding, female, Smartclick support).<br>Connect a communications cable.                                                                                                                       |
| (B)    | EtherNet/IP communications connector 2      | The connector for EtherNet/IP port 2.<br>The connector is an M12 connector (D-coding, female, Smartclick support).<br>Connect a communications cable.                                                                                                                       |
| (C)    | I/O connectors<br>(for safety input ports)  | These connectors are for connecting safety input devices.<br>Affix removable markers to the sides of the I/O connectors.<br>The connectors are M12 connectors (A-coding, female, 5-pin, Smartclick support).<br>Connect I/O cables (5-wire).                                |
| (D)-1  | I/O connectors<br>(for safety output ports) | These connectors are for connecting safety output devices.<br>Affix removable markers to the sides of the I/O connectors.<br>The connectors are M12 connectors (A-coding, female, 5-pin, Smartclick support).<br>Connect I/O cables (5-wire).                               |
| (D)-2  | I/O connectors<br>(for safety I/O ports)    | These connectors are for connecting safety input devices and safety output devices.<br>Affix removable markers to the sides of the I/O connectors.<br>The connectors are M12 connectors (A-coding, female, 8-pin, Smartclick support).<br>Connect I/O cables (8-wire).      |
| (E)    | Power supply connector<br>(input)           | This connector is for supplying Unit/input power and output power.<br>The connector is an M12 connector (L-coding, male, Smartclick support).<br>Connect the power supply cable for connecting to an external power supply.                                                 |
| (F)    | Power supply connector<br>(output)          | This connector is for supplying Unit/input power and output power from the local node to another node.<br>Use this connector when the power supply method is power supply with through-wiring.<br>The connector is an M12 connector (L-coding, female, Smartclick support). |
| (G)    | I/O indicators                              | These indicators indicate the status of the safety input or safety output for the terminal of each port.                                                                                                                                                                    |
| (H)    | Cover mounting holes                        | These screw holes are for mounting the rotary switch cover. They are provided in two locations.<br>The figure above shows the holes when the cover is mounted with screws.                                                                                                  |
| (I)    | Rotary switches                             | These switches are for selecting the safety application and setting the IP address.                                                                                                                                                                                         |
| (J)    | Status indicators                           | These indicators indicate the current operating status of the Safety I/O Terminal.                                                                                                                                                                                          |
| (K)    | Unit mounting holes                         | These holes are for mounting the Unit. They are provided in two locations. Mount the Unit with M5 screws.                                                                                                                                                                   |
| (L)    | Unit identification indicator               | This indicator provides notification by illuminating when using the Unit identification function.                                                                                                                                                                           |
| (M)    | Unit identification marker                  | This marker is for identifying the Safety I/O Terminal. It is white.                                                                                                                                                                                                        |
| (N)    | I/O identification marker                   | This marker is for identifying the I/O terminal. It is white.                                                                                                                                                                                                               |

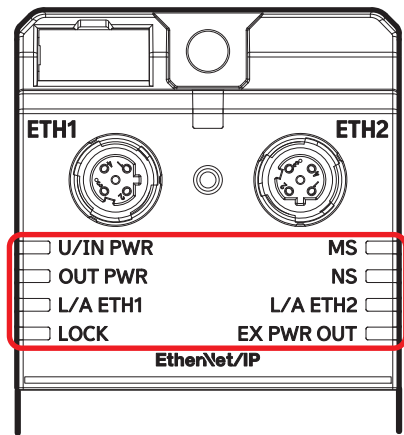
Indicators

The Safety I/O Block has the following indicators. This section describes them.

- Status Indicators
- I/O indicators

Status Indicators

These indicators indicate the current operating status of the Safety I/O Block.



U/IN PWR Indicator

This indicator shows the status of the Unit/input power supply.

| Color | Status                                                                                      | Description                           |
|-------|---------------------------------------------------------------------------------------------|---------------------------------------|
| Green |  Lit      | The Unit/input power is supplied.     |
| ---   |  Not lit | The Unit/input power is not supplied. |

OUT PWR Indicator

This indicator shows the status of the output power supply.

| Color | Status                                                                                      | Description                       |
|-------|---------------------------------------------------------------------------------------------|-----------------------------------|
| Green |  Lit     | The output power is supplied.     |
| ---   |  Not lit | The output power is not supplied. |

**MS Indicator**

This is the module status indicator. It shows the operating status of the Safety I/O Block.

| Color         | Status                                                                                     | Description                                                                                                                                       |
|---------------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Green         |  Lit      | Normal operating status (Executing)                                                                                                               |
|               |  Flashing | Normal operation standby status (Idle)                                                                                                            |
| Red           |  Lit      | Critical error occurred (Critical Fault)                                                                                                          |
|               |  Flashing | Operation stopped error (Abort)                                                                                                                   |
| Green/<br>Red |  Flashing | Initializing (Self-Testing), TUNID setting wait state (Waiting for TUNID), or configuration wait state (Configuring)                              |
| ---           |  Not lit  | IP address indication function executing (IP Address Display), I/O wiring check function executing (I/O Wiring Checking), or power supply is OFF. |

**NS Indicator**

This is the network status indicator. It shows the communications status of the Safety I/O Block.

| Color | Status                                                                                       | Description                                                                                        |
|-------|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Green |  Lit        | Connection established for one of CIP Safety, EtherNet/IP, and CIP message communications.         |
|       |  Flashing | Connection not established for any of CIP Safety, EtherNet/IP, and CIP message communications.     |
| Red   |  Lit      | A critical fault that affects the network occurred.<br>Example: IP address is duplicated.          |
|       |  Flashing | A timeout error occurred with one of the connections in CIP Safety and EtherNet/IP communications. |
| ---   |  Not lit  | The IP address is not set or the power supply is OFF.                                              |

**L/A ETH1 Indicator**

This is the Link/Activity indicator for EtherNet/IP port 1. It shows the linked status and communications status of EtherNet/IP port 1.

