OMRON

Machine Automation Controller

NX-series

Data Reference Manual

NX-□□□□□□ I/O and Interface Units

SYSMAC always in control

W525-E1-09

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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 Slave Terminals.

Use this manual when considering the Unit configuration of 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 product.

- NX-series

  Communications Coupler 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

CONTENTS

Section 1 Data List

Appendices

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 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 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 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

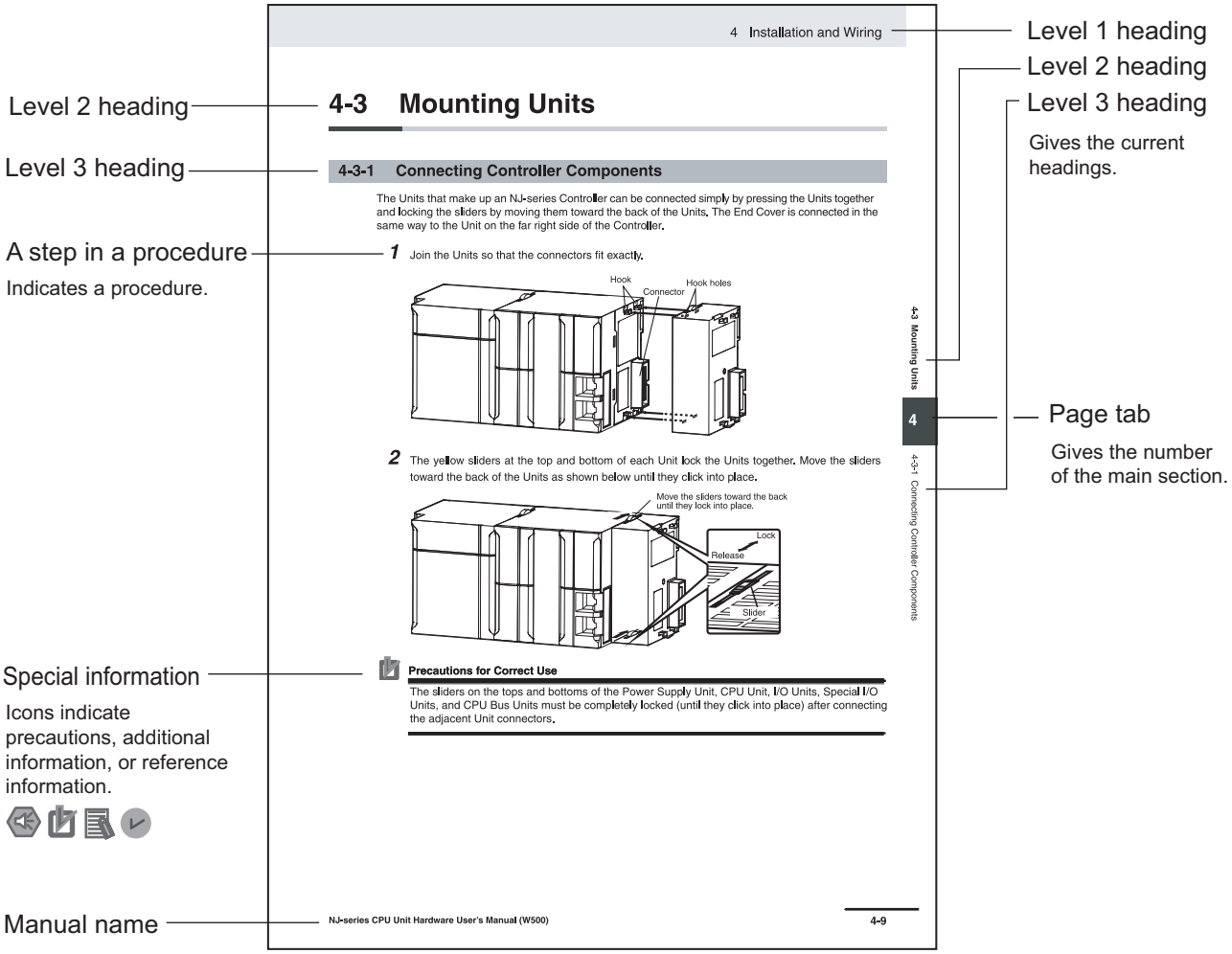
*1. From revision 05 of this manual, information on the NX-series Temperature Input Units (NX-TS□□□□) that were included in previous revisions was moved to the following manual: *NX-series Analog I/O Units User's Manual for Temperature Input Units and Heater Burnout Detection Units* (Cat. No. W566).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

