OMRON

Machine Automation Controller

NX-series

Data Reference Manual

NX-□□□□□□

SYSMAC always in control

W525-E1-19

NOTE

No patent liability is assumed with respect to the use of the information contained herein. Moreover, because OMRON is constantly striving to improve its high-quality products, the information contained in this manual is subject to change without notice. Every precaution has been taken in the preparation of this manual. Nevertheless, OMRON assumes no responsibility for errors or omissions. Neither is any liability assumed for damages resulting from the use of the information contained in this publication.

Trademarks

- Sysmac and SYSMAC are trademarks or registered trademarks of OMRON Corporation in Japan and other countries for OMRON factory automation products.
- Microsoft, Windows, Windows Vista, Excel, and Visual Basic are either registered trademarks or trademarks of Microsoft Corporation in the United States and other countries.
- EtherCAT® is registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.
- Safety over EtherCAT® is registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.
- ODVA, CIP, CompoNet, DeviceNet, and EtherNet/IP are trademarks of ODVA.
- The SD and SDHC logos are trademarks of SD-3C, LLC.

Other company names and product names in this document are the trademarks or registered trademarks of their respective companies.

Copyrights

Microsoft product screen shots reprinted with permission from Microsoft Corporation.

Introduction

Thank you for purchasing an NX-series.

This manual lists data that is required to configure systems, such as the power consumptions and weights of the NX Units that configure CPU Rack or Slave Terminals.

Use this manual when considering the Unit configuration of CPU Rack or Slave Terminals on paper.

Keep this manual in a safe place where it will be available for reference during operation.

Intended Audience

This manual is intended for the following personnel, who must also have knowledge of electrical systems (an electrical engineer or the equivalent).

- Personnel in charge of introducing FA systems.
- Personnel in charge of designing FA systems.
- Personnel in charge of installing and maintaining FA systems.
- Personnel in charge of managing FA systems and facilities.

For programming, this manual is intended for personnel who understand the programming language specifications in international standard IEC 61131-3 or Japanese standard JIS B 3503.

Applicable Products

This manual covers the following products.

- NX-series

  CPU Units
  Communications Coupler Units
  Communication Control Units
  Digital I/O Units
  Analog I/O Units
  Position Interface Units
  System Units
  Safety Control Units
  Communications Interface Units
  Load Cell Input Unit
  Heater Burnout Detection Units
  IO-Link Master Unit
  Temperature Control Units
  RFID Units

CONTENTS

Introduction **1**
Intended Audience 1
Applicable Products 1

Relevant Manuals **4**

Manual Structure **5**
Page Structure and Icons 5
Special Information 6
Precaution on Terminology 7

Terms and Conditions Agreement **8**
Warranty, Limitations of Liability 8
Application Considerations 9
Disclaimers 9

Safety Precautions **10**

Precautions for Safe Use **11**

Precautions for Correct Use **12**

Regulations and Standards **13**

Related Manuals **14**

Revision History **18**

Sections in this Manual **21**

Section 1 Data List

1-1 How to Read the Data List **1-3**

1-2 CPU Units **1-6**
1-2-1 NX1P2 CPU Units 1-6
1-2-2 NX102 CPU Units 1-7

1-3 Communications Coupler Units **1-8**
1-3-1 EtherCAT Coupler Unit 1-8
1-3-2 EtherNet/IP Coupler Unit 1-9
1-3-3 End Cover 1-9

1-4 Communication Control Units **1-10**

1-5 Digital I/O Units **1-11**
1-5-1 Digital Input Units 1-11
1-5-2 Digital Output Units 1-17
1-5-3 Digital Mixed I/O Units 1-24

1-6 Analog I/O Units **1-27**
1-6-1 Analog Input Units 1-27
1-6-2 High-speed Analog Input Units 1-29
1-6-3 Analog Output Units 1-30
1-6-4 Temperature Input Units 1-31
1-6-5 Heater Burnout Detection Units 1-33

1-7 Position Interface Units 1-34
1-7-1 Incremental Encoder Input Units 1-34
1-7-2 SSI Input Units 1-35
1-7-3 Pulse Output Units 1-36
1-8 Communications Interface Units 1-38
1-9 Load Cell Input Unit 1-39
1-10 IO-Link Master Unit 1-40
1-11 Temperature Control Units 1-41
1-12 RFID Units 1-43
1-13 System Units 1-44
1-13-1 Additional NX Unit Power Supply Unit 1-44
1-13-2 Additional I/O Power Supply Unit 1-44
1-13-3 I/O Power Supply Connection Unit 1-45
1-13-4 Shield Connection Unit 1-46
1-14 Safety Control Units 1-47
1-14-1 Safety CPU Unit 1-47
1-14-2 Safety Input Units 1-48
1-14-3 Safety Output Units 1-49

Appendices

A-1 NX Unit Power Supply and I/O Power Supply Capacity A-2
A-1-1 EtherCAT Coupler Unit A-2
A-1-2 EtherNet/IP Coupler Unit A-3
A-1-3 Additional NX Unit Power Supply Unit A-4
A-1-4 Additional I/O Power Supply Unit A-4
A-2 NX Units That Have Restrictions in Communications Cycles A-5
A-2-1 NX Units That Have Restrictions in Communications Cycles in DC Mode A-5
A-2-2 NX Units That Have Restrictions in Communications Cycles in Free-Run Mode A-5
A-3 Specific Values of NX Units for Performance Calculation A-6
A-3-1 Specific Values of NX Units Operate with Synchronous I/O Refreshing A-6
A-3-2 Specific Values of NX Units Operate with Task Period Prioritized Refreshing A-10
A-3-3 Specific Values of NX Units Operate with Time Stamp Refreshing A-12
A-3-4 Specific Values of NX Units Operate with Free-Run Refreshing A-13
A-4 List of Screwless Clamping Terminal Block Models A-16
A-4-1 Model Notation A-16
A-4-2 List of Terminal Block Models A-16
A-4-3 Applicable Screwless Clamping Terminal Blocks for Each Unit Model A-17
A-5 Version Information with CPU Units A-20
A-5-1 Relationship between Unit Versions of Units A-20
A-5-2 Support Functions of the CPU Units and Restrictions on the NX Units A-27
A-6 Version Information with Communications Coupler Units A-29
A-6-1 Connection to an EtherCAT Coupler Unit A-29
A-6-2 Connection to an EtherNet/IP Coupler Unit A-37
A-6-3 Support Functions of the Communications Coupler Units and Restrictions on the NX Units A-45
A-7 Version Information with Communication Control Units A-50
A-7-1 Relationship between Unit Versions of Units A-50
A-7-2 Support Functions of the Communication Control Units and Restrictions on the NX Units A-54

Relevant Manuals

The table below provides the relevant manuals for the NX-series Communications Coupler Units and NX Units.

Read all of the manuals that are relevant to your system configuration and application to make the most of the NX-series Communications Coupler Units and NX Units.

Other manuals, such as related product manuals, are necessary for specific system configurations and applications. Refer to *Related Manuals* on page 14 for the related manuals.

Manual name	Application
NX-series Data Reference Manual	Referencing lists of the data that is required to configure systems with NX-series Units
NX-series NX102 CPU Unit Hardware User's Manual	Learning the basic specifications of the NX-series NX102 CPU Units, including introductory information, designing, installation, and maintenance. Mainly hardware information is provided.
NX-series NX1P2 CPU Unit Hardware User's Manual	Learning the basic specifications of the NX-series NX1P2 CPU Units, including introductory information, designing, installation, and maintenance. Mainly hardware information is provided.
NX-series EtherCAT® Coupler Unit User's Manual	Leaning how to use an NX-series EtherCAT Coupler Unit and EtherCAT Slave Terminals
NX-series EtherNet/IP™ Coupler Unit User's Manual	Learning how to use an NX-series EtherNet/IP Coupler Unit and EtherNet/IP Slave Terminals.
NX-series Safety Control Unit / Communication Control Unit User's Manual	Learning how to use the NX-series Safety Control Units and Communication Control Units.
NX-series Digital I/O Units User's Manual	Learning how to use NX-series Digital I/O Units
NX-series Analog I/O Units User's Manual for Analog Input Units and Analog Output Units*1	Learning how to use NX-series Analog Input Units and Analog Output Units
NX-series Analog I/O Units User's Manual for High-speed Analog Input Units	Learning how to use NX-series High-speed Analog Input Units
NX-series Analog I/O Units User's Manual for Temperature Input Units and Heater Burnout Detection Units*2	Learning how to use NX-series Temperature Input Units and Heater Burnout Detection Units
NX-series System Units User's Manual	Learning how to use NX-series System Units
NX-series Position Interface Units User's Manual	Learning how to use NX-series Position Interface Units
NX-series Communications Interface Units User's Manual	Learning how to use NX-series Communications Interface Units
NX-series Safety Control Unit User's Manual	Learning how to use NX-series Safety Control Units
NX-series Load Cell Input Unit User's Manual	Learning how to use an NX-series Load Cell Input Unit
NX-series IO-Link Master Unit User's Manual	Learning how to use an NX-series IO-Link Master Unit
NX-series Temperature Control Unit User's Manual	Learning how to use an NX-series Temperature Control Unit
NX-series RFID Units User's Manual	Learning how to use NX-series RFID Units

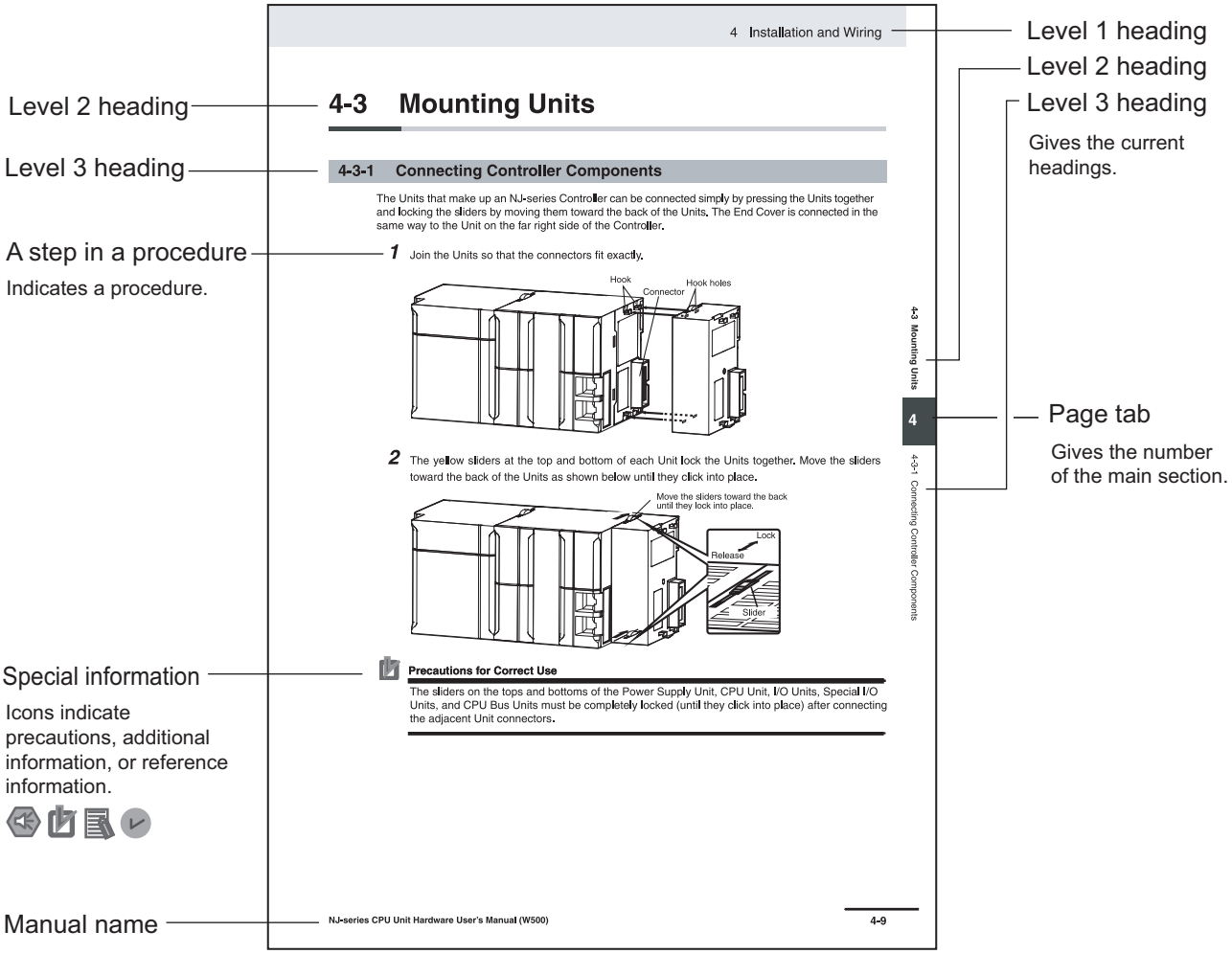
*1. From revision 05 of this manual, information on the NX-series Temperature Input Units (NX-TS□□□□) that were included in previous revisions was moved to the following manual: *NX-series Analog I/O Units User's Manual for Temperature Input Units and Heater Burnout Detection Units* (Cat. No. W566). Accompanying that change, the name of this manual was changed from the *NX-series Analog I/O Units User's Manual* (Cat. No. W522) to the *NX-series Analog I/O Units User's Manual for Analog Input Units and Analog Output Units* (Cat. No. W522).

*2. The NX-series Temperature Input Units (NX-TS□□□□) that were included in the *NX-series Analog I/O Units User's Manual* (Cat No. W522) in revision 04 and earlier revisions were moved to this manual.

Manual Structure

Page Structure and Icons

The following page structure and icons are used in this manual.



Note This illustration is provided only as a sample. It may not literally appear in this manual.

Special Information

Special information in this manual is classified as follows:

Precautions for Safe Use

Precautions on what to do and what not to do to ensure safe usage of the product.

Precautions for Correct Use

Precautions on what to do and what not to do to ensure proper operation and performance.

Additional Information

Additional information to read as required.

This information is provided to increase understanding or make operation easier.

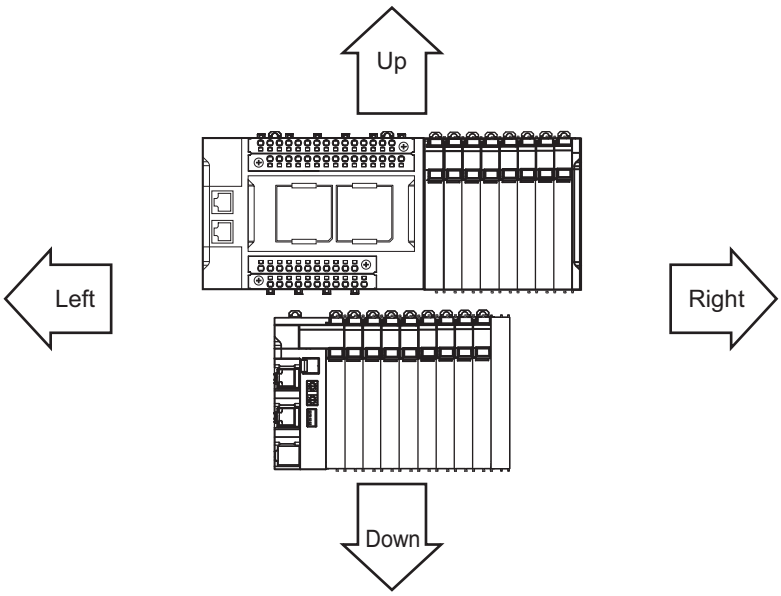
Version Information

Information on differences in specifications and functionality for CPU Units, Industrial PCs, Communications Coupler Units, and Communication Control Units with different unit versions and for different versions of the Support Software is given.

Note References are provided to more detailed or related information.

Precaution on Terminology

- In this manual, “download” refers to transferring data from the Support Software to a physical device and “upload” refers to transferring data from a physical device to the Support Software.
- In this manual, the directions in relation to the Units are given in the following figure, which shows upright installation.



- This user's manual refers to the NY-series IPC Machine Controller Industrial Panel PCs and Industrial Box PCs as simply *Industrial PCs* or as *NY-series Industrial PCs*.
- This user's manual may omit manual names and manual numbers in places that refer to the user's manuals for CPU Units and Industrial PCs. The following table gives some examples. When necessary, refer to *Related Manuals* on page 14 to determine the appropriate manual based on the common text for the omitted contents.

Examples:

Manual name	Omitted contents	Common text
NJ/NX-series CPU Unit Software User's Manual	Software user's manual for the connected CPU Unit or Industrial PC	Software User's Manual
NY-series IPC Machine Controller Industrial Panel PC / Industrial Box PC Software User's Manual		
NJ/NX-series Instructions Reference Manual	Instructions reference manual for the connected CPU Unit or Industrial PC	Instructions Reference Manual
NY-series Instructions Reference Manual		

- This user's manual may omit manual names and manual numbers in places that refer to the user's manuals for Communications Coupler Units. If you use a Communications Coupler Unit, refer to *Related Manuals* on page 14 to identify the manual for your Unit.
- This user’s manual may omit manual names and manual numbers in places that refer to the user’s manuals for Communication Control Units. If you use a Communication Control Unit, refer to *Related Manuals* on page 14 to identify the manual for your Unit.

Terms and Conditions Agreement

Warranty, Limitations of Liability

Warranties

- **Exclusive Warranty**

  Omron's exclusive warranty is that the Products will be free from defects in materials and workmanship for a period of twelve months from the date of sale by Omron (or such other period expressed in writing by Omron). Omron disclaims all other warranties, express or implied.

- **Limitations**

  OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCTS. BUYER ACKNOWLEDGES THAT IT ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE.

  Omron further disclaims all warranties and responsibility of any type for claims or expenses based on infringement by the Products or otherwise of any intellectual property right.

- **Buyer Remedy**

  Omron's sole obligation hereunder shall be, at Omron's election, to (i) replace (in the form originally shipped with Buyer responsible for labor charges for removal or replacement thereof) the non-complying Product, (ii) repair the non-complying Product, or (iii) repay or credit Buyer an amount equal to the purchase price of the non-complying Product; provided that in no event shall Omron be responsible for warranty, repair, indemnity or any other claims or expenses regarding the Products unless Omron's analysis confirms that the Products were properly handled, stored, installed and maintained and not subject to contamination, abuse, misuse or inappropriate modification. Return of any Products by Buyer must be approved in writing by Omron before shipment. Omron Companies shall not be liable for the suitability or unsuitability or the results from the use of Products in combination with any electrical or electronic components, circuits, system assemblies or any other materials or substances or environments. Any advice, recommendations or information given orally or in writing, are not to be construed as an amendment or addition to the above warranty.

See http://www.omron.com/global/ or contact your Omron representative for published information.

Limitation on Liability; Etc

OMRON COMPANIES SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE OR STRICT LIABILITY.

Further, in no event shall liability of Omron Companies exceed the individual price of the Product on which liability is asserted.

Application Considerations

Suitability of Use

Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases.

NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY OR IN LARGE QUANTITIES WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT(S) IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

Programmable Products

Omron Companies shall not be responsible for the user's programming of a programmable Product, or any consequence thereof.

Disclaimers

Performance Data

Data presented in Omron Company websites, catalogs and other materials is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of Omron's test conditions, and the user must correlate it to actual application requirements. Actual performance is subject to the Omron's Warranty and Limitations of Liability.

Change in Specifications

Product specifications and accessories may be changed at any time based on improvements and other reasons. It is our practice to change part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Omron's representative at any time to confirm actual specifications of purchased Product.

Errors and Omissions

Information presented by Omron Companies has been checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.

Safety Precautions

Refer to the user's manual for the Unit to be used for safety precautions.

Precautions for Safe Use

Refer to the user's manual for the Unit to be used for precautions for safe use.

Precautions for Correct Use

Refer to the user's manual for the Unit to be used for precautions for correct use.

Regulations and Standards

Refer to the user's manual for the Unit to be used for regulations and standards.

Related Manuals

The following table shows related manuals. Use these manuals for reference.

Manual name	Cat. No.	Model numbers	Application	Description
NX-series Data Reference Manual	W525	NX-□□□□□□	Referencing lists of the data that is required to configure systems with NX-series Units	Lists of the power consumptions, weights, and other NX Unit data that is required to configure systems with NX-series Units are provided.
NX-series Digital I/O Units User's Manual	W521	NX-ID□□□□ NX-IA□□□□ NX-OC□□□□ NX-OD□□□□ NX-MD□□□□	Learning how to use NX-series Digital I/O Units	The hardware, setup methods, and functions of the NX-series Digital I/O Units are described.
NX-series Analog I/O Units User's Manual for Analog Input Units and Analog Output Units*1	W522	NX-AD□□□□ NX-DA□□□□	Learning how to use NX-series Analog Input Units and Analog Output Units	The hardware, setup methods, and functions of the NX-series Analog Input Units and Analog Output Units are described.
NX-series Analog I/O Units User's Manual for High-speed Analog Input Units	W592	NX-HAD□□□	Learning how to use NX-series High-speed Analog Input Units	The hardware, setup methods, and functions of the NX-series High-speed Analog Input Units are described.
NX-series Analog I/O Units User's Manual for Temperature Input Units and Heater Burnout Detection Units*2	W566	NX-TS□□□□ NX-HB□□□□	Learning how to use NX-series Temperature Input Units and Heater Burnout Detection Units	The hardware, setup methods, and functions of the NX-series Temperature Input Units and Heater Burnout Detection Units are described.
NX-series System Units User's Manual	W523	NX-PD1□□□ NX-PF0□□□ NX-PC0□□□ NX-TBX01	Learning how to use NX-series System Units	The hardware and functions of the NX-series System Units are described.
NX-series Position Interface Units User's Manual	W524	NX-EC0□□□ NX-ECS□□□ NX-PG0□□□	Learning how to use NX-series Position Interface Units	The hardware, setup methods, and functions of the NX-series Incremental Encoder Input Units, SSI Input Units, and Pulse Output Unit are described.
NX-series Communications Interface Units User's Manual	W540	NX-CIF□□□	Learning how to use NX-series Communications Interface Units	The hardware, setup methods, and functions of the NX-series Communications Interface Units are described.
NX-series Load Cell Input Unit User's Manual	W565	NX-RS□□□□	Learning how to use an NX-series Load Cell Input Unit	The hardware, setup methods, and functions of the NX-series Load Cell Input Unit are described.
NX-series IO-Link Master Unit User's Manual	W567	NX-ILM□□□	Learning how to use an NX-series IO-Link Master Unit	The names and functions of the parts, installation, wiring and a list of NX objects of the NX-series IO-Link Master Unit are described.
NX-series Temperature Control Unit User's Manual	H228	NX-TC□□□□	Learning how to use NX-series Temperature Control Units	The hardware, setup methods, and functions of NX-series Temperature Control Units are described.