| Color | Status                                                                                       | Description                                    |
|-------|----------------------------------------------------------------------------------------------|------------------------------------------------|
| Green |  Lit      | Link established                               |
|       |  Flashing | Link established and communications are active |
| ---   |  Not lit  | No link established                            |

## L/A ETH2 Indicator

The Link/Activity indicator for EtherNet/IP port 2. This indicator shows the linked status and communications status of EtherNet/IP port 2.

| Color | Status                                                                                     | Description                                    |
|-------|--------------------------------------------------------------------------------------------|------------------------------------------------|
| Green |  Lit      | Link established                               |
|       |  Flashing | Link established and communications are active |
| ---   |  Not lit  | No link established                            |

## LOCK Indicator

This indicator shows the user authentication status for setting data of the Safety I/O Block. The user is recommended to set the locked state for use after the application operation check.

| Color  | Status                                                                                     | Description                                 |
|--------|--------------------------------------------------------------------------------------------|---------------------------------------------|
| Yellow |  Lit      | Configuration locked                        |
|        |  Flashing | Configuration unlocked and can be locked    |
| ---    |  Not lit  | Configuration unlocked and cannot be locked |

## EX PWR OUT Indicator

This indicator shows the status of the output power supply of the through-wiring.

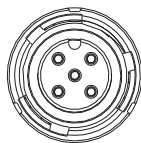
| Color | Status                                                                                      | Description                                             |
|-------|---------------------------------------------------------------------------------------------|---------------------------------------------------------|
| Green |  Lit     | The output power of the through-wiring is supplied.     |
| ---   |  Not lit | The output power of the through-wiring is not supplied. |

## I/O Indicators

The I/O LEDs on the Safety I/O Block indicate the status of the safety input terminals and safety output terminals.

Example: Safety Input Indicator

I/O LED → Si 00 Si 01



### Safety Input Indicator

This indicator shows the status of the safety input terminal.

| Color  | Status                                                                                     | Description                                                                                                                                                                                                                               |
|--------|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Yellow |  Lit      | The safety input terminal is ON (operating normally).                                                                                                                                                                                     |
| Red    |  Lit      | One of the following errors was detected. <ul style="list-style-type: none"> <li>• External Test Signal Failure at Safety Input</li> <li>• Internal Circuit Error at Safety Input</li> <li>• Discrepancy Error at Safety Input</li> </ul> |
|        |  Flashing | An error occurred in the safety input terminal for the other channel of the dual channels.                                                                                                                                                |
| ---    |  Not lit | The safety input terminal is OFF (operating normally).                                                                                                                                                                                    |

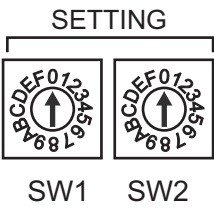
### Safety Output Indicator

This indicator shows the status of the safety output terminal.

| Color  | Status                                                                                       | Description                                                                                                                                                                                                                                                                                                         |
|--------|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Yellow |  Lit      | The safety output terminal is ON (operating normally)                                                                                                                                                                                                                                                               |
| Red    |  Lit      | One of the following errors was detected. <ul style="list-style-type: none"> <li>• Short Circuit Detected at Safety Output</li> <li>• Stuck-at-high Detected at Safety Output</li> <li>• Internal Circuit Error at Safety Output</li> <li>• Data error between dual channel outputs</li> <li>• EDM error</li> </ul> |
|        |  Flashing | An error occurred in another related safety output terminal.                                                                                                                                                                                                                                                        |
| ---    |  Not lit  | The safety output terminal is OFF (operating normally)                                                                                                                                                                                                                                                              |

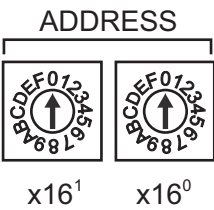
Rotary Switches

Rotary switches have the following settings.



Select from the safety application, IP address indication function, and I/O wiring checking function.  
Operation is performed when SW1 = SW2.

| SW1 = SW2<br>(hexadecimal) | Operating mode                 | Description                                                                   |
|----------------------------|--------------------------------|-------------------------------------------------------------------------------|
| 0                          | Remote I/O mode                | Operates as remote I/O without using logic functions.                         |
| 1 to 3                     | Fixed application              | Use a Pre-defined application built into the safety I/O Block.                |
| 4 to 7                     | Reserved                       | Reserved                                                                      |
| 8                          | IP address indication function | Starts the IP address indication function.                                    |
| 9 to D                     | Add-on application             | Use the applications which are added (Add-on) by the user.                    |
| E                          | I/O wiring checking function   | Check the continuity of the I/O wiring.                                       |
| F                          | User-defined application       | Use the safety application that is configured from the CIP Safety originator. |



Use the two rotary switches to set the IP address.  
The IP address is 192.168.250.□, with the first to third digits being fixed, and the fourth digit □ is to be set.

| Setting name     | Set value (hex) | IP address setting method                               |
|------------------|-----------------|---------------------------------------------------------|
| Software setting | [00]            | Configure the IP address using Sysmac Studio or Web UI. |
| Hardware setting | [01] to [FE]    | 192.168.250.□ *1                                        |
|                  | [FF]            | Obtain the IP address from the DHCP server.             |

\*1 "□" is the setting value of the rotary switches.

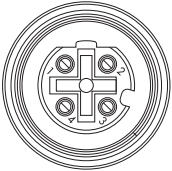
## Connectors

The Safety I/O Block has the following connectors.

- EtherNet/IP communications connectors
- Power supply connectors
- I/O connectors

### EtherNet/IP Communications Connectors

The EtherNet/IP communications connectors are used for EtherNet/IP communications. In this manual, they are sometimes referred to as “communications connectors.”



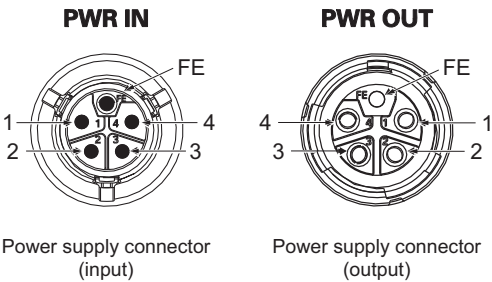
The specifications are as follows.

