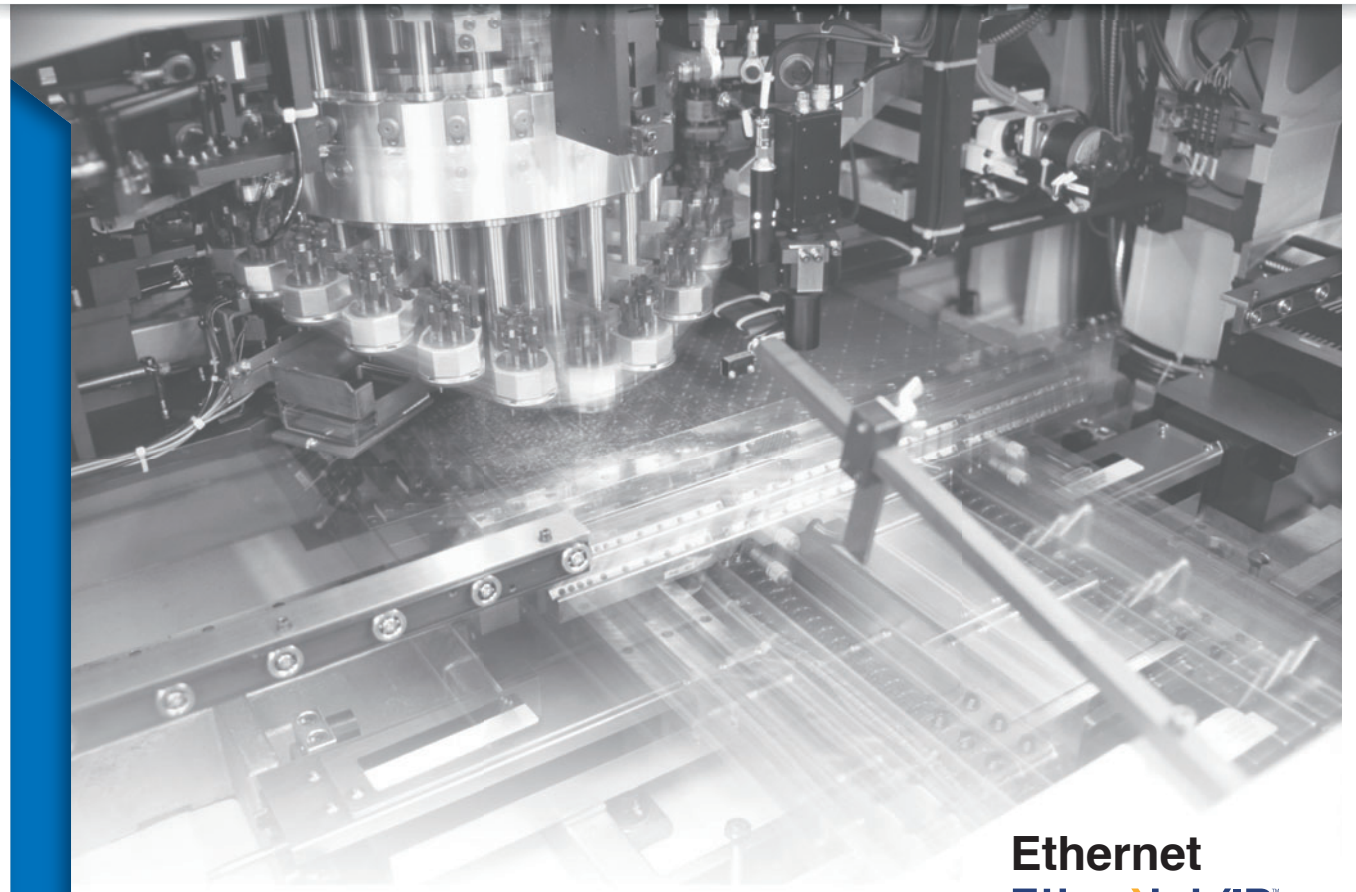
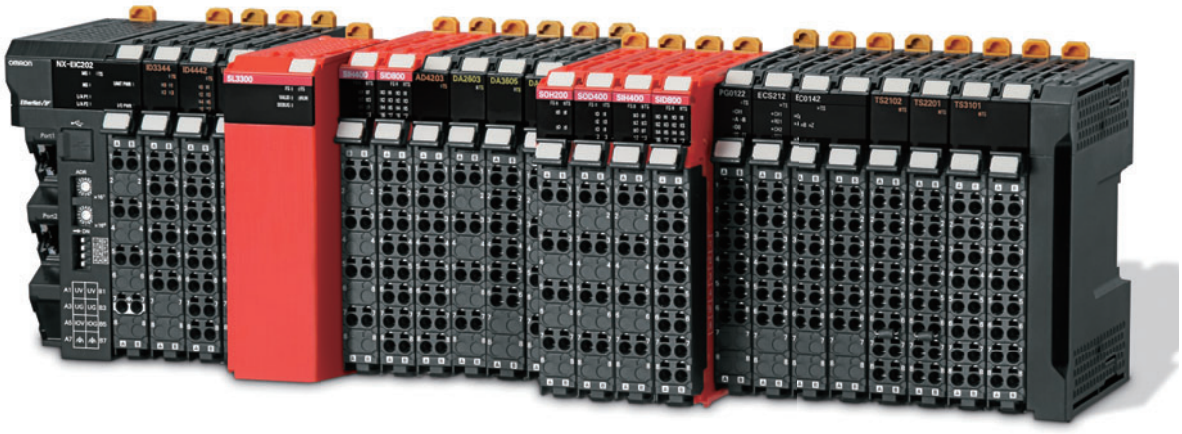
OMRON

