

## Power Supply Unit, Power Connection Unit, and FG Terminal Expansion Unit for NX-series

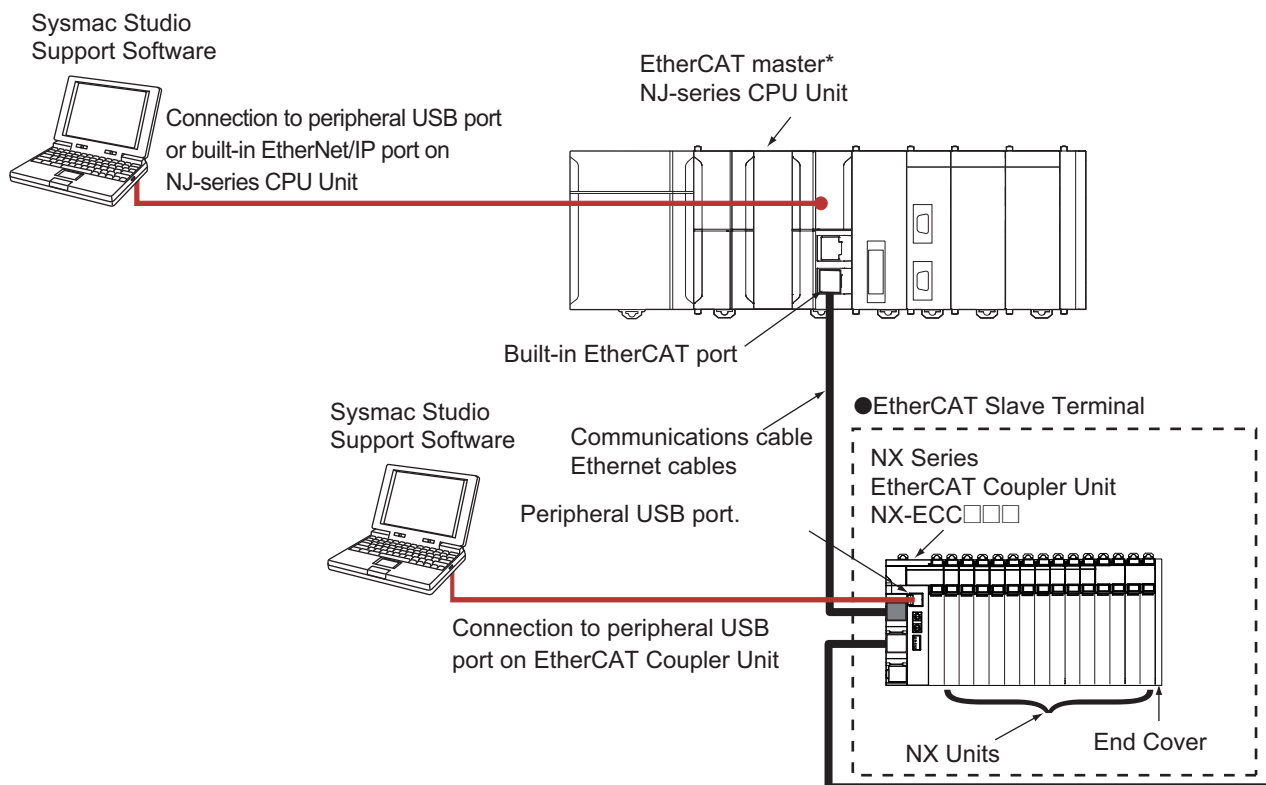
- Provide stabilised power to the internal circuits of NX I/O Units.
- Feed additional power to I/O circuits of NX I/O Units.
- Provide extra terminals for sensor/actuator power and termination of shielded cabling.



## Features

- Units to feed in additional Unit power and I/O power to an NX-series remote I/O terminal.
- Screwless clamp terminal block significantly reduces wiring work.
- Space-saving 12 mm wide units.
- The NX Unit Power Supply Unit allows expansion of the I/O configuration beyond the maximum power supply capacity of the EtherCAT Coupler.
- The I/O Power Supply Unit is used when the total allowed I/O current per feed terminal is exceeded, or to split I/O power into groups.
- The I/O Power Connection Unit can be used as an additional power supply terminal for connected sensors and actuators.
- The FG Terminal Expansion Unit can be used as ground terminal for wire shields.
- The screwless terminal block is detachable for easy commissioning and maintenance.

## System Configuration

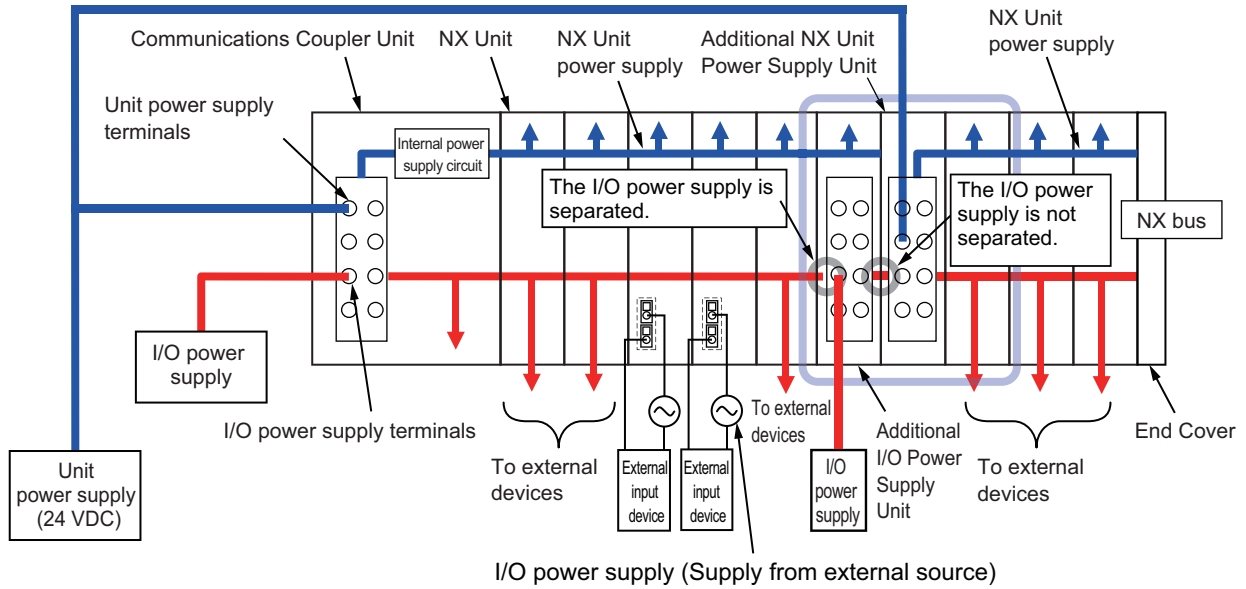


\* OMRON CJ1W-NC□81/□82 Position Control Units cannot be connected to the EtherCAT Slave Terminal even though they support EtherCAT.