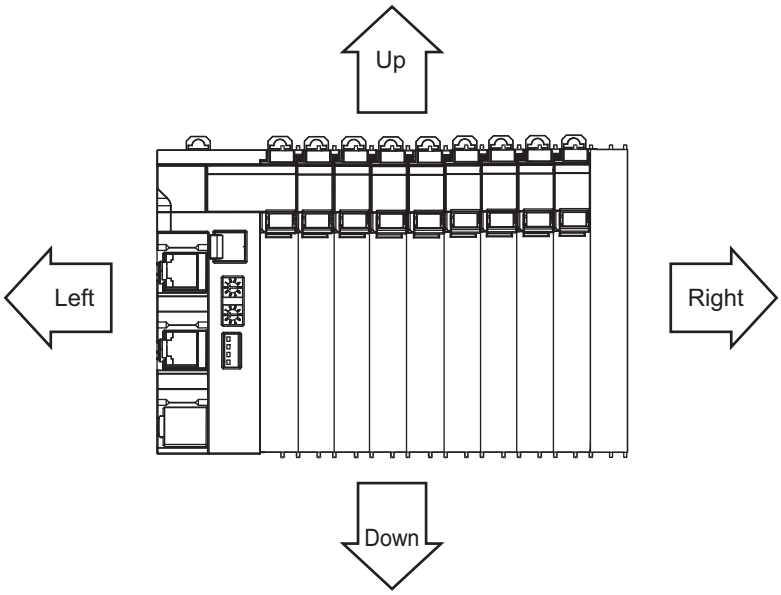
Version Information

Information on differences in specifications and functionality for CPU Units and Communications Coupler Units with different unit versions and for different versions of the Sysmac Studio 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 Sysmac Studio to the physical Controller and “upload” refers to transferring data from the physical Controller to the Sysmac Studio.
  For the Sysmac Studio, synchronization is used to both upload and download data. Here, “synchronize” means to automatically compare the data for the Sysmac Studio on the computer with the data in the physical Controller and transfer the data in the direction that is specified by the user.
- In this manual, the directions in relation to the Units are given in the following figure, which shows upright installation.



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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 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 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.

Manual name	Cat. No.	Model numbers	Application	Description
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-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 CPU Units, including introductory information, designing, installation, and maintenance. Mainly hardware information is provided.	An introduction to the entire NX-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 Use this manual together with the *NJ/NX-series CPU Unit Software User's Manual* (Cat. No. W501).
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 Use this manual together with the *NJ/NX-series CPU Unit Software User's Manual* (Cat. No. W501).

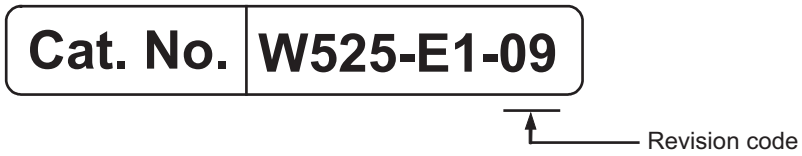
Manual name	Cat. No.	Model numbers	Application	Description
NJ/NX-series CPU Unit Software User's Manual	W501	NX701-□□□□ NJ501-□□□□ NJ301-□□□□ NJ101-□□□□	Learning how to program and set up an NJ/NX-series CPU Unit. Mainly software information is provided.	The following information is provided on an NJ/NX-series CPU Unit. • CPU Unit operation • CPU Unit features • Initial settings • Programming based on IEC 61131-3 language specifications Use this manual together with the *NJ-series CPU Unit Hardware User's Manual* (Cat. No. W500) or *NX-series CPU Unit Hardware User's Manual* (Cat. No. W535).
NJ/NX-series Instructions Reference Manual	W502	NX701-□□□□ NJ501-□□□□ NJ301-□□□□ NJ101-□□□□	Learning detailed specifications on the basic instructions of an NJ/NX-series CPU Unit.	The instructions in the instruction set (IEC 61131-3 specifications) are described. When programming, use this manual together with the *NJ-series CPU Unit Hardware User's Manual* (Cat. No. W500) or *NX-series CPU Unit Hardware User's Manual* (Cat. No. W535) and with the *NJ/NX-series CPU Unit Software User's Manual* (Cat. No. W501).

*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.

Sections in this Manual

1

Data List

This section provides the data lists for Communications Coupler Units and NX Units.

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

The items for this format are explained below.

● Unit Configuration Data

The Unit configuration data is the data required to create the Unit configuration of Slave Terminal.

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 Slave Terminal.

Refer to the user's manual for the Communications Coupler Unit on the maximum value for each data.

Item	Description
NX Unit power consumption	The power consumption of the NX Unit power supply of the Unit.
Current consumption from I/O power supply	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.
Input current	The input current of the Unit at the rated voltage. Only the DC Input Units and AC Input Units have this item.
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 Communications Coupler Unit and the Additional I/O Power Supply Unit do not have this item.
Weight	The weight of the Unit.
Width	The width of the Unit. The unit is "mm".
I/O data size	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.
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.
Number of cyclic communications connections*1	The maximum number of connections that can be set by Class 1 messages.

