

# NX-series PROFINET® Coupler Unit NX-PNC

CSM\_NX-PNC\_DS\_E\_1\_2

## Connecting to open industrial network standard PROFINET RT.

- The PROFINET Coupler Unit is the link between the PROFINET multivendor network and the NX-series I/O Units. With wide variety of the I/O Units, the NX-series is the perfect match for the multivendor Controllers.



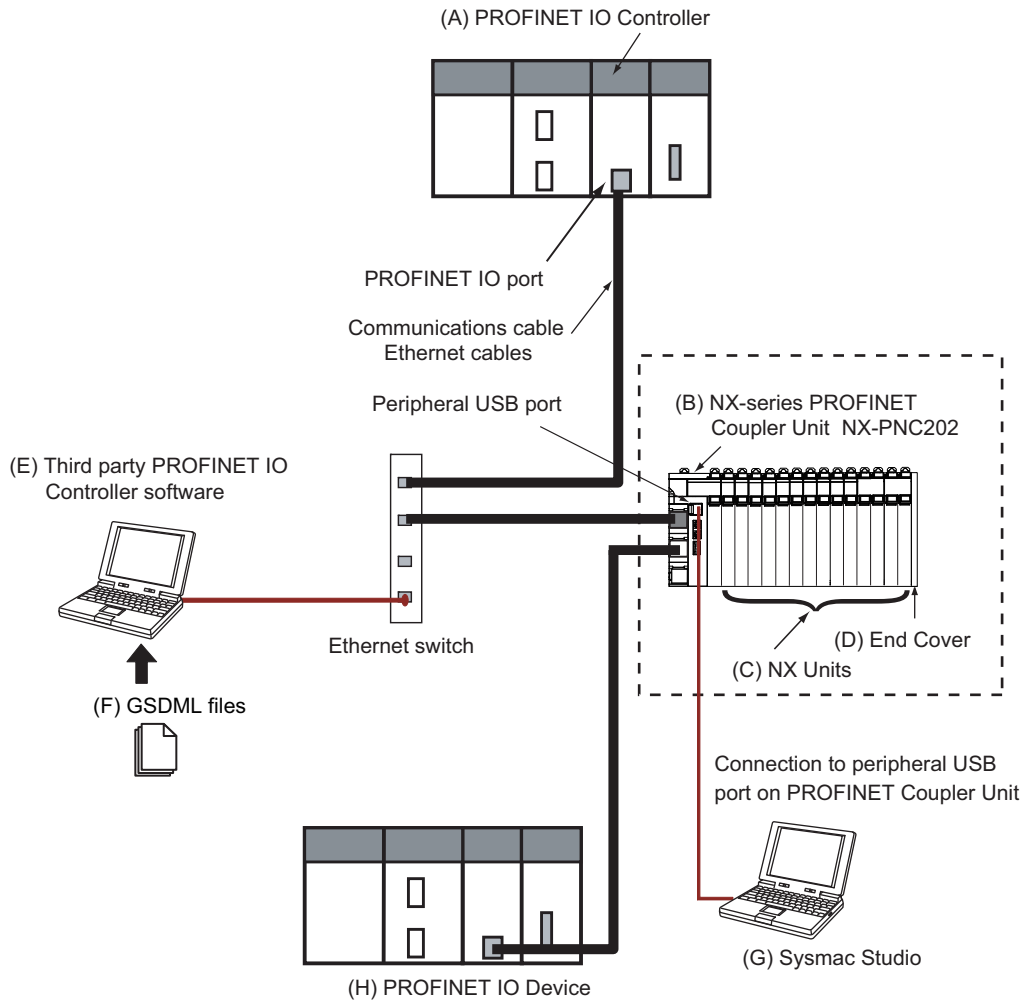
## Features

- Up to 63 NX-IO Units can be connected to one PROFINET Coupler Unit. Standard and high-performance units can be mixed. \*1
  - Each Coupler plus its I/O form just a single PROFINET IO device unit on the network.
  - PROFINET IO device configuration by Sysmac Studio can be done on-the-spot using the Coupler's built-in USB port.
- \*1. Input per Coupler Unit: Maximum 512 bytes, Output per Coupler Unit: Maximum 512 bytes

# NX-PNC

## System Configuration

An example of a system configuration for a PROFINET IO Device Terminal is shown below.