Manual name	Cat. No.	Model numbers	Application	Description
NX-series RFID Units User's Manual	Z401	NX-V680C□	Learning how to use NX-series RFID Units	The hardware, setup methods, and functions of NX-series RFID Units are described.
NX-series Safety Control Unit User's Manual	Z930	NX-SL□□□□ NX-SI□□□□ NX-SO□□□□	Learning how to use NX-series Safety Control Units	The hardware, setup methods, and functions of the NX-series Safety Control Units are described.
Sysmac Studio Version 1 Operation Manual	W504	SYSMAC-SE2□□□	Learning about the operating procedures and functions of the Sysmac Studio	Describes the operating procedures of the Sysmac Studio.
NX-IO Configurator Operation Manual	W585	CXONE-AL□□D-V4	Learning about the operating procedures and functions of the NX-IO Configurator.	Describes the operating procedures of the NX-IO Configurator.
NX-series EtherCAT® Coupler Unit User's Manual	W519	NX-ECC20□	Learning how to use an NX-series EtherCAT Coupler Unit and EtherCAT Slave Terminals	The following items are described: the overall system and configuration methods of an EtherCAT Slave Terminal (which consists of an NX-series EtherCAT Coupler Unit and NX Units), and information on hardware, setup, and functions to set up, control, and monitor NX Units through EtherCAT.
NX-series EtherNet/IP™ Coupler Unit User's Manual	W536	NX-EIC202	Learning how to use an NX-series EtherNet/IP Coupler Unit and EtherNet/IP Slave Terminals	The following items are described: the overall system and configuration methods of an EtherNet/IP Slave Terminal (which consists of an NX-series EtherNet/IP Coupler Unit and NX Units), and information on hardware, setup, and functions to set up, control, and monitor NX Units.
NX-series CPU Unit Hardware User's Manual	W535	NX701-□□□□	Learning the basic specifications of the NX-series NX701 CPU Units, including introductory information, designing, installation, and maintenance. Mainly hardware information is provided.	An introduction to the entire NX701 CPU Unit system is provided along with the following information on the CPU Unit. • Features and system configuration • Overview • Part names and functions • General specifications • Installation and wiring • Maintenance and Inspection
NX-series NX102 CPU Unit Hardware User's Manual	W593	NX102-□□□□	Learning the basic specifications of the NX-series NX102 CPU Units, including introductory information, designing, installation, and maintenance. Mainly hardware information is provided.	An introduction to the entire NX102 CPU Unit system is provided along with the following information on the CPU Unit. • Features and system configuration • Overview • Part names and functions • General specifications • Installation and wiring • Maintenance and inspection

Manual name	Cat. No.	Model numbers	Application	Description
NX-series NX1P2 CPU Unit Hardware User's Manual	W578	NX1P2-□□□□	Learning the basic specifications of the NX-series NX1P2 CPU Units, including introductory information, designing, installation, and maintenance. Mainly hardware information is provided.	An introduction to the entire NX1P2 CPU Unit system is provided along with the following information on the CPU Unit. • Features and system configuration • Overview • Part names and functions • General specifications • Installation and wiring • Maintenance and Inspection
NJ-series CPU Unit Hardware User's Manual	W500	NJ501-□□□□ NJ301-□□□□ NJ101-□□□□	Learning the basic specifications of the NJ-series CPU Units, including introductory information, designing, installation, and maintenance. Mainly hardware information is provided.	An introduction to the entire NJ-series system is provided along with the following information on the CPU Unit. • Features and system configuration • Overview • Part names and functions • General specifications • Installation and wiring • Maintenance and Inspection
NJ/NX-series CPU Unit Software User's Manual	W501	NX701-□□□□ NJ501-□□□□ NJ301-□□□□ NJ101-□□□□ NX102-□□□□ NX1P2-□□□□	Learning how to program and set up an NJ/NX-series CPU Unit. Mainly software information is provided.	The following information is provided on an NJ/NX-series CPU Unit. • CPU Unit operation • CPU Unit features • Initial settings • Programming based on IEC 61131-3 language specifications
NJ/NX-series Instructions Reference Manual	W502	NX701-□□□□ NJ501-□□□□ NJ301-□□□□ NJ101-□□□□ NX102-□□□□ NX1P2-□□□□	Learning detailed specifications on the basic instructions of an NJ/NX-series CPU Unit.	The instructions in the instruction set (IEC 61131-3 specifications) are described.
NY-series IPC Machine Controller Industrial Panel PC Hardware User's Manual	W557	NY532-□□□□	Learning the basic specifications of the NY-series Industrial Panel PCs, including introductory information, designing, installation, and maintenance. Mainly hardware information is provided.	An introduction to the entire NY-series system is provided along with the following information on the Industrial Panel PC. • Features and system configuration • Introduction • Part names and functions • General specifications • Installation and wiring • Maintenance and inspection

Manual name	Cat. No.	Model numbers	Application	Description
NY-series IPC Machine Controller Industrial Box PC Hardware User's Manual	W556	NY512-□□□□	Learning the basic specifications of the NY-series Industrial Box PCs, including introductory information, designing, installation, and maintenance. Mainly hardware information is provided.	An introduction to the entire NY-series system is provided along with the following information on the Industrial Box PC. • Features and system configuration • Introduction • Part names and functions • General specifications • Installation and wiring • Maintenance and inspection
NY-series IPC Machine Controller Industrial Panel PC / Industrial Box PC Software User's Manual	W558	NY532-□□□□ NY512-□□□□	Learning how to program and set up the Controller functions of an NY-series Industrial PC.	The following information is provided on NY-series Machine Automation Control Software. • Controller operation • Controller features • Controller settings • Programming based on IEC 61131-3 language specifications
NY-series Instructions Reference Manual	W560	NY532-□□□□ NY512-□□□□	Learning detailed specifications on the basic instructions of an NY-series Industrial PC.	The instructions in the instruction set (IEC 61131-3 specifications) are described.
NX-series Safety Control Unit / Communication Control Unit User's Manual	Z395	NX-SL5□□□ NX-SI□□□□ NX-SO□□□□ NX-CSG□□□	Learning how to use the NX-series Safety Control Units and Communication Control Units.	Describes the hardware, setup methods, and functions of the NX-series Safety Control Units and Communication Control Units.

*1. From revision 05 of this manual, information on the NX-series Temperature Input Units (NX-TS□□□□) that were included in previous revisions was moved to the following manual: *NX-series Analog I/O Units User's Manual for Temperature Input Units and Heater Burnout Detection Units* (Cat. No. W566). Accompanying that change, the name of this manual was changed from the *NX-series Analog I/O Units User's Manual* (Cat. No. W522) to the *NX-series Analog I/O Units User's Manual for Analog Input Units and Analog Output Units* (Cat. No. W522).

*2. The NX-series Temperature Input Units (NX-TS□□□□) that were included in the *NX-series Analog I/O Units User's Manual* (Cat No. W522) in revision 04 and earlier revisions were moved to this manual.

Revision History

A manual revision code appears as a suffix to the catalog number on the front and back covers of the manual.

Revision code	Date	Revised content
01	April 2013	Original production
02	June 2013	• Added models on time stamp refreshing. • Added Safety Control Units. • Corrected mistakes.
03	September 2013	• Added new models and made changes accompanying the upgrade to the unit version in September 2013. • Corrected mistakes.
04	July 2014	Added new models in July 2014.
05	December 2014	Made changes accompanying the addition of the EtherNet/IP Coupler Units.
06	April 2015	Added new models and made changes accompanying the upgrade to the unit version in April 2015.
07	April 2016	• Made changes accompanying the addition of new models for Pulse Output Unit of Position Interface Unit. • Added Load Cell Input Unit. • Corrected mistakes.
08	April 2016	Added Heater Burnout Detection Units.
09	July 2016	Added IO-Link Master Unit.
10	July 2016	Made changes accompanying the unit version upgrade of the EtherCAT Coupler Unit NX-ECC203.
11	October 2016	• Made changes accompanying the addition of NY-series IPC Machine Controller Industrial Panel PCs and Industrial Box PCs. • Made changes accompanying the addition of the NX-series NX1P2 CPU Unit. • Corrected mistakes.
12	June 2017	• Made changes accompanying the upgrade of the NX-ECC203 unit version to version 1.5. • Made changes accompanying the upgrade of the NX-EIC202 unit version to version 1.2. • Corrected mistakes.
13	October 2017	Made changes accompanying the upgrade of the NX-ILM400 unit version to version 1.1.
14	January 2018	Added Temperature Control Units.
15	April 2018	• Made changes accompanying the upgrade of the Temperature Control Units version to version 1.1. • Corrected mistakes.
16	April 2018	Made changes accompanying the addition of the NX-series NX102 CPU Unit.
17	May 2018	Added High-speed Analog Input Units.

Revision code	Date	Revised content
18	July 2018	• Made changes accompanying the addition of new models for the NX-series NX102 CPU Unit. • Made changes accompanying the addition of the NX-series Communication Control Unit. • Made changes accompanying the addition of new models for the NX-series Safety CPU Unit. • Corrected mistakes.
19	October 2018	• Added RFID Units. • Made changes accompanying the upgrade of the NX-ECC203 unit version to version 1.6.

Sections in this Manual

1 Data List

A Appendices

1

Data List

This section provides the data lists for CPU Units, Communications Coupler Units, Communication Control Units, and NX Units.

1-1 How to Read the Data List 1-3

1-2 CPU Units 1-6

1-2-1 NX1P2 CPU Units 1-6

1-2-2 NX102 CPU Units 1-7

1-3 Communications Coupler Units 1-8

1-3-1 EtherCAT Coupler Unit 1-8

1-3-2 EtherNet/IP Coupler Unit 1-9

1-3-3 End Cover 1-9

1-4 Communication Control Units 1-10

1-5 Digital I/O Units 1-11

1-5-1 Digital Input Units 1-11

1-5-2 Digital Output Units 1-17

1-5-3 Digital Mixed I/O Units 1-24

1-6 Analog I/O Units 1-27

1-6-1 Analog Input Units 1-27

1-6-2 High-speed Analog Input Units 1-29

1-6-3 Analog Output Units 1-30

1-6-4 Temperature Input Units 1-31

1-6-5 Heater Burnout Detection Units 1-33

1-7 Position Interface Units 1-34

1-7-1 Incremental Encoder Input Units 1-34

1-7-2 SSI Input Units 1-35

1-7-3 Pulse Output Units 1-36

1-8 Communications Interface Units 1-38

1-9 Load Cell Input Unit 1-39

1-10 IO-Link Master Unit 1-40

1-11 Temperature Control Units 1-41

1-12 RFID Units 1-43

1-13 System Units 1-44
1-13-1 Additional NX Unit Power Supply Unit 1-44
1-13-2 Additional I/O Power Supply Unit 1-44
1-13-3 I/O Power Supply Connection Unit 1-45
1-13-4 Shield Connection Unit 1-46
1-14 Safety Control Units 1-47
1-14-1 Safety CPU Unit 1-47
1-14-2 Safety Input Units 1-48
1-14-3 Safety Output Units 1-49

1-1 How to Read the Data List

This data list is described with the following format.

Example: For Digital Input Units

Model	Unit configuration data										Summary specifications				
	NX Unit power consumption [W]			Current consumption from I/O power supply [mA]	Input current [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of points	Internal I/O common	Rated input voltage	I/O refreshing method	ON/OFF response time
	CPU	Coupler	Control												

The items for this format are explained below.

Unit Configuration Data

The Unit configuration data is the data required to create the CPU Rack configuration of the NX-series CPU Unit or NX-series Communication Control Unit, or to create the Unit configuration of Slave Terminal. In this manual, Unit configuration is described only for NX Units, CPU Units connectable to NX Units, Communications Coupler Units, and Communication Control Units. The data of the built-in I/O of NX1P2 CPU Units and Option Boards are not shown.

Create the Unit configuration so that the total value of the data for which the maximum value is defined does not exceed the maximum value of the CPU Rack or Slave Terminal.

Refer to the user's manual for the connected CPU Unit, Communications Coupler Unit, or Communication Control Unit on the maximum value for each data.

Yes: Data to be referred to create the target configuration
No: Data not to be referred to create the target configuration

Item	Description	Configuration to create		
		CPU Rack for CPU Unit	Slave Terminal	CPU Rack for Communication Control Unit
Unit power consumption	The power consumption of the CPU Unit or the Communication Control Unit from the Unit power supply.	Yes	No	Yes

Item		Description	Configuration to create		
			CPU Rack for CPU Unit	Slave Terminal	CPU Rack for Communication Control Unit
NX Unit power consumption*1*2	CPU	The power consumption of the Unit connected to the CPU Unit from the NX Unit power supply. The item name is abbreviated as “CPU”. If any value or this item is not provided, the Unit cannot be connected to any CPU Unit.	Yes	No	No
	Coupler	The power consumption of the Unit connected to the Communications Coupler Unit from the NX Unit power supply. The item name is abbreviated as “Coupler”. If any value or this item is not provided, the Unit cannot be connected to any Communications Coupler Unit.	No	Yes	No
	Control	The power consumption of the Unit connected to the Communication Control Unit from the NX Unit power supply. The item name is abbreviated as “Control”. If any value or this item is not provided, the Unit cannot be connected to any Communication Control Unit.	No	No	Yes
Current consumption from I/O power supply*3		The current consumption from I/O power supply of the Unit. The load current of any external connection load, the input current of the Input Units, and the current consumption of any connected external devices are not included.	Yes		
Input current		The input current of the Unit at the rated voltage. Only the DC Input Units and AC Input Units have this item.	Yes		
I/O power supply method		The method for supplying I/O power supply for the Unit. The supply method depends on each Unit. The power is supplied from the NX bus or the external source. NX bus: Supply from the NX bus External: Supply from external source The CPU Unit, Communications Coupler Unit, Communication Control Unit, and the Additional I/O Power Supply Unit do not have this item.	Yes		
Weight		The weight of the Unit.	Yes		
Width		The width of the Unit. The unit is "mm".	Yes		
I/O data size*4		The I/O data size of default value that the Unit consumes. The unit is byte. However, the unit is bit for some Digital I/O Units. In this case, the unit is given in the table. It is described according to the input/output sequence.	Yes		No*5
Number of I/O entry mappings		The number of I/O entry mappings of default value that the Unit consumes. It is described according to the input/output sequence.	No*6	Yes	No*6
Number of cyclic communications connections*7		The maximum number of connections that can be set by Class 1 messages.	No	Yes	No

*1. CPU Units and Communication Control Units do not have this item. This item is defined as the Unit power consumption from the Unit power supply.

*2. The Communications Coupler Units do not distinguish among CPU, Coupler and Control because they cannot be mounted to the CPU Unit or Communication Control Unit.

*3. CPU Units do not have this item.

*4. CPU Units and Communication Control Units do not have this item.

*5. Communication Control Units provide a sufficient margin of capacity for the data size required to allocate I/O data to NX Units which can be connected. For this reason, it is not necessary to consider the I/O data size of the connected NX Units.

*6. There is no restriction for CPU Units and Communication Control Units.

*7. This item is only for EtherNet/IP Coupler Units.

Summary Specifications

The summary specifications of the Units to configure the CPU Rack or Slave Terminal.

Use this as a guide to select the Unit model when you consider the Unit configuration.

The items in the Summary Specifications depend on the Unit type. The meaning of each item is explained for each Unit type.

1-2 CPU Units

This section describes the data for CPU Units.

1-2-1 NX1P2 CPU Units

● Items in the Summary Specifications

Item		Description
Unit power supply	Rated voltage	The rated voltage of the Unit power supply that is supplied to the Unit.
NX Unit power supply capacity		The amount of power that the Unit can supply to the NX Units.

● Data List

Model	Unit configuration data			Summary specifications	
	Unit power consumption [W]*1	Weight [g]*2	Width [mm]*2	Unit power supply: Rated voltage	NX Unit power supply capacity*3
NX1P2-1040DT	7.05	650	154	24 VDC	10 W max.
NX1P2-1040DT1	6.85	660			
NX1P2-1140DT	7.05	650			
NX1P2-1140DT1	6.85	660			
NX1P2-9024DT	6.70	590	130		
NX1P2-9024DT1	6.40				

*1. The power consumption of an SD Memory Card and Option Boards are included. The power consumption of NX Units from the NX Unit power supply is not included.

*2. The weight of the End Cover is included.

*3. The NX Unit power supply capacity is not restricted by the ambient operating temperature.

1-2-2 NX102 CPU Units

● Items in the Summary Specifications

Item		Description
Unit power supply	**Rated voltage**	The rated voltage of the Unit power supply that is supplied to the Unit.
NX Unit power supply capacity		The amount of power that the Unit can supply to the NX Units.

● Data List

Model	Unit configuration data			Summary specifications	
	Unit power consumption [W]*1	Weight [g]*2	Width [mm]*2	Unit power supply	NX Unit power supply capacity*3
				Rated voltage	
NX102-1200	5.80	390	72	24 VDC	10 W max.
NX102-1100					
NX102-1000					
NX102-9000					
NX102-1220					
NX102-1120					
NX102-1020					
NX102-9020					

*1. The power consumption of an SD Memory Card is included. The power consumption of NX Units from the NX Unit power supply is not included.

*2. The weight of the End Cover is included.

*3. The NX Unit power supply capacity is not restricted by the ambient operating temperature.

1-3 Communications Coupler Units

This section describes the data for Communications Coupler Units. This section also gives the data for the End Cover that is an Accessory for the Communications Coupler Unit.

1-3-1 EtherCAT Coupler Unit

● Items in the Summary Specifications

Item		Description
Unit power supply	**Rated voltage**	The rated voltage of the Unit power supply that is supplied to the Unit.
	NX Unit power supply capacity	The amount of power that the Unit can supply to the NX Units. The power consumption of the Unit from the NX Unit power supply is not included.
I/O power supply	**Rated voltage**	The rated voltage of the I/O power supply that is supplied to the Unit.
	Maximum current of I/O power supply	The maximum value of the current supplied from the I/O power supply that the Unit can supply to the NX Units through the NX bus connectors.

● Data List

Model	Unit configuration data						Summary specifications			
							Unit power supply		I/O power supply	
	NX Unit power consumption [W]	Current consumption from I/O power supply [mA]	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Rated voltage	NX Unit power supply capacity*1	Rated voltage	Maximum current of I/O power supply *1
NX-ECC201	1.45	10	170	46	34/0	2/0	24 VDC	10 W max.	5 to 24 VDC	4 A
NX-ECC202										10 A
NX-ECC203	1.25				18/0					

*1. The NX Unit power supply capacity and the maximum current of I/O power supply are sometimes restricted by conditions such as the temperature or installation orientation. For details, refer to *A-1 NX Unit Power Supply and I/O Power Supply Capacity* on page A-2.

1-3-2 EtherNet/IP Coupler Unit

● Items in the Summary Specifications

Item		Description
Unit power supply	Rated voltage	The rated voltage of the Unit power supply that is supplied to the Unit.
	NX Unit power supply capacity	The amount of power that the Unit can supply to the NX Units. The power consumption of the Unit from the NX Unit power supply is not included.
I/O power supply	Rated voltage	The rated voltage of the I/O power supply that is supplied to the Unit.
	Maximum current of I/O power supply	The maximum value of the current supplied from the I/O power supply that the Unit can supply to the NX Units through the NX bus connectors.

● Data List

Model	Unit configuration data						Summary specifications			
							Unit power supply		I/O power supply	
	NX Unit power consumption [W]	Current consumption from I/O power supply [mA]	Weight [g]	Width [mm]	I/O data size [byte]	Number of cyclic communications connections	Rated voltage	NX Unit power supply capacity*1	Rated voltage	Maximum current of I/O power supply *1
NX-EIC202	1.45	10	150	46	1 to 504	8	24 VDC	10 W max.	5 to 24 VDC	10 A

*1. The NX Unit power supply capacity and the maximum current of I/O power supply are sometimes restricted by conditions such as the temperature or installation orientation. For details, refer to *A-1 NX Unit Power Supply and I/O Power Supply Capacity* on page A-2.

1-3-3 End Cover

● Data List

Model	Unit configuration data	
	Weight [g]	Width [mm]
NX-END01	35	12

1-4 Communication Control Units

This section describes the data for Communication Control Units.

● Items in the Summary Specifications

Item		Description
Unit power supply	Rated voltage	The rated voltage of the Unit power supply that is supplied to the Unit.
NX Unit power supply capacity		The amount of power that the Unit can supply to the NX Units.
I/O power supply	Rated voltage	The rated voltage of the I/O power supply that is supplied to the Unit.
	Maximum current of I/O power supply	The maximum value of the current supplied from the I/O power supply that the Unit can supply to the NX Units through the NX bus connectors.

● Data List

Model	Unit configuration data				Summary specifications			
					Unit power supply		I/O power supply	
	Unit power consumption [W]*1	Current consumption from I/O power supply [mA]	Weight [g]*2	Width [mm]*2	Rated voltage	NX Unit power supply capacity*3	Rated voltage	Maximum current of I/O power supply*3
NX-CSG320	5.95	10	390	72	24 VDC	10 W max.	5 to 24 VDC	4 A

*1. The power consumption of NX Units from the NX Unit power supply is not included.

*2. The weight of the End Cover is included.

*3. The NX Unit power supply capacity and the maximum current of I/O power supply are not restricted by the ambient operating temperature.

1-5 Digital I/O Units

This section describes the data for Digital I/O Units.

1-5-1 Digital Input Units

DC Input Units (Screwless Clamping Terminal Block, 12 mm Width)

● Items in the Summary Specifications

Item	Description
Number of points	The number of input points provided by the Unit.
Internal I/O common	This is the polarity that the Unit uses to connect to input devices. There are models with NPN and PNP connections.
Rated input voltage	The rated input voltage of the Unit.
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Free-Run refreshing, synchronous I/O refreshing and input refreshing with input changed time are available. In the following table, the following abbreviations are used. Free: Free-Run refreshing Sync: Switching synchronous I/O refreshing and Free-Run refreshing Changed time: Input refreshing with input changed time
ON/OFF response time	The delay time for which the status change of the input terminals reaches the internal circuit of the Unit. The input filter time is not included. It is described according to the ON/OFF sequence.

Data List

Model	Unit configuration data										Summary specifications				
	NX Unit power consumption [W]			Current consumption from I/O power supply [mA]	Input current [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of points	Internal I/O common	Rated input voltage	I/O refreshing method	ON/OFF response time
	CPU	Coupler	Control												
NX-ID3317	0.90	0.50	0.90	No consumption	6	NX bus	65	12	4/0 bits	1/0	4 points	NPN	12 to 24 VDC	Sync	20/400 µs max.
NX-ID3343		0.55		30	3.5								24 VDC		100/ 100 ns max.
NX-ID3344		0.50	---						34/0					Changed time	
NX-ID3417			0.90	No consumption	6				4/0 bits			PNP	12 to 24 VDC	Sync	20/400 µs max.
NX-ID3443		0.55		30	3.5								24 VDC		100/ 100 ns max.
NX-ID3444		0.50	---						34/0					Changed time	
NX-ID4342			0.90	No consumption					2/0		8 points	NPN		Sync	20/400 µs max.
NX-ID4442												PNP			
NX-ID5342		0.55			2.5						16 points	NPN			
NX-ID5442												PNP			

DC Input Units (M3 Screw Terminal Block, 30 mm Width)

● Items in the Summary Specifications

Item	Description
Number of points	The number of input points provided by the Unit.
Internal I/O common	This is the polarity that the Unit uses to connect to input devices. There are models with NPN and PNP connections.
Rated input voltage	The rated input voltage of the Unit.
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Free-Run refreshing, synchronous I/O refreshing and input refreshing with input changed time are available. In the following table, the following abbreviations are used. Free: Free-Run refreshing Sync: Switching synchronous I/O refreshing and Free-Run refreshing Changed time: Input refreshing with input changed time
ON/OFF response time	The delay time for which the status change of the input terminals reaches the internal circuit of the Unit. The input filter time is not included. It is described according to the ON/OFF sequence.

● Data List

Model	Unit configuration data										Summary specifications				
	NX Unit power consumption [W]			Current consumption from I/O power supply [mA]	Input current [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of points	Internal I/O common	Rated input voltage	I/O refreshing method	ON/OFF response time
	CPU	Coupler	Control												
NX-ID5142-1	0.85	0.55	0.85	No consumption	7	External	125	30	2/0	1/0	16 points	For both NPN/PNP	24 VDC	Sync	20/400 µs max.

DC Input Units (MIL Connector, 30 mm Width)

● Items in the Summary Specifications

Item	Description
Number of points	The number of input points provided by the Unit.
Internal I/O common	This is the polarity that the Unit uses to connect to input devices. There are models with NPN and PNP connections.
Rated input voltage	The rated input voltage of the Unit.
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Free-Run refreshing, synchronous I/O refreshing and input refreshing with input changed time are available. In the following table, the following abbreviations are used. Free: Free-Run refreshing Sync: Switching synchronous I/O refreshing and Free-Run refreshing Changed time: Input refreshing with input changed time
ON/OFF response time	The delay time for which the status change of the input terminals reaches the internal circuit of the Unit. The input filter time is not included. It is described according to the ON/OFF sequence.

● Data List

Model	Unit configuration data										Summary specifications				
	NX Unit power consumption [W]			Current consumption from I/O power supply [mA]	Input current [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of points	Internal I/O common	Rated input voltage	I/O refreshing method	ON/OFF response time
	CPU	Coupler	Control												
NX-ID5142-5	0.85	0.55	0.85	No consumption	7	External	85	30	2/0	1/0	16 points	For both NPN/PNP	24 VDC	Sync	20/400 µs max.
NX-ID6142-5	0.90	0.60	0.90		4.1		90		4/0		32 points	For both NPN/PNP	24 VDC		

DC Input Units (Fujitsu Connector, 30 mm Width)

● Items in the Summary Specifications

Item	Description
Number of points	The number of input points provided by the Unit.
Internal I/O common	This is the polarity that the Unit uses to connect to input devices. There are models with NPN and PNP connections.
Rated input voltage	The rated input voltage of the Unit.
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Free-Run refreshing, synchronous I/O refreshing and input refreshing with input changed time are available. In the following table, the following abbreviations are used. Free: Free-Run refreshing Sync: Switching synchronous I/O refreshing and Free-Run refreshing Changed time: Input refreshing with input changed time
ON/OFF response time	The delay time for which the status change of the input terminals reaches the internal circuit of the Unit. The input filter time is not included. It is described according to the ON/OFF sequence.

● Data List

Model	Unit configuration data										Summary specifications				
	NX Unit power consumption [W]			Current consumption from I/O power supply [mA]	Input current [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of points	Internal I/O common	Rated input voltage	I/O refreshing method	ON/OFF response time
	CPU	Coupler	Control												
NX-ID6142-6	0.95	0.55	0.95	No consumption	4.1	External	90	30	4/0	1/0	32 points	For both NPN/PNP	24 VDC	Sync	20/400 µs max.