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

Summary Specifications

The summary specifications of the Units to configure the 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 Communications Coupler Units

This section describes the data for Communications Coupler Units.

1-2-1 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.
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.

1-2-2 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.
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 Digital I/O Units

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

1-3-1 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
NX-ID3317	0.50	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							34/0					Changed time	
NX-ID3417	0.50	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							34/0					Changed time	
NX-ID4342	0.50	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
NX-ID5142-1	0.55	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
NX-ID5142-5	0.55	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	0.60		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
NX-ID6142-6	0.55	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
NX-IA3117	0.50	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.

1-3-2 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
NX-OD2154	0.50	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		40							PNP				
NX-OD3121	0.55	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	0.50	40											300/300 ns max.
NX-OD3268		20	external							2 A/point, 8 A/Unit			0.5/1.0 ms max.
NX-OD4121	0.55	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	0.65	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	0.70	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
NX-OD5121-1	0.60	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	0.65								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
NX-OD5121-5	0.60	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	0.70	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	1.00	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
NX-OD6121-6	0.80	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
NX-OC2633	0.80	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	0.95			70					N.O. + N.C.			

1-3-3 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
NX-MD6121-5	0.70	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	0.75	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
NX-MD6121-6	0.70	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.

1-4 Analog I/O Units

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

1-4-1 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
NX-AD2203	0.90	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	1.05		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	0.90		NX bus			8/0		4 points	4 to 20 mA	1/8000	Single	Free	250 µs
NX-AD3204			No supply								Diff		
NX-AD3208	0.95									1/30000		Sync	10 µs
NX-AD3603	1.10		NX bus						-10 to +10 V	1/8000	Single	Free	250 µs
NX-AD3604			No supply								Diff		
NX-AD3608										1/30000		Sync	10 µs
NX-AD4203	1.05		NX bus			16/0		8 points	4 to 20 mA	1/8000	Single	Free	250 µs
NX-AD4204			No supply								Diff		
NX-AD4208	1.10									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

1-4-2 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
NX-DA2203	1.75	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	1.10								-10 to +10 V	1/8000	Free	250 µs
NX-DA2605										1/30000	Sync	10 µs
NX-DA3203	1.80					0/8		4 points	4 to 20 mA	1/8000	Free	250 µs
NX-DA3205										1/30000	Sync	10 µs
NX-DA3603	1.25								-10 to +10 V	1/8000	Free	250 µs
NX-DA3605										1/30000	Sync	10 µs

1-4-3 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
NX-TS2101	0.90	No consumption	No supply	70	12	4/0	1/0	2 points	Thermocouple	250 ms	0.1°C max. *1	Free
NX-TS2102	0.80									10 ms	0.01°C max.	
NX-TS2104						8/0				60 ms	0.001°C max.	
NX-TS2201	0.90					4/0			Resistance thermometer	250 ms	0.1°C max.	
NX-TS2202	0.75								Resistance thermometer	10 ms	0.01°C max.	
NX-TS2204						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
NX-TS3101	1.30	No consumption	No supply	140	24	8/0	1/0	4 points	Thermocouple	250 ms	0.1°C max. *1	Free
NX-TS3102	1.10									10 ms	0.01°C max.	
NX-TS3104						16/0				60 ms	0.001°C max.	
NX-TS3201	1.30					8/0			Resistance thermometer	250 ms	0.1°C max.	
NX-TS3202	1.05			130					Resistance thermometer	10 ms	0.01°C max.	
NX-TS3204						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.

1-4-4 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						
								CT input section		Control output section				I/O refreshing method
	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	Maximum heater current	Number of points	Internal I/O common	Maximum load current	Rated voltage	
NX-HB3101	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	

1-5 Position Interface Units

This section describes the data for Position Interface Units.

1-5-1 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
NX-EC0112	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	0.95							1 (PNP)	3 (PNP)			
NX-EC0132	0.95	30*2		130	24	18/4	1/1	1	3 (NPN)	4 MHz		Line receiver input
NX-EC0142	1.05								3 (PNP)			
NX-EC0212	0.85	0		70	12	36/8	2/2	2 (NPN)	None	500 kHz		24 V voltage input
NX-EC0222	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.

1-5-2 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
NX-ECS112	0.85	20	NX bus	65	12	10/0	1/0	1	None	2 MHz	Sync or Task*1
NX-ECS212	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.

1-5-3 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
NX-PG0112	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	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
NX-PG0232-5	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	1.30	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.