Letter	Item	Description
(A)	PROFINET IO Controller	The PROFINET IO Controller manages the PROFINET network, monitors the status of the IO Devices, and exchanges IO data with the IO Devices.
(B)	PROFINET Coupler Unit	The PROFINET Coupler Unit is an interface that performs IO refresh communications between a group of NX Units and the PROFINET Unit over a PROFINET network. The IO data for the NX Units is first accumulated in the PROFINET Coupler Unit and then all of the data is exchanged with the PROFINET Unit at the same time. You can connect up to 63 NX Units.
(C)	NX Units *1	The NX Units perform IO processing with connected external devices. The NX IO Units perform IO refresh communications with the PROFINET IO Controller through the PROFINET Coupler Unit.
(D)	End Cover	The End Cover is attached to the end of the IO Device Terminal.
(E)	Third party PROFINET IO Controller Software	The Third party PROFINET IO Controller Software runs on a personal computer and it is used to configure the PROFINET IO Controller and the connected PROFINET IO network with all IO Devices.
(F)	GSDML file	The GSDML file of the PROFINET Coupler Unit allows the user to configure the IO Controller Unit and the network for I/O data exchange with the PROFINET Coupler Unit and the NX IO System.
(G)	Sysmac Studio	Use Sysmac Studio to adjust the settings of the IO Device Terminal with the configuration and operation settings of the NX Units and PROFINET Coupler Unit.
(H)	PROFINET IO Device	The PROFINET IO Units that are coupled to the PROFINET IO Controller by means of the PROFINET Coupler Unit.


\*1. For whether an NX Unit can be connected to the PROFINET Coupler Unit, refer to the version information in the user's manual for the NX Unit.

## Ordering Information

### Applicable standards

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

## PROFINET Coupler Unit

Product name	Current consumption	Maximum I/O power supply current	Model
 PROFINET Coupler Unit	1.60 W or lower	10 A	NX-PNC202

## Automation Software Sysmac Studio

Please purchase a DVD and required number of licenses the first time you purchase the Sysmac Studio. DVDs and licenses are available individually. Each model of licenses does not include any DVD.

Product name	Specifications	Number of licenses	Media	Model
		1 license	---	
Sysmac Studio NX-I/O Edition Ver.1.□□□	Sysmac Studio NX-I/O Edition is a limited license that provides selected functions required for EtherNet/IP Coupler settings. Because this product is a license only, you need the Sysmac Studio Standard Edition DVD media to install it.	1 license	---	SYSMAC-NE001L
Sysmac Studio Standard Edition Ver.1.□□□	The Sysmac Studio is the software that provides an integrated environment for setting, programming, debugging and maintenance of machine automation controllers including the NJ/NX-series CPU Units, NYseries Industrial PC, EtherCAT Slave, and the HMI.	--- (Media only)	Sysmac Studio (32-bit) DVD	SYSMAC-SE200D
	Sysmac Studio runs on the following OS. Windows 7 (32-bit/64-bit version)/ Windows 8 (32-bit/64-bit version)/ Windows 8.1 (32-bit/64-bit version)/ Windows 10 (32-bit/64-bit version) *1	--- (Media only)	Sysmac Studio (64-bit) DVD	SYSMAC-SE200D-64
	This software provides functions of the Vision Edition. Refer to your OMRON website for details such as supported models and functions.	1 license *2*3*4	---	SYSMAC-SE201L

\*1. Model "SYSMAC-SE200D-64" runs on Windows 10 (64 bit).


\*2. The Sysmac Studio Standard Edition with license(s) (SYSMAC-SE□□□□L) provides functions of the NX-I/O Edition (SYSMAC-NE001L).

\*3. With the Sysmac Studio Standard Edition with license(s) (SYSMAC-SE□□□□L) version 1.45 or higher, you can use the setup functions for the PROFINET Coupler.

\*4. Multi licenses are available for the Sysmac Studio (3, 10, 30, or 50 licenses).

## Recommended PROFINET Communications Cables

### Cable with Connectors

Item	Appearance	Recommended manufacturer	Cable length (m)	Model
Cable with Connectors on Both Ends (RJ45/RJ45) Rugged RJ45 plugs type *1 Wire Gauge and Number of Pairs: AWG22, 2-pair Cable Cable color: Light blue		OMRON	0.3	XS5W-T421-AMD-K
			0.5	XS5W-T421-BMD-K
			1	XS5W-T421-CMD-K
			2	XS5W-T421-DMD-K
			5	XS5W-T421-GMD-K
			10	XS5W-T421-JMD-K

\*1. Standard type cables length 0.2, 0.3, 0.5, 1, 1.5, 2, 3, 5, 7.5, 10, 15 and 20 m are available. Rugged type cables length 0.3, 0.5, 1, 2, 3, 5, 10 and 15 m are available. For details, refer to Cat.No.G019.

### Cables / Connectors

Item		Recommended manufacturer	Model
Products for PROFINET (100BASE-TX)	Wire Gauge and Number of Pairs: AWG22, 2-pair Cable	Cables	Kuramo Electric Co. JMACS Japan Co., Ltd.
		RJ45 Assembly Connector	OMRON

\*1. We recommend you to use above cable for PROFINET and RJ45 Assembly Connector together.