- Electrical specifications  
Conforms to IEEE 802.3 standards.
- Connector structure  
M12 connector (D-coding, female, Smartclick support, shielded) ×2
- Pin arrangement

| Pin No. | Signal name | Description    |
|---------|-------------|----------------|
| 1       | TD+         | Send data +    |
| 2       | RD+         | Receive data + |
| 3       | TD-         | Send data -    |
| 4       | RD-         | Receive data - |

Power Supply Connectors

These connectors are for supplying power to the Safety I/O Block.



Power Supply Connector (Input)

This connector is for supplying Unit/input power and output power. Connect the power supply cable of an external power supply.

Power Supply Connector (Output)

This is the connector for supplying output power from the local node to another node. Use it to supply power with through-wiring.

Specifications

The specifications are as follows.

- a. Connector structure
  - Power supply connector (input): M12 connector (L-coding, male, Smartclick support)
  - Power supply connector (output): M12 connector (L-coding, female, Smartclick support)
- b. Pin arrangement
  - Both the power supply connector (input) and power supply connector (output) have the following pin arrangement.

| Pin No.               | Signal name | Description               | Cable color |
|-----------------------|-------------|---------------------------|-------------|
| 1                     | U/IN P+     | Unit/input power supply + | BN          |
| 2                     | OUT P-      | Output power supply -     | WH          |
| 3                     | U/IN P-     | Unit/input power supply - | BU          |
| 4                     | OUT P+      | Output power supply +     | BK          |
| FE (Functional Earth) | FG          | Frame ground              | GY          |

## I/O Connectors

Connectors for connecting safety input and safety output devices.

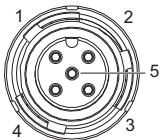
### Safety Input Ports

I/O connectors with test outputs and safety input terminals are called safety input ports.

The number of safety input ports and their locations differ depending on the model.

- For NXR-SXD1204-CST: Ports P1 to P6
- For NXR-SXD1204B-CST: Ports P1 to P4

The following shows the pin arrangement of safety input ports.



- Connector structure  
M12 connectors (A-coding, female, 5-pin, Smartclick support).  
Connect I/O cables (5-wire).

| Pin No. | Signal name | Description                                  |
|---------|-------------|----------------------------------------------|
| 1       | T (n)       | Test output terminal<br>T00/02/04/06/08/10   |
| 2       | Si (n)      | Safety input terminal<br>Si00/02/04/06/08/10 |
| 3       | U/IN P-     | Unit/Input power supply -                    |
| 4       | Si (n+1)    | Safety input terminal<br>Si01/03/05/07/09/11 |
| 5       | T (n+1)     | Test output terminal<br>T01/03/05/07/09/11   |

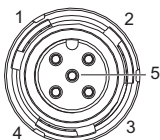
### Safety Output Ports

I/O connectors with safety output terminals are called safety output ports.

There are safety output ports on NXR-SXD1204-CST only.

The safety output ports are ports P7 to P8.

The following shows the pin arrangement of safety output ports.



- Connector structure  
M12 connectors (A-coding, female, 5-pin, Smartclick support).  
Connect I/O cables (5-wire).

| Pin No. | Signal name | Description                    |
|---------|-------------|--------------------------------|
| 1       | NC          | NC                             |
| 2       | So (n)      | Safety output terminal So00/02 |
| 3       | OUT P-      | Output power supply -          |
| 4       | So (n+1)    | Safety output terminal So01/03 |
| 5       | OUT P-      | Output power supply -          |

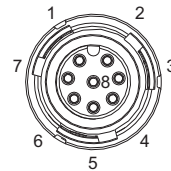
### Safety I/O Ports

I/O connectors with safety input terminals and safety output terminals are called safety I/O ports.

There are safety I/O ports on NXR-SXD1204B-CST only.

The safety I/O ports are ports P5 to P6.

The following shows the pin arrangement of safety I/O ports.



- Connector structure  
M12 connectors (A-coding, female, 8-pin, Smartclick support).  
Connect I/O cables (8-wire).

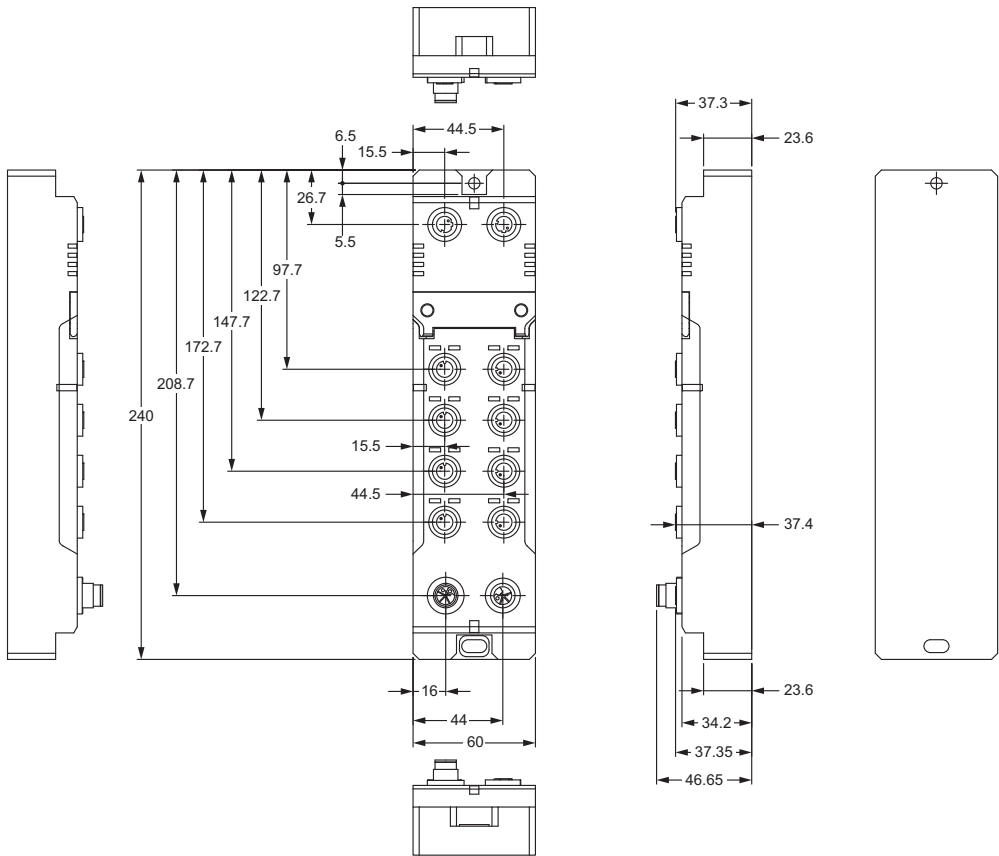
| Pin No. | Signal name | Description                    |
|---------|-------------|--------------------------------|
| 1       | T (n)       | Test output terminal T08/10    |
| 2       | Si (n)      | Safety input terminal Si08/10  |
| 3       | U/IN P-     | Unit/input power supply -      |
| 4       | Si (n+1)    | Safety input terminal Si09/11  |
| 5       | T (n+1)     | Test output terminal T09/11    |
| 6       | So (n)      | Safety output terminal So00/02 |
| 7       | So (n+1)    | Safety output terminal So01/03 |
| 8       | OUT P-      | Output power supply -          |