1-6 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
NX-CIF101	0.90	No consumption	No supply	66	12	30/28	1/1	Screwless clamping terminal block	RS-232C	1	No-protocol	Free
NX-CIF105	1.45			69					RS-422A/485			
NX-CIF210	0.95			91	30	60/56	2/2	D-sub connector	RS-232C	2		

1-7 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
NX-RS1201	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

1-8 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				
									Internal I/O common			
	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	Digital inputs (in SIO (DI) Mode)	Digital outputs (in SIO (DO) Mode)	Digital inputs for pin 2 (in IO-Link Mode)	I/O refreshing method
NX-ILM400	0.80	50	NX bus	67	12	14/8	4/4	4	PNP	PNP	PNP	Free

1-9 System Units

This section describes the data for System Units.

1-9-1 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.

● 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
NX-PD1000	0.45	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.

1-9-2 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
NX-PF0630	0.45	10	65	12	0/0	0/0	5 to 24 VDC	4 A
NX-PF0730								10 A

1-9-3 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
NX-PC0020	0.45	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	

1-9-4 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
NX-TBX01	0.45	No consumption	No supply	65	12	0/0	0/0	14 terminals

1-10 Safety Control Units

This section describes the data for Safety Control Units.

1-10-1 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.
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	I/O refreshing method
NX-SL3300	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	

1-10-2 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
NX-SID800	0.75	20	3.0	NX bus	70	12	10/10	2/2	8 points	2 points	PNP	24 VDC	No	1	Free
NX-SIH400	0.70		4.5				8/8		4 points				Yes		

1-10-3 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
NX-SOD400	0.75	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	0.70	40						2 points		2.0 A/point, 4.0 A/Unit at 40°C, 2.5 A/Unit at 55°C			

A

Appendices

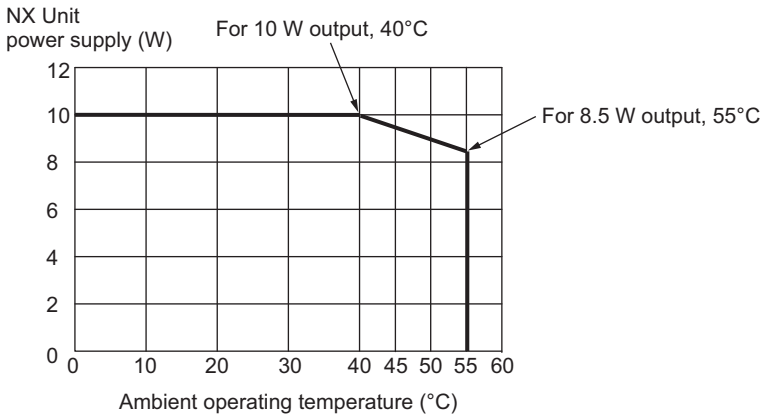
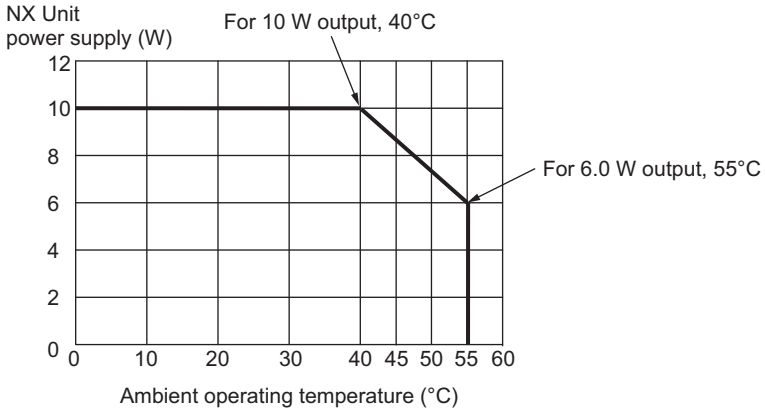
This section describes NX Unit power supply and I/O power supply capacity, NX Units that have restrictions in the communications cycles, and specific values of NX Units for calculating communications performance.

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 Slave Terminal has different restrictions on the installation orientation and maximum output capacity. This section describes the restrictions on each Unit.