AC Input Units (Screwless Clamping Terminal Block, 12 mm Width)

● Items in the Summary Specifications

Item	Description
Number of points	The number of input points provided by the Unit.
Internal I/O common	This is the polarity that the Unit uses to connect to input devices. There are models with NPN and PNP connections.
Rated input voltage	The rated input voltage of the Unit.
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Free-Run refreshing, synchronous I/O refreshing and input refreshing with input changed time are available. In the following table, the following abbreviations are used. Free: Free-Run refreshing Sync: Switching synchronous I/O refreshing and Free-Run refreshing Changed time: Input refreshing with input changed time
ON/OFF response time	The delay time for which the status change of the input terminals reaches the internal circuit of the Unit. The input filter time is not included. It is described according to the ON/OFF sequence.

● Data List

Model	Unit configuration data										Summary specifications				
	NX Unit power consumption [W]			Current consumption from I/O power supply [mA]	Input current [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of points	Internal I/O common	Rated input voltage	I/O refreshing method	ON/OFF response time
	CPU	Coupler	Control												
NX-IA3117	0.80	0.50	0.80	No consumption	9 (200 VAC/50 Hz) 11 (200 VAC/60 Hz)	External	60	12	4/0 bits	1/0	4 points	No polarity	200 to 240 VAC	Free	10/40 ms max.

1-5-2 Digital Output Units

Transistor Output Units (Screwless Clamping Terminal Block, 12 mm Width)

● Items in the Summary Specifications

Item	Description
Number of points	The number of output points provided by the Unit.
Internal I/O common	This is the polarity that the Unit uses to connect to output devices. There are models with NPN and PNP connections.
Maximum load current	The maximum output load current of the Unit. Specifications for each output point and for the Unit are described.
Rated voltage	The rated output voltage of the Unit.
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Free-Run refreshing, synchronous I/O refreshing and output refreshing with specified time stamp are available. In the following table, the following abbreviations are used. Free: Free-Run refreshing Sync: Switching synchronous I/O refreshing and Free-Run refreshing Specified time: Output refreshing with specified time stamp
ON/OFF response time	The delay time for which data in the internal circuit is reflected in the state of output elements of the Unit. It is described according to the ON/OFF sequence.

Data List

Model	Unit configuration data									Summary specifications					
	NX Unit power consumption [W]			Current consumption from I/O power supply [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of points	Internal I/O common	Maximum load current	Rated voltage	I/O refreshing method	ON/OFF response time
	CPU	Coupler	Control												
NX-OD2154	0.85	0.45	---	30	NX bus	70	12	2/18	1/1	2 points	NPN	0.5 A/point, 1 A/Unit	24 VDC	Specified time	300/300 ns max.
NX-OD2258		0.50		40							PNP				
NX-OD3121	0.90	0.55	0.90	10				0/4 bits	0/1	4 points	NPN	0.5 A/point, 2 A/Unit	12 to 24 VDC	Sync	0.1/0.8 ms max.
NX-OD3153		0.50		30									24 VDC		300/300 ns max.
NX-OD3256		0.55		20							PNP				0.5/1.0 ms max.
NX-OD3257	0.85	0.50	0.85	40											300/300 ns max.
NX-OD3268				20	External							2 A/point, 8 A/Unit			0.5/1.0 ms max.
NX-OD4121	0.90	0.55	0.90	10	NX bus			0/2		8 points	NPN	0.5 A/point, 4 A/Unit	12 to 24 VDC		0.1/0.8 ms max.
NX-OD4256	1.00	0.65	1.00	30							PNP		24 VDC		0.5/1.0 ms max.
NX-OD5121				20						16 points	NPN		12 to 24 VDC		0.1/0.8 ms max.
NX-OD5256	1.10	0.70	1.10	40							PNP		24 VDC		0.5/1.0 ms max.

Transistor Output Units (M3 Screw Terminal Block, 30 mm Width)

● Items in the Summary Specifications

Item	Description
Number of points	The number of output points provided by the Unit.
Internal I/O common	This is the polarity that the Unit uses to connect to output devices. There are models with NPN and PNP connections.
Maximum load current	The maximum output load current of the Unit. Specifications for each output point and for the Unit are described.
Rated voltage	The rated output voltage of the Unit.
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Free-Run refreshing, synchronous I/O refreshing and output refreshing with specified time stamp are available. In the following table, the following abbreviations are used. Free: Free-Run refreshing Sync: Switching synchronous I/O refreshing and Free-Run refreshing Specified time: Output refreshing with specified time stamp
ON/OFF response time	The delay time for which data in the internal circuit is reflected in the state of output elements of the Unit. It is described according to the ON/OFF sequence.

● Data List

Model	Unit configuration data									Summary specifications					
	NX Unit power consumption [W]			Current consumption from I/O power supply [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of points	Internal I/O common	Maximum load current	Rated voltage	I/O refreshing method	ON/OFF response time
	CPU	Coupler	Control												
NX-OD5121-1	0.90	0.60	0.90	30	External	125	30	0/2	0/1	16 points	NPN	0.5 A/point, 5 A/Unit	12 to 24 VDC	Sync	0.1/0.8 ms max.
NX-OD5256-1	0.95	0.65	0.95								PNP		24 VDC		0.5/1.0 ms max.

Transistor Output Units (MIL Connector, 30 mm Width)

● Items in the Summary Specifications

Item	Description
Number of points	The number of output points provided by the Unit.
Internal I/O common	This is the polarity that the Unit uses to connect to output devices. There are models with NPN and PNP connections.
Maximum load current	The maximum output load current of the Unit. Specifications for each output point and for the Unit are described.
Rated voltage	The rated output voltage of the Unit.
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Free-Run refreshing, synchronous I/O refreshing and output refreshing with specified time stamp are available. In the following table, the following abbreviations are used. Free: Free-Run refreshing Sync: Switching synchronous I/O refreshing and Free-Run refreshing Specified time: Output refreshing with specified time stamp
ON/OFF response time	The delay time for which data in the internal circuit is reflected in the state of output elements of the Unit. It is described according to the ON/OFF sequence.

● Data List

Model	Unit configuration data									Summary specifications					
	NX Unit power consumption [W]			Current consumption from I/O power supply [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of points	Internal I/O common	Maximum load current	Rated voltage	I/O refreshing method	ON/OFF response time
	CPU	Coupler	Control												
NX-OD5121-5	0.95	0.60	0.95	30	External	80	30	0/2	0/1	16 points	NPN	0.5 A/point, 2 A/Unit	12 to 24 VDC	Sync	0.1/0.8 ms max.
NX-OD5256-5	1.00	0.70	1.00	40		85					PNP		24 VDC		0.5/1.0 ms max.
NX-OD6121-5		0.80		50		90		0/4		32 points	NPN	0.5 A/point, 2 A/common, 4A/Unit	12 to 24 VDC		0.1/0.8 ms max.
NX-OD6256-5	1.30	1.00	1.30	80		95					PNP		24 VDC		0.5/1.0 ms max.

Transistor Output Units (Fujitsu Connector, 30 mm Width)

● Items in the Summary Specifications

Item	Description
Number of points	The number of output points provided by the Unit.
Internal I/O common	This is the polarity that the Unit uses to connect to output devices. There are models with NPN and PNP connections.
Maximum load current	The maximum output load current of the Unit. Specifications for each output point and for the Unit are described.
Rated voltage	The rated output voltage of the Unit.
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Free-Run refreshing, synchronous I/O refreshing and output refreshing with specified time stamp are available. In the following table, the following abbreviations are used. Free: Free-Run refreshing Sync: Switching synchronous I/O refreshing and Free-Run refreshing Specified time: Output refreshing with specified time stamp
ON/OFF response time	The delay time for which data in the internal circuit is reflected in the state of output elements of the Unit. It is described according to the ON/OFF sequence.

● Data List

Model	Unit configuration data									Summary specifications					
	NX Unit power consumption [W]			Current consumption from I/O power supply [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of points	Internal I/O common	Maximum load current	Rated voltage	I/O refreshing method	ON/OFF response time
	CPU	Coupler	Control												
NX-OD6121-6	1.10	0.80	1.10	50	External	90	30	0/4	0/1	32 points	NPN	0.5 A/point, 2 A/common, 4 A/Unit	12 to 24 VDC	Sync	0.1/0.8 ms max.

Relay Output Units (Screwless Clamping Terminal Block, 12 mm Width)

● Items in the Summary Specifications

Item	Description
Number of points	The number of output points provided by the Unit.
Relay type	The type of relay that is connected to the Unit. There are N.O. and N.O. + N.C.
Maximum switching capacity	The maximum value of switchable current of the relay that is connected to the Unit.
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Free-Run refreshing and synchronous I/O refreshing are available. In the following table, the following abbreviations are used. Free: Free-Run refreshing Sync: Switching synchronous I/O refreshing and Free-Run refreshing
ON/OFF response time	The delay time for which data in the internal circuit is reflected in the state of output elements of the Unit. It is described according to the ON/OFF sequence.

● Data List

Model	Unit configuration data									Summary specifications				
	NX Unit power consumption [W]			Current consumption from I/O power supply [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of points	Relay type	Maximum switching capacity	I/O refreshing method	ON/OFF response time
	CPU	Coupler	Control											
NX-OC2633	1.20	0.80	1.20	No consumption	External	65	12	0/2 bit	0/1	2 points, independent contacts	N.O.	250 VAC/2 A (cosΦ = 1), 250 VAC/2 A (cosΦ = 0.4), 24 VDC/2 A, 4 A/Unit	Free	15/15 ms max.
NX-OC2733	1.30	0.95	1.30			70					N.O. + N.C.			

Relay Output Units (Screwless Clamping Terminal Block, 24 mm Width)

● Items in the Summary Specifications

Item	Description
Number of points	The number of output points provided by the Unit.
Relay type	The type of relay that is connected to the Unit. There are N.O. and N.O. + N.C.
Maximum switching capacity	The maximum value of switchable current of the relay that is connected to the Unit.
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Free-Run refreshing and synchronous I/O refreshing are available. In the following table, the following abbreviations are used. Free: Free-Run refreshing Sync: Switching synchronous I/O refreshing and Free-Run refreshing
ON/OFF response time	The delay time for which data in the internal circuit is reflected in the state of output elements of the Unit. It is described according to the ON/OFF sequence.

● Data List

Model	Unit configuration data									Summary specifications				
	NX Unit power consumption [W]			Current consumption from I/O power supply [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of points	Relay type	Maximum switching capacity	I/O refreshing method	ON/OFF response time
	CPU	Coupler	Control											
NX-OC4633	2.00	1.65	2.00	No consumption	External	140	24	0/2	0/1	8 points, independent contacts	N.O.	2 A 250 VAC (cosΦ = 1), 2 A 250 VAC (cosΦ = 0.4), 2 A 24 VDC 8 A/Unit	Free	15/15 ms max.

1-5-3 Digital Mixed I/O Units

DC Input/Transistor Output Units (MIL Connector, 30 mm Width)

● Items in the Summary Specifications

Item	Description
Number of points	The number of output and input points provided by the Unit. The first value in this column is for output, and the latter is for input.
Internal I/O common	This is the polarity that the Unit uses to connect to output and input devices. There are models with NPN and PNP connections. The first value in this column is for output, and the latter is for input.
Maximum load current	The maximum output load current of the Unit. Specifications for each output point and for the Unit are described.
Rated voltage	The rated output voltage and rated input voltage of the Unit. The first value in this column is for output, and the latter is for input.
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Free-Run refreshing, synchronous I/O refreshing, output refreshing with specified time stamp and input refreshing with input changed time are available. In the following table, the following abbreviations are used. Free: Free-Run refreshing Sync: Switching synchronous I/O refreshing and Free-Run refreshing Specified time: Output refreshing with specified time stamp Changed time: Input refreshing with input changed time
ON/OFF response time	For outputs, the delay time for which data in the internal circuit is reflected in the state of output elements of the Unit. For inputs, the delay time for which the status change of the input terminals reaches the internal circuit of the Unit. The input filter time is not included. The first two values in this column are for output, and the latter two are for input.

Data List

Model	Unit configuration data										Summary specifications					
	NX Unit power consumption [W]			Current consumption from I/O power supply [mA]	Input current [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of points	Internal I/O common	Maximum load current	Rated voltage	I/O refreshing method	ON/OFF response time
	CPU	Coupler	Control													
NX-MD6121-5	1.00	0.70	1.00	30	7	External	105	30	2/2	1/1	16 points, 16 points	NPN, for both NPN/PNP	0.5 A/point, 2 A/Unit	12 to 24 VDC, 24 VDC	Sync	0.1/0.8 ms max., 20/400 µs max.
NX-MD6256-5	1.10	0.75	1.10	40			110					PNP, for both NPN/PNP		24 VDC, 24 VDC		0.5/1.0 ms max., 20/400 µs max.

DC Input/Transistor Output Units (Fujitsu Connector, 30 mm Width)

● Items in the Summary Specifications

Item	Description
Number of points	The number of output and input points provided by the Unit. The first value in this column is for output, and the latter is for input.
Internal I/O common	This is the polarity that the Unit uses to connect to output and input devices. There are models with NPN and PNP connections. The first value in this column is for output, and the latter is for input.
Maximum load current	The maximum output load current of the Unit. Specifications for each output point and for the Unit are described.
Rated voltage	The rated output voltage and rated input voltage of the Unit. The first value in this column is for output, and the latter is for input.
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Free-Run refreshing, synchronous I/O refreshing, output refreshing with specified time stamp and input refreshing with input changed time are available. In the following table, the following abbreviations are used. Free: Free-Run refreshing Sync: Switching synchronous I/O refreshing and Free-Run refreshing Specified time: Output refreshing with specified time stamp Changed time: Input refreshing with input changed time
ON/OFF response time	For outputs, the delay time for which data in the internal circuit is reflected in the state of output elements of the Unit. For inputs, the delay time for which the status change of the input terminals reaches the internal circuit of the Unit. The input filter time is not included. The first two values in this column are for output, and the latter two are for input.

● Data List

Model	Unit configuration data										Summary specifications					
	NX Unit power consumption [W]			Current consumption from I/O power supply [mA]	Input current [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of points	Internal I/O common	Maximum load current	Rated voltage	I/O refreshing method	ON/OFF response time
	CPU	Coupler	Control													
NX-MD6121-6	1.00	0.70	1.00	30	7	External	95	30	2/2	1/1	16 points, 16 points	NPN, for both NPN/PNP	0.5 A/point, 2 A/Unit	12 to 24 VDC, 24 VDC	Sync	0.1/0.8 ms max., 20/400 µs max.

1-6 Analog I/O Units

This section describes the data for Analog I/O Units.

1-6-1 Analog Input Units

Analog Input Units (Screwless Clamping Terminal Block, 12 mm Width)

● Items in the Summary Specifications

Item	Description
Number of points	The number of analog input points provided by the Unit.
Input range	The input range of the Unit.
Resolution	The resolution of converted values of the Unit.
Input method	The analog signal input method provided by the Unit. Single-ended input and differential input are available. In the following table, the following abbreviations are used. Single: Single-ended input Diff: Differential input
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Free-Run refreshing and synchronous I/O refreshing are available. In the following table, the following abbreviations are used. Free: Free-Run refreshing Sync: Switching synchronous I/O refreshing and Free-Run refreshing
Conversion time	The time required per input to convert analog input signals of the Unit to the converted values.

Data List

Model	Unit configuration data									Summary specifications					
	NX Unit power consumption [W]			Current consumption from I/O power supply [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of points	Input range	Resolution	Input method	I/O refreshing method	Conversion time
	CPU	Coupler	Control												
NX-AD2203	1.25	0.90	1.25	No consumption	NX bus	70	12	4/0	1/0	2 points	4 to 20 mA	1/8000	Single	Free	250 µs
NX-AD2204					No supply								Diff		
NX-AD2208												1/30000		Sync	10 µs
NX-AD2603	1.35	1.05	1.35		NX bus						-10 to +10 V	1/8000	Single	Free	250 µs
NX-AD2604					No supply								Diff		
NX-AD2608												1/30000		Sync	10 µs
NX-AD3203	1.25	0.90	1.25		NX bus			8/0		4 points	4 to 20 mA	1/8000	Single	Free	250 µs
NX-AD3204					No supply								Diff		
NX-AD3208	1.30	0.95	1.30									1/30000		Sync	10 µs
NX-AD3603	1.35	1.10	1.35		NX bus						-10 to +10 V	1/8000	Single	Free	250 µs
NX-AD3604					No supply								Diff		
NX-AD3608	1.45		1.45									1/30000		Sync	10 µs
NX-AD4203	1.40	1.05	1.40		NX bus			16/0		8 points	4 to 20 mA	1/8000	Single	Free	250 µs
NX-AD4204					No supply								Diff		
NX-AD4208	1.45	1.10	1.45									1/30000		Sync	10 µs
NX-AD4603		1.15			NX bus						-10 to +10 V	1/8000	Single	Free	250 µs
NX-AD4604					No supply								Diff		
NX-AD4608												1/30000		Sync	10 µs

1-6-2 High-speed Analog Input Units

High-speed Analog Input Units (Screwless Clamping Terminal Block, 24 mm Width)

● Items in the Summary Specifications

Item		Description
Analog input section	**Number of points**	The number of analog input points provided by the Unit.
	Input range	The input range of the Unit.
	Resolution	The resolution of converted values of the Unit.
	Input method	The analog signal input method provided by the Unit. Only differential input method is available. In the following table, the following abbreviation is used. Diff: Differential input
	Conversion time	The time required to convert analog input signals of the Unit to the converted values.
Trigger input section	**Number of points**	The number of trigger input points provided by the Unit.
	Internal I/O common	The polarity of the input devices that are connected to the Unit. There are models with NPN and PNP connections.
I/O refreshing method		The I/O refreshing methods that are used by the Unit. Only synchronous I/O refreshing method is available. In the following table, the following abbreviation is used. Sync: Synchronous I/O refreshing

● Data List

Model	Unit configuration data								Summary specifications							
	NX Unit power consumption [W]		Current consumption from I/O power supply [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Analog input section					Trigger input section		I/O refreshing method
	CPU	Coupler							Number of points	Input range	Resolution	Input method	Conversion time	Number of points	Internal I/O common	
NX-HAD401	3.30	2.95	30	NX bus	140	24	136/8*1	4/4	4 points	-10 to 10 V -5 to 5 V 0 to 10 V 0 to 5 V 1 to 5 V 0 to 20 mA 4 to 20 mA	*2	Diff	5 µs per channel	4 points	NPN	Sync
NX-HAD402															PNP	

*1. The input data size will increase if a number greater than 10 is set for the number of sampling in **Ch□ Number of Samplings Setting**. For the Number of Samplings Setting or I/O data specification, refer to the *NX-series Analog I/O Units User's Manual for High-speed Analog Input Units* (Cat. No. W592).

*2. Depending on the input range, the resolution becomes as follows.
For -10 to 10 V and -5 to 5 V: 1/64000
For other ranges: 1/32000

1-6-3 Analog Output Units

Analog Output Units (Screwless Clamping Terminal Block, 12 mm Width)

● Items in the Summary Specifications

Item	Description
Number of points	The number of analog output points provided by the Unit.
Output range	The output range of the Unit.
Resolution	The resolution of converted values of the Unit.
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Free-Run refreshing and synchronous I/O refreshing are available. In the following table, the following abbreviations are used. Free: Free-Run refreshing Sync: Switching synchronous I/O refreshing and Free-Run refreshing.
Conversion time	The time required per output to convert analog output signals of the Unit to the converted values.

● Data List

Model	Unit configuration data									Summary specifications				
	NX Unit power consumption [W]			Current consumption from I/O power supply [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of points	Output range	Resolution	I/O refreshing method	Conversion time
	CPU	Coupler	Control											
NX-DA2203	2.10	1.75	2.10	No consumption	NX bus	70	12	0/4	0/1	2 points	4 to 20 mA	1/8000	Free	250 µs
NX-DA2205												1/30000	Sync	10 µs
NX-DA2603	1.40	1.10	1.40								-10 to +10 V	1/8000	Free	250 µs
NX-DA2605												1/30000	Sync	10 µs
NX-DA3203	2.10	1.80	2.10					0/8		4 points	4 to 20 mA	1/8000	Free	250 µs
NX-DA3205												1/30000	Sync	10 µs
NX-DA3603	1.35	1.25	1.35								-10 to +10 V	1/8000	Free	250 µs
NX-DA3605	1.60		1.60									1/30000	Sync	10 µs

1-6-4 Temperature Input Units

Temperature Input Units (Screwless Clamping Terminal Block, 12 mm Width)

● Items in the Summary Specifications

Item	Description
Number of points	The number of temperature input points provided by the Unit.
Input type	The temperature input type of the Unit.
Conversion time	The time required to convert temperature input signals of the Unit to temperature data.
Resolution	The resolution of the measured values for the Unit. It is defined in °C.
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Only Free-Run refreshing is available. In the following table, the following abbreviation is used. Free: Free-Run refreshing

● Data List

Model	Unit configuration data									Summary specifications				
	NX Unit power consumption [W]			Current consumption from I/O power supply [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of points	Input type	Conversion time	Resolution	I/O refreshing method
	CPU	Coupler	Control											
NX-TS2101	1.25	0.90	1.25	No consumption	No supply	70	12	4/0	1/0	2 points	Thermocouple	250 ms	0.1°C max. *1	Free
NX-TS2102	1.15	0.80	1.15									10 ms	0.01°C max.	
NX-TS2104	0.95		0.95					8/0				60 ms	0.001°C max.	
NX-TS2201	1.25	0.90	1.25					4/0			Resistance thermometer	250 ms	0.1°C max.	
NX-TS2202	1.15	0.75	1.15								Resistance thermometer	10 ms	0.01°C max.	
NX-TS2204	0.90		0.90					8/0			Resistance thermometer	60 ms	0.001°C max.	

*1. The resolution is 0.2°C max. when the input type is R, S, or W.

Temperature Input Units (Screwless Clamping Terminal Block, 24 mm Width)

● Items in the Summary Specifications

Item	Description
Number of points	The number of temperature input points provided by the Unit.
Input type	The temperature input type of the Unit.
Conversion time	The time required to convert temperature input signals of the Unit to temperature data.
Resolution	The resolution of the measured values for the Unit. It is defined in °C.
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Only Free-Run refreshing is available. In the following table, the following abbreviation is used. Free: Free-Run refreshing

● Data List

Model	Unit configuration data									Summary specifications				
	NX Unit power consumption [W]			Current consumption from I/O power supply [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of points	Input type	Conversion time	Resolution	I/O refreshing method
	CPU	Coupler	Control											
NX-TS3101	1.75	1.30	1.75	No consumption	No supply	140	24	8/0	1/0	4 points	Thermocouple	250 ms	0.1°C max. *1	Free
NX-TS3102	1.55	1.10	1.55									10 ms	0.01°C max.	
NX-TS3104	1.45		1.45					16/0				60 ms	0.001°C max.	
NX-TS3201	1.75	1.30	1.75					8/0			Resistance thermometer	250 ms	0.1°C max.	
NX-TS3202	1.50	1.05	1.50			130					Resistance thermometer	10 ms	0.01°C max.	
NX-TS3204	1.45		1.45					16/0			Resistance thermometer	60 ms	0.001°C max.	

*1. The resolution is 0.2°C max. when the input type is R, S, or W.

1-6-5 Heater Burnout Detection Units

This section describes the data for Heater Burnout Detection Units.

● Items in the Summary Specifications

Item		Description
CT input section	**Number of points**	The number of CT inputs supported by the Unit.
	Maximum heater current	The maximum value of the current that can flow through the heater power line on the primary side of the CT that is connected to the Unit.
Control output section	**Number of points**	The number of control output signals supported by the Unit.
	Internal I/O common	The polarity that the Unit uses to connect to output devices. There are models with NPN and PNP connections.
	Maximum load current	The maximum load current for control outputs from the Unit. A specification is given for each control output and each Unit.
	Rated voltage	The rated voltage of the control outputs on the Unit.
I/O refreshing method		The I/O refreshing methods that are used by the Unit. Only Free-Run refreshing is available. In the following table, the following abbreviation is used. Free: Free-Run refreshing

● Data List

Model	Unit configuration data								Summary specifications						
	NX Unit power consumption [W]		Current consumption from I/O power supply [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	CT input section		Control output section				I/O refreshing method
	CPU	Coupler							Number of points	Maximum heater current	Number of points	Internal I/O common	Maximum load current	Rated voltage	
NX-HB3101	1.05	0.75	20	NX bus	70	12	42/18	2/2	4 points	50 A AC	4 points	NPN	0.1 A/point, 0.4 A/Unit	12 to 24 VDC	Free
NX-HB3201												PNP		24 VDC	

1-7 Position Interface Units

This section describes the data for Position Interface Units.