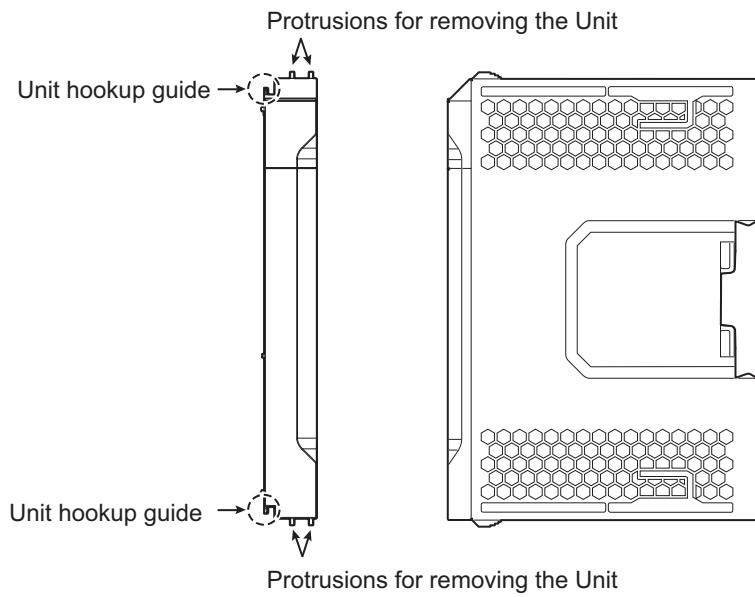
## Optional Products

Product name	Specification				Model
Unit/Terminal Block Coding Pins	Pins for 10 Units (30 terminal block pins and 30 Unit pins)				NX-AUX02
Product name	Specification				Model
	No. of terminals	Terminal number indications	Ground terminal mark	Terminal current capacity	
Terminal Block	8	A/B	Provided	10 A	NX-TBC082

## Accessories

### End Cover (NX-END01)

One End Cover is provided together with the PROFINET Coupler Unit.



## General Specifications

Item		Specification
<b>Enclosure</b>		Mounted in a panel
<b>Grounding method</b>		Ground to 100 $\Omega$ or less
<b>Operating environment</b>	<b>Ambient operating temperature</b>	0 to 55°C
	<b>Ambient operating humidity</b>	10% to 95% (with no condensation or icing)
	<b>Atmosphere</b>	Must be free from corrosive gases.
	<b>Ambient storage temperature</b>	-25 to 70°C (with no condensation or icing)
	<b>Altitude</b>	2,000 m max.
	<b>Pollution degree</b>	2 or less: Conforms to JIS B3502 and IEC 61131-2.
	<b>Noise immunity</b>	2 kV on power supply line (Conforms to IEC61000-4-4.)
	<b>Overvoltage category</b>	Category II: Conforms to JIS B3502 and IEC 61131-2.
	<b>EMC immunity level</b>	Zone B
	<b>Vibration resistance</b>	Conforms to IEC 60068-2-6. 5 to 8.4 Hz with 3.5-mm amplitude, 8.4 to 150 Hz, acceleration of 9.8 m/s <sup>2</sup> , 100 min each in X, Y, and Z directions (10 sweeps of 10 min each = 100 min total) *1
<b>Shock resistance</b>	Conforms to IEC 60068-2-27. 147 m/s <sup>2</sup> , 3 times each in X, Y, and Z directions *1	
<b>Applicable standards *2</b>		cULus: Listed UL508 and ANSI/ISA 12.12.01 EC: EN 61131-2, C-Tick or RCM, KC

\*1. Refer to the *NX-series Digital IO Units User's Manual* (Cat. No. W521) for the vibration and shock resistance specifications of the Relay Output Unit.

\*2. Refer to the OMRON website (<http://www.ia.omron.com/>) or consult your OMRON representative for the most recent applicable standards for each model.