NX-series Safety Controller

Stand-alone System



Ethernet
EtherNet/IP™



Directly connects to any PLC for monitoring and status

STI SAFETY, TECHNOLOGY & INNOVATION

The safety solution for any application

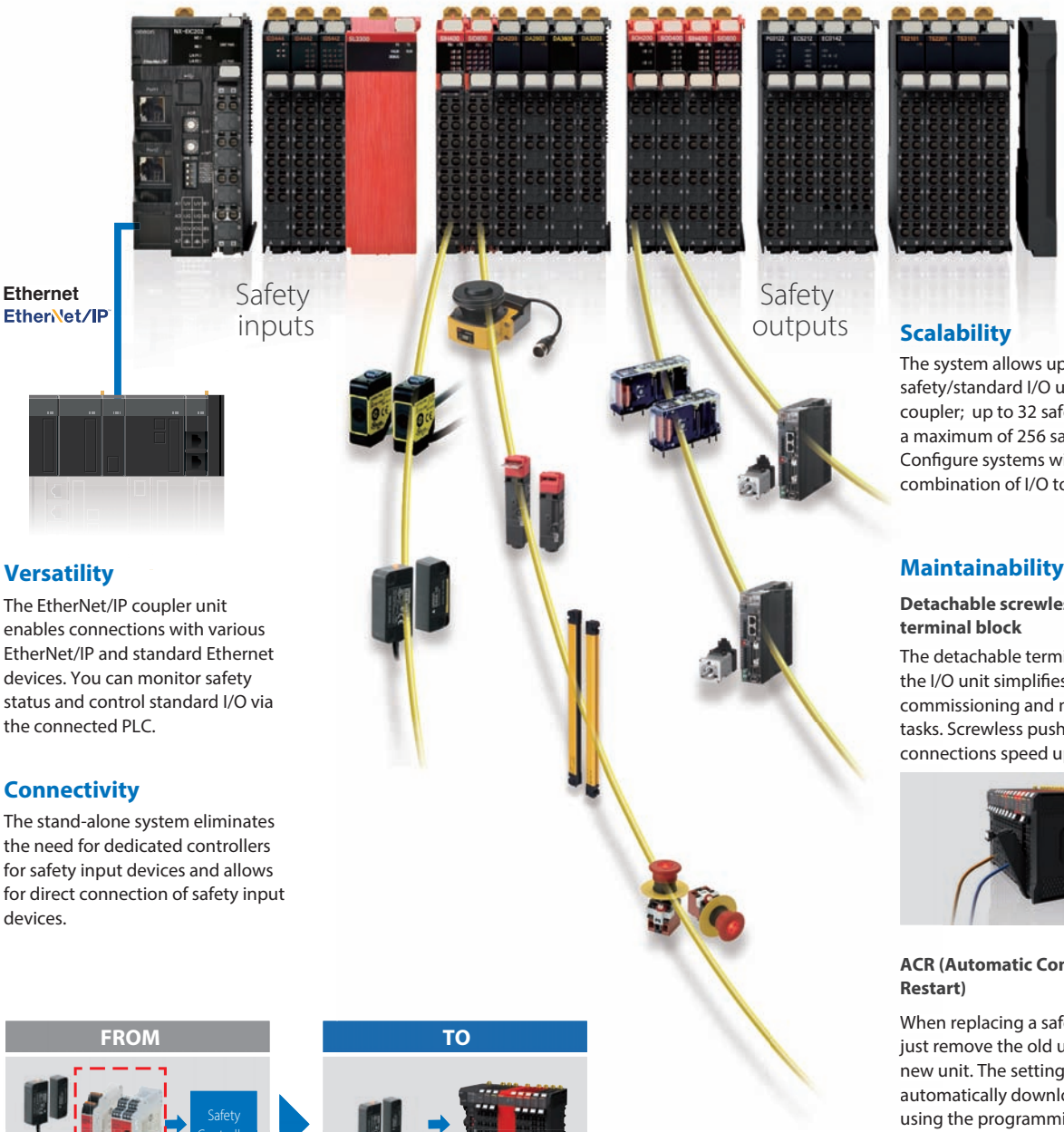
The NX Stand-alone Safety Controller is a powerful and robust Safety System that reaches the PLe according to EN 13849-1 and SIL3 according to IEC 61508. The EtherNet/IP coupler unit allows for connection to almost any PLC via EtherNet/IP™ or standard Ethernet communications. The flexible hardware allows the NX safety I/O units to be mixed in any combination with standard NX I/O units. Sysmac Studio software allows for configuration, programming, simulation and monitoring functionality.