1-7-1 Incremental Encoder Input Units

● Items in the Summary Specifications

Item	Description
Number of channels	The number of encoder input channels of the Unit.
Number of external inputs	The number of external inputs of the Unit.
Maximum response frequency	The maximum frequency of the encoder input.
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Free-Run refreshing, synchronous I/O refreshing and task period prioritized refreshing are available. In the following table, the following abbreviations are used. Free: Free-Run refreshing Sync: Switching synchronous I/O refreshing and Free-Run refreshing Task: Switching Free-Run refreshing, synchronous I/O refreshing and task period prioritized refreshing

● Data List

Model	Unit configuration data								Summary specifications				
	NX Unit power consumption [W]		Current consumption from I/O power supply [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of channels	Number of external inputs	Maximum response frequency	I/O refreshing method	Remarks
	CPU	Coupler											
NX-EC0112	1.15	0.85	0	NX bus	70	12	18/4	1/1	1 (NPN)	3 (NPN)	500 kHz	Sync or Task*1	24 V voltage input
NX-EC0122	1.30	0.95							1 (PNP)	3 (PNP)			
NX-EC0132	1.25	0.95	30*2		130	24	18/4	1/1	1	3 (NPN)	4 MHz		Line receiver input
NX-EC0142	1.50	1.05								3 (PNP)			
NX-EC0212	1.15	0.85	0		70	12	36/8	2/2	2 (NPN)	None	500 kHz		24 V voltage input
NX-EC0222	1.30	0.95							2 (PNP)				

*1. "Sync" is for Units with unit version 1.1 or earlier. "Task" is for Units with unit version 1.2 or later.

*2. When you use the 5-V power supply for an encoder, be sure to include that current too. Refer to the *NX-series Position Interface Units User's Manual* (Cat. No. W524-E1-04 or later) for information on how to convert a 5-V power supply current consumption to a 24-V power supply current consumption.

1-7-2 SSI Input Units

● Items in the Summary Specifications

Item	Description
Number of channels	The number of SSI communications channels of the Unit.
Number of external inputs	The number of external inputs of the Unit.
Maximum baud rate	The maximum baud rate (Maximum frequency of synchronous clock) that you can use for SSI communications.
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Free-Run refreshing, synchronous I/O refreshing and task period prioritized refreshing are available. In the following table, the following abbreviations are used. Free: Free-Run refreshing Sync: Switching synchronous I/O refreshing and Free-Run refreshing Task: Switching Free-Run refreshing, synchronous I/O refreshing and task period prioritized refreshing

● Data List

Model	Unit configuration data								Summary specifications			
	NX Unit power consumption [W]		Current consumption from I/O power supply [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of channels	Number of external inputs	Maximum baud rate	I/O refreshing method
	CPU	Coupler										
NX-ECS112	1.20	0.85	20	NX bus	65	12	10/0	1/0	1	None	2 MHz	Sync or Task*1
NX-ECS212	1.25	0.90	30				20/0	2/0	2			

*1. "Sync" is for Units with unit version 1.1 or earlier. "Task" is for Units with unit version 1.2 or later.

1-7-3 Pulse Output Units

Pulse Output Units (Screwless Clamping Terminal Block, 12 mm Width)

● Items in the Summary Specifications

Item	Description
Number of channels	The number of pulse output channels of the Unit.
Number of external inputs	The number of external inputs of the Unit.
Number of external outputs	The number of external outputs of the Unit.
Maximum pulse output speed	The maximum pulse output speed.
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Synchronous I/O refreshing and task period prioritized refreshing are available. In the following table, the following abbreviations are used. Sync: Synchronous I/O refreshing Task: Switching synchronous I/O refreshing and task period prioritized refreshing*1

*1. For Pulse Output Units, Free-Run refreshing is not available.

● Data List

Model	Unit configuration data								Summary specifications					
	NX Unit power consumption [W]		Current consumption from I/O power supply [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of channels	Number of external inputs	Number of external outputs	Maximum pulse output speed	I/O refreshing method	Remarks
	CPU	Coupler												
NX-PG0112	1.15	0.80	20	NX bus	70	12	18/14	1/1	1 (NPN)	2 (NPN)	1 (NPN)	500 kpps	Sync or Task*1	Open collector output
NX-PG0122	1.30	0.90							1 (PNP)	2 (PNP)	1 (PNP)			

*1. "Sync" is for Units with unit version 1.1 or earlier. "Task" is for Units with unit version 1.2 or later.

Pulse Output Units (MIL Connector, 30 mm Width)

● Items in the Summary Specifications

Item	Description
Number of channels	The number of pulse output channels of the Unit.
Number of external inputs	The number of external inputs of the Unit. The number of inputs for each pulse output channel.
Number of external outputs	The number of external outputs of the Unit. The number of outputs for each pulse output channel.
Maximum pulse output speed	The maximum pulse output speed.
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Synchronous I/O refreshing and task period prioritized refreshing are available. In the following table, the following abbreviations are used. Sync: Synchronous I/O refreshing Task: Switching synchronous I/O refreshing and task period prioritized refreshing*1

*1. For Pulse Output Units, Free-Run refreshing is not available.

● Data List

Model	Unit configuration data								Summary specifications					
	NX Unit power consumption [W]		Current consumption from I/O power supply [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of channels	Number of external inputs	Number of external outputs	Maximum pulse output speed	I/O refreshing method	Remarks
	CPU	Coupler												
NX-PG0232-5	1.55	1.20	50	External	110	30	34/26	2/2	2	5 inputs per channel (NPN)	3 inputs per channel (NPN)	4Mpps	Task	Line driver output
NX-PG0242-5		1.20	50		110					5 inputs per channel (PNP)	3 inputs per channel (PNP)			
NX-PG0332-5	1.65	1.30	50/CN*1		150		68/52	4/4	4	5 inputs per channel (NPN)	3 inputs per channel (NPN)			
NX-PG0342-5		1.30	50/CN*1		150					5 inputs per channel (PNP)	3 inputs per channel (PNP)			

*1. The current consumption from I/O power supply for one MIL connector.

1-8 Communications Interface Units

This section describes the data for Communications Interface Units.

● Items in the Summary Specifications

Item	Description
External connection terminals	The shape of the external connection terminals of the Unit.
Port specifications	The serial communications port specifications of the Unit.
Number of ports	The number of serial ports of the Unit.
Communications protocol	The serial communications protocol supported by the Unit.
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Only Free-Run refreshing is available. In this table, the following abbreviation is used. Free: Free-Run refreshing

● Data List

Model	Unit configuration data								Summary specifications				
	NX Unit power consumption [W]		Current consumption from I/O power supply [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	External connection terminals	Port specifications	Number of ports	Communications protocol	I/O refreshing method
	CPU	Coupler											
NX-CIF101	1.10	0.90	No consumption	No supply	66	12	30/28	1/1	Screwless clamping terminal block	RS-232C	1	No-protocol	Free
NX-CIF105	1.65	1.45			69					RS-422A/485			
NX-CIF210	1.15	0.95			91	30	60/56	2/2	D-sub connector	RS-232C	2		

1-9 Load Cell Input Unit

This section describes the data for the Load Cell Input Unit.

● Items in the Summary Specifications

Item	Description
Number of points	The number of load cell input points provided by the Unit.
Conversion cycle	The time required to convert load cell input signals of the Unit to measurement values.
Load cell excitation voltage	The excitation voltage that is supplied from the Unit to the load cell. The output current of the load cell excitation voltage that the Unit can supply is also listed.
Input range	The input range of the Unit.
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Free-Run refreshing, synchronous I/O refreshing and task period prioritized refreshing are available. In the following table, the following abbreviations are used. Free: Free-Run refreshing Sync: Switching synchronous I/O refreshing and Free-Run refreshing Task: Switching Free-Run refreshing, synchronous I/O refreshing and task period prioritized refreshing

● Data List

Model	Unit configuration data								Summary specifications				
	NX Unit power consumption [W]		Current consumption from I/O power supply [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of points	Conversion cycle	Load cell excitation voltage	Input range	I/O refreshing method
	CPU	Coupler											
NX-RS1201	2.05	1.70	No consumption	No supply	70	12	8/2	1/1	1 point	125 µs	5 VDC ± 10%, Output current: 60 mA max.	-5.0 to 5.0 mV/V	Task

1-10 IO-Link Master Unit

This section describes the data for the IO-Link Master Unit.

● Items in the Summary Specifications

Item		Description
Number of ports		The number of ports for I/O connection on the Unit.
Internal I/O common	**Digital inputs (in SIO (DI) Mode)**	The polarity that the Unit uses to connect to input devices in SIO (DI) Mode.
	Digital outputs (in SIO (DO) Mode)	The polarity that the Unit uses to connect to output devices in SIO (DO) Mode.
	Digital inputs for pin 2 (in IO-Link Mode)	The polarity that the Unit uses to connect to input devices for digital inputs for pin 2 in IO-Link Mode.
I/O refreshing method		The I/O refreshing methods that are used by the Unit. Free-Run refreshing, synchronous I/O refreshing and task period prioritized refreshing are available. In the following table, the following abbreviations are used. Free: Free-Run refreshing Sync: Switching synchronous I/O refreshing and Free-Run refreshing Task: Switching Free-Run refreshing, synchronous I/O refreshing and task period prioritized refreshing

● Data List

Model	Unit configuration data								Summary specifications				
	NX Unit power consumption [W]		Current consumption from I/O power supply [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of ports	Internal I/O common			I/O refreshing method
	CPU	Coupler								Digital inputs (in SIO (DI) Mode)	Digital outputs (in SIO (DO) Mode)	Digital inputs for pin 2 (in IO-Link Mode)	
NX-ILM400	1.05	0.80	50	NX bus	67	12	*1	4/4	4	PNP	PNP	PNP	Free

*1. The default values are different depend on the unit version.
Version 1.0: 14/8
Version 1.1 or later: 16/10

1-11 Temperature Control Units

This section describes the data for Temperature Control Units.

● Items in the Summary Specifications

Item		Description
Number of channels, Input type, Conversion time		• Number of channels The number of control loops that are provided on the Unit.*1 • Input type The input type of the temperature input that are provided on the Unit. In the following table, the following abbreviations are used. Universal: Thermocouple and Platinum resistance thermometer • Conversion time The time required to convert temperature input signals of the Unit to temperature data.
Output	**Output type**	The control outputs that are provided by the Unit. In the following table, the following abbreviation is used. Voltage: Voltage output (for driving SSR) Current: Linear current output
	Number of output points per channel	The number of output points per channel on the Unit.
Number of CT input points per channel		The number of CT inputs per channel on the Unit.
Control type		The control types that are provided by the Unit. In the following table, the following abbreviation is used. Standard: Standard control Heating/cooling: Heating/cooling control
I/O refreshing method		The I/O refreshing methods that are used by the Unit. Only Free-Run refreshing is available. In the following table, the following abbreviation is used. Free: Free-Run refreshing

*1. One temperature input is provided for each channel. For example, the Unit with two channels has two inputs.

Data List

Model	Unit configuration data								Summary specifications					
	NX Unit power consumption [W]		Current consumption from I/O power supply [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of channels, Input type, Conversion time	Output		Number of CT input points per channel	Control type	I/O refreshing method
	CPU	Coupler								Output type	Number of output points per channel			
NX-TC2405	1.45	1.10	20	NX bus	75	12	74/92	1/1	2 channels, Universal, 50 ms	Voltage	1 point per channel	1 point per channel	Standard	Free
NX-TC2406	1.25	0.95					50/84					None		
NX-TC2407	1.30	1.00					74/96				2 points per channel		Heating/cooling	
NX-TC2408	1.25	0.95					50/84			Current	1 point per channel		Standard	
NX-TC3405	1.80	1.35			140	24	146/184		4 channels, Universal, 50 ms	Voltage		1 point per channel		
NX-TC3406	1.70	1.25					98/168					None		
NX-TC3407	1.75	1.30					146/192				2 points per channel		Heating/cooling	
NX-TC3408	1.65	1.25	30				98/168			Current	1 point per channel		Standard	

1-12 RFID Units

This section describes the data for RFID Units.

● Items in the Summary Specifications

Item	Description
External connection terminals	The shape of the external connection terminals of the Unit.
Number of connected antennas	The number of antennas connected to the Unit.
Communications protocol	The communications protocol supported by the Unit.
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Only Free-Run refreshing is available. In the following table, the following abbreviations are used. Free: Free-Run refreshing

● Data List

Model	Unit configuration data									Summary specifications			
	NX Unit power consumption [W]		Current consumption from I/O power supply [mA]		I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	External connection terminals	Number of connected antennas	Communications protocol	I/O refreshing method
	CPU	Coupler											
NX-V680C1	1.00	0.90	V680-HA63□ connection	210	NX bus	120	30	28/30	1/1	FG terminal block (1 terminal)	1	ISO/IEC18000-3 (15693)	Free
			V680-H01-V2 connection	250									
NX-V680C2			V680-HA63□ connection	380		130		56/60	2/2		2		

1-13 System Units

This section describes the data for System Units.

1-13-1 Additional NX Unit Power Supply Unit

● Items in the Summary Specifications

Item	Description
Rated power supply voltage	The rated voltage that is supplied to the Unit.
NX Unit power supply capacity	The amount of power that the Unit can supply to the NX Units. The power consumption of the Unit from the NX Unit power supply is not included.

● Data List

Model	Unit configuration data									Summary specifications	
	NX Unit power consumption [W]			Current consumption from I/O power supply [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Rated power supply voltage	NX Unit power supply capacity*1
	CPU	Coupler	Control								
NX-PD1000	0.85	0.45	0.85	No consumption	No supply	65	12	0/0	0/0	24 VDC	10 W

*1. The NX Unit power supply capacity is restricted by the temperature or installation orientation. For details, refer to *A-1 NX Unit Power Supply and I/O Power Supply Capacity* on page A-2.

1-13-2 Additional I/O Power Supply Unit

● Items in the Summary Specifications

Item	Description
Rated power supply voltage	The rated voltage of the I/O power supply that is supplied to the Unit.
Maximum current of I/O power supply	The maximum value of the current supplied from the I/O power supply that the Unit can supply to the NX Units through the NX bus connectors.

● Data List

Model	Unit configuration data								Summary specifications	
	NX Unit power consumption [W]			Current consumption from I/O power supply [mA]	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Rated power supply voltage	Maximum current of I/O power supply
	CPU	Coupler	Control							
NX-PF0630	0.85	0.45	0.85	10	65	12	0/0	0/0	5 to 24 VDC	4 A
NX-PF0730										10 A*1

*1. When an Additional I/O Power Supply Unit is connected to the CPU Rack of a CPU Unit, the maximum I/O power supply current value may be smaller than that of the Additional I/O Power Supply Unit. For example, the maximum I/O power supply current for the CPU Rack of an NX1P2 CPU Unit is 4 A. Refer to the hardware user's manual for the CPU Unit to which NX Units are connected for information on the restrictions for the CPU Rack of the CPU Unit.

1-13-3 I/O Power Supply Connection Unit

● Items in the Summary Specifications

Item	Description
Number of I/O power supply terminals	The type (IOV/IOG) and number of I/O power supply terminals of the Unit.
Current capacity of I/O power supply terminal	The current capacity of the I/O power supply terminals of the Unit.

● Data List

Model	Unit configuration data									Summary specifications	
	NX Unit power consumption [W]			Current consumption from I/O power supply [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of I/O power supply terminals	Current capacity of I/O power supply terminal
	CPU	Coupler	Control								
NX-PC0020	0.85	0.45	0.85	No consumption	NX bus	65	12	0/0	0/0	IOV: 16 terminals	4 A/terminal
NX-PC0010										IOG: 16 terminals	
NX-PC0030										IOV: 8 terminals IOG: 8 terminals	

1-13-4 Shield Connection Unit

● Items in the Summary Specifications

Item	Description
Number of shield terminals	The number of terminals of the SHLD terminal of the Unit.

● Data List

Model	Unit configuration data									Summary specifications
	NX Unit power consumption [W]			Current consumption from I/O power supply [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of shield terminals
	CPU	Coupler	Control							
NX-TBX01	0.85	0.45	0.85	No consumption	No supply	65	12	0/0	0/0	14 terminals

1-14 Safety Control Units

This section describes the data for Safety Control Units.

1-14-1 Safety CPU Unit

● Items in the Summary Specifications

Item	Description
Maximum number of safety I/O points	This is the number of safety I/O points that the Unit can control.
Program capacity	This is the capacity of the user program in the Unit.
Number of safety master connections	This is the number of safety master connections that the Unit can have through Safety over EtherCAT (FSoE). You can connect one Safety I/O Unit for each safety master connection.
Number of safety I/O connections	This is the number of safety I/O connections for the Unit. The value is the total number of CIP Safety originator connections, CIP Safety target connections, and FSoE master connections.
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Only Free-Run refreshing is available. In the following table, the following abbreviation is used. Free: Free-Run refreshing

● Data List

Model	Unit configuration data									Summary specifications				
	NX Unit power consumption [W]			Current consumption from I/O power supply [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Maximum number of safety I/O points	Program capacity	Number of safety master connections	Number of safety I/O connections	I/O refreshing method
	CPU	Coupler	Control											
NX-SL3300	1.25	0.90	---	No consumption	No supply	75	30	0/0 to 512/512	2/2	256 points	512 KB	32	---	Free
NX-SL3500								0/0 to 1024/1024		1024 points	2048 KB	128	---	
NX-SL5500	3.35	---	3.35			130		0/0 to 2048/2048	3/3	1024 points	2048 KB	---	128	
NX-SL5700								0/0 to 2048/2048	3/3	2032 points	4096 KB	---	254	

1-14-2 Safety Input Units

● Items in the Summary Specifications

Item	Description
Number of safety input points	This is the number of safety input points on the Unit.
Number of test output points	This is the number of test output points on the Unit. The test output points are used with the safety input terminals.
Internal I/O common	This is the polarity that the Unit uses to connect to input devices. There are models with NPN and PNP connections.
Rated input voltage	This is the rated input voltage of the Unit.
OMRON Special Safety Input Devices	This tells whether the Unit supports the connection of OMRON Special Safety Input Devices (D40A Non-contact Door Switches, E3FS Single Beam Safety Sensors, etc.). In the following table, the following abbreviations are used. Yes: Can be connected No: Cannot be connected
Number of safety slave connections	This is the number of safety slave connections that the Unit can have through Safety over EtherCAT (FSoE). You can connect to one Safety CPU Unit for each safety slave connection.
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Only Free-Run refreshing is available. In the following table, the following abbreviation is used. Free: Free-Run refreshing

● Data List

Model	Unit configuration data										Summary specifications						
	NX Unit power consumption [W]			Current consumption from I/O power supply [mA]	Input current [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of safety input points	Number of test output points	Internal I/O common	Rated input voltage	OMRON Special Safety Input Devices	Number of safety slave connections	I/O refreshing method
	CPU	Coupler	Control														
NX-SID800	1.10	0.75	1.10	20	3.0	NX bus	70	12	10/10	2/2	8 points	2 points	PNP	24 VDC	No	1	Free
NX-SIH400	1.10	0.70	1.10		4.5				8/8		4 points				Yes		

1-14-3 Safety Output Units

● Items in the Summary Specifications

Item	Description
Number of safety output points	This is the number of safety output points on the Unit.
Internal I/O common	This is the polarity that the Unit uses to connect to output devices. There are models with NPN and PNP connections.
Maximum load current	This is the maximum load current for outputs on the Unit. A specification is given for each output and each Unit.
Rated voltage	This is the rated voltage of the outputs on the Unit.
Number of safety slave connections	This is the number of safety slave connections that the Unit can have through Safety over EtherCAT (FSoE). You can connect to one Safety CPU Unit for each safety slave connection.
I/O refreshing method	The I/O refreshing methods that are used by the Unit. Only Free-Run refreshing is available. In the following table, the following abbreviation is used. Free: Free-Run refreshing

● Data List

Model	Unit configuration data									Summary specifications					
	NX Unit power consumption [W]			Current consumption from I/O power supply [mA]	I/O power supply method	Weight [g]	Width [mm]	I/O data size [byte]	Number of I/O entry mappings	Number of safety output points	Internal I/O common	Maximum load current	Rated voltage	Number of safety slave connections	I/O refreshing method
	CPU	Coupler	Control												
NX-SOD400	1.10	0.75	1.10	60	NX bus	65	12	8/8	2/2	4 points	PNP	0.5 A/point, 2 A/Unit	24 VDC	1	Free
NX-SOH200	1.05	0.70	1.05	40						2 points		2.0 A/point, 4.0 A/Unit at 40°C, 2.5 A/Unit at 55°C			

A

Appendices

This section describes NX Unit power supply and I/O power supply capacity, NX Units that have restrictions in the communications cycles, and specific values of NX Units for calculating performance.

A-1 NX Unit Power Supply and I/O Power Supply Capacity A-2
- A-1-1 EtherCAT Coupler Unit A-2
- A-1-2 EtherNet/IP Coupler Unit A-3
- A-1-3 Additional NX Unit Power Supply Unit A-4
- A-1-4 Additional I/O Power Supply Unit A-4

A-2 NX Units That Have Restrictions in Communications Cycles A-5
- A-2-1 NX Units That Have Restrictions in Communications Cycles in DC Mode A-5
- A-2-2 NX Units That Have Restrictions in Communications Cycles in Free-Run Mode A-5

A-3 Specific Values of NX Units for Performance Calculation A-6
- A-3-1 Specific Values of NX Units Operate with Synchronous I/O Refreshing A-6
- A-3-2 Specific Values of NX Units Operate with Task Period Prioritized Refreshing A-10
- A-3-3 Specific Values of NX Units Operate with Time Stamp Refreshing A-12
- A-3-4 Specific Values of NX Units Operate with Free-Run Refreshing A-13

A-4 List of Screwless Clamping Terminal Block Models A-16
- A-4-1 Model Notation A-16
- A-4-2 List of Terminal Block Models A-16
- A-4-3 Applicable Screwless Clamping Terminal Blocks for Each Unit Model A-17

A-5 Version Information with CPU Units A-20
- A-5-1 Relationship between Unit Versions of Units A-20
- A-5-2 Support Functions of the CPU Units and Restrictions on the NX Units A-27

A-6 Version Information with Communications Coupler Units A-29
- A-6-1 Connection to an EtherCAT Coupler Unit A-29
- A-6-2 Connection to an EtherNet/IP Coupler Unit A-37
- A-6-3 Support Functions of the Communications Coupler Units and Restrictions on the NX Units A-45

A-7 Version Information with Communication Control Units A-50
- A-7-1 Relationship between Unit Versions of Units A-50
- A-7-2 Support Functions of the Communication Control Units and Restrictions on the NX Units A-54

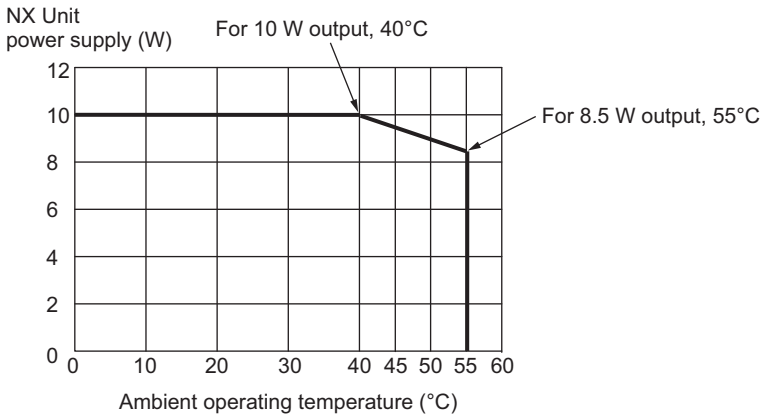
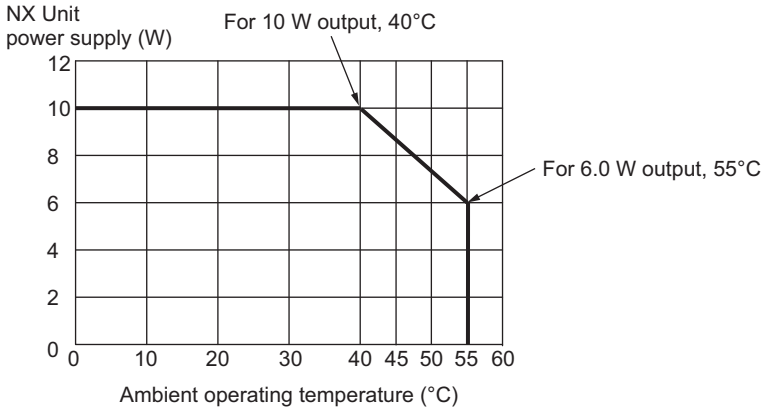
A-1 NX Unit Power Supply and I/O Power Supply Capacity

Each Unit that supplies NX Unit power or I/O power to the CPU Rack or Slave Terminal has different restrictions on the installation orientation and maximum output capacity. This section describes the restrictions on each Unit.

The Units shown in this section are only the ones with certain restrictions.