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## Power Supply Systems




**Note:** Supply the Unit power and the I/O power from different power supplies. If you supply power from the same power supply the galvanic separation between the bus system and the I/O circuits is no longer effective. Noise generated in the I/O circuits may cause malfunctions in the internal circuits of the units.

## Ordering Information


### International Standards

- The standards are abbreviated as follows: U: UL, U1: UL(Class I Division 2 Products for Hazardous Locations), C: CSA, UC: cULus, UC1: cULus (Class I Division 2 Products for Hazardous Locations), CU: cUL, N: NK, L: Lloyd, CE: EC Directives, and KC: KC Registration.
- Contact your OMRON representative for further details and applicable conditions for these standards.


### Additional NX Unit Power Supply Unit

Unit type	Product Name	Power supply voltage	NX Bus power supply capacity	NX Unit power consumption	Model	Standards
NX Series System Unit	Additional NX Unit Power Supply Unit 	24 VDC (20.4 to 28.8 VDC)	10 W max.	0.45 W max.	NX-PD1000	UC1, N, L, CE, KC


### Additional I/O Power Supply Unit

Unit type	Product Name	Power supply voltage	I/O power feed maximum current	NX Unit power consumption	Model	Standards
NX Series System Unit	Additional I/O Power Supply Unit 	5 to 24 VDC (4.5 to 28.8 VDC)	4 A	0.45 W max.	NX-PF0630	UC1, N, L, CE, KC
			10 A		NX-PF0730	

### I/O Power Supply Connection Unit

Unit type	Product Name	Number of I/O power terminals	Current capacity of I/O power terminal	NX Unit power consumption	Model	Standards
NX Series System Unit	I/O Power Supply Connection Unit 	IOG: 16 terminals	4 A/terminal max.	0.45 W max.	NX-PC0010	UC1, N, L, CE, KC
		IOV: 16 terminals	4 A/terminal max.	0.45 W max.	NX-PC0020	UC1, N, L, CE, KC
		IOV:8 terminals IOG:8 terminals	4 A/terminal max.	0.45 W max.	NX-PC0030	UC1, N, L, CE, KC

### Shield Connection Unit

Unit type	Product Name	Number of shield terminals	NX Unit power consumption	Model	Standards
NX Series System Unit	Shield Connection Unit 	14 terminals (The following two terminals are functional ground terminals.)	0.45 W max.	NX-TBX01	UC1, N, L, CE, KC

## Optional Products

Product Name	Specification	Model	Standards
Unit/Terminal Block Coding Pins	For 10 Units (Terminal Block: 30 pins, Unit: 30 pins)	NX-AUX02	—

Product Name	Specification				Model	Standards
	No. of terminals	Terminal number indications	Ground terminal mark	Terminal current capacity		
Terminal Block	8	A/B	None	10 A	NX-TBA082	---
			Provided		NX-TBC082	
	16		None		NX-TBA162	
			Provided		NX-TBC162	

### Accessories

There are no accessories.

## General Specification

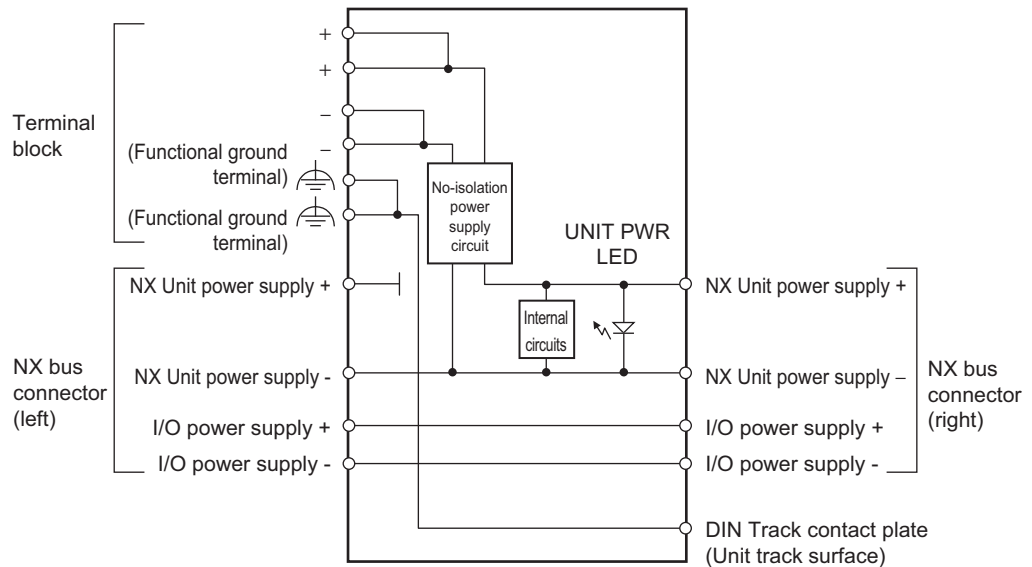
Item		Specification
Enclosure		Mounted in a panel
Grounding method		Ground to 100 $\Omega$ or less
Operating environment	Ambient operating temperature	0 to 55°C
	Ambient operating humidity	10% to 95% (with no condensation or icing)
	Atmosphere	Must be free from corrosive gases.
	Ambient storage temperature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

## Specification

### Additional NX Unit Power Supply Unit NX-PD1000

<b>Unit name</b>	Additional NX Unit Power Supply Unit
<b>Model</b>	NX-PD1000
<b>External connection terminals</b>	Screwless push-in terminal block (8 terminals)
<b>Power supply voltage</b>	24 VDC (20.4 to 28.8 VDC)
<b>NX Bus power supply capacity</b>	10 W max. (Refer to Installation orientation and restrictions for details.)
<b>NX Unit power supply efficiency</b>	70%
<b>Unwired terminal current capacity</b>	4 A max. (Including the current of through-wiring)
<b>Dimensions</b>	12 (W) × 100 (H) 71 × (D)
<b>Isolation method</b>	No-isolation
<b>Insulation resistance</b>	20 MΩ min. between isolated circuits (at 100 VDC)
<b>Dielectric strength</b>	510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max.
<b>NX Unit power consumption</b>	0.45 W max.
<b>I/O current consumption</b>	No consumption
<b>Weight</b>	65 g max.