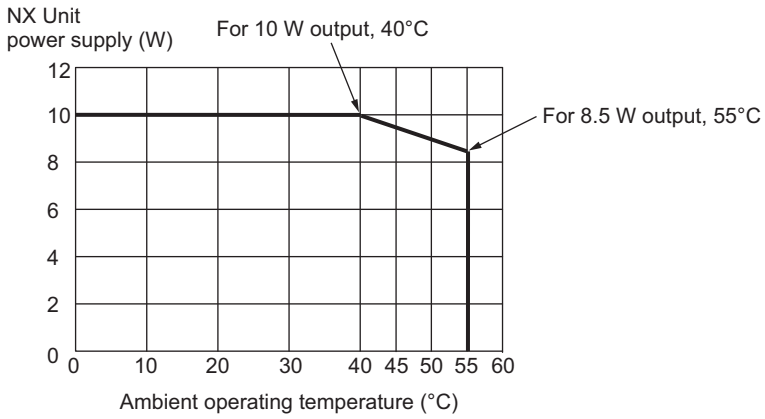
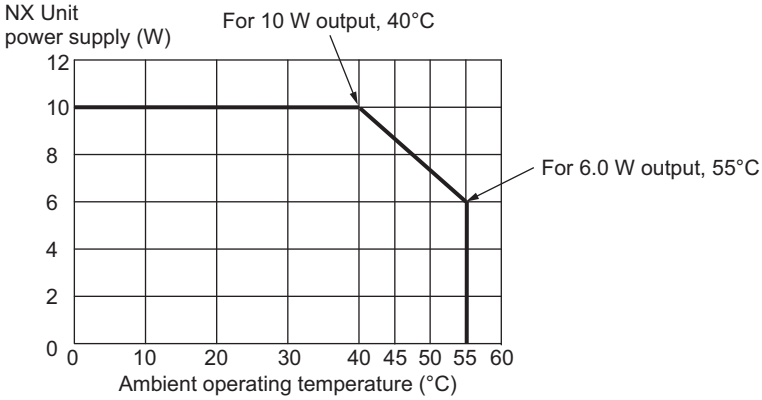
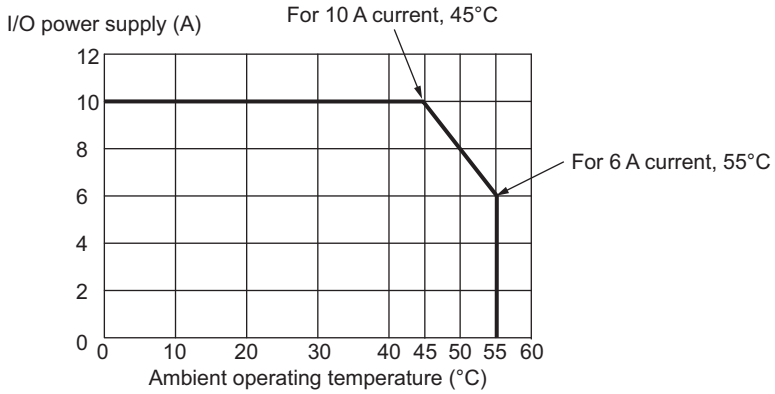
A-1-1 EtherCAT Coupler Unit

● 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 

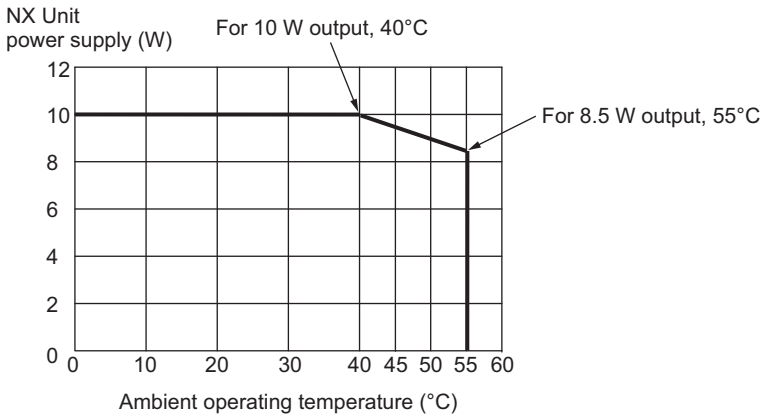
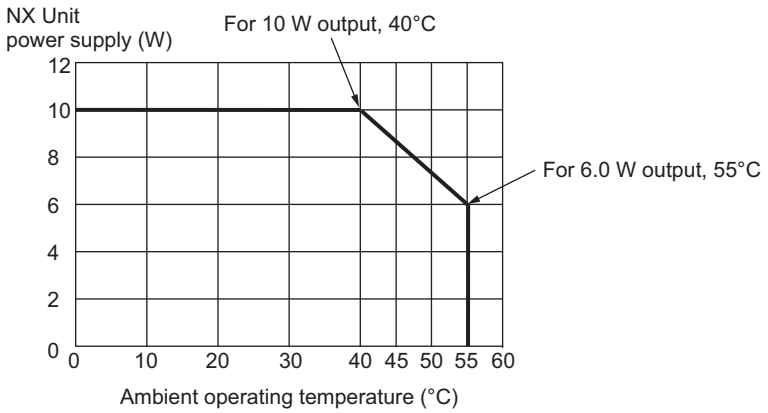
A-1-2 EtherNet/IP Coupler Unit

● 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: Possible in 6 orientations. Restrictions: • For upright installation  • For any installation other than upright 

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)

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 Communications Performance Calculation

This section describes the specific values of NX Units for calculating the process data communications performance of EtherCAT Slave Terminals.