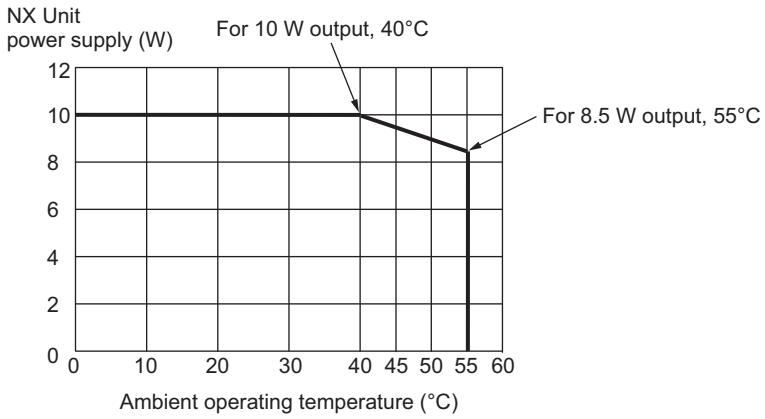
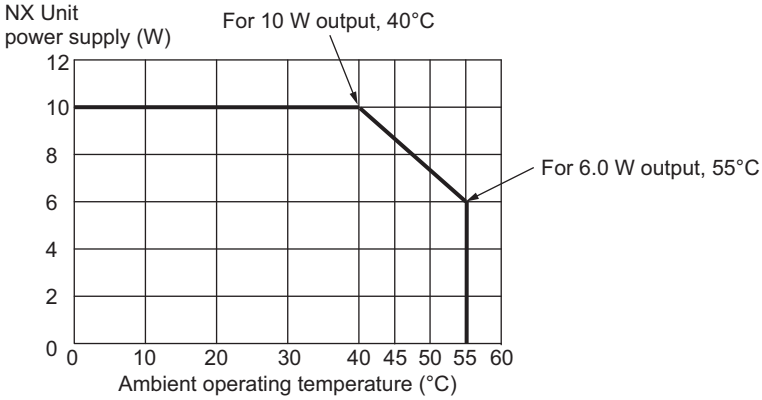
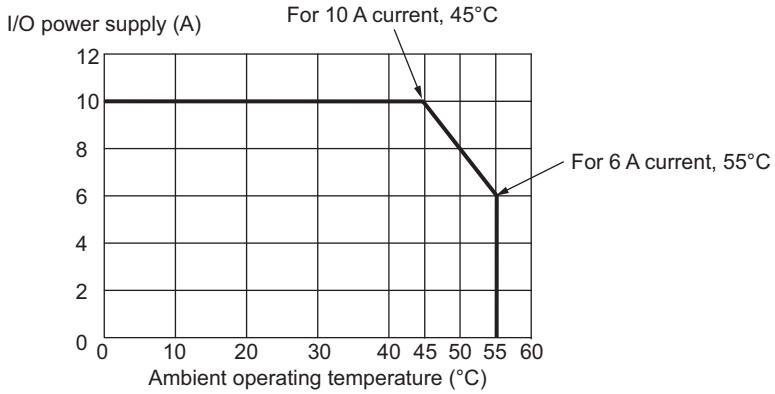
A-1-1 EtherCAT Coupler Unit

● NX-ECC201/ECC202/ECC203

Item	Specification
NX Unit power supply capacity	10 W max. (Refer to *Installation orientation and restrictions* for details.)
Installation orientation and restrictions	Installation orientation: Possible in 6 orientations. Restrictions: • For upright installation  • For any installation other than upright 

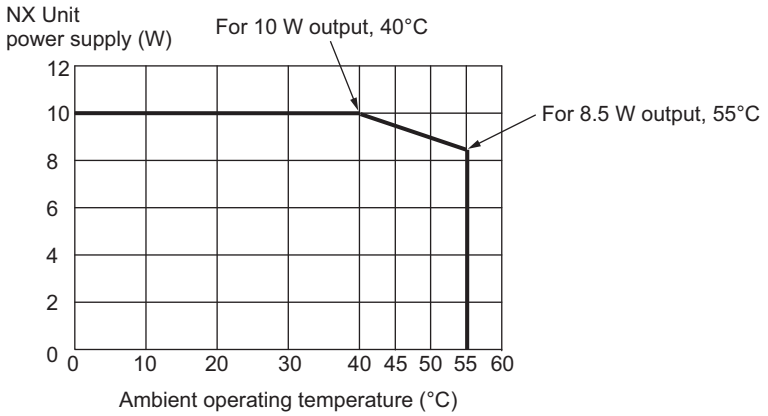
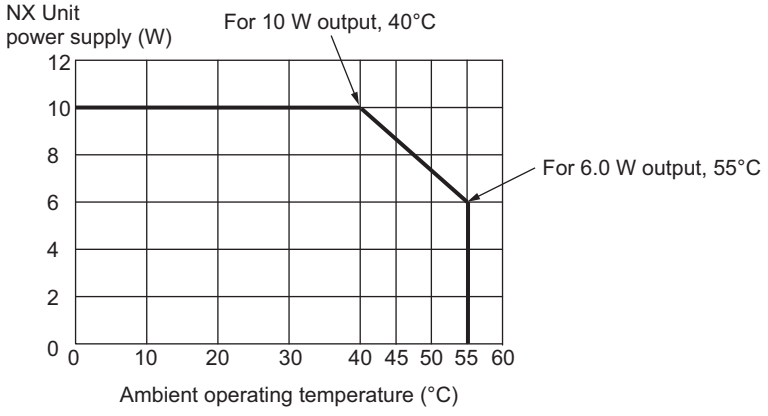
A-1-2 EtherNet/IP Coupler Unit

● NX-EIC202

Item	Specification
NX Unit power supply capacity	10 W max. (Refer to *Installation orientation and restrictions* for details.)
Maximum current of I/O power supply	10 A (Refer to *Installation orientation and restrictions* for details.)
Installation orientation and restrictions	Installation orientation: Possible in 6 orientations. Restrictions: • For upright installation The following restrictions apply to the NX Unit power supply.  • For any installation other than upright The following restrictions apply respectively to the NX Unit power supply and I/O power supply.  

A-1-3 Additional NX Unit Power Supply Unit

● NX-PD1000

Item	Specification
NX Unit power supply capacity	10 W max. (Refer to *Installation orientation and restrictions* for details.)
Installation orientation and restrictions	Installation orientation: • Connected to a CPU Unit or Communication Control Unit Possible in upright installation. • Connected to a Communications Coupler Unit Possible in 6 orientations. Restrictions: As shown in the following. • For upright installation  • For any installation other than upright 

A-1-4 Additional I/O Power Supply Unit

When this Unit is used on the CPU Rack of the NX1P2 CPU Unit, the following items must be 4 A or lower regardless of the Unit model.

- Maximum current of I/O power supply
- Current capacity of I/O power supply terminals

A-2 NX Units That Have Restrictions in Communications Cycles

This section describes the NX Units that have restrictions in the communications cycles in DC Mode and Free-Run Mode for EtherCAT Slave Terminals that you can set.

A-2-1 NX Units That Have Restrictions in Communications Cycles in DC Mode

The following table gives the NX Units that have restrictions in the communications cycles in DC Mode for EtherCAT Slave Terminals that you can set. For information on the communications cycles that you can set, refer to *Refresh Cycles* in the user's manuals for the NX Units.

NX Units	User's Manual
Position Interface Units	NX-series Position Interface Units User's Manual (Cat. No. W524-E1-06 or later)
Load Cell Input Unit	NX-series Load Cell Input Unit User's Manual (Cat. No. W565)
High-speed Analog Input Units	NX-series Analog I/O Units User's Manual for High-speed Analog Input Units (Cat. No. W592)

A-2-2 NX Units That Have Restrictions in Communications Cycles in Free-Run Mode

The following table gives the NX Units that have restrictions in the communications cycles in Free-Run Mode for EtherCAT Slave Terminals that you can set. For information on the communications cycles that you can set, refer to *Refresh Cycles* in the user's manuals for the NX Units.

NX Units	User's Manual
Position Interface Units	NX-series Position Interface Units User's Manual (Cat. No. W524-E1-06 or later)

A-3 Specific Values of NX Units for Performance Calculation

This section describes the specific values of NX Units used for calculating the I/O response times of NX Units connected to the CPU Unit or the Communication Control Unit and the process data communications performance of EtherCAT Slave Terminals.

Refer to the *NJ/NX-series CPU Unit Software User's Manual* (Cat. No. W501) for details on the I/O response times of NX Units connected to the CPU Unit.

Refer to the user's manual for the connected Communications Coupler Unit for details on calculating the process data communications performance of Slave Terminals.

Refer to the user's manual for the Communication Control Unit for details on the I/O response times of NX Units connected to the Communication Control Unit.

Refer to the user's manuals for the individual NX Units for further information if specific values for your NX Units are not provided in this manual. The refreshing methods that you can use depend on the Unit to which the NX Unit is connected. For available refreshing methods, refer to the user's manual for the CPU Unit, Communications Coupler Unit, or Communication Control Unit to which the NX Unit is connected.

A-3-1 Specific Values of NX Units Operate with Synchronous I/O Refreshing

The following table gives specific values for each element of NX Units that operate with synchronous I/O refreshing.

● Input Data Processing Time of NX Unit (Tnx-InProc)

NX Units		Tnx-InProc	Remarks
Type	Model		
Digital Input Units	Models support synchronous I/O refreshing	0 [µs]	–
Analog Input Units		0 [µs]	–
Digital Mixed I/O Units		0 [µs]	The value for digital inputs.
Incremental Encoder Input Units		85 [µs]	The value for pulse inputs and external inputs.
SSI Input Units		65 [µs]	–
Pulse Output Units	NX-PG0122 /-PG0112	45 [µs]	The values for status and other input data processing and for external inputs.*1
	NX-PG0232-5 /-PG0242-5	21 [µs]	
	NX-PG0332-5 /-PG0342-5	31 [µs]	
Load Cell Input Unit	NX-RS1201	65 [µs]	–
High-speed Analog Input Units	NX-HAD401 /-HAD402	30 [µs]	The value for analog inputs.

*1. Pulse Output Units process status and other input data. Therefore, if there are Pulse Output Units that operate with synchronous I/O refreshing in the configuration, they must be included in the Tmax-InProc calculation regardless of whether the external inputs are used.

Output Data Processing Time of NX Unit (Tnx-OutProc)

NX Units		Tnx-OutProc*1	Remarks
Type	Model		
Digital Output Units	Models support synchronous I/O refreshing	0 [µs]	–
Digital Mixed I/O Units		0 [µs]	The value for digital outputs.
Analog Output Units		Conversion time × Number of points	The conversion time and number of points depend on the model of the Unit.
Incremental Encoder Input Units		40 [µs]	This is the value for command values and other output data processing.*2
SSI Input Units		40 [µs]	
Pulse Output Units	NX-PG0122 /-PG0112	70 [µs]	The value for pulse outputs and external outputs.
	NX-PG0232-5 /-PG0242-5	95 [µs]	
	NX-PG0332-5 /-PG0342-5	160 [µs]	
Load Cell Input Unit	NX-RS1201	35 [µs]	This is the value for operation commands and other output data processing.*3
High-speed Analog Input Units	NX-HAD401 /-HAD402	15 [µs]	This is the value for operation commands and other output data processing.*4

*1. If only a definition is given in the above table, refer to the data of the NX Units in *Section 1 Data List* or the manuals for the specific NX Units for the values of the items.

*2. Incremental Encoder Input Units and SSI Input Units perform processing for command values and other output data. Therefore, if there are any of these Units that operate with synchronous I/O refreshing in the configuration, they must be included in the Tmax-OutProc calculations.

*3. The Load Cell Input Unit performs processing for operation commands and other output data. Therefore, if there is a Load Cell Input Unit that operates with synchronous I/O refreshing in the configuration, the Unit must be included in the Tmax-OutProc calculations.

*4. High-speed Analog Input Units perform processing for operation commands and other output data. Therefore, if there are High-speed Analog Input Units that operate with synchronous I/O refreshing in the configuration, the Units must be included in the Tmax-OutProc calculations.

Input Delay Time of NX Unit (Tnx-Indelay)

NX Units		Tnx-Indelay*1	Remarks
Type	Model		
Digital Input Units	Models support synchronous I/O refreshing	ON/OFF response time + Input filter time	The ON/OFF response time depends on the model of the Unit. You can set the input filter time for each Unit.
Digital Mixed I/O Units		ON/OFF response time + Input filter time	This is applicable to the digital inputs. The ON/OFF response time depends on the model of the Unit. You can set the input filter time for each Unit.
Analog Input Units		Conversion time × Number of points	The conversion time and number of points depend on the model of the Unit.
Incremental Encoder Input Units		0 [µs]	The value for pulse inputs and external inputs.
SSI Input Units		0 [µs]	–
Pulse Output Units	NX-PG0122 /-PG0112	0 [µs]	This is the value for external inputs. The ON/OFF response time of the external inputs is included in Tnx-InProc.
	NX-PG0232-5 /-PG0242-5 /-PG0332-5 /-PG0342-5	0 [µs]	The value for external inputs 0 and 1. The ON/OFF response time of external inputs 0 and 1 is included in Tnx-InProc.*2
		ON/OFF response time	This is applicable to external inputs 2 through 4.
Load Cell Input Unit	NX-RS1201	0 [µs]	–
High-speed Analog Input Units	NX-HAD401 /-HAD402	0 [µs]	The value for analog inputs.

*1. If only a definition is given in the above table, refer to the data of the NX Units in *Section 1 Data List* or the manuals for the specific NX Units for the values of the items.

*2. The value for external input 0 is the same as one given in the above table even if it is used in the model with a line receiver input.

Output Delay Time of NX Unit (Tnx-Outdelay)

NX Units		Tnx-Outdelay*1	Remarks
Type	Model		
Digital Output Units	Models support synchronous I/O refreshing	ON/OFF response time	The ON/OFF response time depends on the model of the Unit.
Digital Mixed I/O Units		ON/OFF response time	This is applicable to the digital outputs. The ON/OFF response time depends on the model of the Unit.
Analog Output Units		0 [µs]	–

NX Units		Tnx-Outdelay*1	Remarks
Type	Model		
Pulse Output Units	NX-PG0122 /-PG0112	0 [µs]	The value for pulse outputs and external outputs. The ON/OFF response time of the external outputs is included in Tnx-OutProc.
	NX-PG0232-5 /-PG0332-5	0 [µs]	The value for pulse outputs and external output 0. The ON/OFF response time of external output 0 is included in Tnx-OutProc.
		ON/OFF response time	This is applicable to external outputs 1 and 2.
	NX-PG0242-5 /-PG0342-5	0 [µs]	The value for pulse outputs.
		ON/OFF response time	This is applicable to external outputs. The ON/OFF response time depends on the output port.

*1. If only a definition is given in the above table, refer to the data of the NX Units in *Section 1 Data List* or the manuals for the specific NX Units for the values of the items.

A-3-2 Specific Values of NX Units Operate with Task Period Prioritized Refreshing

The following table gives specific values for each element of NX Units that operate with input prioritized refreshing or output prioritized refreshing for task period prioritized refreshing.

● Input Data Processing Time of NX Unit (Tnx-InProc)

NX Units		Tnx-InProc	Remarks
Type	Model		
Incremental Encoder Input Units*1	Models support task period prioritized refreshing	85 [µs]	The value for pulse inputs and external inputs.
SSI Input Units*1		65 [µs]	–
Load Cell Input Unit*1	NX-RS1201	65 [µs]	–

*1. The Units operate with input prioritized refreshing.

● Output Data Processing Time of NX Unit (Tnx-OutProc)

NX Units		Tnx-OutProc	Remarks
Type	Model		
Pulse Output Units*1	NX-PG0122 /-PG0112	70 [µs]	The value for pulse outputs and external outputs.
	NX-PG0232-5 /-PG0242-5	95 [µs]	
	NX-PG0332-5 /-PG0342-5	160 [µs]	

*1. The Units operate with output prioritized refreshing.

● Input Delay Time of NX Unit (Tnx-Indelay)

NX Units		Tnx-Indelay	Remarks
Type	Model		
Incremental Encoder Units*1	Models support task period prioritized refreshing	0 [µs]	The value for pulse inputs and external inputs.
SSI Input Units*1		0 [µs]	–
Load Cell Input Unit*1	NX-RS1201	0 [µs]	–

*1. The Units operate with input prioritized refreshing.

● Output Delay Time of NX Unit (Tnx-Outdelay)

NX Units		Tnx-Outdelay	Remarks
Type	Model		
Pulse Output Units*1	NX-PG0122 /-PG0112	0 [µs]	The same value applies to external outputs. The ON/OFF response time of the external outputs is included in Tnx-OutProc.
	NX-PG0232-5 /-PG0332-5	0 [µs]	The value for pulse outputs and external output 0. The ON/OFF response time of external output 0 is included in Tnx-OutProc.
		ON/OFF response time	This is applicable to external outputs 1 and 2.
	NX-PG0242-5 /-PG0342-5	0 [µs]	The value for pulse outputs.
		ON/OFF response time	This is applicable to external outputs. The ON/OFF response time depends on the output port.

*1. The Units operate with output prioritized refreshing.

A-3-3 Specific Values of NX Units Operate with Time Stamp Refreshing

The following table gives specific values for each element of NX Units that operate with input refreshing with input changed time for time stamp refreshing or output refreshing with specified time stamp.

● Input Data Processing Time of NX Unit (Tnx-InProc)

NX Units		Tnx-InProc	Remarks
Type	Model		
Digital Input Units	Models support input refreshing with input changed time	0 [µs]	–

● Output Data Processing Time of NX Unit (Tnx-OutProc)

NX Units		Tnx-OutProc	Remarks
Type	Model		
Digital Output Units	Models support output refreshing with specified time stamp	0 [µs]	–

● Input Delay Time of NX Unit (Tnx-Indelay)

NX Units		Tnx-Indelay*1	Remarks
Type	Model		
Digital Input Units	Models support input refreshing with input changed time	ON/OFF response time	The ON/OFF response time depends on the model of the Unit.

*1. If only a definition is given in the above table, refer to the data of the NX Units in *Section 1 Data List* or the manuals for the specific NX Units for the values of the items.

● Output Delay Time of NX Unit (Tnx-Outdelay)

NX Units		Tnx-Outdelay*1	Remarks
Type	Model		
Digital Output Units	Models support output refreshing with specified time stamp	ON/OFF response time	The ON/OFF response time depends on the model of the Unit.

*1. If only a definition is given in the above table, refer to the data of the NX Units in *Section 1 Data List* or the manuals for the specific NX Units for the values of the items.

A-3-4 Specific Values of NX Units Operate with Free-Run Refreshing

The following table gives specific values for each element of NX Units that operate with Free-Run refreshing.

● Input Data Processing Time of NX Unit (Tnx-InProc)

NX Units		Tnx-InProc*1	Remarks
Type	Model		
Digital Input Units	Models support Free-Run refreshing	0 [µs]	–
Digital Mixed I/O Units		0 [µs]	The value for digital inputs.
Analog Input Units		0 [µs]	–
Temperature Input Units		Conversion time	–
Incremental Encoder Input Units		85 [µs]	The value for pulse inputs and external inputs.
SSI Input Units		65 [µs]	–
Load Cell Input Unit	NX-RS1201	65 [µs]	–
Heater Burnout Detection Units	NX-HB3101 /-HB3201	10 [ms]	This is applicable to the CT inputs.
Temperature Control Units	All models	50 [ms]	This is the value for measured value and CT input.

*1. If only a definition is given in the above table, refer to the data of the NX Units in *Section 1 Data List* or the manuals for the specific NX Units for the values of the items.

● Output Data Processing Time of NX Unit (Tnx-OutProc)

NX Units		Tnx-OutProc*1	Remarks
Type	Model		
Digital Output Units	Models support Free-Run refreshing	0 [µs]	-
Digital Mixed I/O Units		0 [µs]	The value for digital outputs.
Analog Output Units		Conversion time × Number of points	The conversion time and number of points depend on the model of the Unit.
Incremental Encoder Input Units		40 [µs]	This is the value for command values and other output data processing.
SSI Input Units		40 [µs]	
Load Cell Input Unit	NX-RS1201	35 [µs]	This is the value for operation commands and other output data processing.
Heater Burnout Detection Units	NX-HB3101 /-HB3201	10 [ms]	This is applicable to the control outputs.
Temperature Control Units	All models	50 [ms]	This is applicable to the control outputs.

*1. If only a definition is given in the above table, refer to the data of the NX Units in *Section 1 Data List* or the manuals for the specific NX Units for the values of the items.

Input Delay Time of NX Unit (Tnx-Indelay)

NX Units		Tnx-Indelay*1	Remarks
Type	Model		
Digital Input Units	Models support Free-Run refreshing	ON/OFF response time + Input filter time	The ON/OFF response time depends on the model of the Unit. You can set the input filter time for each Unit.
Digital Mixed I/O Units		ON/OFF response time + Input filter time	This is applicable to the digital inputs. The ON/OFF response time depends on the model of the Unit. You can set the input filter time for each Unit.
Analog Input Units		Conversion time × Number of points	The conversion time and number of points depend on the model of the Unit.
Temperature Input Units		Conversion time	–
Incremental Encoder Input Units		0 [µs]	The value for pulse inputs and external inputs.
SSI Input Units		0 [µs]	–
Load Cell Input Unit	NX-RS1201	0 [µs]	–
Heater Burnout Detection Units	NX-HB3101 /-HB3201	Control period	This is applicable to the CT inputs. The value set for Out□ Control Period of the time-proportional output in the Unit operation settings of the Heater Burnout Detection Unit.
Temperature Control Units	All models	100 [ms]	This is the value for measured value and CT input.

*1. If only a definition is given in the above table, refer to the data of the NX Units in *Section 1 Data List* or the manuals for the specific NX Units for the values of the items.

Output Delay Time of NX Unit (Tnx-Outdelay)

NX Units		Tnx-Outdelay*1	Remarks
Type	Model		
Digital Output Units	Models support Free-Run refreshing	ON/OFF response time	The ON/OFF response time depends on the model of the Unit.
Digital Mixed I/O Units		ON/OFF response time	This is applicable to the digital outputs. The ON/OFF response time depends on the model of the Unit.
Analog Output Units		0 [µs]	–
Heater Burnout Detection Units	NX-HB3101 /-HB3201	Control period	This is applicable to the control outputs. The value set for Out□ Control Period of the time-proportional output in the Unit operation settings of the Heater Burnout Detection Unit.

NX Units		Tnx-Outdelay*1	Remarks
Type	Model		
Temperature Control Units	Model number of voltage output for driving SSR	Control period	This is applicable to the control outputs. The value set for Ch□ Control Period (Heating) or Ch□ Control Period (Cooling) in the Unit operation settings of the Temperature Control Unit.
	Model number of linear current output	0 [µs]	–

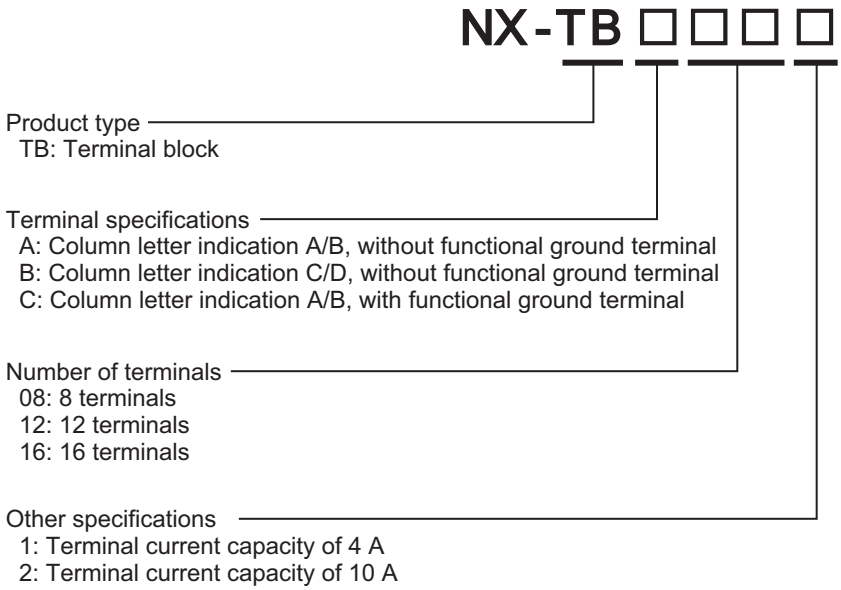
*1. If only a definition is given in the above table, refer to the data of the NX Units in *Section 1 Data List* or the manuals for the specific NX Units for the values of the items.

A-4 List of Screwless Clamping Terminal Block Models

This section explains how to read the Screwless Clamping Terminal Block model numbers and shows the Screwless Clamping Terminal Block models that are applicable to each Unit.

A-4-1 Model Notation

The Screwless Clamping Terminal Block models are assigned based on the following rules.



A-4-2 List of Terminal Block Models

The following table shows a list of Screwless Clamping Terminal Blocks.