# NX-PNC

## PROFINET Specifications

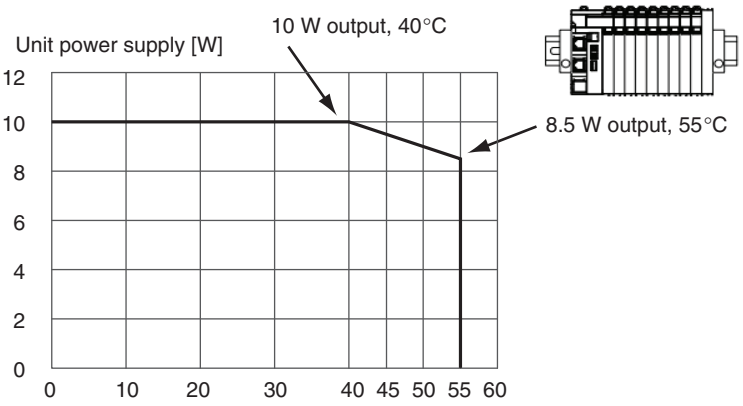
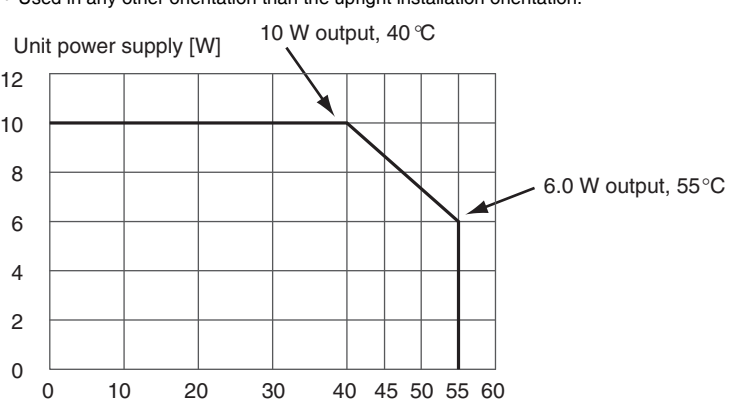
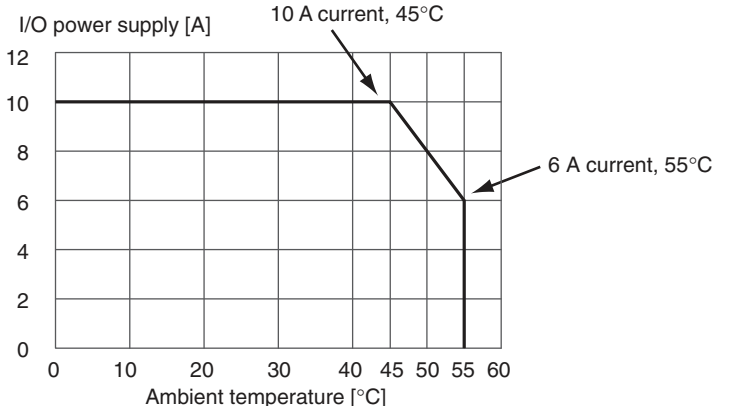
Item		Specification
Name		NX-PNC202
Manufacture ID		0x0264
Device ID		0x1500
PROFINET version		2.41
Application Relationship		Max 1
Send Data Interval		64, 128, 256, 512 ms
Data Size (In)	Status	Max 28 Bytes
	NX Unit In	512 Bytes *1
Data Size (Out)	Unit Control	2 Bytes
	NX Unit Out	512 Bytes *1
PROFINET interface	Protocol	PROFINET IO
	PROFINET unit type	PROFINET IO Device
	Isochronous mode	No
	Alarms	No
	Conformance Class	Class-A
Link speed		100 Mbps
Physical layer		100BASE-TX
Topology		Line, Tree, Star

\*1. NX Unit data size is fixed 512Bytes. If this is not enough the shortage data is filled with padding data. The data in the padding part will be zero.

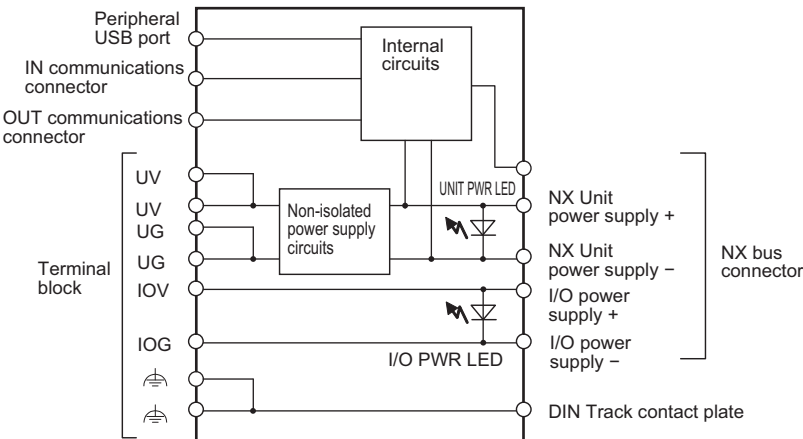
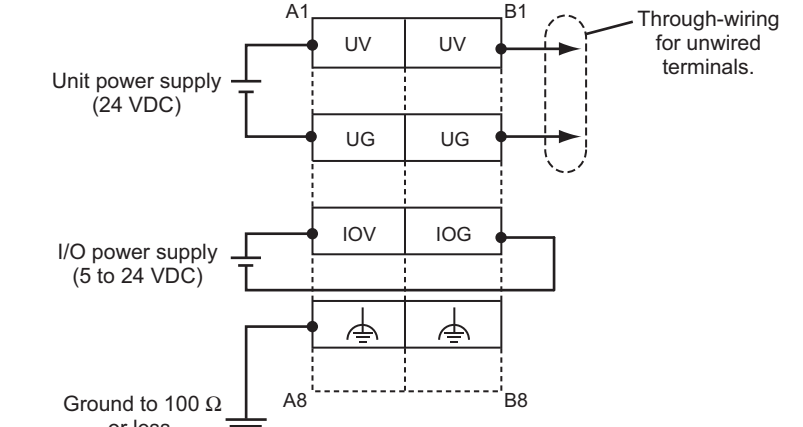
## PROFINET Coupler Unit Specifications