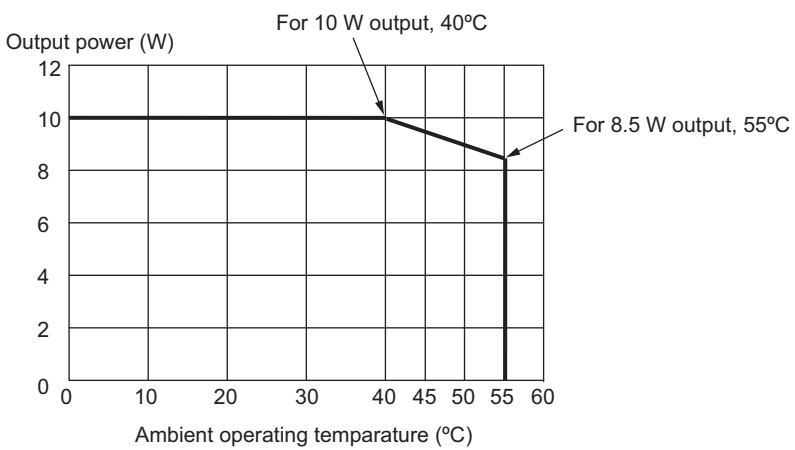
#### Circuit layout



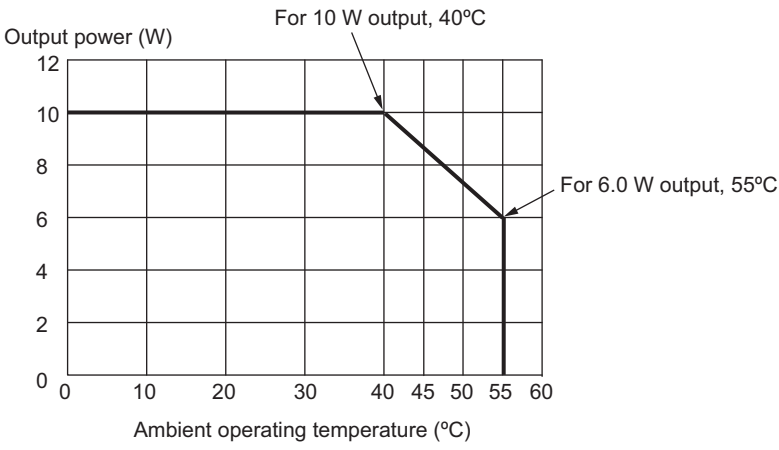
Installation orientation and restrictions

Installation orientation: Possible in 6 orientations.  
Restrictions:

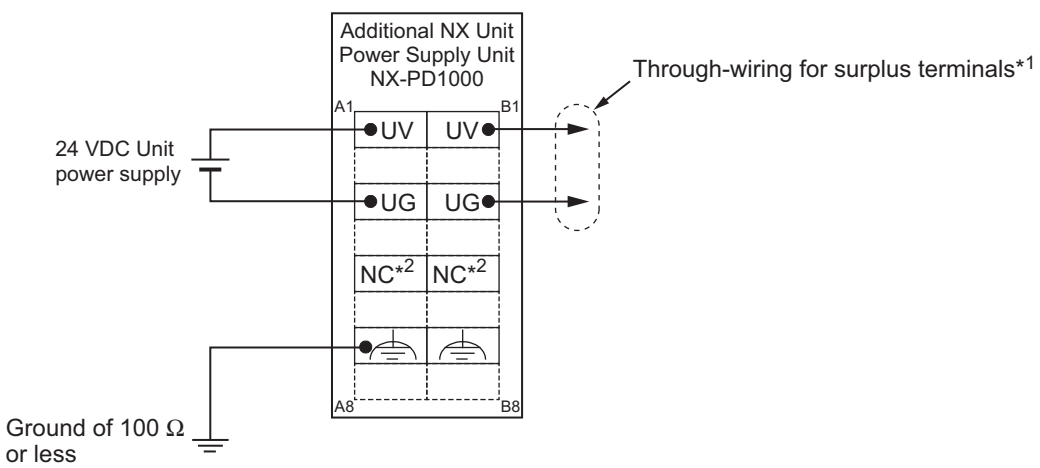
- For upright installation



- For any installation other than upright



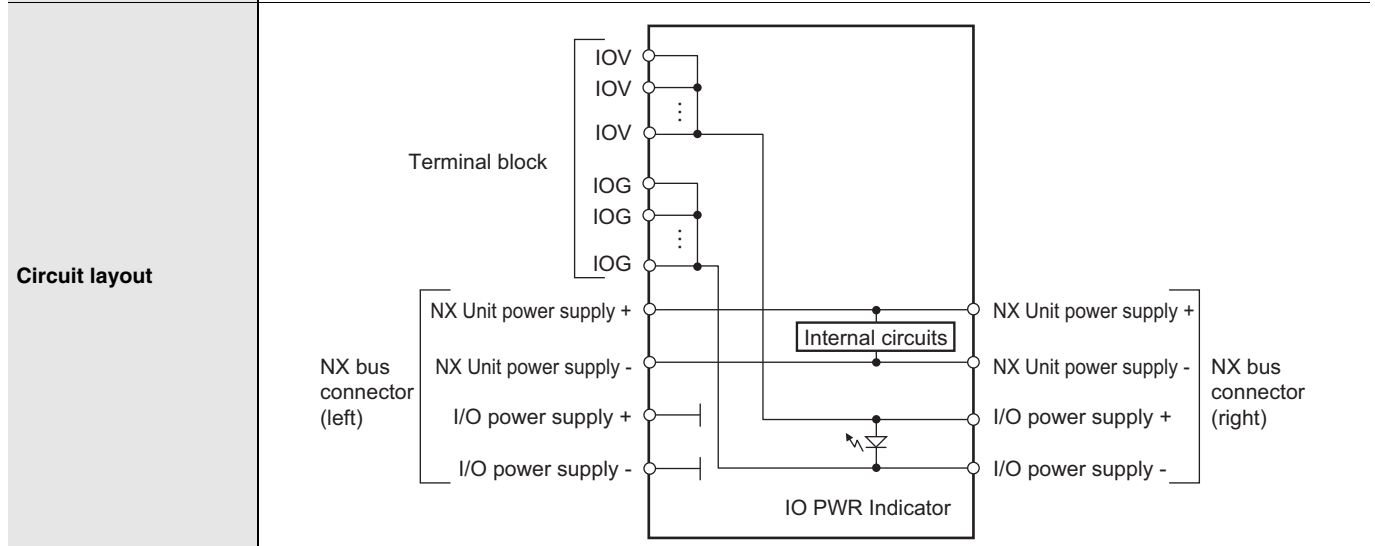
Terminal connection diagram



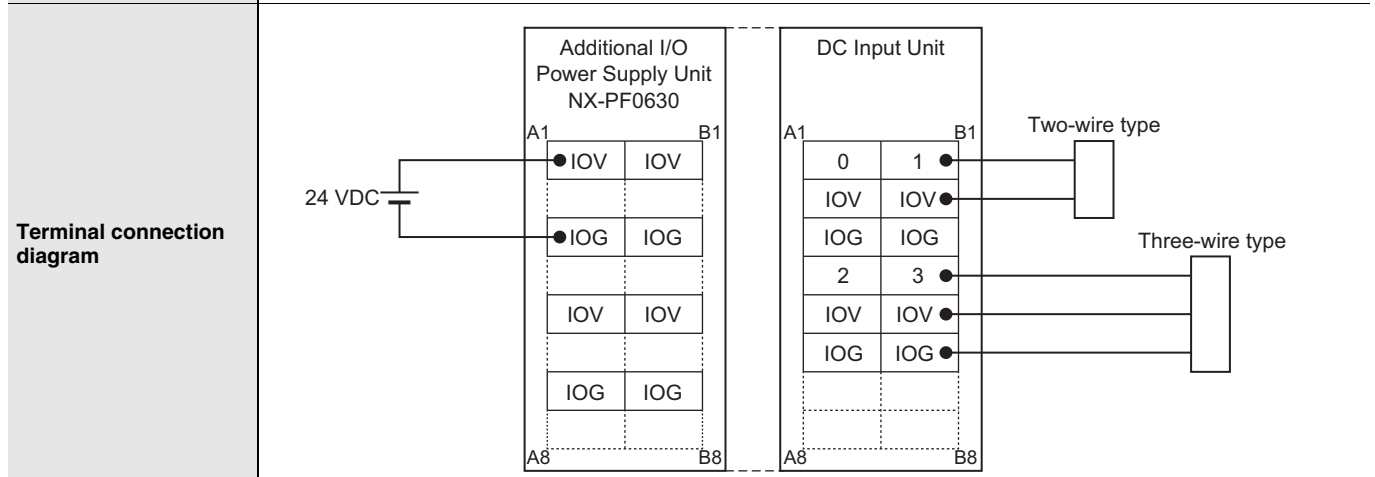
\*1. You can use the unwired terminals of the Unit power supply terminals (UV/UG) for through-wiring of the Additional NX Unit Power Supply Unit or the Unit power supply terminals on the EtherCAT Coupler Unit.  
\*2. The NC terminal is not connected to the internal circuit.

# Additional I/O Power Supply Units NX-PF0□30

Unit name	Additional I/O Power Supply Unit	
Model	NX-PF0630	NX-PF0730
External connection terminals	Screwless push-in terminal block (8 terminals)	
Power supply voltage	5 to 24 VDC (4.5 to 28.8 VDC)*	
I/O power supply maximum current	4 A	10 A
Current capacity of I/O power supply terminal	4 A max.	10 A max.
Dimensions	12 (W) × 100 (H) 71 × (D)	
Isolation method	No-isolation	
Insulation resistance	20 MΩ min. between isolated circuits (at 100 VDC)	
Dielectric strength	510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max.	
NX Unit power consumption	0.45 W max.	
I/O current consumption	10 mA max.	
Weight	65 g max.	



Installation orientation and restrictions	Installation orientation: Possible in 6 orientations. Restrictions: No restrictions	
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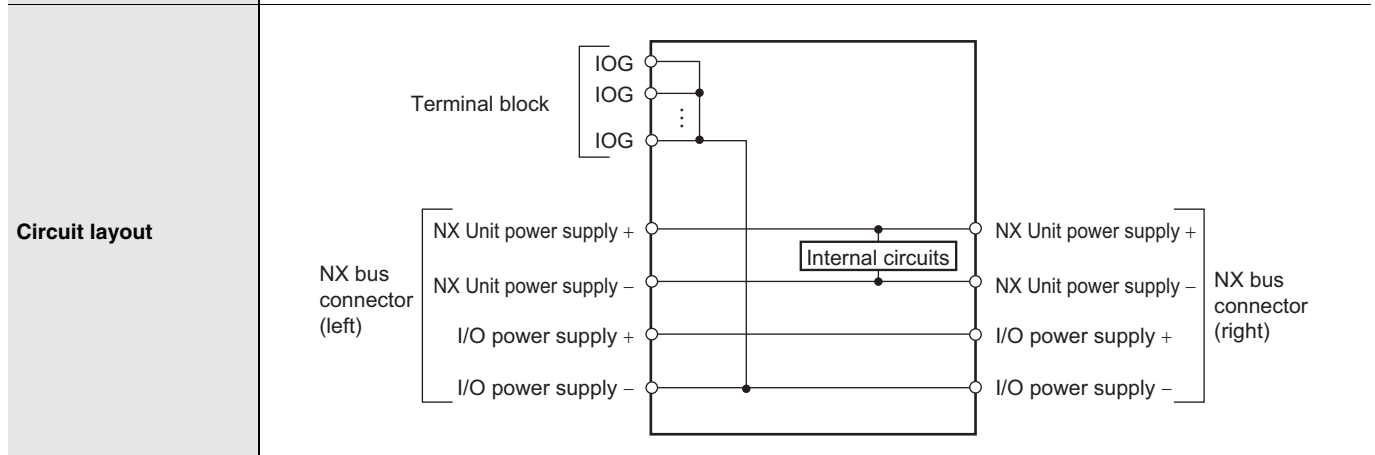


Overload/low voltage detection	Not supported	
Protective function	Not supported.	

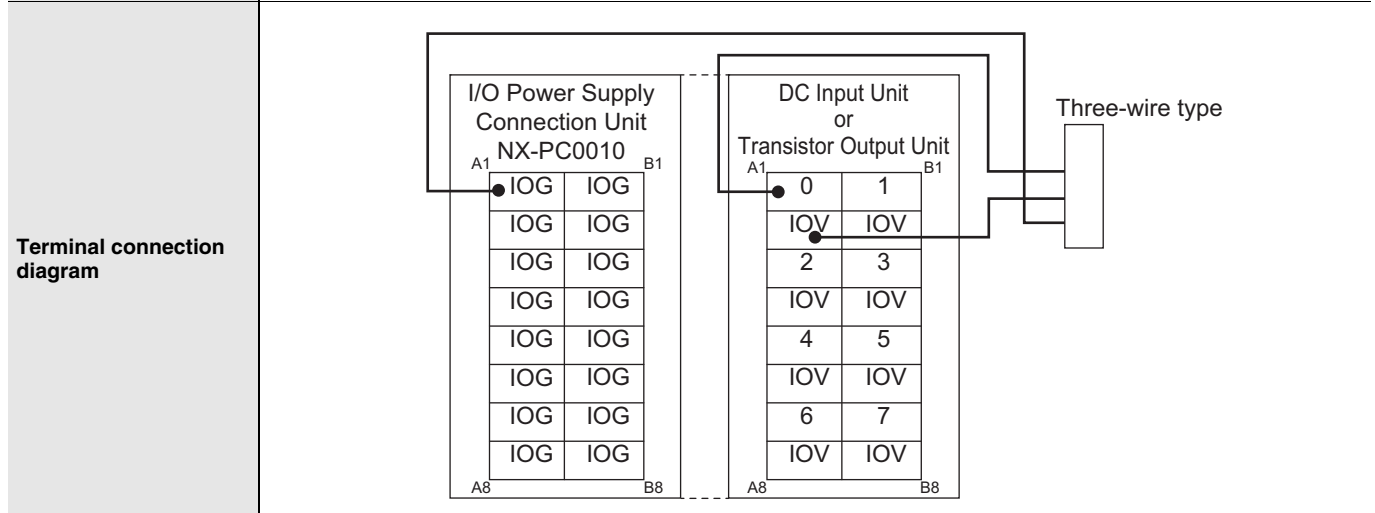
\* Use an output voltage that is appropriate for the I/O circuits of the NX Units and the connected external devices.