Refer to the *NX-series EtherCAT Coupler Unit User's Manual* (Cat. No. W519-E1-06 or later) for details on calculating the process data communications performance of EtherCAT Slave Terminals.

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.

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]	–

*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

*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.

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]	–

NX Units		Tnx-Indelay*1	Remarks
Type	Model		
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]	–

*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]	–
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.

*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.

*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.

*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.

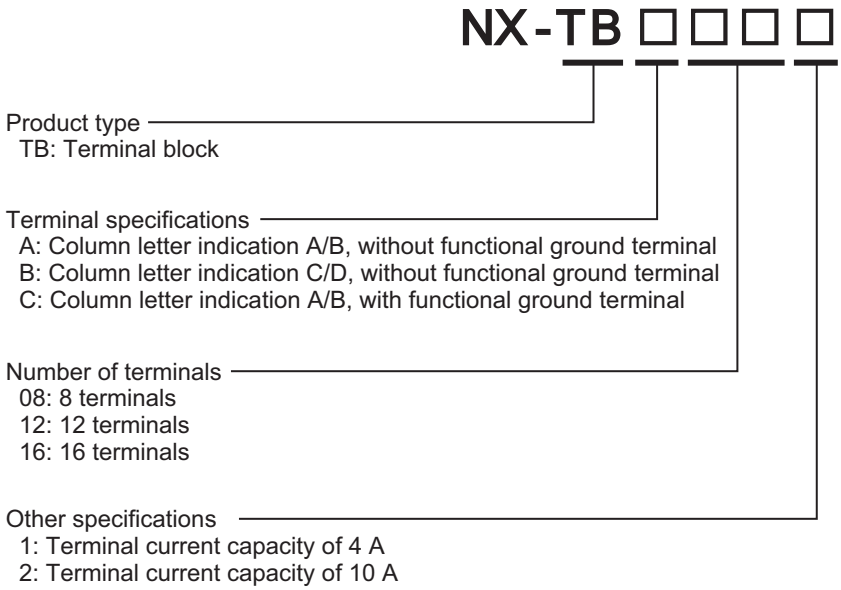
*1. If only a definition is given in the above table, refer to the data of the NX Units in *Section 1 Data List* or the manuals for the specific NX Units for the values of the items.

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-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
NX-ECC201	NX-TBA081	8	Not provided	4 A
	NX-TBC082		Provided	10 A
NX-ECC202	NX-TBC082			10 A
NX-EIC202	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-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-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.			
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

Unit model number	Terminal Block			
	Model	Number of terminals	Ground terminal mark	Current capacity
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-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-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

This section describes the relationship between the unit versions of the NX Units, Communications Coupler Units and CPU Units, and the versions of the Sysmac Studio, 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 the NX Units and the Communications Coupler Units, CPU Units, and Sysmac Studio versions are shown below.

How to Read the Version Combination Table

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

NX Units		Corresponding Unit Versions/Versions				
		EtherCAT			EtherNet/IP	
Model	Unit version	Communications Coupler Units	CPU Units	Sysmac Studio	Communications Coupler Units	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 NX-series CPU Units or NJ-series CPU Units that are compatible with the EtherCAT Coupler Unit.	Sysmac Studio versions that are compatible with the NX Units, EtherCAT Coupler Units and CPU Units.	Unit versions of EtherNet/IP Coupler Units that are compatible with the NX Units.	Sysmac Studio versions that are compatible with the NX Units and EtherNet/IP Coupler Units.

Version Combination Table

- With the combinations of the unit versions/versions shown below, you can use all 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.
- If you use a unit version/version later/higher than the corresponding unit versions/versions below, refer to the version information for the Communications Coupler Unit and CPU Unit.

● Communications Coupler Units

Model number of EtherCAT Coupler Unit	Unit version	Corresponding unit version/version*1			
		Using an NX-series CPU Unit		Using an NJ-series CPU Unit	
		Unit version of CPU Unit	Sysmac Studio version	Unit version of CPU Unit	Sysmac Studio version
NX-ECC201	Ver.1.2	Ver. 1.10 or later	Ver. 1.13 or higher	Ver. 1.07 or later	Ver. 1.08 or higher
	Ver.1.1			Ver. 1.06 or later	Ver. 1.07 or higher
	Ver.1.0			Ver. 1.05 or later	Ver. 1.06 or higher
NX-ECC202	Ver.1.2*2			Ver. 1.07 or later	Ver. 1.08 or higher
NX-ECC203	Ver.1.3*3			Ver. 1.07 or later	Ver. 1.13 or higher

*1. Some Units do not have all of the versions given in the above 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.