Item		Specification
<b>Model</b>		NX-PNC202
<b>Number of connectable NX Units</b>		63 Units max
<b>Refreshing method</b>		Free-run Refreshing
<b>NX bus I/O data size</b>		Input: up to 512 bytes Output: up to 512 bytes
<b>Ethernet connection</b>		RJ45(2 port) with switching hub (Layer 2), 100 Mbps, full-duplex, auto-negotiate *1 Max length of Ethernet cable: 100 m
<b>Unit power supply</b>	<b>Power supply voltage</b>	24 VDC (20.4 to 28.8 VDC)
	<b>NX Unit power supply capacity</b>	10 W max. Refer to <i>Installation orientation and restrictions</i> for details.
	<b>NX Unit power supply efficiency</b>	70%
	<b>Isolation method</b>	No isolation between NX Unit power supply and Unit power supply terminals
	<b>Current capacity of power supply terminals</b>	4 A max.
<b>I/O power supply</b>	<b>Power supply voltage</b>	5 to 24 VDC (4.5 to 28.8 VDC)
	<b>Maximum I/O power supply current</b>	10 A Refer to <i>Installation orientation and restrictions</i> for details.
	<b>Current capacity of power supply terminals</b>	10 A max.
<b>NX Unit power consumption</b>		1.60 W max.
<b>Current consumption from I/O power supply</b>		10 mA max. (for 24 VDC)
<b>Dielectric strength</b>		510 VAC for 1 min, leakage current: 5 mA max. (between isolated circuits)
<b>Insulation resistance</b>		100 VDC, 20 MΩ min. (between isolated circuits)
<b>USB port</b>		USB 2.0-compliant, Type-B, Max. 5m
<b>Dimensions (width height depth)</b>		46 mm * 100 mm * 71 mm
<b>Weight</b>		150 g max

\*1. It is not supported to change duplex mode (full/half) and link speed (100/10 Mbps) manually.

Item	Specification
<p><b>Installation orientation and restrictions</b></p>	<p>Installation orientation: 6 possible orientations            Restrictions:            • Used in the upright installation orientation.</p>
	 <p>Unit power supply [W]</p> <p>Ambient temperature [°C]</p> <p>10 W output, 40°C</p> <p>8.5 W output, 55°C</p>
	<p>• Used in any other orientation than the upright installation orientation.</p>  <p>Unit power supply [W]</p> <p>Ambient temperature [°C]</p> <p>10 W output, 40°C</p> <p>6.0 W output, 55°C</p>
 <p>I/O power supply [A]</p> <p>Ambient temperature [°C]</p> <p>10 A current, 45°C</p> <p>6 A current, 55°C</p>	



Item	Specification
<p><b>Circuit layout</b></p>	 <p>Peripheral USB port</p> <p>IN communications connector</p> <p>OUT communications connector</p> <p>Terminal block</p> <p>UV</p> <p>UV</p> <p>UG</p> <p>UG</p> <p>IOV</p> <p>IOV</p> <p>IOG</p> <p>IOG</p> <p>DIN Track contact plate</p> <p>Internal circuits</p> <p>Non-isolated power supply circuits</p> <p>UNIT PWR LED</p> <p>I/O PWR LED</p> <p>NX Unit power supply +</p> <p>NX Unit power supply -</p> <p>I/O power supply +</p> <p>I/O power supply -</p> <p>NX bus connector</p>
<p><b>Terminal arrangement</b></p>	 <p>A1</p> <p>B1</p> <p>Unit power supply (24 VDC)</p> <p>UV</p> <p>UV</p> <p>UG</p> <p>UG</p> <p>I/O power supply (5 to 24 VDC)</p> <p>IOV</p> <p>IOG</p> <p>IOV</p> <p>IOG</p> <p>Ground to 100 <math>\Omega</math> or less.</p> <p>A8</p> <p>B8</p> <p>Through-wiring for unwired terminals.</p>
<p><b>Accessory</b></p>	<p>End Cover (NX-END01): 1</p>

# NX-PNC

## Configuration Unit

Refer to the user's manuals for information on the NX Units that can be connected to the NX-series PROFINET Coupler Unit.