**I/O Power Supply Connection Unit IOG terminal type NX-PC0010**

<b>Unit name</b>	I/O Power Supply Connection Unit
<b>Model</b>	NX-PC0010
<b>External connection terminals</b>	Screwless push-in terminal block (16 terminals)
<b>Number of I/O power supply terminals</b>	IOG: 16 terminals
<b>Current capacity of I/O power supply terminal</b>	4 A/terminal max.
<b>Dimensions</b>	12 (W) × 100 (H) 71 ×(D)
<b>Isolation method</b>	No-isolation
<b>Insulation resistance</b>	20 MΩ min. between isolated circuits (at 100 VDC)
<b>Dielectric strength</b>	510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max.
<b>NX Unit power consumption</b>	0.45 W max.
<b>I/O current consumption</b>	No consumption
<b>Weight</b>	65 g max.

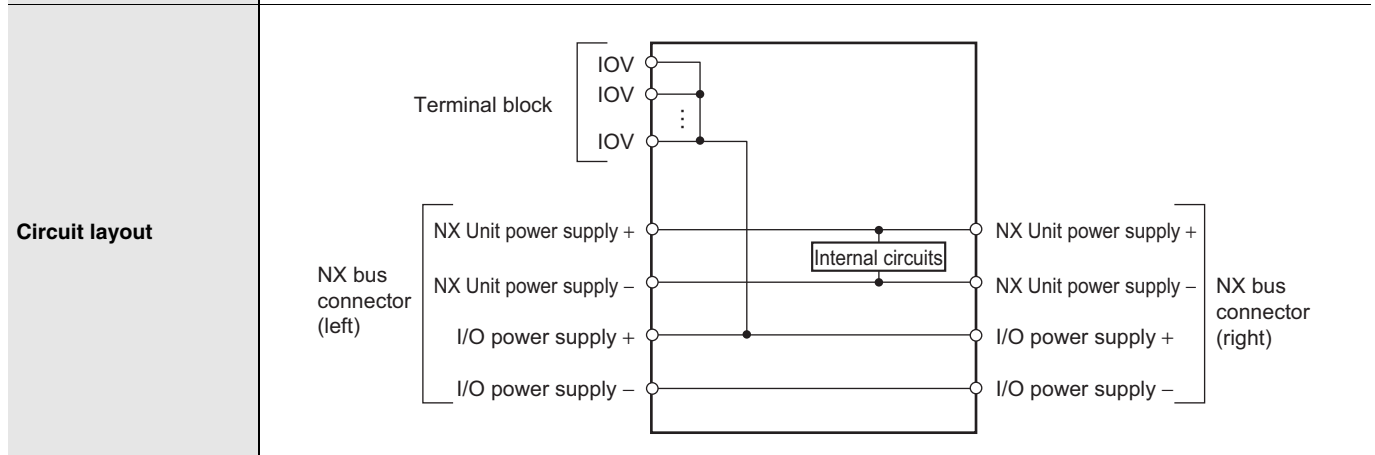


<b>Installation orientation and restrictions</b>	Installation orientation: Possible in 6 orientations. Restrictions: No restrictions
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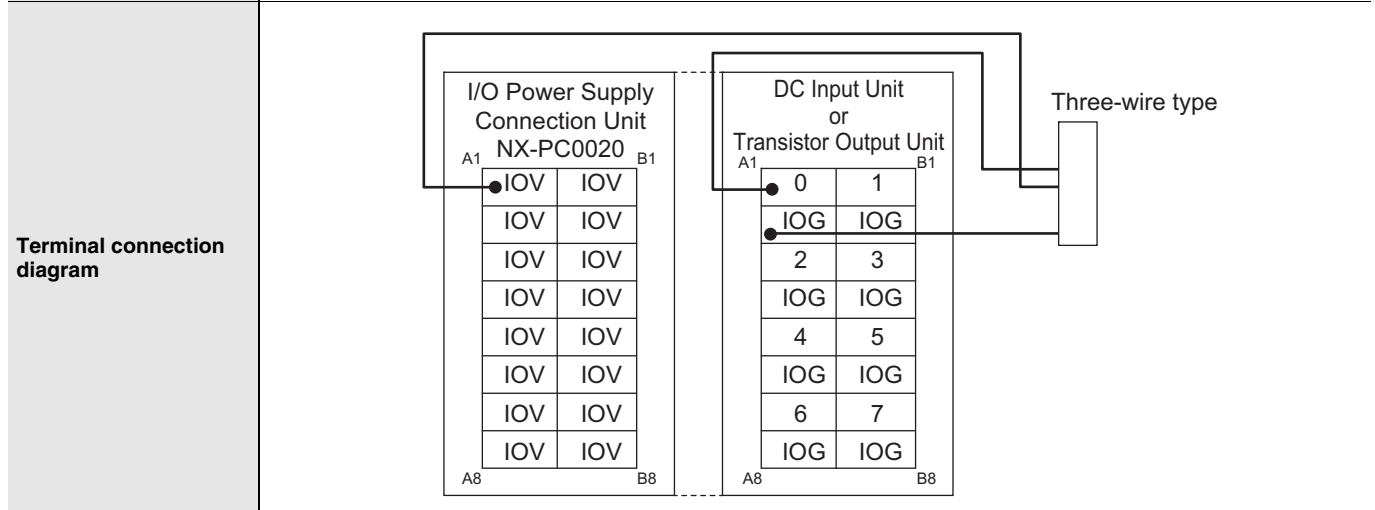


**I/O Power Supply Connection Unit IOV terminal type NX-PC0020**

<b>Unit name</b>	I/O Power Supply Connection Unit
<b>Model</b>	NX-PC0020
<b>External connection terminals</b>	Screwless push-in terminal block (16 terminals)
<b>Number of I/O power supply terminals</b>	IOV: 16 terminals
<b>Current capacity of I/O power supply terminal</b>	4 A/terminal max.
<b>Dimensions</b>	12 (W) × 100 (H) 71 × (D)
<b>Isolation method</b>	No-isolation
<b>Isolation resistance</b>	20 MΩ min. between isolated circuits (at 100 VDC)
<b>Dielectric strength</b>	510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max.
<b>NX Unit power consumption</b>	0.45 W max.
<b>I/O current consumption</b>	No consumption
<b>Weight</b>	65 g max.