Terminal Block model	Number of terminals	Ground terminal mark	Terminal current capacity
NX-TBA081	8	Not provided	4 A
NX-TBA121	12		
NX-TBA161	16		
NX-TBB121	12		
NX-TBB161	16		
NX-TBA082	8		10 A
NX-TBA122	12		
NX-TBA162	16		
NX-TBB082	8		
NX-TBB122	12		
NX-TBB162	16		
NX-TBC082	8	Provided	
NX-TBC162	16		

Note When you purchase a Terminal Block, purchase an NX-TB□□□2.

A-4-3 Applicable Screwless Clamping Terminal Blocks for Each Unit Model

The following indicates the Screwless Clamping Terminal Blocks that are applicable to each Unit.

Unit model number	Terminal Block			
	Model	Number of terminals	Ground terminal mark	Current capacity
NX102-□□□□	NX-TBC082	8	Provided	10 A
NX-ECC201	NX-TBA081	8	Not provided	4 A
	NX-TBC082		Provided	10 A
NX-ECC202	NX-TBC082			10 A
NX-ECC203	NX-TBC082			10 A
NX-EIC202	NX-TBC082	8	Provided	10 A
NX-CSG320	NX-TBC082	8	Provided	10 A
NX-ID3□□□	NX-TBA121	12	Not provided	4 A
	NX-TBA122			10 A
NX-ID4□□□	NX-TBA161	16		4 A
	NX-TBA162			10 A
NX-ID5□□□	NX-TBA161			4 A
	NX-TBA162			10 A
NX-IA3117	NX-TBA081	8		4 A
	NX-TBA082			10 A
NX-OD2□□□	NX-TBA081			4 A
	NX-TBA082			10 A
NX-OD3268	NX-TBA162	16		10 A
NX-OD3□□□ (any model other than NX-OD3268)	NX-TBA121	12		4 A
	NX-TBA122			10 A
NX-OD4□□□	NX-TBA161	16		4 A
	NX-TBA162			10 A
NX-OD5□□□	NX-TBA161			4 A
	NX-TBA162			10 A
NX-OC2□□□	NX-TBA081	8		4 A
	NX-TBA082			10 A
NX-OC4633	NX-TBA082			10 A
	NX-TBB082			
NX-AD2□□□	NX-TBA081			4 A
	NX-TBA082			10 A
NX-AD3□□□	NX-TBA121	12		4 A
	NX-TBA122			10 A
NX-AD4□□□	NX-TBA161	16		4 A
	NX-TBA162			10 A
NX-HAD40□	NX-TBA162/TBB162	16		10 A
NX-DA2□□□	NX-TBA081	8		4 A
	NX-TBA082			10 A
NX-DA3□□□	NX-TBA121	12		4 A
	NX-TBA122			10 A
NX-TS21□□	You cannot replace the Terminal Blocks.			
NX-TS31□□	Refer to the *NX-series Analog I/O Units User's Manual* (Cat. No. W522) for details.			

Unit model number	Terminal Block			
	Model	Number of terminals	Ground terminal mark	Current capacity
NX-TS22□□	NX-TBA161	16	Not provided	4 A
	NX-TBA162			10 A
NX-TS32□□	NX-TBA161/TBB161			4 A
	NX-TBA162/TBB162			10 A
NX-HB3□01	NX-TBA161			4 A
	NX-TBA162			10 A
NX-EC0112	NX-TBA161			4 A
	NX-TBA162			10 A
NX-EC0122	NX-TBA161	16	Not provided	4 A
	NX-TBA162			10 A
NX-EC0132	NX-TBA121/TBB121	12	Not provided	4 A
	NX-TBA122/TBB122			10 A
NX-EC0142	NX-TBA121/TBB121			4 A
	NX-TBA122/TBB122			10 A
NX-EC0212	NX-TBA121			4 A
	NX-TBA122			10 A
NX-EC0222	NX-TBA121			4 A
	NX-TBA122			10 A
NX-ECS112	NX-TBA121			4 A
	NX-TBA122			10 A
NX-ECS212	NX-TBA121			4 A
	NX-TBA122			10 A
NX-PG0112	NX-TBA161	16		4 A
	NX-TBA162			10 A
NX-PG0122	NX-TBA161			4 A
	NX-TBA162			10 A
NX-CIF101	NX-TBC162		Provided	10 A
NX-CIF105	NX-TBC162			10 A
NX-RS1201	NX-TBC162			10 A
NX-ILM400	NX-TBA162		Not provided	10 A
NX-TC□4□□	The terminal block can not be replaced. Refer to the NX-series Temperature Control Units User's Manual (Cat. No. H228) for details.			
NX-PD1000	NX-TBA081	8	Not provided	4 A
	NX-TBC082		Provided	10 A
NX-PF0630	NX-TBA081		Not provided	4 A
	NX-TBA082			10 A
NX-PF0730	NX-TBA082			10 A
NX-PC□□□□	NX-TBA161	16		4 A
	NX-TBA162			10 A
NX-TBX01	NX-TBA161			4 A
	NX-TBC162		Provided	10 A
NX-SL3300	No Terminal Blocks			
NX-SL3500	No Terminal Blocks			
NX-SL5500	No Terminal Blocks			
NX-SL5700	No Terminal Blocks			

Unit model number	Terminal Block			
	Model	Number of terminals	Ground terminal mark	Current capacity
NX-SIH400	NX-TBA081	8	Not provided	4 A
	NX-TBA082			10 A
NX-SID800	NX-TBA161	16		4 A
	NX-TBA162			10 A
NX-SOD400	NX-TBA081	8		4 A
	NX-TBA082			10 A
NX-SOH200	NX-TBA081			4 A
	NX-TBA082			10 A

Precautions for Correct Use

You can mount NX-TB□□□1 and NX-TB□□□2 Terminal Blocks to the Units whose terminal current capacity is specified to 4 A or less.

However, even if you mount the NX-TB□□□2 Terminal Block, the current specification does not change because the current capacity specification of the terminals on the Units is 4 A or less.

A-5 Version Information with CPU Units

This section provides version-related information when connecting Units to a CPU Unit.

This section describes the relationship between the unit versions of each Unit and the CPU Unit, and Sysmac Studio version, and the specification changes for each unit version of each Unit.

A-5-1 Relationship between Unit Versions of Units

The relationship between the unit versions of each Unit and the CPU Unit, and Sysmac Studio version are shown below.

Interpreting the Version Combination Tables

The items that are used in the version combination tables are given below.

Refer to the user's manual for the CPU Unit for the models of CPU Unit to which NX Units can be connected.

NX Units		Corresponding unit versions/versions	
Model	Unit version	CPU Units	Sysmac Studio
Model numbers of the NX Units.	Unit versions of the NX Units.	Unit versions of the CPU Unit that are compatible with the NX Units.	Sysmac Studio versions that are compatible with the NX Units and CPU Units.

Version Combination Tables

- With the combinations of the unit versions/versions shown below, you can use the functions that are supported by the unit version of the Unit model. Use the unit versions/versions that correspond to the NX Unit models and the unit versions or the later/higher versions. You cannot use the specifications that were added or changed for the relevant NX Unit models and the unit versions unless you use the corresponding unit versions/versions.
- You cannot connect the relevant NX Unit to the CPU Unit if “---” is shown in the corresponding unit versions/versions column.
- Depending on the type and model of the Unit to which the NX Unit is connected, some Units do not have the corresponding versions given in the table. If a Unit does not have the specified version, support is provided by the oldest available version after the specified version. Refer to the user’s manuals for the specific Units for the relation between models and versions.
- If you use the corresponding unit versions/versions given in the following table or later/higher versions, refer to the version information on the CPU Unit.

● Digital I/O Units

NX Units		Corresponding unit versions/versions	
Model	Unit version	CPU Units	Sysmac Studio
NX-ID3317	Ver.1.0	Ver.1.13	Ver.1.17
NX-ID3343			
NX-ID3344			
NX-ID3417			
NX-ID3443			
NX-ID3444			
NX-ID4342			
NX-ID4442			
NX-ID5142-1			
NX-ID5142-5			
NX-ID5342			
NX-ID5442			
NX-ID6142-5			
NX-ID6142-6			
NX-IA3117			
NX-OD2154			
NX-OD2258			
NX-OD3121			
NX-OD3153			
NX-OD3256			
NX-OD3257			
NX-OD3268			
NX-OD4121			
NX-OD4256			
NX-OD5121			
NX-OD5121-1			
NX-OD5121-5			
NX-OD5256			
NX-OD5256-1			
NX-OD5256-5			
NX-OD6121-5			
NX-OD6121-6			
NX-OD6256-5			
NX-OC2633			
NX-OC2733			
NX-OC4633			
NX-MD6121-5			
NX-MD6121-6			
NX-MD6256-5			

● Analog Input Units/Analog Output Units

NX Units		Corresponding unit versions/versions	
Model	Unit version	CPU Units	Sysmac Studio
NX-AD2203	Ver.1.0	Ver.1.13	Ver.1.17
NX-AD2204			
NX-AD2208			
NX-AD2603			
NX-AD2604			
NX-AD2608			
NX-AD3203			
NX-AD3204			
NX-AD3208			
NX-AD3603			
NX-AD3604			
NX-AD3608			
NX-AD4203			
NX-AD4204			
NX-AD4208			
NX-AD4603			
NX-AD4604			
NX-AD4608			
NX-DA2203			
NX-DA2205			
NX-DA2603			
NX-DA2605			
NX-DA3203			
NX-DA3205			
NX-DA3603			
NX-DA3605			

● High-speed Analog Input Units

NX Units		Corresponding unit versions/versions	
Model	Unit version	CPU Units	Sysmac Studio
NX-HAD401	Ver.1.0	Ver.1.18	Ver.1.23
NX-HAD402			

Temperature Input Units

NX Units		Corresponding unit versions/versions	
Model	Unit version	CPU Units	Sysmac Studio
NX-TS2101	Ver.1.0	Ver.1.13	Ver.1.17
	Ver.1.1		
NX-TS2102	Ver.1.1		
NX-TS2104	Ver.1.1		
NX-TS2201	Ver.1.0		
	Ver.1.1		
NX-TS2202	Ver.1.1		
NX-TS2204	Ver.1.1		
NX-TS3101	Ver.1.0		
	Ver.1.1		
NX-TS3102	Ver.1.1		
NX-TS3104	Ver.1.1		
NX-TS3201	Ver.1.0		
	Ver.1.1		
NX-TS3202	Ver.1.1		
NX-TS3204	Ver.1.1		

Heater Burnout Detection Units

NX Units		Corresponding unit versions/versions	
Model	Unit version	CPU Units	Sysmac Studio
NX-HB3101	Ver.1.0	Ver.1.13	Ver.1.17
NX-HB3201			

Position Interface Units

NX Units		Corresponding unit versions/versions	
Model	Unit version	CPU Units	Sysmac Studio
NX-EC0112	Ver.1.1	Ver.1.13	Ver.1.17
	Ver.1.2		
NX-EC0122	Ver.1.0		
	Ver.1.1		
	Ver.1.2		
NX-EC0132	Ver.1.1		
	Ver.1.2		
NX-EC0142	Ver.1.0		
	Ver.1.1		
	Ver.1.2		
NX-EC0212	Ver.1.1		
	Ver.1.2		
NX-EC0222	Ver.1.0		
	Ver.1.1		
	Ver.1.2		
NX-ECS112	Ver.1.0		
	Ver.1.1		
	Ver.1.2		
NX-ECS212	Ver.1.0		
	Ver.1.1		
	Ver.1.2		
NX-PG0112	Ver.1.1		
	Ver.1.2		
	Ver.1.3		Ver.1.19
NX-PG0122	Ver.1.0		Ver.1.17
	Ver.1.1		
	Ver.1.2		
	Ver.1.3		Ver.1.19
NX-PG0232-5	Ver.1.2		Ver.1.17
	Ver.1.3		Ver.1.19
NX-PG0242-5	Ver.1.2		Ver.1.17
	Ver.1.3		Ver.1.19
NX-PG0332-5	Ver.1.2		Ver.1.17
	Ver.1.3		Ver.1.19
NX-PG0342-5	Ver.1.2		Ver.1.17
	Ver.1.3		Ver.1.19

Communications Interface Units

NX Units		Corresponding unit versions/versions	
Model	Unit version	CPU Units	Sysmac Studio
NX-CIF101	Ver.1.0	Ver.1.13	Ver.1.17
NX-CIF105			
NX-CIF210			

Load Cell Input Unit

NX Units		Corresponding unit versions/versions	
Model	Unit version	CPU Units	Sysmac Studio
NX-RS1201	Ver.1.0	Ver.1.13	Ver.1.17

IO-Link Master Unit

NX Units		Corresponding unit versions/versions	
Model	Unit version	CPU Units	Sysmac Studio
NX-ILM400	Ver.1.0	Ver.1.13	Ver.1.17
	Ver.1.1		Ver.1.20

Temperature Control Units

NX Units		Corresponding unit versions/versions	
Model	Unit version	CPU Units	Sysmac Studio
NX-TC2405	Ver.1.0	Ver.1.13	Ver.1.21
	Ver.1.1		Ver.1.22
NX-TC2406	Ver.1.0		Ver.1.21
	Ver.1.1		Ver.1.22
NX-TC2407	Ver.1.0		Ver.1.21
	Ver.1.1		Ver.1.22
NX-TC2408	Ver.1.0		Ver.1.21
	Ver.1.1		Ver.1.22
NX-TC3405	Ver.1.0		Ver.1.21
	Ver.1.1		Ver.1.22
NX-TC3406	Ver.1.0		Ver.1.21
	Ver.1.1		Ver.1.22
NX-TC3407	Ver.1.0		Ver.1.21
	Ver.1.1		Ver.1.22
NX-TC3408	Ver.1.0		Ver.1.21
	Ver.1.1		Ver.1.22

RFID Units

NX Units		Corresponding unit versions/versions	
Model	Unit version	CPU Units	Sysmac Studio
NX-V680C1	Ver.1.0	Ver.1.13	Ver.1.25
NX-V680C2			

System Units

NX Units		Corresponding unit versions/versions	
Model	Unit version	CPU Units	Sysmac Studio
NX-PD1000	Ver.1.0	Ver.1.13	Ver.1.17
NX-PF0630			
NX-PF0730			
NX-PC0020			
NX-PC0010			
NX-PC0030			
NX-TBX01			

Safety Control Units

NX Units		Corresponding unit versions/versions	
Model	Unit version	CPU Units	Sysmac Studio
NX-SL3300	Ver.1.0	Ver.1.30*1	Ver.1.23
	Ver.1.1		
NX-SL3500	Ver.1.0		
	Ver.1.1		
NX-SL5500*2	Ver.1.3	Ver.1.31*1	Ver.1.24
NX-SL5700*3	Ver.1.2	---	---
	Ver.1.3	Ver.1.31*1	Ver.1.24
NX-SIH400	Ver.1.0	Ver.1.30*1	Ver.1.23
	Ver.1.1		
NX-SID800	Ver.1.0		
NX-SOD400			
NX-SOH200			

*1. You cannot connect NX Units to an NX1P2 CPU Unit.

*2. For the NX-SL5500, there is no unit version of 1.2 or earlier.

*3. For the NX-SL5700, there is no unit version of 1.1 or earlier.

A-5-2 Support Functions of the CPU Units and Restrictions on the NX Units

Some support functions of the CPU Units are restricted depending on the models of the NX Units and unit versions.

The following is a list of restrictions on NX Units for the functions.

When you use the functions of the CPU Units shown below in the NX Units, use the NX Units with the unit versions or the later unit versions shown in the models of the NX Units and unit versions.

Note that the following tables do not show whether your NX Unit can be connected to the CPU Unit. Refer to *A-5-1 Relationship between Unit Versions of Units* on page A-20 for the connection specifications.

Also, refer to the software user's manual of the CPU Unit for details on the functions listed below.

The following is a list of restrictions for NX Units categorized by type.

● NX Unit Part 1

Function of CPU Unit		Models of NX Units and unit versions				
		Digital I/O Units	Analog Input Units/Analog Output Units	Temperature Input Units	Position Interface Units	System Units
Restarting	Restarting a specified NX Unit	Ver.1.0	Ver.1.0	Ver.1.1	Ver.1.1	Ver.1.0
Monitoring total power-ON time		Ver.1.0	Ver.1.0	Ver.1.1	Ver.1.1	Ver.1.0
Restarting after transferring Unit operation settings	Restarting the NX Unit to which the Unit operation settings were transferred when you transfer the settings to a specified NX Unit	Ver.1.0	Ver.1.0	Ver.1.1	Ver.1.1	Not supported

● NX Unit Part 2

Function of CPU Unit		Models of NX Units and unit versions				
		Safety Control Units	Communications Interface Units	Load Cell Input Units	Heater Burnout Detection Units	IO-Link Master Unit
Restarting	Restarting a specified NX Unit	Not supported	Ver.1.0	Ver.1.0	Ver.1.0	Ver.1.0
Monitoring total power-ON time		Ver.1.3*1	Ver.1.0	Ver.1.0	Ver.1.0	Ver.1.0
Restarting after transferring Unit operation settings	Restarting the NX Unit to which the Unit operation settings were transferred when you transfer the settings to a specified NX Unit	Not supported	Ver.1.0	Ver.1.0	Ver.1.0	Ver.1.0

*1. The NX-SL5500 and NX-SL5700 support this function.

● NX Unit Part 3

Function of CPU Unit		Models of NX Units and unit versions		
		Temperature Control Units	High-speed Analog Input Units	RFID Units
Restarting	Restarting a specified NX Unit	Ver.1.0	Ver.1.0	Ver.1.0
Monitoring total power-ON time		Ver.1.0	Ver.1.0	Ver.1.0
Restarting after transferring Unit operation settings	Restarting the NX Unit to which the Unit operation settings were transferred when you transfer the settings to a specified NX Unit	Ver.1.0	Ver.1.0	Ver.1.0

A-6 Version Information with Communications Coupler Units

This section provides version-related information when connecting Units to a Communications Coupler Unit. Version information is provided separately for each Communications Coupler Unit that an NX Unit is connected to.

A-6-1 Connection to an EtherCAT Coupler Unit

The relationship between the unit versions of each Unit, EtherCAT Coupler Unit, CPU Unit and Industrial PC, and versions of the Sysmac Studio are shown below.

Relationship between Unit Versions of Units

The items that are used in the version combination table are given below.

NX Units		Corresponding unit versions/versions		
Model	Unit version	EtherCAT Coupler Units	CPU Units or Industrial PCs	Sysmac Studio
Model numbers of NX Units.	Unit versions of NX Units.	Unit versions of EtherCAT Coupler Units that are compatible with the NX Units.	Unit versions of NJ/NX-series CPU Units or NY-series Industrial PCs that are compatible with the EtherCAT Coupler Units.	Sysmac Studio versions that are compatible with the NX Units, EtherCAT Coupler Units, CPU Units and Industrial PCs.

The version combination table is given below.

- With the combinations of the unit versions/versions shown below, you can use the functions that are supported by the unit version of the Unit model. Use the unit versions/versions (or the later/higher unit versions/versions) that correspond to the NX Unit models and the unit versions. You cannot use the specifications that were added or changed for the relevant NX Unit models and the unit versions unless you use the corresponding unit versions/versions.
- Depending on the type and model of the Unit to which the NX Unit is connected, some Units do not have the corresponding versions given in the table. If a Unit does not have the specified version, support is provided by the oldest available version after the specified version. Refer to the user's manuals for the specific Units for the relation between models and versions.
- You cannot connect the relevant NX Unit to the target Communications Coupler Unit if "---" is shown in the corresponding unit versions/versions column.
- If you use the corresponding unit versions/versions given in the following table or later/higher versions, refer to the version information in the user's manual for Communications Coupler Unit, CPU Unit, and Industrial PC.

● EtherCAT Coupler Units

EtherCAT Coupler Units		Corresponding unit versions/versions					
Model	Unit version	Application with an NX-series CPU Unit		Application with an NJ-series CPU Unit		Application with an NY-series Industrial PC	
		Unit version of CPU Unit	Sysmac Studio version	Unit version of CPU Unit	Sysmac Studio version	Industrial PC version	Sysmac Studio version
NX-ECC201	Ver. 1.2	Ver. 1.10	Ver. 1.13	Ver. 1.07	Ver. 1.08	Ver. 1.12	Ver. 1.17
	Ver. 1.1			Ver. 1.06	Ver. 1.07		
	Ver. 1.0			Ver. 1.05	Ver. 1.06		
NX-ECC202	Ver. 1.2*1			Ver. 1.07	Ver. 1.08		
NX-ECC203	Ver. 1.6		Ver. 1.25		Ver. 1.25		Ver. 1.25
	Ver. 1.5		Ver. 1.19		Ver. 1.19		Ver. 1.19
	Ver. 1.4		Ver. 1.16		Ver. 1.16		Ver. 1.17
	Ver. 1.3*2		Ver. 1.13		Ver. 1.13		

*1. For the NX-ECC202, there is no unit version of 1.1 or earlier.

*2. For the NX-ECC203, there is no unit version of 1.2 or earlier.

● Digital I/O Units

NX Units		Corresponding unit versions/versions		
Model	Unit version	EtherCAT Coupler Units	CPU Units or Industrial PCs	Sysmac Studio
NX-ID3317	Ver.1.0	Ver.1.0	Ver.1.05	Ver.1.06
NX-ID3343				
NX-ID3344		Ver.1.1	Ver.1.06*1	Ver.1.07
NX-ID3417		Ver.1.0	Ver.1.05	Ver.1.06
NX-ID3443				
NX-ID3444		Ver.1.1	Ver.1.06*1	Ver.1.07
NX-ID4342		Ver.1.0	Ver.1.05	Ver.1.06
NX-ID4442				
NX-ID5142-1				Ver.1.13
NX-ID5142-5				Ver.1.10
NX-ID5342				Ver.1.06
NX-ID5442				
NX-ID6142-5				Ver.1.10
NX-ID6142-6				Ver.1.13
NX-IA3117				Ver.1.08
NX-OD2154		Ver.1.1	Ver.1.06*1	Ver.1.07
NX-OD2258				
NX-OD3121		Ver.1.0	Ver.1.05	Ver.1.06
NX-OD3153				
NX-OD3256				
NX-OD3257				
NX-OD3268				Ver.1.13
NX-OD4121				Ver.1.06
NX-OD4256				
NX-OD5121				
NX-OD5121-1				Ver.1.13
NX-OD5121-5				Ver.1.10
NX-OD5256				Ver.1.06
NX-OD5256-1				Ver.1.13
NX-OD5256-5				Ver.1.10
NX-OD6121-5				
NX-OD6121-6				Ver.1.13
NX-OD6256-5				Ver.1.10
NX-OC2633				Ver.1.06
NX-OC2733				Ver.1.08
NX-OC4633				Ver.1.17
NX-MD6121-5				Ver.1.10
NX-MD6121-6				Ver.1.13
NX-MD6256-5				Ver.1.10

*1. If you use a CPU Unit, the instructions for time stamp refreshing are supported by CPU Units with unit version 1.06 or later. If you do not use instructions for time stamp refreshing, you can use version 1.05. Refer to the instructions reference manual for the connected CPU Unit or Industrial PC for details on the instructions for time stamp refreshing.

● Analog Input Units/Analog Output Units

NX Units		Corresponding unit versions/versions		
Model	Unit version	EtherCAT Coupler Units	CPU Units or Industrial PCs	Sysmac Studio
NX-AD2203	Ver.1.0	Ver.1.0	Ver.1.05	Ver.1.06
NX-AD2204				
NX-AD2208				
NX-AD2603				
NX-AD2604				
NX-AD2608				
NX-AD3203				
NX-AD3204				
NX-AD3208				
NX-AD3603				
NX-AD3604				
NX-AD3608				
NX-AD4203				
NX-AD4204				
NX-AD4208				
NX-AD4603				
NX-AD4604				
NX-AD4608				
NX-DA2203				
NX-DA2205				
NX-DA2603				
NX-DA2605				
NX-DA3203				
NX-DA3205				
NX-DA3603				
NX-DA3605				

● High-speed Analog Input Units

NX Units		Corresponding unit versions/versions		
Model	Unit version	EtherCAT Coupler Units	CPU Units or Industrial PCs	Sysmac Studio
NX-HAD401	Ver.1.0	Ver.1.0*1	Ver.1.18	Ver.1.23
NX-HAD402				

*1. The High-speed Analog Input Units can be connected with the following OMRON EtherCAT masters.
NJ/NX-series CPU Units
NY-series Industrial PCs (NX5□□-1□00 and NY5□□-5□00)
They cannot be connected to other OMRON EtherCAT masters.