### PROFINET Coupler Unit

Unit	Model
PROFINET Coupler Unit	NX-PNC202

### I/O Units

Unit	Model				
	2-point Units	4-point Units	8-point Units	16-point Units	32-point Units
Digital Input Unit	-	NX-ID3317 NX-ID3343 NX-ID3417 NX-ID3443 NX-IA3117	NX-ID4342 NX-ID4442	NX-ID5142-1 NX-ID5142-5 NX-ID5342 NX-ID5442	NX-ID6142-5 NX-ID6142-6
Digital Output Unit	NX-OC2633 NX-OC2733	NX-OD3121 NX-OD3153 NX-OD3256 NX-OD3257 NX-OD3268	NX-OD4121 NX-OD4256 NX-OC4633	NX-OD5121 NX-OD5121-1 NX-OD5121-5 NX-OD5256 NX-OD5256-1 NX-OD5256-5	NX-OD6121-5 NX-OD6121-6 NX-OD6256-5
Digital Mixed I/O Unit	-	-	-	NX-MD6121-5 NX-MD6121-6 NX-MD6256-5	-
Analog Input Unit	NX-AD2603 NX-AD2604 NX-AD2608 NX-AD2203 NX-AD2204 NX-AD2208	NX-AD3603 NX-AD3604 NX-AD3608 NX-AD3203 NX-AD3204 NX-AD3208	NX-AD4603 NX-AD4604 NX-AD4608 NX-AD4203 NX-AD4204 NX-AD4208	-	-
Analog Output Unit	NX-DA2603 NX-DA2605 NX-DA2203 NX-DA2205	NX-DA3603 NX-DA3605 NX-DA3203 NX-DA3205	-	-	-
Temperature Input Unit	NX-TS2101 NX-TS2102 NX-TS2104 NX-TS2201 NX-TS2202 NX-TS2204	NX-TS3101 NX-TS3102 NX-TS3104 NX-TS3201 NX-TS3202 NX-TS3204	-	-	-
Heater Burnout Detection Unit	-	NX-HB3101 NX-HB3201	-	-	-

### Temperature Control Units

Unit	Model	
	2CH	4CH
Temperature Control Unit	NX-TC2405, NX-TC2406, NX-TC2407, NX-TC2408	NX-TC3405, NX-TC3406, NX-TC3407, NX-TC3408

### Load Cell Input Unit

Unit	Model
Load Cell Input Unit	NX-RS1201, NX-RS1201-K

### Position Interface Units

Unit	Model		
	1CH	2CH	4CH
Incremental Encoder Input Unit	NX-EC0112, NX-EC0122, NX-EC0132, NX-EC0142	NX-EC0212, NX-EC0222	-
SSI Input Unit	NX-ECS112	NX-ECS212	-

### System Units

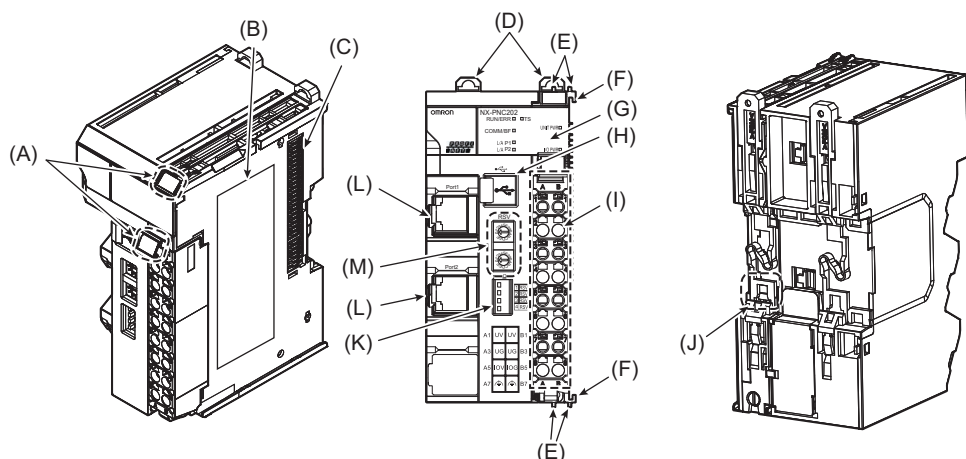
Unit	Model
Additional NX Unit Power Supply Unit	NX-PD1000
Additional I/O Power Supply Unit	NX-PF0630, NX-PF0730
I/O Power Supply Connection Unit	NX-PC0010, NX-PC0020, NX-PC0030
Shield Connection Unit	NX-TBX01