NXR-SXD1204□-CST

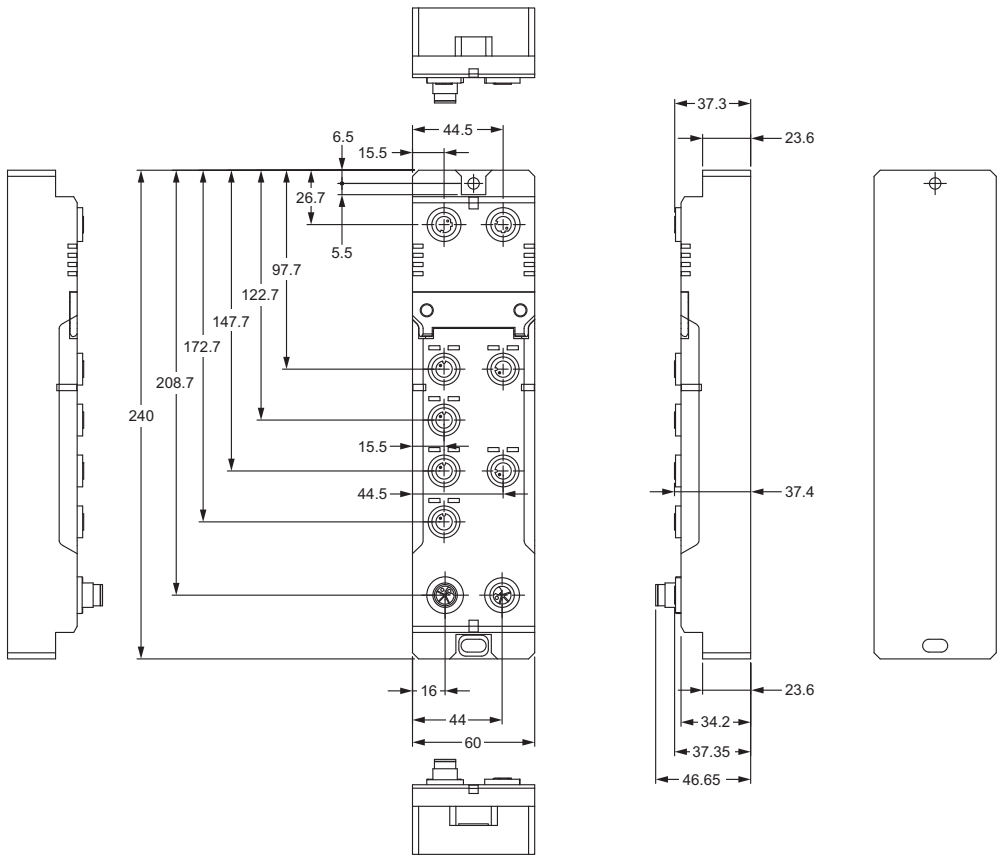
Dimensions

(Unit: mm)

NXR-SXD1204-CST



NXR-SXD1204B-CST



## Example of Pre-defined application

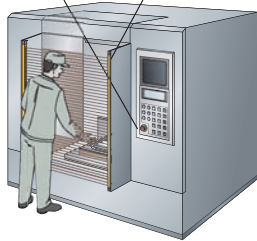
### No.1 partial stop + entire stop application

**To realize a partial stop and entire stop application.**

- When the emergency stop switch is pressed, the entire device stops.
- When the safety light curtains are interrupted, only the operating part of the segment B stops partially.

(1) Emergency stop switch

(2) Safety light curtain



(1) Emergency stop switch

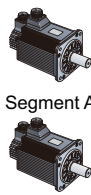
(2) Safety light curtain F3SG-SR, etc.





Segment A

Segment B



**[Operation example]**

(1) Press the emergency stop switch.

(2) Interrupt the safety light curtains.

Stop segment A

Stop segment B

Continuing operation segment A

Stop segment B

When the emergency stop switch is pressed, the entire device stops.  
When the safety light curtains are interrupted, only So02/So03 stops partially.  
The following table shows the logic settings.

| Input | Device                | Input type | Reset type    | So00 | So02 |
|-------|-----------------------|------------|---------------|------|------|
| Si00  | Emergency stop switch | ---        | Manual (Si06) | 0    | 0    |
| Si02  | Safety light curtain  | ---        | Manual (Si06) | 1    | 0    |

The following tables show the I/O Block settings of the partial stop + entire stop application.