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

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

Model number of EtherNet/IP Coupler Unit	Unit version	Corresponding Versions
		Sysmac Studio
NX-EIC202	Ver.1.0	Ver.1.10

● Digital I/O Units

NX Units		Corresponding Unit Versions/Versions*1				
		EtherCAT			EtherNet/IP	
Model	Unit version	Communications Coupler Units	CPU Units	Sysmac Studio	Communications Coupler Units	Sysmac Studio
NX-ID3317	Ver.1.0	Ver.1.0	Ver.1.05	Ver.1.06	Ver.1.0	Ver.1.10
NX-ID3343						
NX-ID3344		Ver.1.1	Ver.1.06*2	Ver.1.07	---	---
NX-ID3417		Ver.1.0	Ver.1.05	Ver.1.06	Ver.1.0	Ver.1.10
NX-ID3443						
NX-ID3444		Ver.1.1	Ver.1.06*2	Ver.1.07	---	---
NX-ID4342		Ver.1.0	Ver.1.05	Ver.1.06	Ver.1.0	Ver.1.10
NX-ID4442						
NX-ID5142-1				Ver.1.13		Ver.1.13
NX-ID5142-5				Ver.1.10		Ver.1.10
NX-ID5342				Ver.1.06		
NX-ID5442						
NX-ID6142-5				Ver.1.10		
NX-ID6142-6				Ver.1.13		Ver.1.13
NX-IA3117				Ver.1.08		Ver.1.10
NX-OD2154		Ver.1.1	Ver.1.06*2	Ver.1.07	---	---
NX-OD2258						
NX-OD3121		Ver.1.0	Ver.1.05	Ver.1.06	Ver.1.0	Ver.1.10
NX-OD3153						
NX-OD3256						
NX-OD3257						
NX-OD3268				Ver.1.13		Ver.1.13
NX-OD4121				Ver.1.06		Ver.1.10
NX-OD4256						
NX-OD5121						
NX-OD5121-1				Ver.1.13		Ver.1.13
NX-OD5121-5				Ver.1.10		Ver.1.10
NX-OD5256				Ver.1.06		
NX-OD5256-1				Ver.1.13		Ver.1.13
NX-OD5256-5				Ver.1.10		Ver.1.10
NX-OD6121-5						
NX-OD6121-6				Ver.1.13		Ver.1.13
NX-OD6256-5				Ver.1.10		Ver.1.10
NX-OC2633				Ver.1.06		
NX-OC2733				Ver.1.08		
NX-MD6121-5				Ver.1.10		
NX-MD6121-6				Ver.1.13		Ver.1.13
NX-MD6256-5				Ver.1.10		Ver.1.10

*1. Some Units do not have all of the versions given in the above 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.

*2. 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 *NJ/NX-series Instructions Reference Manual* (Cat. No. W502) for details on the instructions for time stamp refreshing.

● Analog Input Units/Analog Output Units

NX Units		Corresponding Unit Versions/Versions*1				
		EtherCAT			EtherNet/IP	
Model	Unit Version	Communications Coupler Units	CPU Units	Sysmac Studio	Communications Coupler Units	Sysmac Studio
NX-AD2203	Ver.1.0	Ver.1.0	Ver.1.05	Ver.1.06	Ver.1.0	Ver.1.10
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. Some Units do not have all of the versions given in the above 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.

● Temperature Input Units

NX Units		Corresponding Unit Versions/Versions*1				
		EtherCAT			EtherNet/IP	
Model	Unit Version	Communications Coupler Units	CPU Units	Sysmac Studio	Communications Coupler Units	Sysmac Studio
NX-TS2101	Ver.1.0	Ver.1.0	Ver.1.05	Ver.1.06	Ver.1.0	Ver.1.10
	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					

*1. Some Units do not have all of the versions given in the above 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.

● Heater Burnout Detection Units

NX Units		Corresponding Unit Versions/Versions*1				
		EtherCAT			EtherNet/IP	
Model	Unit Version	Communications Coupler Units	CPU Units	Sysmac Studio	Communications Coupler Units	Sysmac Studio
NX-HB3101	Ver.1.0	Ver.1.0	Ver.1.05	Ver.1.16	Ver.1.0	Ver.1.16
NX-HB3201						

*1. Some Units do not have all of the versions given in the above 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.

● Position Interface Units

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

*1. Some Units do not have all of the versions given in the above 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.