### RFID Units

Unit	Model
RFID Unit	NX-V680C1, NX-V680C2

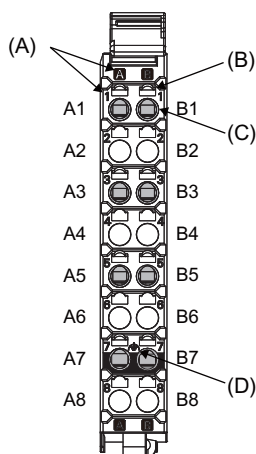
## External Interface

### PROFINET Coupler Unit NX-PNC202



Letter	Name	Function
(A)	Marker attachment locations	The locations where markers are attached. The markers made by OMRON are installed for the factory setting. Commercially available markers can also be installed.
(B)	Unit specifications	The specifications of the Unit are engraved in the side of the casing.
(C)	NX bus connector	This connector is used to connect the PROFINET Coupler Unit to the NX Unit on the right of the Coupler Unit.
(D)	DIN Track mounting hooks	These hooks are used to mount the PROFINET Coupler Unit to a DIN Track.
(E)	Protrusions for removing the Unit	The protrusions to hold when removing the Unit.
(F)	Unit hookup guides	These guides are used to connect two Units.
(G)	Indicators	The indicators show the current operating status of the Unit and the status of the power supply.
(H)	Peripheral USB port	This port is used to connect to the Sysmac Studio.
(I)	Terminal block	The terminal block is used to connect to the power supply cables and ground wire.
(J)	DIN Track contact plate	This plate is connected internally to the functional ground terminal on the terminal block.
(K)	DIP switch	Not used
(L)	Communications connectors	These connectors are connected to the communications cables of the PROFINET network.
(M)	Rotary switches	Not used

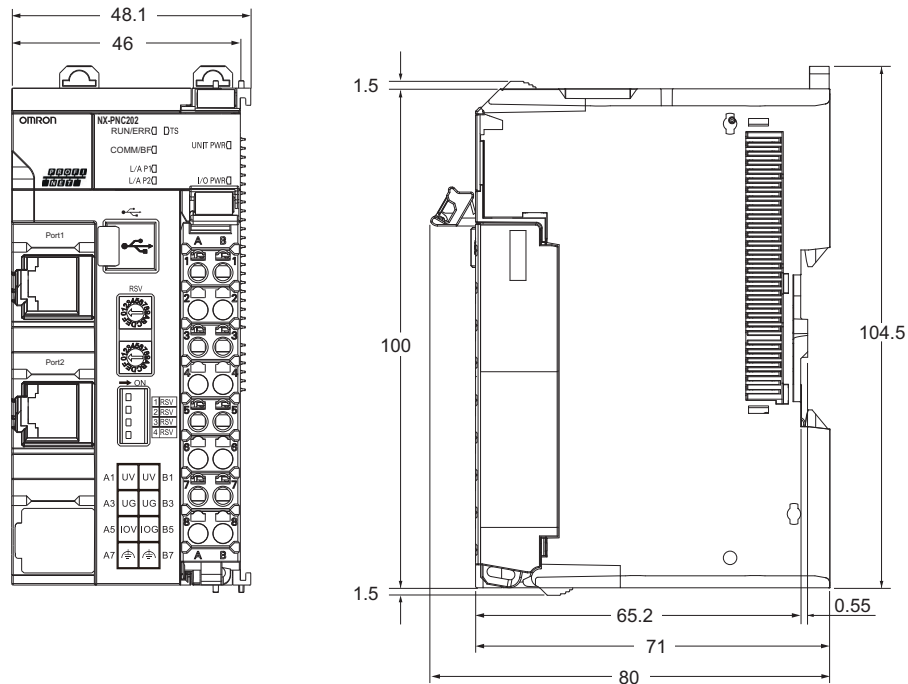
### Terminal Block



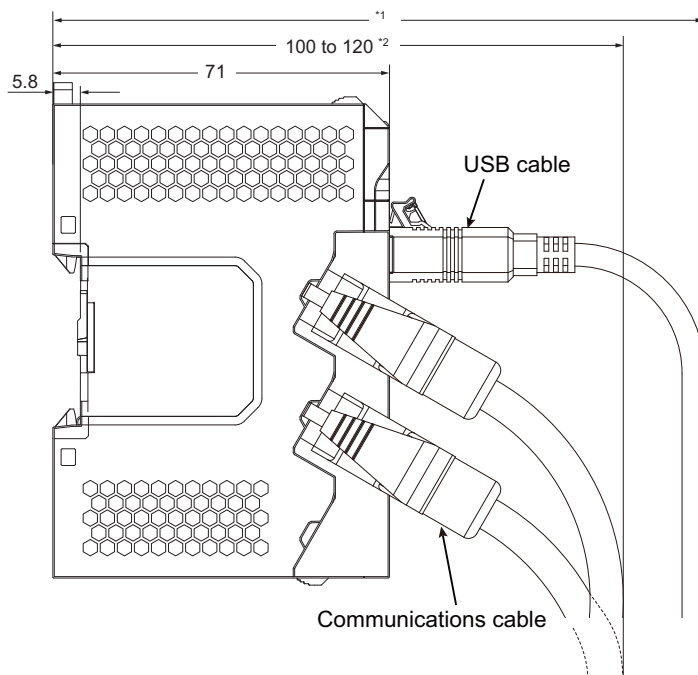
8-terminal type

Letter	Name	Function
(A)	Terminal number indications	The terminal numbers (A1 to A8 and B1 to B8) are displayed. The terminal number indicators are the same regardless of the number of terminals on the terminal block.
(B)	Release holes	Insert a flat-blade screwdriver into these holes to connect and remove the wires.
(C)	Terminal holes	The wires are inserted into these holes.
(D)	Ground terminal mark	This mark indicates the ground terminals.