Safety

ISO 13849-1, Cat.4/PLe
IEC 61508 SIL3

PLC

IEC 61131-2
IEC 61131-3
PLCopen® FBD



Versatility

The EtherNet/IP coupler unit enables connections with various EtherNet/IP and standard Ethernet devices. You can monitor safety status and control standard I/O via the connected PLC.

Connectivity

The stand-alone system eliminates the need for dedicated controllers for safety input devices and allows for direct connection of safety input devices.

Intermediate Controller

Direct Connection

Scalability

The system allows up to 63 safety/standard I/O units per coupler; up to 32 safety I/O units to a maximum of 256 safety I/O signals. Configure systems with the right combination of I/O to optimize cost.

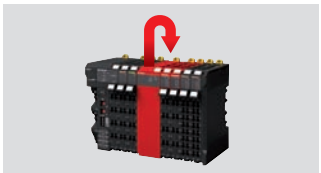
Maintainability

Detachable screwless terminal block

The detachable terminal block of the I/O unit simplifies the commissioning and maintenance tasks. Screwless push-in connections speed up installation.

ACR (Automatic Configuration Restart)

When replacing a safety I/O Unit, just remove the old unit and insert a new unit. The setting data is automatically downloaded without using the programming software.



Flexibility and reusability of programming code

Standard programming with Sysmac Studio

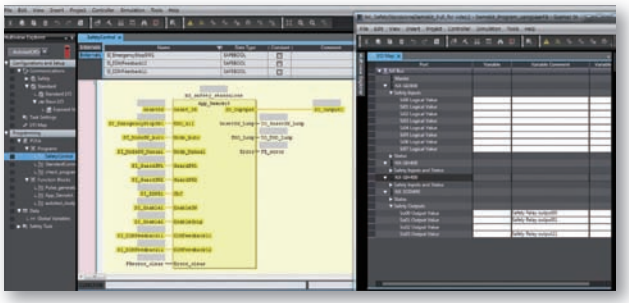
Sysmac Studio is compliant to the IEC 61131-3 standard and utilizes PLCopen® function blocks.
The safety controller provides a large program capacity of 512 KB (equivalent to more than 1,000 function blocks), visual setting of IO and automatic generating wiring diagram,variable style programming, reusable user-defined function blocks, offline simulation and simple automatic test.

Visual setting of IO and automatic generating wiring diagram

By drag&drop the visual icon, the settings of I/Os are completed. Wiring diagrams are also automatically generated based on terminal settings. The wiring diagrams can be used for wiring check and Technical Construction Files (TCF).

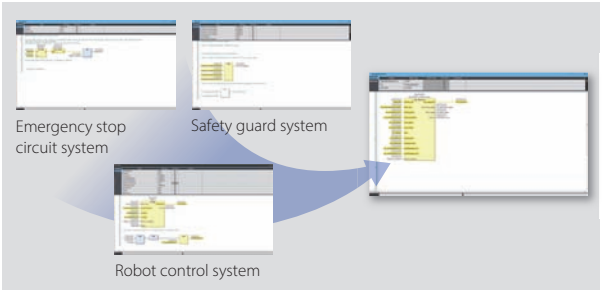
Programming with variables

Unlike previous programming with physical addresses, programming with variables does not depend on the hardware configuration. You can use the same code for the machine with a different hardware configuration by flexibly changing connections between variable names and hardware memory addresses.