*2. 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

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

*4. 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.

*5. 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				
		EtherCAT			EtherNet/IP	
Model	Unit version	Communications Coupler Units	CPU Units	Sysmac Studio	Communications Coupler Unit	Sysmac Studio
NX-CIF101	Ver.1.0	Ver.1.0	Ver.1.10	Ver.1.12	---	---
NX-CIF105						
NX-CIF210						

● Load Cell Input Unit

NX Units		Corresponding Unit Versions/Versions*1				
		EtherCAT			EtherNet/IP	
Model	Unit version	Communications Coupler Units	CPU Units	Sysmac Studio	Communications Coupler Unit	Sysmac Studio
NX-RS1201	Ver.1.0	Ver.1.0*2	Ver.1.05	Ver.1.16	Ver.1.0	Ver.1.16

*1. Some Units do not have all of the versions given in the above 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.

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

● IO-Link Master Unit

NX Units		Corresponding Unit Versions/Versions*1				
		EtherCAT			EtherNet/IP	
Model	Unit version	Communications Coupler Units	CPU Units	Sysmac Studio	Communications Coupler Unit	Sysmac Studio
NX-ILM400	Ver.1.0	Ver.1.0	Ver.1.12	Ver.1.16	Ver.1.0	Ver.1.16

*1. Some Units do not have all of the versions given in the above 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.

● System Units

NX Units		Corresponding Unit Versions/Versions*1				
		EtherCAT			EtherNet/IP	
Model	Unit version	Communications Coupler Units	CPU Units	Sysmac Studio	Communications Coupler Unit	Sysmac Studio
NX-PD1000	Ver.1.0	Ver.1.0	Ver.1.05	Ver.1.06	Ver.1.0	Ver.1.10
NX-PF0630						
NX-PF0730				Ver.1.08		
NX-PC0020				Ver.1.06		
NX-PC0010						
NX-PC0030						
NX-TBX01						

*1. Some Units do not have all of the versions given in the above 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.

● Safety Control Units

NX Units		Corresponding Unit Versions/Versions*1				
		EtherCAT			EtherNet/IP	
Model	Unit version	Communications Coupler Units	CPU Units	Sysmac Studio	Communications Coupler Unit	Sysmac Studio
NX-SL3300	Ver.1.0	Ver.1.1	Ver.1.06	Ver.1.07	---	---
	Ver.1.1			Ver.1.10	Ver.1.0	Ver.1.10
NX-SL3500	Ver.1.0	Ver.1.2	Ver.1.07	Ver.1.08	---	---
	Ver.1.1			Ver.1.10		
NX-SIH400	Ver.1.0	Ver.1.1	Ver.1.06	Ver.1.07	---	---
	Ver.1.1			Ver.1.10	Ver.1.0	Ver.1.10
NX-SID800	Ver.1.0	Ver.1.1	Ver.1.06	Ver.1.07		
NX-SOD400						
NX-SOH200						

*1. Some Units do not have all of the versions given in the above 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.

A-5-2 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.

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
Restarting	Restarting a specified NX Unit *1	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 *2	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	Ver.1.0
I/O refreshing method	Time stamp refreshing *3 • 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

*1. A CPU Unit with unit version 1.07 or later is required to specify an NX Unit with the restart instruction. If you do not specify an NX Unit with the restart instruction, you can use version 1.05. Refer to the *NJ/NX-series Instructions Reference Manual* (Cat. No. W502) for details on specifying an NX Unit with the restart instruction.

*2. 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.

*3. 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 *NJ/NX-series Instructions Reference Manual* (Cat. No. W502) for details on the instructions for time stamp refreshing.

● 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
Restarting	Restarting a specified NX Unit *1	Not supported	Ver.1.0	Ver.1.0	Ver.1.0	Ver.1.0
I/O checking		Not supported	Ver.1.0	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 *2 • Input refreshing with input changed time • Output refreshing with specified time stamp	Not supported	Not supported	Not supported	Not supported	Not supported

*1. A CPU Unit with unit version 1.07 or later is required to specify an NX Unit with the restart instruction. If you do not specify an NX Unit with the restart instruction, you can use version 1.05. Refer to the *NJ/NX-series Instructions Reference Manual* (Cat. No. W502) for details on specifying an NX Unit with the restart instruction.

*2. 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 *NJ/NX-series Instructions Reference Manual* (Cat. No. W502) for details on the instructions for time stamp refreshing.

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	Ver.1.0

● 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	Not supported	Ver.1.0	Ver.1.0	Ver.1.0
Monitoring total power-ON time		Not supported	Not supported	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	Not supported	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	Not supported	Ver.1.0	Ver.1.0	Ver.1.0

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