Temperature Input Units

NX Units		Corresponding unit versions/versions		
Model	Unit version	EtherCAT Coupler Units	CPU Units or Industrial PCs	Sysmac Studio
NX-TS2101	Ver.1.0	Ver.1.0	Ver.1.05	Ver.1.06
	Ver.1.1			Ver.1.08
NX-TS2102	Ver.1.1			
NX-TS2104	Ver.1.1			
NX-TS2201	Ver.1.0			Ver.1.06
	Ver.1.1			Ver.1.08
NX-TS2202	Ver.1.1			
NX-TS2204	Ver.1.1			
NX-TS3101	Ver.1.0			Ver.1.06
	Ver.1.1			Ver.1.08
NX-TS3102	Ver.1.1			
NX-TS3104	Ver.1.1			
NX-TS3201	Ver.1.0			Ver.1.06
	Ver.1.1			Ver.1.08
NX-TS3202	Ver.1.1			
NX-TS3204	Ver.1.1			

Heater Burnout Detection Units

NX Units		Corresponding unit versions/versions		
Model	Unit version	EtherCAT Coupler Units	CPU Units or Industrial PCs	Sysmac Studio
NX-HB3101	Ver.1.0	Ver.1.0	Ver.1.05	Ver.1.16
NX-HB3201				

● Position Interface Units

NX Units		Corresponding unit versions/versions		
Model	Unit version	EtherCAT Coupler Units	CPU Units or Industrial PCs	Sysmac Studio
NX-EC0112	Ver.1.1	Ver.1.1*1	Ver.1.06*1	Ver.1.10
	Ver.1.2	Ver.1.3*2*3		Ver.1.13
NX-EC0122	Ver.1.0	Ver.1.1*1		Ver.1.07
	Ver.1.1			Ver.1.08
	Ver.1.2	Ver.1.3*2*3		Ver.1.13
NX-EC0132	Ver.1.1	Ver.1.1*1		Ver.1.10
	Ver.1.2	Ver.1.3*2*3		Ver.1.13
NX-EC0142	Ver.1.0	Ver.1.1*1		Ver.1.07
	Ver.1.1			Ver.1.08
	Ver.1.2	Ver.1.3*2*3		Ver.1.13
NX-EC0212	Ver.1.1	Ver.1.1*1		Ver.1.10
	Ver.1.2	Ver.1.3*2*3		Ver.1.13
NX-EC0222	Ver.1.0	Ver.1.1*1		Ver.1.07
	Ver.1.1			Ver.1.08
	Ver.1.2	Ver.1.3*2*3		Ver.1.13
NX-ECS112	Ver.1.0	Ver.1.1*1		Ver.1.07
	Ver.1.1			Ver.1.08
	Ver.1.2	Ver.1.3*2*3		Ver.1.13
NX-ECS212	Ver.1.0	Ver.1.1*1		Ver.1.07
	Ver.1.1			Ver.1.08
	Ver.1.2	Ver.1.3*2*3		Ver.1.13
NX-PG0112	Ver.1.1	Ver.1.0	Ver.1.05	Ver.1.10
	Ver.1.2	Ver.1.3*2*4		Ver.1.13
	Ver.1.3			Ver.1.19
NX-PG0122	Ver.1.0	Ver.1.0		Ver.1.06
	Ver.1.1			Ver.1.08
	Ver.1.2	Ver.1.3*2*4		Ver.1.13
	Ver.1.3			Ver.1.19
NX-PG0232-5	Ver.1.2			Ver.1.15
	Ver.1.3			Ver.1.19
NX-PG0242-5	Ver.1.2			Ver.1.15
	Ver.1.3			Ver.1.19
NX-PG0332-5	Ver.1.2			Ver.1.15
	Ver.1.3			Ver.1.19
NX-PG0342-5	Ver.1.2			Ver.1.15
	Ver.1.3			Ver.1.19

*1. You can use the following versions if the time stamp refreshing function is not used.
EtherCAT Coupler Unit: Version 1.0
NJ-series CPU Units: Version 1.05

*2. To use task period prioritized refreshing, you must use the NX-ECC203.

*3. If you do not use task period prioritized refreshing, you can use EtherCAT Coupler Units which support Position Interface Units with unit version 1.1 or earlier.

*4. If you do not use task period prioritized refreshing, you can use EtherCAT Coupler Units with unit version 1.0.

Communications Interface Units

NX Units		Corresponding unit versions/versions		
Model	Unit version	EtherCAT Coupler Units	CPU Units or Industrial PCs	Sysmac Studio
NX-CIF101	Ver.1.0	Ver.1.0	Ver.1.11*1	Ver.1.15
NX-CIF105				
NX-CIF210				

*1. If you use a CPU Unit, the serial communications instructions for the CIF Unit are supported by CPU Units with unit version 1.11 or later. If you do not use serial communications instructions, you can use version 1.10. Refer to the instructions reference manual for the connected CPU Unit or Industrial PC for details on the serial communications instructions for the CIF Unit.

Load Cell Input Unit

NX Units		Corresponding unit versions/versions		
Model	Unit version	EtherCAT Coupler Units	CPU Units or Industrial PCs	Sysmac Studio
NX-RS1201	Ver.1.0	Ver.1.0*1	Ver.1.05	Ver.1.16

*1. To use task period prioritized refreshing, you must use the NX-ECC203.

IO-Link Master Unit

NX Units		Corresponding unit versions/versions		
Model	Unit version	EtherCAT Coupler Units	CPU Units or Industrial PCs	Sysmac Studio
NX-ILM400	Ver.1.0	Ver.1.0	Ver.1.12	Ver.1.16
	Ver.1.1			Ver.1.20

Temperature Control Units

NX Units		Corresponding unit versions/versions		
Model	Unit version	EtherCAT Coupler Units	CPU Units or Industrial PCs	Sysmac Studio
NX-TC2405	Ver.1.0	Ver.1.0*1	Ver.1.05	Ver.1.21
	Ver.1.1			Ver.1.22
NX-TC2406	Ver.1.0			Ver.1.21
	Ver.1.1			Ver.1.22
NX-TC2407	Ver.1.0			Ver.1.21
	Ver.1.1			Ver.1.22
NX-TC2408	Ver.1.0			Ver.1.21
	Ver.1.1			Ver.1.22
NX-TC3405	Ver.1.0			Ver.1.21
	Ver.1.1			Ver.1.22
NX-TC3406	Ver.1.0			Ver.1.21
	Ver.1.1			Ver.1.22
NX-TC3407	Ver.1.0			Ver.1.21
	Ver.1.1			Ver.1.22
NX-TC3408	Ver.1.0			Ver.1.21
	Ver.1.1			Ver.1.22

*1. When connecting with other manufacturer's master, use the EtherCAT Coupler Unit with unit version Ver.1.5 or later.

● RFID Units

NX Units		Corresponding unit versions/versions		
Model	Unit version	EtherCAT Coupler Units	CPU Units or Industrial PCs	Sysmac Studio
NX-V680C1	Ver.1.0	Ver.1.0*1	Ver.1.05	Ver.1.25
NX-V680C2				

*1. When connecting with other manufacturer's master, use the EtherCAT Coupler Unit with unit version Ver.1.5 or later.

● System Units

NX Units		Corresponding unit versions/versions		
Model	Unit version	EtherCAT Coupler Units	CPU Units or Industrial PCs	Sysmac Studio
NX-PD1000	Ver.1.0	Ver.1.0	Ver.1.05	Ver.1.06
NX-PF0630				
NX-PF0730				Ver.1.08
NX-PC0020				Ver.1.06
NX-PC0010				
NX-PC0030				
NX-TBX01				

● Safety Control Units

NX Units		Corresponding unit versions/versions		
Model	Unit version	EtherCAT Coupler Units	CPU Units or Industrial PCs	Sysmac Studio
NX-SL3300	Ver.1.0	Ver.1.1	Ver.1.06	Ver.1.07
	Ver.1.1			Ver.1.10
NX-SL3500	Ver.1.0	Ver.1.2	Ver.1.07	Ver.1.08
	Ver.1.1			Ver.1.10
NX-SL5500*1	Ver.1.3	---	---	---
NX-SL5700*2	Ver.1.2	---	---	---
	Ver.1.3			
NX-SIH400	Ver.1.0	Ver.1.1	Ver.1.06	Ver.1.07
	Ver.1.1			Ver.1.10
NX-SID800	Ver.1.0	Ver.1.1	Ver.1.06	Ver.1.07
NX-SOD400				
NX-SOH200				

*1. For the NX-SL5500, there is no unit version of 1.2 or earlier.

*2. For the NX-SL5700, there is no unit version of 1.1 or earlier.

A-6-2 Connection to an EtherNet/IP Coupler Unit

The relationship between the unit versions of each Unit, EtherNet/IP Coupler Unit, CPU Unit and Industrial PC, and versions of the Sysmac Studio and NX-IO Configurator are shown below.

Relationship between Unit Versions of Units

The items that are used in the version combination tables are given below.

NX Units		Corresponding unit versions/versions					
Model	Unit version	Application with an NJ/NX/NY-series Controller			Application with a CS/CJ/CP-series PLC		
		EtherNet/IP Coupler Unit	CPU Unit or Industrial PC	Sysmac Studio	EtherNet/IP Coupler Unit	Sysmac Studio	NX-IO Configurator
Model number of NX Unit	Unit version of the NX Unit	Unit version of EtherNet/IP Coupler Unit that is compatible with the NX Unit	Unit version of NJ/NX-series CPU Unit or NY-series Industrial PC that is compatible with the EtherNet/IP Coupler Unit	Sysmac Studio version that is compatible with the NX Unit, EtherNet/IP Coupler Unit, CPU Unit, and Industrial PC	Unit version of EtherNet/IP Coupler Unit that is compatible with the NX Unit	Sysmac Studio version that is compatible with the NX Unit, EtherNet/IP Coupler Unit, and CPU Unit	NX-IO Configurator version that is compatible with the NX Unit, EtherNet/IP Coupler Unit, and CPU Unit

The version combination table is given below.

- With the combinations of the unit versions/versions shown below, you can use the functions that are supported by the unit version of the Unit model. Use the unit versions/versions (or the later/higher unit version/versions) that correspond to the NX Unit models and the unit versions. You cannot use the specifications that were added or changed for the relevant NX Unit models and the unit versions unless you use the corresponding unit versions/versions.
- Depending on the type and model of the Unit to which the NX Unit is connected, some Units do not have the corresponding versions given in the table. If a Unit does not have the specified version, support is provided by the oldest available version after the specified version. Refer to the user's manuals for the specific Units for the relation between models and versions.
- You cannot connect the relevant NX Unit to the target Communications Coupler Unit if "---" is shown in the corresponding unit versions/versions column.
- If you use the corresponding unit versions/versions given in the following table or later/higher versions, refer to the version information in the user's manual for the Communications Coupler Unit, CPU Unit, and Industrial PC.

● EtherNet/IP Coupler Unit

Refer to the user's manual of the EtherNet/IP Coupler Units for the unit versions of CPU Units, Industrial PCs, and EtherNet/IP Units corresponding to EtherNet/IP Coupler Units.

EtherNet/IP Coupler Unit		Corresponding unit versions/versions	
Model	Unit version	Sysmac Studio	NX-IO Configurator
NX-EIC202	Ver. 1.2	Ver. 1.19	Ver. 1.00
	Ver. 1.0	Ver. 1.10	---

● Digital I/O Units

NX Units		Corresponding unit versions/versions					
Model	Unit version	Application with an NJ/NX/NY-series Controller*1			Application with a CS/CJ/CP-series PLC*2		
		EtherNet/IP Coupler Unit	CPU Unit or Industrial PC	Sysmac Studio	EtherNet/IP Coupler Unit	Sysmac Studio	NX-IO Configurator*3
NX-ID3317	Ver. 1.0	Ver. 1.2	Ver. 1.14	Ver. 1.19	Ver. 1.0	Ver. 1.10	Ver. 1.00
NX-ID3343							
NX-ID3344		---	---	---	---	---	---
NX-ID3417		Ver. 1.2	Ver. 1.14	Ver. 1.19	Ver. 1.0	Ver. 1.10	Ver. 1.00
NX-ID3443							
NX-ID3444		---	---	---	---	---	---
NX-ID4342		Ver. 1.2	Ver. 1.14	Ver. 1.19	Ver. 1.0	Ver. 1.10	Ver. 1.00
NX-ID4442							
NX-ID5142-1						Ver. 1.13	
NX-ID5142-5						Ver. 1.10	
NX-ID5342							
NX-ID5442							
NX-ID6142-5							
NX-ID6142-6						Ver. 1.13	
NX-IA3117						Ver. 1.10	
NX-OD2154		---	---	---	---	---	---
NX-OD2258							
NX-OD3121		Ver. 1.2	Ver. 1.14	Ver. 1.19	Ver. 1.0	Ver. 1.10	Ver. 1.00
NX-OD3153							
NX-OD3256							
NX-OD3257							
NX-OD3268						Ver. 1.13	
NX-OD4121						Ver. 1.10	
NX-OD4256							
NX-OD5121							
NX-OD5121-1						Ver. 1.13	
NX-OD5121-5						Ver. 1.10	
NX-OD5256							
NX-OD5256-1						Ver. 1.13	
NX-OD5256-5						Ver. 1.10	
NX-OD6121-5							
NX-OD6121-6						Ver. 1.13	
NX-OD6256-5						Ver. 1.10	
NX-OC2633							
NX-OC2733							
NX-OC4633						Ver. 1.17	
NX-MD6121-5						Ver. 1.10	
NX-MD6121-6						Ver. 1.13	
NX-MD6256-5						Ver. 1.10	

*1. Refer to the user's manual for the EtherNet/IP Coupler Units for information on the unit versions of EtherNet/IP Units that are compatible with EtherNet/IP Coupler Units.

*2. Refer to the user's manual for the EtherNet/IP Coupler Units for information on the unit versions of CPU Units and EtherNet/IP Units that are compatible with EtherNet/IP Coupler Units.

*3. For connection to an EtherNet/IP Coupler Unit with unit version 1.0, You can connect only to the peripheral USB port on the EtherNet/IP Coupler Unit. You cannot connect with any other path. If you need to connect by another path, use an EtherNet/IP Coupler Unit with unit version 1.2 or later.

● Analog Input Units/Analog Output Units

NX Units		Corresponding unit versions/versions					
Model	Unit version	Application with an NJ/NX/NY-series Controller*1			Application with a CS/CJ/CP-series PLC*2		
		EtherNet/IP Coupler Unit	CPU Unit or Industrial PC	Sysmac Studio	EtherNet/IP Coupler Unit	Sysmac Studio	NX-IO Configurator*3
NX-AD2203	Ver. 1.0	Ver. 1.2	Ver. 1.14	Ver. 1.19	Ver. 1.0	Ver. 1.10	Ver. 1.00
NX-AD2204							
NX-AD2208							
NX-AD2603							
NX-AD2604							
NX-AD2608							
NX-AD3203							
NX-AD3204							
NX-AD3208							
NX-AD3603							
NX-AD3604							
NX-AD3608							
NX-AD4203							
NX-AD4204							
NX-AD4208							
NX-AD4603							
NX-AD4604							
NX-AD4608							
NX-DA2203							
NX-DA2205							
NX-DA2603							
NX-DA2605							
NX-DA3203							
NX-DA3205							
NX-DA3603							
NX-DA3605							

*1. Refer to the user's manual for the EtherNet/IP Coupler Units for information on the unit versions of EtherNet/IP Units that are compatible with EtherNet/IP Coupler Units.

*2. Refer to the user's manual for the EtherNet/IP Coupler Units for information on the unit versions of CPU Units and EtherNet/IP Units that are compatible with EtherNet/IP Coupler Units.

*3. For connection to an EtherNet/IP Coupler Unit with unit version 1.0, You can connect only to the peripheral USB port on the EtherNet/IP Coupler Unit. You cannot connect with any other path. If you need to connect by another path, use an EtherNet/IP Coupler Unit with unit version 1.2 or later.

● High-speed Analog Input Units

NX Units		Corresponding unit versions/versions					
Model	Unit version	Application with an NJ/NX/NY-series Controller			Application with a CS/CJ/CP-series PLC		
		EtherNet/IP Coupler Unit	CPU Unit or Industrial PC	Sysmac Studio	EtherNet/IP Coupler Unit	Sysmac Studio	NX-IO Configurator
NX-HAD401	Ver.1.0	---	---	---	---	---	---
NX-HAD402							

● Temperature Input Units

NX Units		Corresponding unit versions/versions					
Model	Unit version	Application with an NJ/NX/NY-series Controller*1			Application with a CS/CJ/CP-series PLC*2		
		EtherNet/IP Coupler Unit	CPU Unit or Industrial PC	Sysmac Studio	EtherNet/IP Coupler Unit	Sysmac Studio	NX-IO Configurator*3
NX-TS2101	Ver. 1.0	Ver. 1.2	Ver. 1.14	Ver. 1.19	Ver. 1.0	Ver. 1.10	Ver. 1.00
	Ver. 1.1						
NX-TS2102	Ver. 1.1						
NX-TS2104	Ver. 1.1						
NX-TS2201	Ver. 1.0						
	Ver. 1.1						
NX-TS2202	Ver. 1.1						
NX-TS2204	Ver. 1.1						
NX-TS3101	Ver. 1.0						
	Ver. 1.1						
NX-TS3102	Ver. 1.1						
NX-TS3104	Ver. 1.1						
NX-TS3201	Ver. 1.0						
	Ver. 1.1						
NX-TS3202	Ver. 1.1						
NX-TS3204	Ver. 1.1						

*1. Refer to the user's manual for the EtherNet/IP Coupler Units for information on the unit versions of EtherNet/IP Units that are compatible with EtherNet/IP Coupler Units.

*2. Refer to the user's manual for the EtherNet/IP Coupler Units for information on the unit versions of CPU Units and EtherNet/IP Units that are compatible with EtherNet/IP Coupler Units.

*3. For connection to an EtherNet/IP Coupler Unit with unit version 1.0, You can connect only to the peripheral USB port on the EtherNet/IP Coupler Unit. You cannot connect with any other path. If you need to connect by another path, use an EtherNet/IP Coupler Unit with unit version 1.2 or later.

● Heater Burnout Detection Units

NX Units		Corresponding unit versions/versions					
Model	Unit version	Application with an NJ/NX/NY-series Controller*1			Application with a CS/CJ/CP-series PLC*2		
		EtherNet/IP Coupler Unit	CPU Unit or Industrial PC	Sysmac Studio	EtherNet/IP Coupler Unit	Sysmac Studio	NX-IO Configurator*3
NX-HB3101	Ver. 1.0	Ver. 1.2	Ver. 1.14	Ver. 1.19	Ver. 1.0	Ver. 1.16	Ver. 1.00
NX-HB3201							

*1. Refer to the user's manual for the EtherNet/IP Coupler Units for information on the unit versions of EtherNet/IP Units that are compatible with EtherNet/IP Coupler Units.

*2. Refer to the user's manual for the EtherNet/IP Coupler Units for information on the unit versions of CPU Units and EtherNet/IP Units that are compatible with EtherNet/IP Coupler Units.

*3. For connection to an EtherNet/IP Coupler Unit with unit version 1.0, You can connect only to the peripheral USB port on the EtherNet/IP Coupler Unit. You cannot connect with any other path. If you need to connect by another path, use an EtherNet/IP Coupler Unit with unit version 1.2 or later.

● Position Interface Units

NX Units		Corresponding unit versions/versions					
Model	Unit version	Application with an NJ/NX/NY-series Controller*1			Application with a CS/CJ/CP-series PLC*2		
		EtherNet/IP Coupler Unit	CPU Unit or Industrial PC	Sysmac Studio	EtherNet/IP Coupler Unit	Sysmac Studio	NX-IO Configurator*3
NX-EC0112	Ver. 1.1	Ver. 1.2	Ver. 1.14	Ver. 1.19	Ver. 1.0	Ver. 1.10	Ver. 1.00
	Ver. 1.2					Ver. 1.13	
NX-EC0122	Ver. 1.0					Ver. 1.10	
	Ver. 1.1						
	Ver. 1.2					Ver. 1.13	
NX-EC0132	Ver. 1.1					Ver. 1.10	
	Ver. 1.2					Ver. 1.13	
NX-EC0142	Ver. 1.0					Ver. 1.10	
	Ver. 1.1						
	Ver. 1.2					Ver. 1.13	
NX-EC0212	Ver. 1.1					Ver. 1.10	
	Ver. 1.2					Ver. 1.13	
NX-EC0222	Ver. 1.0					Ver. 1.10	
	Ver. 1.1						
	Ver. 1.2					Ver. 1.13	
NX-ECS112	Ver. 1.0					Ver. 1.10	
	Ver. 1.1						
	Ver. 1.2					Ver. 1.13	
NX-ECS212	Ver. 1.0					Ver. 1.10	
	Ver. 1.1						
	Ver. 1.2					Ver. 1.13	
NX-PG0112	Ver. 1.1	---	---	---	---	---	---
	Ver. 1.2						
	Ver. 1.3						
NX-PG0122	Ver. 1.0						
	Ver. 1.1						
	Ver. 1.2						
	Ver. 1.3						
NX-PG0232-5	Ver. 1.2						
	Ver. 1.3						
NX-PG0242-5	Ver. 1.2						
	Ver. 1.3						
NX-PG0332-5	Ver. 1.2						
	Ver. 1.3						
NX-PG0342-5	Ver. 1.2						
	Ver. 1.3						

*1. Refer to the user's manual for the EtherNet/IP Coupler Units for information on the unit versions of EtherNet/IP Units that are compatible with EtherNet/IP Coupler Units.

*2. Refer to the user's manual for the EtherNet/IP Coupler Units for information on the unit versions of CPU Units and EtherNet/IP Units that are compatible with EtherNet/IP Coupler Units.

*3. For connection to an EtherNet/IP Coupler Unit with unit version 1.0, You can connect only to the peripheral USB port on the EtherNet/IP Coupler Unit. You cannot connect with any other path. If you need to connect by another path, use an EtherNet/IP Coupler Unit with unit version 1.2 or later.

● Communications Interface Units

NX Units		Corresponding unit versions/versions					
		Application with an NJ/NX/NY-series Controller*1			Application with a CS/CJ/CP-series PLC*2		
Model	Unit version	EtherNet/IP Coupler Unit	CPU Unit or Industrial PC	Sysmac Studio	EtherNet/IP Coupler Unit	Sysmac Studio	NX-IO Configurator*3
NX-CIF101	Ver. 1.0	Ver. 1.2	Ver. 1.14	Ver. 1.19	Ver. 1.2	Ver. 1.19	Ver. 1.00
NX-CIF105							
NX-CIF210							

*1. Refer to the user's manual for the EtherNet/IP Coupler Units for information on the unit versions of EtherNet/IP Units that are compatible with EtherNet/IP Coupler Units.

*2. Refer to the user's manual for the EtherNet/IP Coupler Units for information on the unit versions of CPU Units and EtherNet/IP Units that are compatible with EtherNet/IP Coupler Units.

*3. For connection to an EtherNet/IP Coupler Unit with unit version 1.0, You can connect only to the peripheral USB port on the EtherNet/IP Coupler Unit. You cannot connect with any other path. If you need to connect by another path, use an EtherNet/IP Coupler Unit with unit version 1.2 or later.

● Load Cell Input Unit

NX Units		Corresponding unit versions/versions					
		Application with an NJ/NX/NY-series Controller*1			Application with a CS/CJ/CP-series PLC*2		
Model	Unit version	EtherNet/IP Coupler Unit	CPU Unit or Industrial PC	Sysmac Studio	EtherNet/IP Coupler Unit	Sysmac Studio	NX-IO Configurator*3
NX-RS1201	Ver. 1.0	Ver. 1.2	Ver. 1.14	Ver. 1.19	Ver. 1.0	Ver. 1.16	Ver. 1.00

*1. Refer to the user's manual for the EtherNet/IP Coupler Units for information on the unit versions of EtherNet/IP Units that are compatible with EtherNet/IP Coupler Units.

*2. Refer to the user's manual for the EtherNet/IP Coupler Units for information on the unit versions of CPU Units and EtherNet/IP Units that are compatible with EtherNet/IP Coupler Units.

*3. For connection to an EtherNet/IP Coupler Unit with unit version 1.0, You can connect only to the peripheral USB port on the EtherNet/IP Coupler Unit. You cannot connect with any other path. If you need to connect by another path, use an EtherNet/IP Coupler Unit with unit version 1.2 or later.

● IO-Link Master Unit

NX Units		Corresponding unit versions/versions					
		Application with an NJ/NX/NY-series Controller*1			Application with a CS/CJ/CP-series PLC*2		
Model	Unit version	EtherNet/IP Coupler Unit	CPU Unit or Industrial PC	Sysmac Studio	EtherNet/IP Coupler Unit	Sysmac Studio	NX-IO Configurator*3
NX-ILM400	Ver. 1.0	Ver. 1.2	Ver. 1.14	Ver. 1.19	Ver. 1.0	Ver. 1.16	Ver. 1.00
	Ver. 1.1					Ver. 1.20	Ver. 1.01

*1. Refer to the user's manual for the EtherNet/IP Coupler Units for information on the unit versions of EtherNet/IP Units that are compatible with EtherNet/IP Coupler Units.