User-defined function blocks

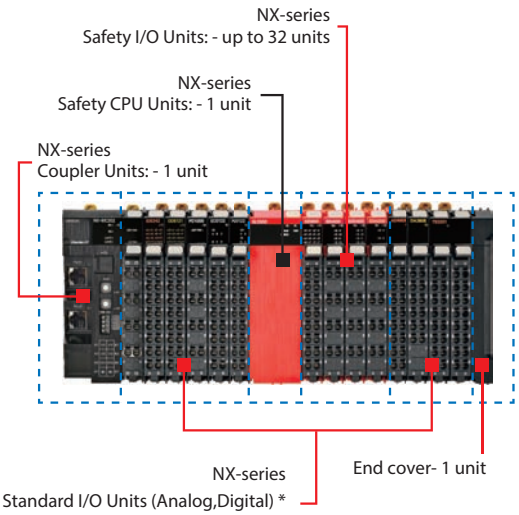
You can define your own function blocks. Repeat use of user-defined function blocks cuts programming time and maintains consistency of quality. Secure the code with password protection and add user-defined help files to make re-using functions safe and easy.



Offline simulation and simple automatic test

You can check operation on the Simulator without physical devices. Furthermore, basing on the relationship between inputs and outputs, program can be tested automatically.
This significantly reduces program modification and debugging time.

System configuration



* Refer to your OMRON website for details.

NX-series EtherNet/IP Coupler Unit

NX Unit power consumption	Maximum I/O power supply current	Model
1.60 W max.	10A	**NX-EIC202**

Accessary: End cover

Safety CPU Unit

Maximum number of safety I/O points	Program capacity	Number of safety master connections	Model
256	512KB	32	**NX-SL3300**

Safety Input Unit

Number of safety input points	Number of test output points	Rated input voltage	OMRON special safety input devices	Model
4 points	2 points	24 VDC	Can be connected	**NX-SIH400**
8 points	2 points	24 VDC	Cannot be connected	**NX-SID800**

Safety Output Unit

Number of safety output points	Internal I/O common	Rated input voltage	Maximum load current	Model
2 points	Sourcing outputs(PNP)	24 VDC	2.0 A/point	**NX-SOH200**
4 points	Sourcing outputs(PNP)	24 VDC	0.5 A/point and 2.0 A/Unit	**NX-SOD400**

Automation Software Sysmac Studio

Licenses and DVDs are ordered separately.

Product name	Specifications	Number of licenses	Media	Model
Sysmac Studio NX-I/O Edition *1 Ver.1.□□	Sysmac Studio NX-I/O Edition is a limited license that provides selected functions required for EtherNet/IP Coupler settings. * This product is a license only. You need the Sysmac Studio Standard Edition DVD media to install it.	1 license	—	**SYSMAC-NE001L**
Sysmac Studio Safety Edition *2 Ver.1.□□	Sysmac Studio Safety Edition is a license including necessary setting functions for the safety control system. * This product is a license only. You need the Sysmac Studio Standard Edition DVD media to install it.	1 license	—	**SYSMAC-FE001L**
Sysmac Studio Standard Edition *3 Ver.1.□□	The Sysmac Studio is the software that provides an integrated environment for setting, programming, debugging and maintenance of machine automation controllers including the NJ/NX-series CPU Units, NY-series Industrial PC, EtherCAT Slave, and the HMI. Sysmac Studio runs on the following OS. *4 Windows 7(32-bit/64-bit version)/Windows 8.1(32-bit/64-bit version)/ Windows 10(32-bit/64-bit version)/Windows 11(64-bit version)	- (Media only)	Sysmac Studio (32bit) DVD	**SYSMAC-SE200D**
		- (Media only)	Sysmac Studio (64bit) DVD	**SYSMAC-SE200D-64**

Note: For details of the Automation Software Sysmac Studio, refer to your local OMRON website.
*1. With the NX-I/O Edition, you can use only the setup functions for EtherNet/IP Coupler.
*2. Safety Edition can be used with Communication Control Unit and EtherNet/IP Coupler Unit.
*3. The Sysmac Studio Standard Edition with license(s) (SYSMAC-SE□□□L) provides functions of the NX-I/O Edition (SYSMAC-NE001L) and functions of the Safety Edition (SYSMAC-FE001L).
With the Sysmac Studio Standard Edition with license(s) (SYSMAC-SE□□□L) version 1.10 or higher, you can use the setup functions for the EtherNet/IP Coupler.
*4. Model "SYSMAC-SE200D-64" runs on Windows 10 (64bit) or higher.

Note: Do not use this document to operate the Unit.

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Cat. No. F100-E1-04 0823 (0316)