**Safety input terminals**

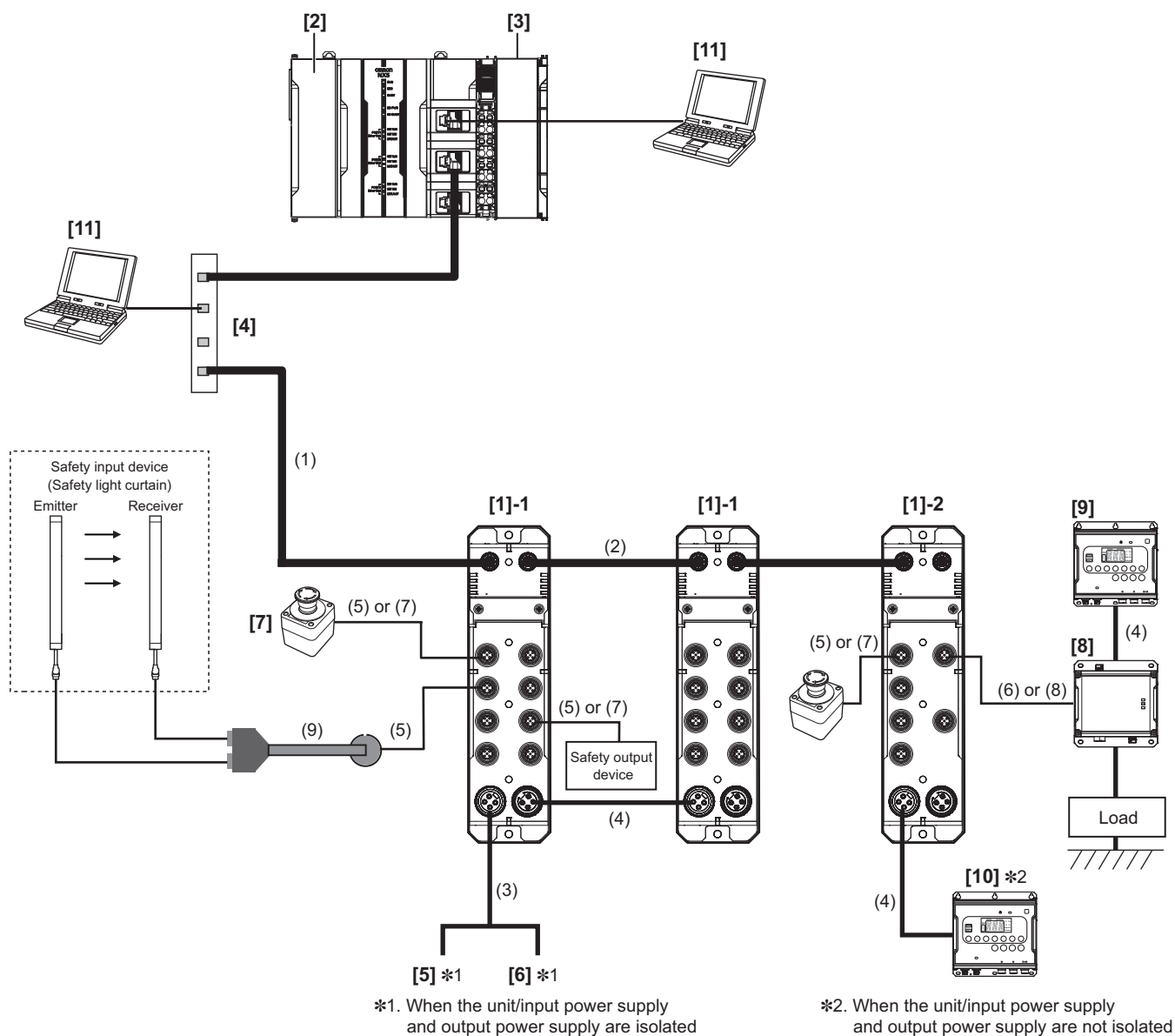
| Terminal number | Connection component  | Channel mode     | Dual mode         | Test terminal | Test terminal mode |
|-----------------|-----------------------|------------------|-------------------|---------------|--------------------|
| Si00            | Emergency stop switch | Test pulse input | Dual (same value) | T0            | Test pulse output  |
| Si01            |                       | Test pulse input | Dual (same value) | T1            | Test pulse output  |
| Si02            | Safety light curtain  | Safety input     | Dual (same value) | T2            | Power supply       |
| Si03            |                       | Safety input     | Dual (same value) | T3            | Standard output    |
| Si04            | ---                   | ---              | ---               | ---           | ---                |
| Si05            | ---                   | ---              | ---               | ---           | ---                |
| Si06            | Reset input           | Test pulse input | Single            | T6            | Test pulse output  |
| Si07            | ---                   | ---              | ---               | T7            | Standard output    |
| Si08            | ---                   | ---              | ---               | ---           | ---                |
| Si09            | ---                   | ---              | ---               | ---           | ---                |
| Si10            | ---                   | ---              | ---               | ---           | ---                |
| Si11            | ---                   | ---              | ---               | ---           | ---                |

**Safety output terminals**

| Terminal number | Connection component | Dual mode         |
|-----------------|----------------------|-------------------|
| So00            | Safety servo drive   | Dual (same value) |
| So01            |                      | Dual (same value) |
| So02            | Safety servo drive   | Dual (same value) |
| So03            |                      | Dual (same value) |

## List of configuration devices

### Basic configuration

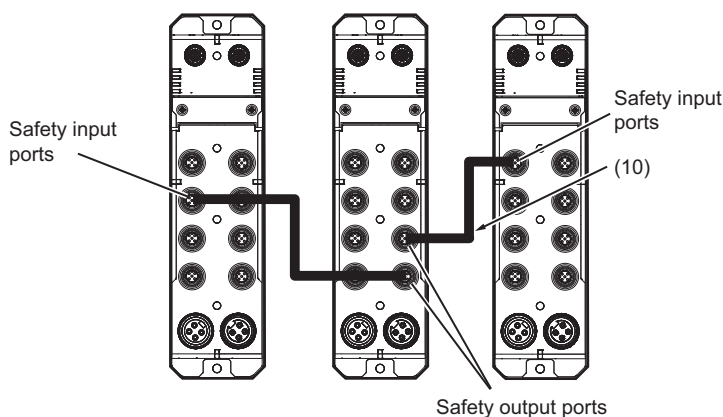


The following table describes each configuration device.