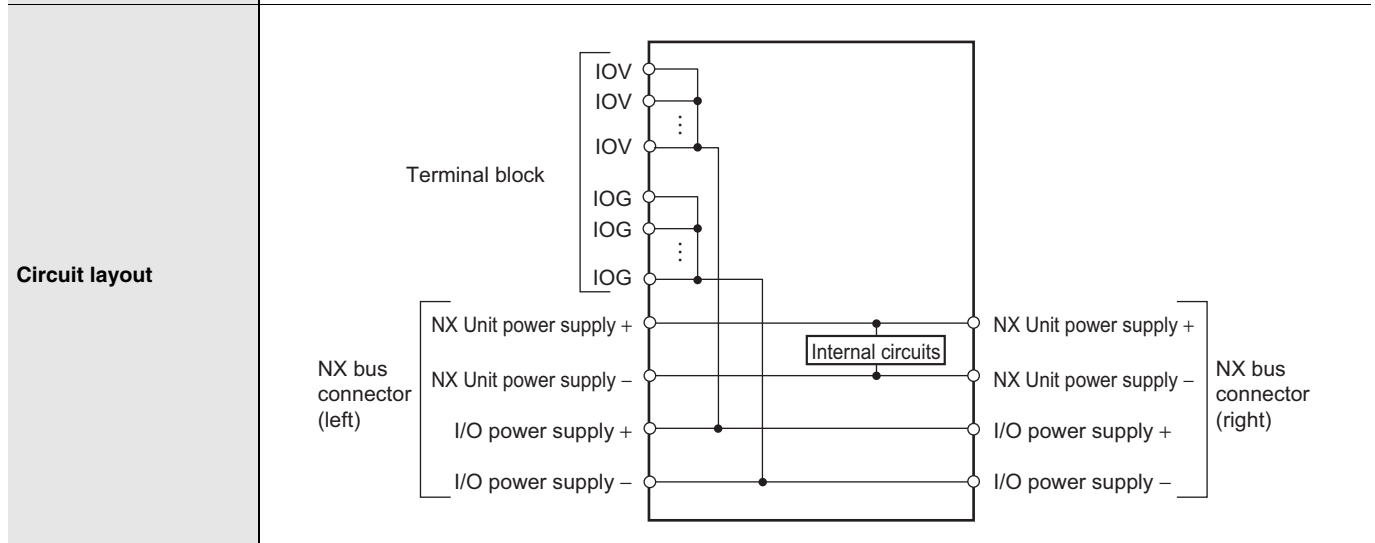


<b>Installation orientation and restrictions</b>	Installation orientation: Possible in 6 orientations. Restrictions: No restrictions
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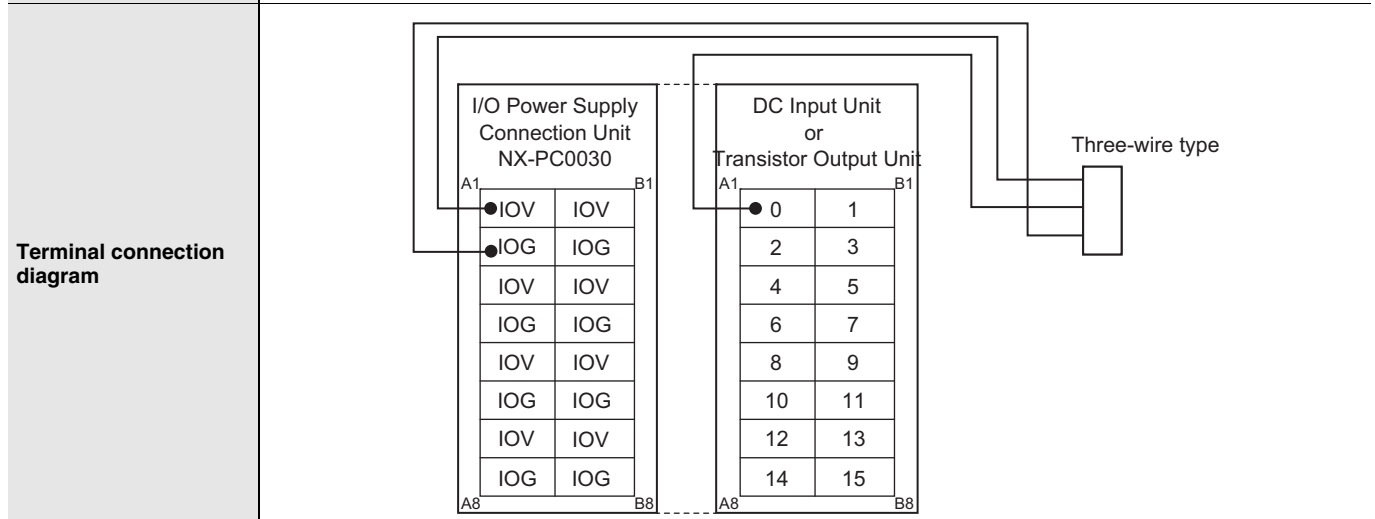


**I/O Power Supply Connection Unit IOV/IOG terminal type NX-PC00300**

<b>Unit name</b>	I/O Power Supply Connection Unit
<b>Model</b>	NX-PC0030
<b>External connection terminals</b>	Screwless push-in terminal block (16 terminals)
<b>Number of I/O power supply terminals</b>	IOV: 8 terminals IOG: 8 terminals
<b>Current capacity of I/O power supply terminal</b>	4 A/terminal max.
<b>Dimensions</b>	12 (W) × 100 (H) 71 × (D)
<b>Isolation method</b>	No-isolation
<b>Insulation resistance</b>	20 MΩ min. between isolated circuits (at 100 VDC)
<b>Dielectric strength</b>	510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max.
<b>NX Unit power consumption</b>	0.45 W max.
<b>I/O current consumption</b>	No consumption
<b>Weight</b>	65 g max.