*2. Refer to the user's manual for the EtherNet/IP Coupler Units for information on the unit versions of CPU Units and EtherNet/IP Units that are compatible with EtherNet/IP Coupler Units.

*3. For connection to an EtherNet/IP Coupler Unit with unit version 1.0, You can connect only to the peripheral USB port on the EtherNet/IP Coupler Unit. You cannot connect with any other path. If you need to connect by another path, use an EtherNet/IP Coupler Unit with unit version 1.2 or later.

● Temperature Control Units

NX Units		Corresponding unit versions/versions					
Model	Unit version	Application with an NJ/NX/NY-series Controller*1			Application with a CS/CJ/CP-series PLC*2		
		EtherNet/IP Coupler Unit	CPU Unit or Industrial PC	Sysmac Studio	EtherNet/IP Coupler Unit	Sysmac Studio	NX-IO Configurator
NX-TC2405	Ver.1.0	Ver.1.2	Ver.1.14	Ver.1.21	Ver.1.2	Ver.1.21	Ver.1.11
	Ver.1.1			Ver.1.22		Ver.1.22	Ver.1.12
NX-TC2406	Ver.1.0			Ver.1.21		Ver.1.21	Ver.1.11
	Ver.1.1			Ver.1.22		Ver.1.22	Ver.1.12
NX-TC2407	Ver.1.0			Ver.1.21		Ver.1.21	Ver.1.11
	Ver.1.1			Ver.1.22		Ver.1.22	Ver.1.12
NX-TC2408	Ver.1.0			Ver.1.21		Ver.1.21	Ver.1.11
	Ver.1.1			Ver.1.22		Ver.1.22	Ver.1.12
NX-TC3405	Ver.1.0			Ver.1.21		Ver.1.21	Ver.1.11
	Ver.1.1			Ver.1.22		Ver.1.22	Ver.1.12
NX-TC3406	Ver.1.0			Ver.1.21		Ver.1.21	Ver.1.11
	Ver.1.1			Ver.1.22		Ver.1.22	Ver.1.12
NX-TC3407	Ver.1.0			Ver.1.21		Ver.1.21	Ver.1.11
	Ver.1.1			Ver.1.22		Ver.1.22	Ver.1.12
NX-TC3408	Ver.1.0			Ver.1.21		Ver.1.21	Ver.1.11
	Ver.1.1			Ver.1.22		Ver.1.22	Ver.1.12

*1. Refer to the user's manual for the EtherNet/IP Coupler Units for information on the unit versions of EtherNet/IP Units that are compatible with EtherNet/IP Coupler Units.

*2. Refer to the user's manual for the EtherNet/IP Coupler Units for information on the unit versions of CPU Units and EtherNet/IP Units that are compatible with EtherNet/IP Coupler Units.

● RFID Units

NX Units		Corresponding unit versions/versions					
Model	Unit version	Application with an NJ/NX/NY-series Controller*1			Application with a CS/CJ/CP-series PLC*2		
		EtherNet/IP Coupler Unit	CPU Unit or Industrial PC	Sysmac Studio	EtherNet/IP Coupler Unit	Sysmac Studio	NX-IO Configurator
NX-V680C1	Ver.1.0	Ver.1.2	Ver.1.14	Ver.1.25	Ver.1.2	Ver.1.25	Ver.1.13
NX-V680C2							

*1. Refer to the user's manual of the EtherNet/IP Coupler Unit for information on the unit versions of EtherNet/IP Units that are compatible with EtherNet/IP Coupler Units.

*2. Refer to the user's manual of the EtherNet/IP Coupler Unit for information on the unit versions of CPU Units and EtherNet/IP Units that are compatible with EtherNet/IP Coupler Units.

● System Units

NX Units		Corresponding unit versions/versions					
Model	Unit version	Application with an NJ/NX/NY-series Controller*1			Application with a CS/CJ/CP-series PLC*2		
		EtherNet/IP Coupler Unit	CPU Unit or Industrial PC	Sysmac Studio	EtherNet/IP Coupler Unit	Sysmac Studio	NX-IO Configurator*3
NX-PD1000	Ver. 1.0	Ver. 1.2	Ver. 1.14	Ver. 1.19	Ver. 1.0	Ver. 1.10	Ver. 1.00
NX-PF0630							
NX-PF0730							
NX-PC0020							
NX-PC0010							
NX-PC0030							
NX-TBX01							

*1. Refer to the user's manual for the EtherNet/IP Coupler Units for information on the unit versions of EtherNet/IP Units that are compatible with EtherNet/IP Coupler Units.

*2. Refer to the user's manual for the EtherNet/IP Coupler Units for information on the unit versions of CPU Units and EtherNet/IP Units that are compatible with EtherNet/IP Coupler Units.

*3. For connection to an EtherNet/IP Coupler Unit with unit version 1.0, You can connect only to the peripheral USB port on the EtherNet/IP Coupler Unit. You cannot connect with any other path. If you need to connect by another path, use an EtherNet/IP Coupler Unit with unit version 1.2 or later.

● Safety Control Units

NX Units		Corresponding unit versions/versions					
Model	Unit version	Application with an NJ/NX/NY-series Controller*1			Application with a CS/CJ/CP-series PLC*2		
		EtherNet/IP Coupler Unit	CPU Unit or Industrial PC	Sysmac Studio	EtherNet/IP Coupler Unit	Sysmac Studio	NX-IO Configurator
NX-SL3300	Ver. 1.0	---	---	---	---	---	---
	Ver. 1.1	Ver. 1.2	Ver. 1.14	Ver. 1.19	Ver. 1.0	Ver. 1.10	---
NX-SL3500	Ver. 1.0	---	---	---	---	---	---
	Ver. 1.1						
NX-SL5500*3	Ver. 1.3	---	---	---	---	---	---
NX-SL5700*4	Ver. 1.2	---	---	---	---	---	---
	Ver. 1.3						
NX-SIH400	Ver. 1.0	---	---	---	---	---	---
	Ver. 1.1	Ver. 1.2	Ver. 1.14	Ver. 1.19	Ver. 1.0	Ver. 1.10	---
NX-SID800	Ver. 1.0						
NX-SOD400							
NX-SOH200							

*1. Refer to the user's manual for the EtherNet/IP Coupler Units for information on the unit versions of EtherNet/IP Units that are compatible with EtherNet/IP Coupler Units.

*2. Refer to the user's manual for the EtherNet/IP Coupler Units for information on the unit versions of CPU Units and EtherNet/IP Units that are compatible with EtherNet/IP Coupler Units.

*3. For the NX-SL5500, there is no unit version of 1.2 or earlier.

*4. For the NX-SL5700, there is no unit version of 1.1 or earlier.

A-6-3 Support Functions of the Communications Coupler Units and Restrictions on the NX Units

Some functions that were added or changed for each model addition and unit version of the Communications Coupler Units are restricted depending on the models of the NX Units and unit versions.

The following is a list of restrictions on NX Units for the functions.

When you use the functions of the Communications Coupler Units shown below in the NX Units, use the NX Units with the unit versions or the later unit versions shown in the models of the NX Units and unit versions.

Note that the following tables do not show whether your NX Unit can be connected to the Communications Coupler Unit. Refer to *A-6-1 Connection to an EtherCAT Coupler Unit* on page A-29 and *A-6-2 Connection to an EtherNet/IP Coupler Unit* on page A-37 for the connection specifications.

Also, refer to the user's manual for the Communications Coupler Unit for details on the functions listed below.

EtherCAT Coupler Unit

The following is a list of restrictions for NX Units categorized by type.

● NX Unit Part 1

Function of EtherCAT Coupler Unit		Models of NX Units and unit versions				
		Digital I/O Units	Analog Input Units/Analog Output Units	Temperature Input Units	Position Interface Units	System Units
CoE objects[*1] Reading/writing and saving Unit operation settings and changing the write mode for the NX Unit		Ver. 1.0	Ver. 1.0	Ver. 1.0	Ver. 1.0[*2]	Ver. 1.0
Restarting	Restarting a specified NX Unit [*3]	Ver.1.0	Ver.1.0	Ver.1.1	Ver.1.1	Ver.1.0
I/O checking		Ver.1.0	Ver.1.0	Ver.1.0	Ver.1.0 [*4]	Not supported
Monitoring total power-ON time		Ver.1.0	Ver.1.0	Ver.1.1	Ver.1.1	Ver.1.0
Restarting after Clear All Memory operation	Restarting only the specified NX Unit after performing the Clear All Memory operation for a specified NX Unit	Ver.1.0	Ver.1.0	Ver.1.1	Ver.1.1	Ver.1.0
Restarting after transferring Unit operation settings	Restarting the NX Unit to which the Unit operation settings were transferred when you transfer the settings to a specified NX Unit	Ver.1.0	Ver.1.0	Ver.1.1	Ver.1.1	Not supported
I/O refreshing method	Time stamp refreshing [*5] • Input refreshing with input changed time • Output refreshing with specified time stamp	Model on time stamp refreshing Ver.1.0	Not supported	Not supported	Not supported	Not supported
	Task period prioritized refreshing[*6]	Not supported	Not supported	Not supported	Ver.1.2	Not supported

*1. This function is supported by the NX-ECC203 with unit version 1.5 or later.

*2. The function to read/write NX Unit operation settings is not supported by Pulse Output Units.

*3. If you use a CPU Unit, restart instructions that specify an NX Unit are supported by CPU Units with unit version 1.07 or later. If you do not specify an NX Unit for the restart instruction, you can use version 1.05. Refer to the instructions reference manual for the connected CPU Unit or Industrial PC for details on the restart instructions for the NX Unit.

*4. When the MC Function Module is used, use the MC Test Run and axis status monitor (MC monitor table) functions of the Sysmac Studio to check the wiring.

*5. If you use a CPU Unit, the instructions for time stamp refreshing are supported by CPU Units with unit version 1.06 or later. If you do not use instructions for time stamp refreshing, you can use version 1.05. Refer to the instructions reference manual for the connected CPU Unit or Industrial PC for details on the instructions for time stamp refreshing.

*6. This method is supported only by the NX-ECC203.

● NX Unit Part 2

Function of EtherCAT Coupler Unit		Models of NX Units and unit versions				
		Safety Control Units	Communications Interface Units	Load Cell Input Unit	Heater Burnout Detection Units	IO-Link Master Unit
CoE objects*1 Reading/writing and saving Unit operation settings and changing the write mode for the NX Unit		Not supported	Ver. 1.0	Ver. 1.0	Ver. 1.0	Ver. 1.0
Restarting	Restarting a specified NX Unit *2	Not supported	Ver.1.0	Ver.1.0	Ver.1.0	Ver.1.0
I/O checking		Not supported	Not supported	Ver.1.0	Ver.1.0	Not supported
Monitoring total power-ON time		Not supported	Ver.1.0	Ver.1.0	Ver.1.0	Ver.1.0
Restarting after Clear All Memory operation	Restarting only the specified NX Unit after performing the Clear All Memory operation for a specified NX Unit	Not supported	Ver.1.0	Ver.1.0	Ver.1.0	Ver.1.0
Restarting after transferring Unit operation settings	Restarting the NX Unit to which the Unit operation settings were transferred when you transfer the settings to a specified NX Unit	Not supported	Ver.1.0	Ver.1.0	Ver.1.0	Ver.1.0
I/O refreshing method	Time stamp refreshing *3 • Input refreshing with input changed time • Output refreshing with specified time stamp	Not supported	Not supported	Not supported	Not supported	Not supported
	Task period prioritized refreshing*4	Not supported	Not supported	Ver.1.0	Not supported	Not supported

*1. This function is supported by the NX-ECC203 with unit version 1.5 or later.

*2. If you use a CPU Unit, restart instructions that specify an NX Unit are supported by CPU Units with unit version 1.07 or later. If you do not specify an NX Unit for the restart instruction, you can use version 1.05. Refer to the instructions reference manual for the connected CPU Unit or Industrial PC for details on the restart instructions for the NX Unit.

*3. If you use a CPU Unit, the instructions for time stamp refreshing are supported by CPU Units with unit version 1.06 or later. If you do not use instructions for time stamp refreshing, you can use version 1.05. Refer to the instructions reference manual for the connected CPU Unit or Industrial PC for details on the instructions for time stamp refreshing.

*4. This method is supported only by the NX-ECC203.

● NX Unit Part 3

Function of EtherCAT Coupler Unit		Models of NX Units and unit versions		
		Temperature Control Units	High-speed Analog Input Units	RFID Units
CoE objects[*1] Reading/writing and saving Unit operation settings and changing the write mode for the NX Unit		Ver.1.0	Ver.1.0	Ver.1.0
Restarting	Restarting a specified NX Unit [*2]	Ver.1.0	Ver.1.0	Ver.1.0
I/O checking		Ver.1.0	Ver.1.0	Not supported
Monitoring total power-ON time		Ver.1.0	Ver.1.0	Ver.1.0
Restarting after Clear All Memory operation	Restarting only the specified NX Unit after performing the Clear All Memory operation for a specified NX Unit	Ver.1.0	Ver.1.0	Ver.1.0
Restarting after transferring Unit operation settings	Restarting the NX Unit to which the Unit operation settings were transferred when you transfer the settings to a specified NX Unit	Ver.1.0	Ver.1.0	Ver.1.0
I/O refreshing method	Time stamp refreshing [*3] • Input refreshing with input changed time • Output refreshing with specified time stamp	Not supported	Not supported	Not supported
	Task period prioritized refreshing[*4]	Not supported	Not supported	Not supported

*1. This function is supported by the NX-ECC203 with unit version 1.5 or later.

*2. If you use a CPU Unit, restart instructions that specify an NX Unit are supported by CPU Units with unit version 1.07 or later. If you do not specify an NX Unit for the restart instruction, you can use version 1.05. Refer to the instructions reference manual for the connected CPU Unit or Industrial PC for details on the restart instructions for the NX Unit.

*3. If you use a CPU Unit, the instructions for time stamp refreshing are supported by CPU Units with unit version 1.06 or later. If you do not use instructions for time stamp refreshing, you can use version 1.05. Refer to the instructions reference manual for the connected CPU Unit or Industrial PC for details on the instructions for time stamp refreshing.

*4. This method is supported only by the NX-ECC203.

EtherNet/IP Coupler Unit

The following is a list of restrictions for NX Units categorized by type.

● NX Unit Part 1

Function of EtherNet/IP Coupler Unit		Models of NX Units and unit versions				
		Digital I/O Units	Analog Input Units/Analog Output Units	Temperature Input Units	Position Interface Units	System Units
Restarting	Restarting a specified NX Unit	Ver.1.0	Ver.1.0	Ver.1.1	Ver.1.1	Ver.1.0
Monitoring total power-ON time		Ver.1.0	Ver.1.0	Ver.1.1	Ver.1.1	Ver.1.0
Restarting after Clear All Memory operation	Restarting only the specified NX Unit after performing the Clear All Memory operation for a specified NX Unit	Ver.1.0	Ver.1.0	Ver.1.1	Ver.1.1	Ver.1.0
Restarting after transferring Unit operation settings	Restarting the NX Unit to which the Unit operation settings were transferred when you transfer the settings to a specified NX Unit	Ver.1.0	Ver.1.0	Ver.1.1	Ver.1.1	Not supported

● NX Unit Part 2

Function of EtherNet/IP Coupler Unit		Models of NX Units and unit versions				
		Safety Control Units	Communications Interface Units	Load Cell Input Unit	Heater Burnout Detection Units	IO-Link Master Unit
Restarting	Restarting a specified NX Unit	Not supported	Ver.1.0	Ver.1.0	Ver.1.0	Ver.1.0
Monitoring total power-ON time		Not supported	Ver.1.0	Ver.1.0	Ver.1.0	Ver.1.0
Restarting after Clear All Memory operation	Restarting only the specified NX Unit after performing the Clear All Memory operation for a specified NX Unit	Not supported	Ver.1.0	Ver.1.0	Ver.1.0	Ver.1.0
Restarting after transferring Unit operation settings	Restarting the NX Unit to which the Unit operation settings were transferred when you transfer the settings to a specified NX Unit	Not supported	Ver.1.0	Ver.1.0	Ver.1.0	Ver.1.0

● NX Unit Part 3

Function of EtherNet/IP Coupler Unit		Models of NX Units and unit versions		
		Temperature Control Units	High-speed Analog Input Units	RFID Units
Restarting	Restarting a specified NX Unit	Ver.1.0	Not supported	Ver.1.0
Monitoring total power-ON time		Ver.1.0	Not supported	Ver.1.0
Restarting after Clear All Memory operation	Restarting only the specified NX Unit after performing the Clear All Memory operation for a specified NX Unit	Ver.1.0	Not supported	Ver.1.0
Restarting after transferring Unit operation settings	Restarting the NX Unit to which the Unit operation settings were transferred when you transfer the settings to a specified NX Unit	Ver.1.0	Not supported	Ver.1.0

A-7 Version Information with Communication Control Units

This section provides version-related information when connecting Units to a Communication Control Unit. This section describes the relationship between the unit versions of each Unit and the Communication Control Unit, and Sysmac Studio version, and the specification changes for each unit version of each Unit.

A-7-1 Relationship between Unit Versions of Units

The relationship between the unit versions of each Unit, Communication Control Unit, and Sysmac Studio version are shown below.

Interpreting the Version Combination Tables

The items that are used in the version combination tables are given below.

NX Units		Corresponding unit versions/versions	
Model	Unit version	Communication Control Unit	Sysmac Studio
Model numbers of the NX Units.	Unit versions of the NX Units.	Unit versions of the Communication Control Unit that are compatible with the NX Units.	Sysmac Studio versions that are compatible with the NX Units and Communication Control Units.

Version Combination Tables

- With the combinations of the unit versions/versions shown below, you can use the functions that are supported by the unit version of the Unit model. Use the unit versions/versions that correspond to the NX Unit models and the unit versions or the later/higher versions. You cannot use the specifications that were added or changed for the relevant NX Unit models and the unit versions unless you use the corresponding unit versions/versions.
- You cannot connect NX Units that are not given in the table to the Communication Control Units. You cannot connect the relevant NX Unit that is given in the table to the Communication Control Unit if "---" is shown in the corresponding unit versions/versions column.
- Depending on the type and model of the Unit to which the NX Unit is connected, some Units do not have the corresponding versions given in the table. If a Unit does not have the specified version, support is provided by the oldest available version after the specified version. Refer to the user's manuals for the specific Units for the relation between models and versions.
- If you use the corresponding unit versions/versions given in the following table or later/higher versions, refer to the version information in the user's manual for the Communication Control Unit.

● Digital I/O Units

NX Units		Corresponding unit versions/versions	
Model	Unit version	Communication Control Unit	Sysmac Studio
NX-ID3317	Ver.1.0	Ver.1.00	Ver.1.24
NX-ID3343			
NX-ID3344		---	---
NX-ID3417		Ver.1.00	Ver.1.24
NX-ID3443			
NX-ID3444		---	---
NX-ID4342		Ver.1.00	Ver.1.24
NX-ID4442			
NX-ID5142-1			
NX-ID5142-5			
NX-ID5342			
NX-ID5442			
NX-ID6142-5			
NX-ID6142-6			
NX-IA3117			
NX-OD2154		---	---
NX-OD2258			
NX-OD3121		Ver.1.00	Ver.1.24
NX-OD3153			
NX-OD3256			
NX-OD3257			
NX-OD3268			
NX-OD4121			
NX-OD4256			
NX-OD5121			
NX-OD5121-1			
NX-OD5121-5			
NX-OD5256			
NX-OD5256-1			
NX-OD5256-5			
NX-OD6121-5			
NX-OD6121-6			
NX-OD6256-5			
NX-OC2633			
NX-OC2733			
NX-OC4633			
NX-MD6121-5			
NX-MD6121-6			
NX-MD6256-5			

● Analog Input Units/Analog Output Units

NX Units		Corresponding unit versions/versions	
Model	Unit version	Communication Control Unit	Sysmac Studio
NX-AD2203	Ver.1.0	Ver.1.00	Ver.1.24
NX-AD2204			
NX-AD2208			
NX-AD2603			
NX-AD2604			
NX-AD2608			
NX-AD3203			
NX-AD3204			
NX-AD3208			
NX-AD3603			
NX-AD3604			
NX-AD3608			
NX-AD4203			
NX-AD4204			
NX-AD4208			
NX-AD4603			
NX-AD4604			
NX-AD4608			
NX-DA2203			
NX-DA2205			
NX-DA2603			
NX-DA2605			
NX-DA3203			
NX-DA3205			
NX-DA3603			
NX-DA3605			

● Temperature Input Units

NX Units		Corresponding unit versions/versions	
Model	Unit version	Communication Control Unit	Sysmac Studio
NX-TS2101	Ver.1.0	Ver.1.00	Ver.1.24
	Ver.1.1		
NX-TS2102	Ver.1.1		
NX-TS2104	Ver.1.1		
NX-TS2201	Ver.1.0		
	Ver.1.1		
NX-TS2202	Ver.1.1		
NX-TS2204	Ver.1.1		
NX-TS3101	Ver.1.0		
	Ver.1.1		
NX-TS3102	Ver.1.1		
NX-TS3104	Ver.1.1		
NX-TS3201	Ver.1.0		
	Ver.1.1		
NX-TS3202	Ver.1.1		
NX-TS3204	Ver.1.1		

System Units

NX Units		Corresponding unit versions/versions	
Model	Unit version	Communication Control Unit	Sysmac Studio
NX-PD1000	Ver.1.0	Ver.1.00	Ver.1.24
NX-PF0630			
NX-PF0730			
NX-PC0020			
NX-PC0010			
NX-PC0030			
NX-TBX01			

Safety Control Units

NX Units		Corresponding unit versions/versions	
Model	Unit version	Communication Control Unit	Sysmac Studio
NX-SL3300	Ver.1.0	---	---
	Ver.1.1		
NX-SL3500	Ver.1.0		
	Ver.1.1		
NX-SL5500*1	Ver.1.3	Ver.1.01	Ver.1.24
NX-SL5700*2	Ver.1.2	Ver.1.00 only*3	
	Ver.1.3	Ver.1.01	
NX-SIH400	Ver.1.0	Ver.1.00	
	Ver.1.1		
NX-SID800	Ver.1.0		
NX-SOD400			
NX-SOH200			

*1. For the NX-SL5500, there is no unit version of 1.2 or earlier.

*2. For the NX-SL5700, there is no unit version of 1.1 or earlier.

*3. When you use the NX-SL5700 unit version of 1.2, it can be connected only to the Communication Control Unit with unit version of 1.00.

A-7-2 Support Functions of the Communication Control Units and Restrictions on the NX Units

Some support functions of the Communication Control Units are restricted depending on the models of the NX Units and unit versions.

The following is a list of restrictions on NX Units for the functions.

When you use the functions of the Communication Control Units shown below in the NX Units, use the NX Units with the unit versions or the later unit versions shown in the models of the NX Units and unit versions.

Note that the following tables do not show whether your NX Unit can be connected to the Communication Control Unit. Refer to *A-7-1 Relationship between Unit Versions of Units* on page A-50 for the connection specifications.

Also, refer to the user's manual of the Communication Control Units for details on the functions listed below.

Functions of Communication Control Unit		Models of NX Units and unit versions				
		Digital I/O Units	Analog Input Units/Analog Output Units	Temperature Input Units	System Units	Safety Control Units
Restarting	Restarting a specified NX Unit	Ver.1.0	Ver.1.0	Ver.1.1	Ver.1.0	Not supported
Monitoring total power-ON time		Ver.1.0	Ver.1.0	Ver.1.1	Ver.1.0	Ver.1.2*1
Restarting after transferring Unit operation settings	Restarting the NX Unit to which the Unit operation settings were transferred when you transfer the settings to a specified NX Unit	Ver.1.0	Ver.1.0	Ver.1.1	Not supported	Not supported

*1. The NX-SL5500 and NX-SL5700 support this function.

OMRON Corporation **Industrial Automation Company**
Kyoto, JAPAN
Contact: www.ia.omron.com

Regional Headquarters
OMRON EUROPE B.V.
Wegalaan 67-69, 2132 JD Hoofddorp
The Netherlands
Tel: (31)2356-81-300/Fax: (31)2356-81-388

OMRON ELECTRONICS LLC
2895 Greenspoint Parkway, Suite 200
Hoffman Estates, IL 60169 U.S.A.
Tel: (1) 847-843-7900/Fax: (1) 847-843-7787

OMRON ASIA PACIFIC PTE. LTD.
No. 438A Alexandra Road # 05-05/08 (Lobby 2),
Alexandra Technopark,
Singapore 119967
Tel: (65) 6835-3011/Fax: (65) 6835-2711

OMRON (CHINA) CO., LTD.
Room 2211, Bank of China Tower,
200 Yin Cheng Zhong Road,
PuDong New Area, Shanghai, 200120, China
Tel: (86) 21-5037-2222/Fax: (86) 21-5037-2200

Authorized Distributor:

Cat. No. W525-E1-19 1018