| No.   | Configuration device                                                            | Product Name                                    | Model name                 | Description                                                                                                                                                                                                                                                          |
|-------|---------------------------------------------------------------------------------|-------------------------------------------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| [1]-1 | Target Device<br>(Remote I/O Block)                                             | Simple Logic Safety I/O Block<br>for CIP Safety | NXR-SXD1204-CST            | This product                                                                                                                                                                                                                                                         |
| [1]-2 |                                                                                 |                                                 | NXR-SXD1204B-CST           |                                                                                                                                                                                                                                                                      |
| [2]   | Originator (EtherNet/IP)<br>Programmable Controller<br>(Built-in EtherNet Port) | NX502 CPU Unit<br>NX102 CPU Unit                | NX502-□□□□□<br>NX102-□□□□□ | Used to perform EtherNet/IP communications<br>with the Simple Logic Safety I/O Block, and<br>monitor the operating status of the Simple<br>Logic Safety I/O Block.<br>They operate as the originator for EtherNet/IP<br>communications.                              |
|       |                                                                                 | Communication Control Unit<br>*1                | NX-CSG320                  |                                                                                                                                                                                                                                                                      |
| [3]   | Originator<br>(CIP Safety Communication)<br>Safety Controller                   | Safety CPU Unit *1                              | NX-SL5□□□                  | Used to perform CIP Safety communications<br>with the Simple Logic Safety I/O Block, and<br>create and execute safety programs.<br>It operates as the originator for CIP Safety<br>communications.                                                                   |
| [4]   | Ethernet switch                                                                 | ---                                             | ---                        | A relay device that connects multiple nodes.                                                                                                                                                                                                                         |
| [5]   | Unit/input power supply                                                         | ---                                             | ---                        | A power supply used for operation of the<br>Simple Logic Safety I/O Block and for<br>interfacing with safety input devices. Supply<br>power by connecting an external power supply<br>to the power supply connector (input).                                         |
| [6]   | Output power supply                                                             | ---                                             | ---                        | A power supply used for interfacing with safety<br>output devices. Supply power by connecting an<br>external power supply to the power supply<br>connector (input).                                                                                                  |
| [7]   | Safety input device                                                             | Safety Light Curtain                            | F3SG-4SR□□□□-□□            | An input device that is designed with special<br>safety measures for use in safety controls.<br>The generic term for devices such as<br>emergency stop switches and safety door<br>switches.                                                                         |
|       |                                                                                 | Emergency Stop Switch                           | ---                        |                                                                                                                                                                                                                                                                      |
| [8]   | Safety output device                                                            | DC Blocking BOX                                 | S8R-BB□□A□                 | An output device that is designed with special<br>safety measures for use in safety controls.<br>The generic term for devices such as safety<br>relays.                                                                                                              |
| [9]   | Load Power Supply Unit                                                          | Environment-resistant<br>IP67 power supply      | S8NR-S□□024-A□□□           | Power supply to supply the load.                                                                                                                                                                                                                                     |
| [10]  | Unit/Input and Output Power<br>(Non-Isolated)                                   | Environment-resistant<br>IP67 power supply      | S8NR-S□□024-A□□□           | When the input and output are non-isolated,<br>the power supply that supplies power to the<br>NXR-S.                                                                                                                                                                 |
| [11]  | Software                                                                        | Sysmac Studio                                   | SYSMAC-□□□□□□              | Software to provide an integrated development<br>environment for the setting, programming,<br>debugging, and maintenance of the Simple<br>Logic Safety I/O Block, NJ/NX-series CPU<br>Unit, NY-series Industrial Panel PC/Industrial<br>Box PC, and Safety CPU Unit. |

\*1 It can also be used without CIP Safety communications. In such a case, the NX-SL5□□□ is not required. Also, it is possible to connect the NJ/NX-series CPU Unit or the NY-series Industrial Panel PC/Industrial Box PC.

#### Example of connection between Units for expanding the number of inputs/outputs without passing through a network



**Note:** Be sure to use the Web UI or the Sysmac Studio to verify that there are no abnormalities in each unit caused by ground faults, short circuits, overcurrent, incorrect settings, or other issues.

## Related products

### Automation Software Sysmac Studio

Software to provide an integrated development environment for the setting, programming, debugging, and maintenance of Machine automation controllers including the NJ/NX-series CPU Unit and NY-series Industrial PC, the EtherCAT Slave, and the HMI.

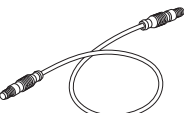
The available standalone license editions for this product are as follows:

- Sysmac Studio Standard Edition Ver.1□□
- Sysmac Studio Safety Edition Ver.1□□

For details, refer to the product information on the OMRON website ([www.fa.omron.co.jp/](http://www.fa.omron.co.jp/)) and *Sysmac Studio Catalog* (Cat.No.P138).