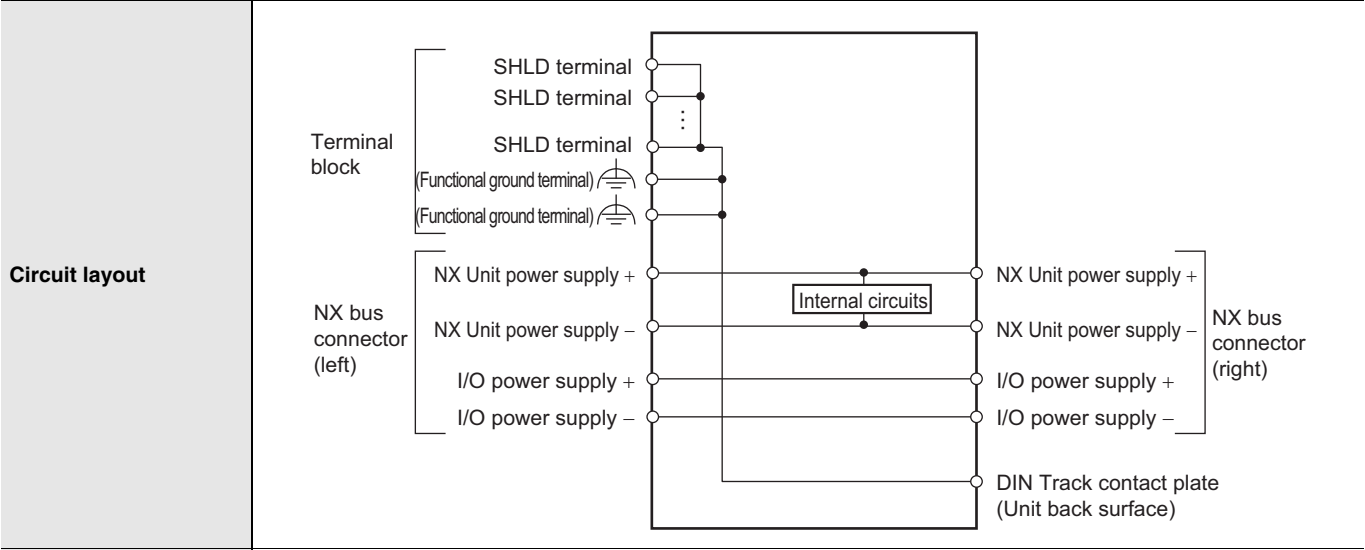


<b>Installation orientation and restrictions</b>	Installation orientation: Possible in 6 orientations. Restrictions: No restrictions
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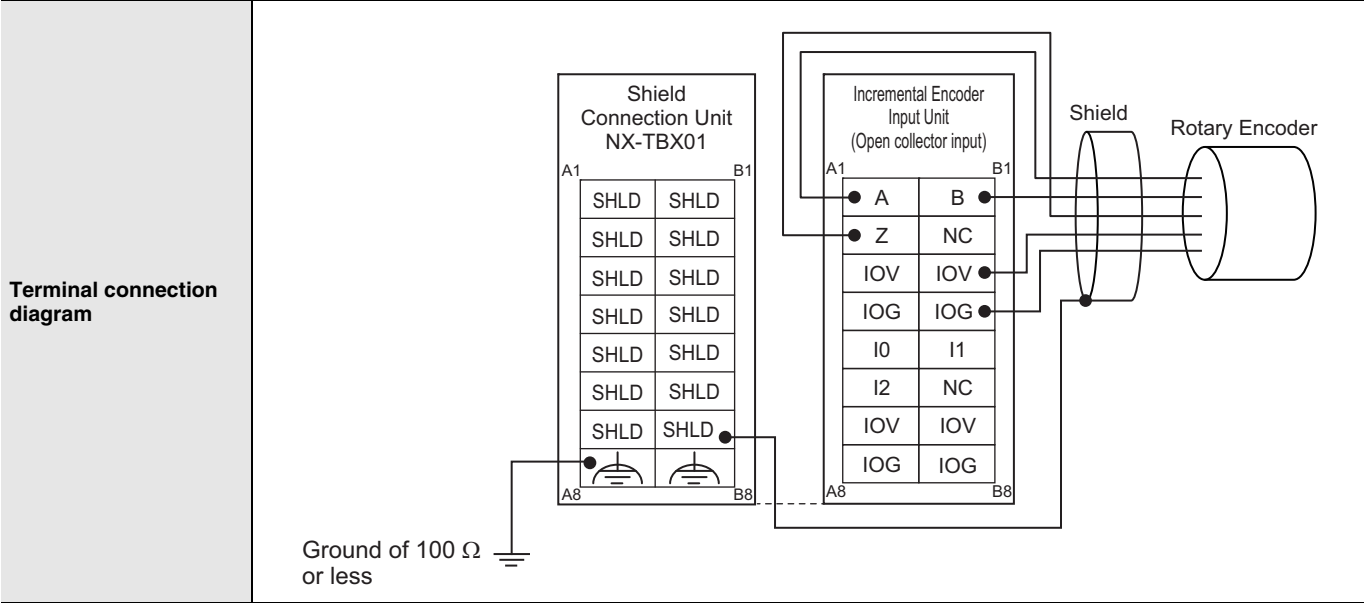


Shield Connection Unit NX-TBX01

Unit name	Shield Connection Unit
Model	NX-TBX01
External connection terminals	Screwless push-in terminal block (16 terminals)
Number of shield terminals	14 terminals (The following two terminals are functional ground terminals.)
Dimensions	12 (W) × 100 (H) 71 × (D)
Isolation method	Isolation between the SHLD functional ground terminal, and internal circuit: No-isolation
Insulation resistance	20 MΩ min. between isolated circuits (at 100 VDC)
Dielectric strength	510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max.
NX Unit power consumption	0.45 W max.
I/O current consumption	No consumption
Weight	65 g max.



Installation orientation and restrictions	Installation orientation: Possible in 6 orientations. Restrictions: No restrictions
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## Version Information

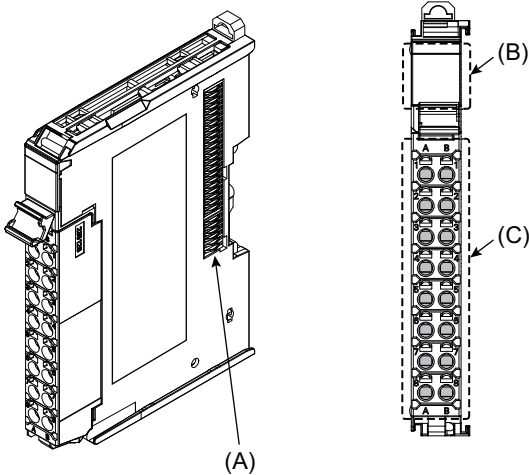
NX Units		Corresponding unit versions/versions		
Model	Unit Version	EtherCAT Coupler Units NX-ECC201/ECC202*	NJ-series CPU Units NJ501-□□□□/NJ301-□□□□	Sysmac Studio
NX-PD1000	Ver.1.0	Ver.1.0 or later	Ver.1.05 or later	Ver.1.06 or higher
NX-PF0630				Ver.1.08 or higher
NX-PF0730				Ver.1.06 or higher
NX-PC0020				
NX-PC0010				
NX-PC0030				
NX-TBX01				

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

# External Interface

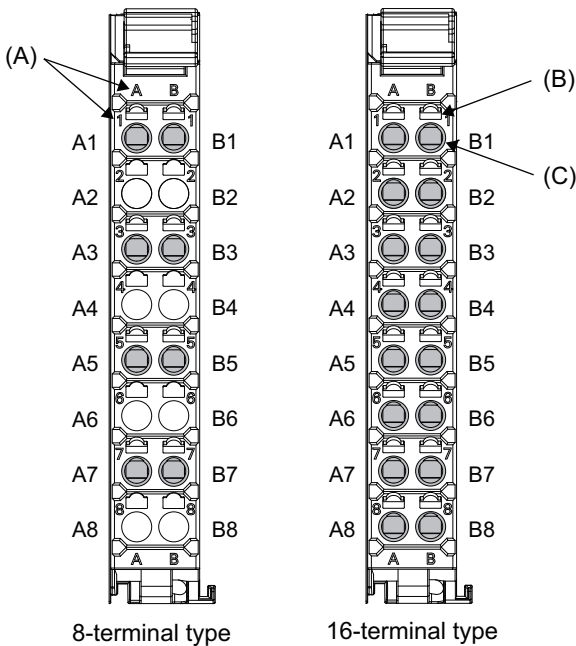
## Additional NX Unit Power Supply Unit, Additional I/O Power Supply Unit, I/O Power Supply Connection Unit, and Shield Connection Unit

NX-PD1000/NX-PF0□30/NX-PC00□0/NX-TBX01



Symbol	Name	Function
(A)	NX bus connector	This connector is used to connect each Unit.
(B)	Indicators	The indicators show the current operating status of the Unit.
(C)	Terminal block	The terminal block is used to connect external devices. The number of terminals depends on the type of Unit.