### PROFINET Coupler Unit Only



### With Cables Connected

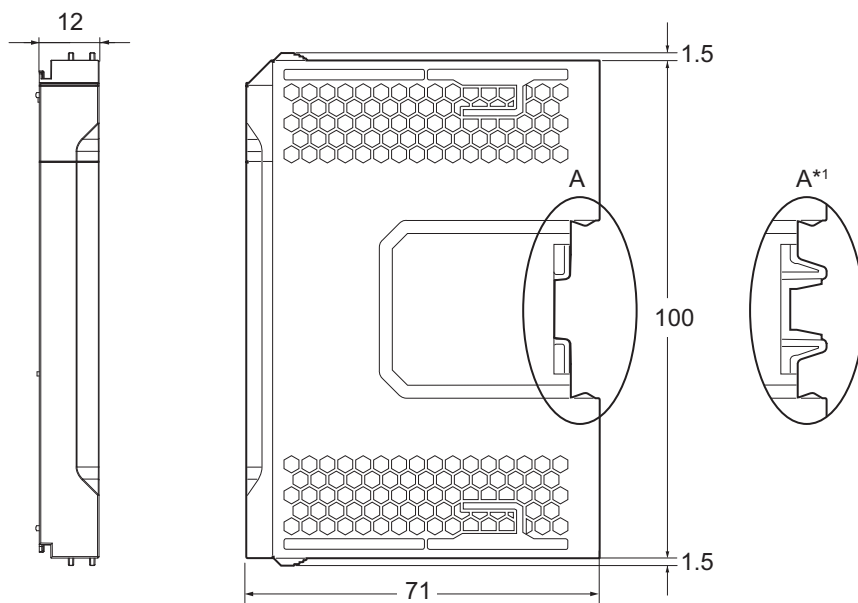


\*1. This dimension depends on the specifications of the commercially available USB certified cable. Check the specifications of the USB cable that is used.

\*2. This is the dimension from the back of the Unit to the communications cables.

- 100 mm: When an MPS588-C Connector is used.
- 120 mm: When an XS6G-T421-1 Connector is used.

End Cover



\*1. This is the shape for Units with lot numbers through December 2014.

# NX-PNC

## Related Manuals

The following manuals are related. Use these manuals for reference.

Manual name	Cat. No.	Model numbers	Application	Description
NX-series PROFINET Coupler Unit User's Manual	W623	NX-PNC□□□□	Learning how to use an NX-series PROFINET Coupler Unit	The following items are described: the overall system and configuration methods of a PROFINET Coupler Unit, and information on hardware, setup, and functions to set up, control, and monitor NX Units.
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 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 IO Units User's Manual	W521	NX-ID□□□□□ NX-IA□□□□□ NX-OC□□□□□ NX-OD□□□□□	Learning how to use NX-series Digital IO Units	The hardware, setup methods, and functions of the NX-series Digital IO Units are described.
NX-series Analog IO Units User's Manual for Analog Input Units and Analog Output Units	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 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 Load Cell Input Unit User's Manual	W565	NX-RS□□□□□	Learning how to use NX-series Load Cell Input Unit	The hardware, setup methods, and functions of the NX-series Load Cell Input Unit are described.
NX-series Analog IO Units User's Manual for Temperature Input Units and Heater Burnout Detection Units	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 Temperature Control Units User's Manual	H228	NX-TC□□□□□	Learning how to use NX-series Temperature Control Units.	The hardware, setup methods, and functions of the NX-series Temperature Control Units are described.

- Sysmac and SYSMAC are trademarks or registered trademarks of OMRON Corporation in Japan and other countries for OMRON factory automation products.
- Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and other countries.
- EtherCAT® is registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.
- EtherNet/IP is trademarks of ODVA.
- Other company names and product names in this document are the trademarks or registered trademarks of their respective companies.

## Terms and Conditions Agreement

### Read and understand this catalog.

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

### Warranties.

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

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

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

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

### Limitation on Liability: Etc.

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

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

### Suitability of Use.

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

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

### Programmable Products.

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

### Performance Data.

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

### Change in Specifications.

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

### Errors and Omissions.

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