## Connection-related equipment

### Industrial Ethernet Cables (Shield Strengthening model)

| No. | Name and appearance                                                                                                                                                                        | Manufacturer | Specifications                                         | Available connectors | Cable connection direction | Number of cable conductors | Cable length | Model            |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------------------------------------|----------------------|----------------------------|----------------------------|--------------|------------------|
| (1) | Cable with plug connector on both sides (M12 Smart Click Straight/RJ45)<br>                               | OMRON        | M12 plug (D-coding, male) to RJ45                      | Smartclick connector | Straight/straight          | 4                          | 0.5 m        | XS5W-T421-BMC-SS |
|     |                                                                                                                                                                                            |              |                                                        |                      |                            |                            | 1 m          | XS5W-T421-CMC-SS |
|     |                                                                                                                                                                                            |              |                                                        |                      |                            |                            | 2 m          | XS5W-T421-DMC-SS |
|     |                                                                                                                                                                                            |              |                                                        |                      |                            |                            | 3 m          | XS5W-T421-EMC-SS |
|     |                                                                                                                                                                                            |              |                                                        |                      |                            |                            | 5 m          | XS5W-T421-GMC-SS |
|     |                                                                                                                                                                                            |              |                                                        |                      |                            |                            | 10 m         | XS5W-T421-JMC-SS |
| (2) | Cable with connectors on both sides of the plug (M12 Smart Click Straight/M12 Smart Click Straight)<br> | OMRON        | M12 plug (D-coding, male) to M12 plug (D-coding, male) | Smartclick connector | Straight/straight          | 4                          | 0.5 m        | XS5W-T421-BM2-SS |
|     |                                                                                                                                                                                            |              |                                                        |                      |                            |                            | 1 m          | XS5W-T421-CM2-SS |
|     |                                                                                                                                                                                            |              |                                                        |                      |                            |                            | 2 m          | XS5W-T421-DM2-SS |
|     |                                                                                                                                                                                            |              |                                                        |                      |                            |                            | 3 m          | XS5W-T421-EM2-SS |
|     |                                                                                                                                                                                            |              |                                                        |                      |                            |                            | 5 m          | XS5W-T421-GM2-SS |
|     |                                                                                                                                                                                            |              |                                                        |                      |                            |                            | 10 m         | XS5W-T421-JM2-SS |

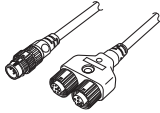
**Note:** 1. For more information on cables with Ethernet connectors, please refer to *the Industrial Ethernet Connectors Catalogue XS5/XS2/XS6* (Cat.No. G019).

## Power supply cables

| No. | Name and appearance                                                        | Manufacturer        | Specifications                                             | Available connectors | Cable connection direction | Number of cable conductors | Cable length | Model              |
|-----|----------------------------------------------------------------------------|---------------------|------------------------------------------------------------|----------------------|----------------------------|----------------------------|--------------|--------------------|
| (3) | M12 L-coding power supply cable (M12 straight female to discrete wires)    | OMRON               | M12 socket (L-coding, female) to discrete wires            | Screw connector      | Straight                   | 5                          | 2 m          | XS2FP-L521-0200    |
|     |                                                                            |                     |                                                            |                      |                            |                            | 5 m          | XS2FP-L521-0500    |
|     |                                                                            |                     |                                                            |                      |                            |                            | 10 m         | XS2FP-L521-1000    |
|     |                                                                            | Murrelektronik GmbH | M12 socket (L-coding, female) to discrete wires            | Screw connector      | Straight                   | 5                          | 2 m          | 7000-P4221-P040200 |
|     |                                                                            |                     |                                                            |                      |                            |                            | 5 m          | 7000-P4221-P040500 |
|     |                                                                            |                     |                                                            |                      |                            |                            | 10 m         | 7000-P4221-P041000 |
| (4) | M12 L-coding power supply cable (M12 straight male to M12 straight female) | OMRON               | M12 plug (L-coding, male) to M12 socket (L-coding, female) | Screw connector      | Straight/straight          | 5                          | 2 m          | XS2WP-L521-0200    |
|     |                                                                            |                     |                                                            |                      |                            |                            | 5 m          | XS2WP-L521-0500    |
|     |                                                                            |                     |                                                            |                      |                            |                            | 10 m         | XS2WP-L521-1000    |
|     |                                                                            | Murrelektronik GmbH | M12 plug (L-coding, male) to M12 socket (L-coding, female) | Screw connector      | Straight/straight          | 5                          | 2 m          | 7000-P4241-P040200 |
|     |                                                                            |                     |                                                            |                      |                            |                            | 5 m          | 7000-P4241-P040500 |
|     |                                                                            |                     |                                                            |                      |                            |                            | 10 m         | 7000-P4241-P041000 |