### Terminal Blocks



Symbol	Name	Function
{A}	Terminal number indications	Terminal numbers for which A and B indicate the column, and 1 to 8 indicate the line are displayed. The terminal number is a combination of column and line, so A1 to A8 and B1 to B8 are displayed. The terminal number indications 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.

## Applicable Terminal Blocks for Each Unit Model

Unit model	Terminal Blocks				
	Model	No. of terminals	Terminal number indications	Ground terminal mark	Terminal current capacity
NX-PD1000	NX-TBC082	8	A/B	Provided	10 A
NX-PF0630	NX-TBA082	8	A/B	None	10 A
NX-PF0730	NX-TBA082	8	A/B	None	10 A
NX-PC□□□□	NX-TBA162	16	A/B	None	10 A
NX-TBX01	NX-TBC162	16	A/B	Provided	10 A

## Applicable Wires

### Using Ferrules

If you use ferrules, attach the twisted wires to them.

Observe the application instructions for your ferrules for the wire stripping length when attaching ferrules.

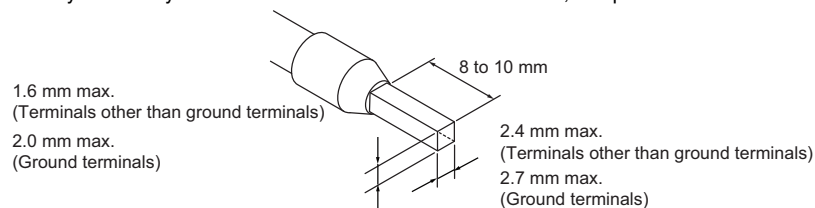
Always use plated one-pin ferrules. Do not use unplated ferrules or two-pin ferrules.

The applicable ferrules, wires, and crimping tool are given in the following table.

Terminal types	Manufacturer	Ferrule model	Applicable wire (mm² (AWG))	Crimping tool
Terminals other than ground terminals	Phoenix Contact	Al0,34-8	0.34 (#22)	Phoenix Contact (The figure in parentheses is the applicable wire size.) CRIMPFOX 6 (0.25 to 6 mm², AWG 24 to 10)
		Al0,5-8	0.5 (#20)	
		Al0,5-10		
		Al0,75-8	0.75 (#18)	
		Al0,75-10		
		Al1,0-8	1.0 (#18)	
		Al1,0-10		
		Al1,5-8	1.5 (#16)	
		Al1,5-10		
Ground terminals		Al2,5-10	2.0 **1	
Terminals other than ground terminals	Weidmuller	H0.14/12	0.14 (#26)	Weidmuller (The figure in parentheses is the applicable wire size.) PZ6 Roto (0.14 to 6 mm², AWG 26 to 10)
		H0.25/12	0.25 (#24)	
		H0.34/12	0.34 (#22)	
		H0.5/14	0.5 (#20)	
		H0.5/16		
		H0.75/14	0.75 (#18)	
		H0.75/16		
		H1.0/14	1.0 (#18)	
		H1.0/16		
		H1.5/14	1.5 (#16)	
		H1.5/16		

\*1. Some AWG 14 wires exceed 2.0 mm<sup>2</sup> and cannot be used in the screwless clamping terminal block.

When you use any ferrules other than those in the above table, crimp them to the twisted wires so that the following processed dimensions are achieved.

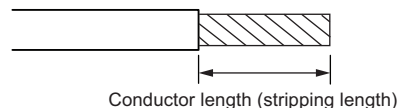


### Using Twisted Wires/Solid Wires

If you use the twisted wires or the solid wires, use the following table to determine the correct wire specifications.

Terminals		Wire type		Wire plating		Wire size	Conductor length (stripping length)
Classification	Current capacity	Twisted wires	Solid wire	Plated	Unplated		
All terminals except ground terminals	2 A max.	Possible	Possible	Possible	Possible	0.08 to 1.5 mm <sup>2</sup> AWG28 to 16	8 to 10 mm
	Greater than 2 A and 4 A or less		Not Possible		Not Possible		
	Greater than 4 A		Possible		Possible		
Ground terminals *	---				Possible	2.0 mm <sup>2</sup>	9 to 10 mm

\* With the NX-TB□□□1 Terminal Block, use twisted wires to connect the ground terminal. Do not use a solid wire.



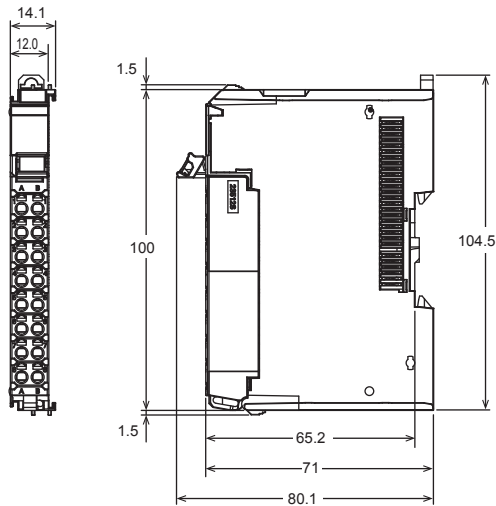
<Additional Information> If more than 2 A will flow on the wires, use plated wires or use ferrules.

Dimensions

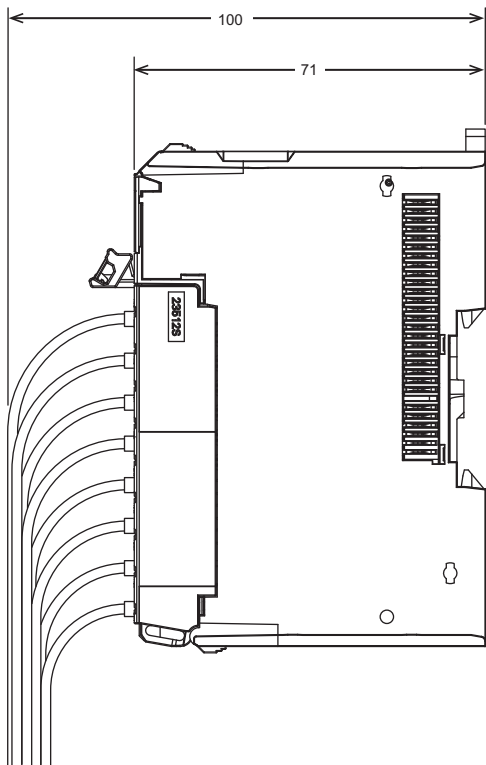
(Unit: mm)

Additional NX Unit Power Supply Unit, Additional I/O Power Supply Unit, I/O Power Supply Connection Unit, and Shield Connection Unit  
NX-PD1000/NX-PF0□30/NX-PC00□0/NX-TBX01

● Unit Only



● With Cables Connected



Related Manuals

Man. No	Model	Manual	Application	Description
W523	NX-PD1 □□□ NX-PF0 □□□ NX-PC0 □□□ NX-TBX □□□	NX-series System Unit User's Manual	Learning how to use NX- series System Units	The hardware and functions of the NX-series System Units are described.

## Terms and Conditions Agreement

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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.

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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.

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Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
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- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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