## I/O cables

### For direct connection or extension connection

| No.  | Name and appearance                                                                                                                                                                                                                                                        | Manufacturer | Specifications                                                                                                        | Available connectors | Cable connection direction | Number of cable conductors | Cable length | Model           |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------------------------------------------------------------------------------------------------------|----------------------|----------------------------|----------------------------|--------------|-----------------|
| (5)  | Connectors with Cables, Socket and Plug on Both Cable Ends (M12 socket/M12 plug)<br>                                                                                                      | OMRON        | M12 socket (A-coding, female) to M12 plug (A-coding, male), uses DC                                                   | Smartclick connector | Straight                   | 5                          | 0.5 m        | XS5W-D521-BG1-F |
|      |                                                                                                                                                                                                                                                                            |              |                                                                                                                       |                      |                            |                            | 1 m          | XS5W-D521-CG1-F |
|      |                                                                                                                                                                                                                                                                            |              |                                                                                                                       |                      |                            |                            | 2 m          | XS5W-D521-DG1-F |
|      |                                                                                                                                                                                                                                                                            |              |                                                                                                                       |                      |                            |                            | 3 m          | XS5W-D521-EG1-F |
|      |                                                                                                                                                                                                                                                                            |              |                                                                                                                       |                      |                            |                            | 5 m          | XS5W-D521-GG1-F |
|      |                                                                                                                                                                                                                                                                            |              |                                                                                                                       |                      |                            |                            | 10 m         | XS5W-D521-JG1-F |
|      |                                                                                                                                                                                                                                                                            |              |                                                                                                                       |                      |                            |                            | 15 m         | XS5W-D521-KG1-F |
| (6)  | Connectors with Cables, Socket and Plug on Both Cable Ends (M12 socket/M12 plug)<br>                                                                                                      | OMRON        | M12 socket (A-coding, female) to M12 plug (A-coding, male), uses DC                                                   | Smartclick connector | Straight                   | 8                          | 0.5 m        | XS5W-D821-BK1-F |
|      |                                                                                                                                                                                                                                                                            |              |                                                                                                                       |                      |                            |                            | 1 m          | XS5W-D821-CK1-F |
|      |                                                                                                                                                                                                                                                                            |              |                                                                                                                       |                      |                            |                            | 2 m          | XS5W-D821-DK1-F |
|      |                                                                                                                                                                                                                                                                            |              |                                                                                                                       |                      |                            |                            | 3 m          | XS5W-D821-EK1-F |
|      |                                                                                                                                                                                                                                                                            |              |                                                                                                                       |                      |                            |                            | 5 m          | XS5W-D821-GK1-F |
|      |                                                                                                                                                                                                                                                                            |              |                                                                                                                       |                      |                            |                            | 10 m         | XS5W-D821-JK1-F |
|      |                                                                                                                                                                                                                                                                            |              |                                                                                                                       |                      |                            |                            | 15 m         | XS5W-D821-KK1-F |
| (7)  | Connectors with Cables, Plug on One Cable End (M12 plug/loose wire)<br>                                                                                                                   | OMRON        | M12 plug (A-coding, male) to discrete wires                                                                           | Smartclick connector | Straight                   | 5                          | 0.5 m        | XS5H-D521-BG0-F |
|      |                                                                                                                                                                                                                                                                            |              |                                                                                                                       |                      |                            |                            | 1 m          | XS5H-D521-CG0-F |
|      |                                                                                                                                                                                                                                                                            |              |                                                                                                                       |                      |                            |                            | 2 m          | XS5H-D521-DG0-F |
|      |                                                                                                                                                                                                                                                                            |              |                                                                                                                       |                      |                            |                            | 3 m          | XS5H-D521-EG0-F |
| (8)  | Connectors with Cables, Plug on One Cable End (M12 plug/loose wire)<br>                                                                                                                 | OMRON        | M12 plug (A-coding, male) to discrete wires                                                                           | Smartclick connector | Straight                   | 8                          | 0.5 m        | XS5H-D821-BK0-F |
|      |                                                                                                                                                                                                                                                                            |              |                                                                                                                       |                      |                            |                            | 1 m          | XS5H-D821-CK0-F |
|      |                                                                                                                                                                                                                                                                            |              |                                                                                                                       |                      |                            |                            | 2 m          | XS5H-D821-DK0-F |
|      |                                                                                                                                                                                                                                                                            |              |                                                                                                                       |                      |                            |                            | 3 m          | XS5H-D821-EK0-F |
| (9)  | Safety Light Curtain Y-Joint Plug/Socket, Connectors on Both Ends<br><br><b>Note: 1.</b> When extending the cable, connect the cable with connectors on both sides of (5) to extend it. | OMRON        | M12 plug (A-coding, male, 5 pins)<br>-M12 socket (A-coding, female, 5 pins)/<br>M12 socket (A-coding, female, 8 pins) | Smartclick connector | Straight                   | 5-5/8                      | 0.5 m        | F39-GCNY4       |
|      |                                                                                                                                                                                                                                                                            |              |                                                                                                                       |                      |                            |                            |              |                 |
|      |                                                                                                                                                                                                                                                                            |              |                                                                                                                       |                      |                            |                            |              |                 |
|      |                                                                                                                                                                                                                                                                            |              |                                                                                                                       |                      |                            |                            |              |                 |
|      |                                                                                                                                                                                                                                                                            |              |                                                                                                                       |                      |                            |                            |              |                 |
| (10) | For connecting IN-OUT between units (M12 plug/M12 plug)                                                                                                                                                                                                                    |              |                                                                                                                       |                      |                            |                            |              |                 |
|      | Connectors with Cables, Plug on One Cable End (M12 plug/loose wire)<br>                                                                                                                 | OMRON        | M12 plug (A-coding, male) to discrete wires                                                                           | Smartclick connector | Straight                   | 5                          | 0.5 m        | XS5H-D521-BG0-F |
|      |                                                                                                                                                                                                                                                                            |              |                                                                                                                       |                      |                            |                            | 1 m          | XS5H-D521-CG0-F |
|      |                                                                                                                                                                                                                                                                            |              |                                                                                                                       |                      |                            |                            | 2 m          | XS5H-D521-DG0-F |
|      |                                                                                                                                                                                                                                                                            |              |                                                                                                                       |                      |                            |                            | 3 m          | XS5H-D521-EG0-F |
|      | Sensor I/O Connector (M12 plug)                                                                                                                                                                                                                                            | OMRON        | Round Water-resistant Connector, Assembly Connector Plug (male)                                                       | Smartclick connector | Straight                   | 5                          | ---          | XS5G-D5S7       |

**Note: 2.** For details on the XS5W, XS5H, and XS5G connectors, refer to *Round Water-resistant Connectors (M12 Smartclick connector) XS5 Datasheet*.

### Waterproof covers for connectors

| Name and appearance                                                                                          | Manufacturer | Specifications                                                                                             | Available connectors | Model   |
|--------------------------------------------------------------------------------------------------------------|--------------|------------------------------------------------------------------------------------------------------------|----------------------|---------|
| M12 waterproof covers<br> | OMRON        | <ul style="list-style-type: none"> <li>M12 A-coding</li> <li>M12 D-coding</li> <li>M12 L-coding</li> </ul> | Smartclick connector | XS5Z-12 |

**Note: 1.** For details on the XS5Z connector, refer to *Round Water-resistant Connectors (M12 Smartclick) XS5 Datasheet*.

# NXR-SXD1204□-CST

## Related Manuals

| Manual                                                                                                        | Man.No. | Model                               | Application                                                                                                                       | Description                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------|---------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Environment-resistive Remote Terminal NXR-S series Simple Logic Safety I/O Block for CIP Safety User's Manual | W645    | NXR-SXD1204-CST<br>NXR-SXD1204B-CST | To learn the usage method of the Environment-resistive Remote Terminal NXR-S series Simple Logic Safety I/O Block for CIP Safety. | Describes the hardware, setting method, and functions of the Environment-resistive Remote Terminal NXR-S series Simple Logic Safety I/O Block for CIP Safety. |

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