

Power Supply Unit, Power Connection Unit, and FG Terminal Expansion Unit for NX Series

- The Power Supply Unit can supply stable power to the NX Units.



NX-PD1000

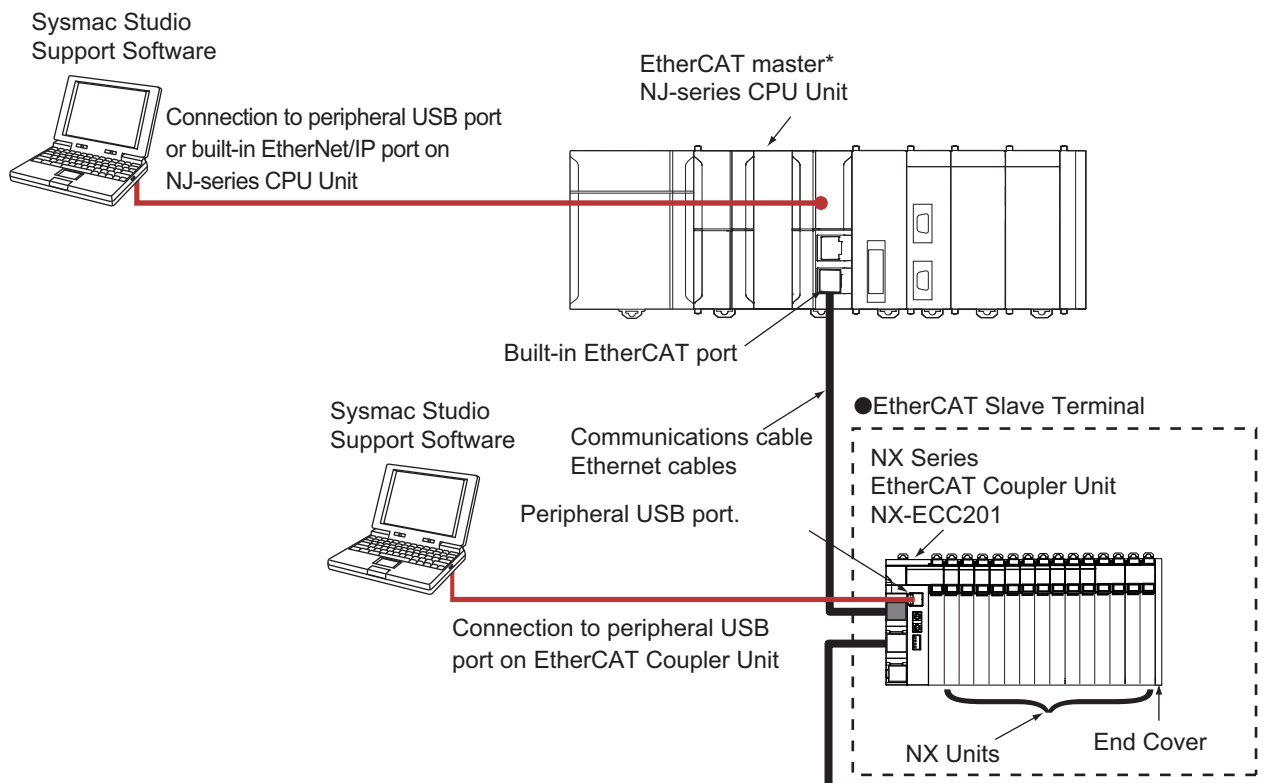


NX-TBX01

Features

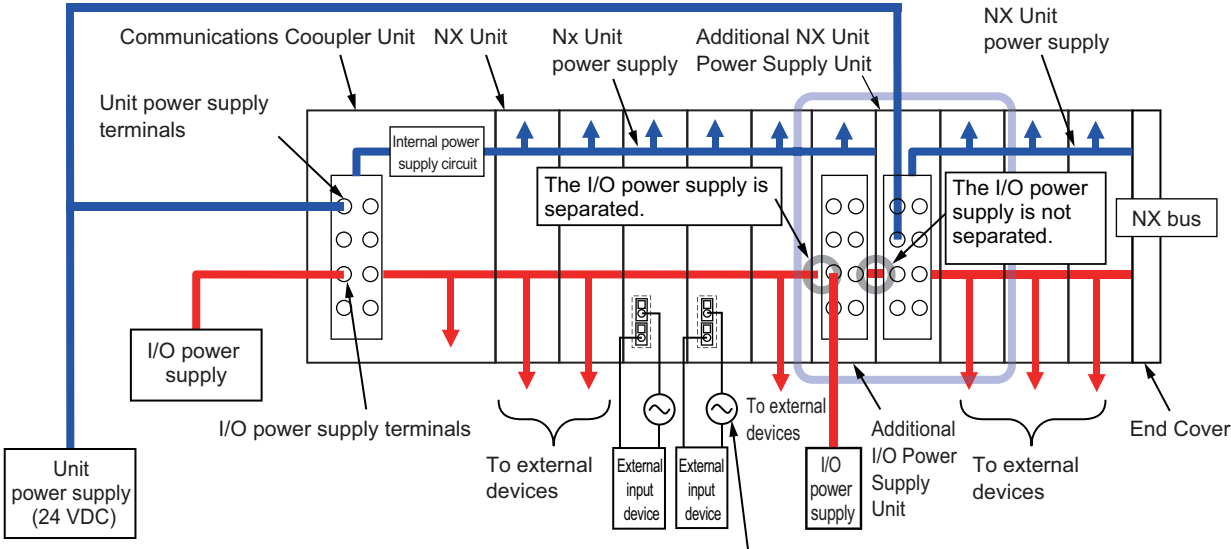
- Additional power can be supplied by mounting to the slave terminal of the EtherCAT Coupler.
- Screw-less clamp terminal block significantly reduces wiring work.
- 12-mm-wide unit can save space.
- The NX Unit Power Supply Unit enables connection beyond the maximum power supply capacity of the EtherCAT Coupler Power Supply.
- The I/O Power Supply Unit can make up for I/O power shortage and separate the I/O power supply.
- The I/O Power Connection Unit can be used as an additional power supply terminal.
- The FG Terminal Expansion Unit can be used as an additional shield terminal.
- The removable screwless terminal block improves maintenance.

System Configuration



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

Power Supply Systems



I/O power supply (Supply from external source)


Note: Supply the Unit power and the I/O power from different power supplies. If you supply power from the same power supply, noise may cause malfunctions.

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 Unit 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, CE, KC
						


Additional I/O Power Supply Unit

Unit type	Product Name	Power supply voltage	I/O power supply 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, CE, KC
						

I/O Power Supply Connection Unit

Unit type	Product Name	Number of I/O power supply terminals	Current capacity of I/O power supply 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, CE, KC
		IOV: 16 terminals	4 A/terminal max.	0.45 W max.	NX-PC0020	UC1, CE, KC
		IOV:8 terminals IOG:8 terminals	4 A/terminal max.	0.45 W max.	NX-PC0030	UC1, 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, CE, KC
					

Optional Products

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

Accessories

There are no accessories.

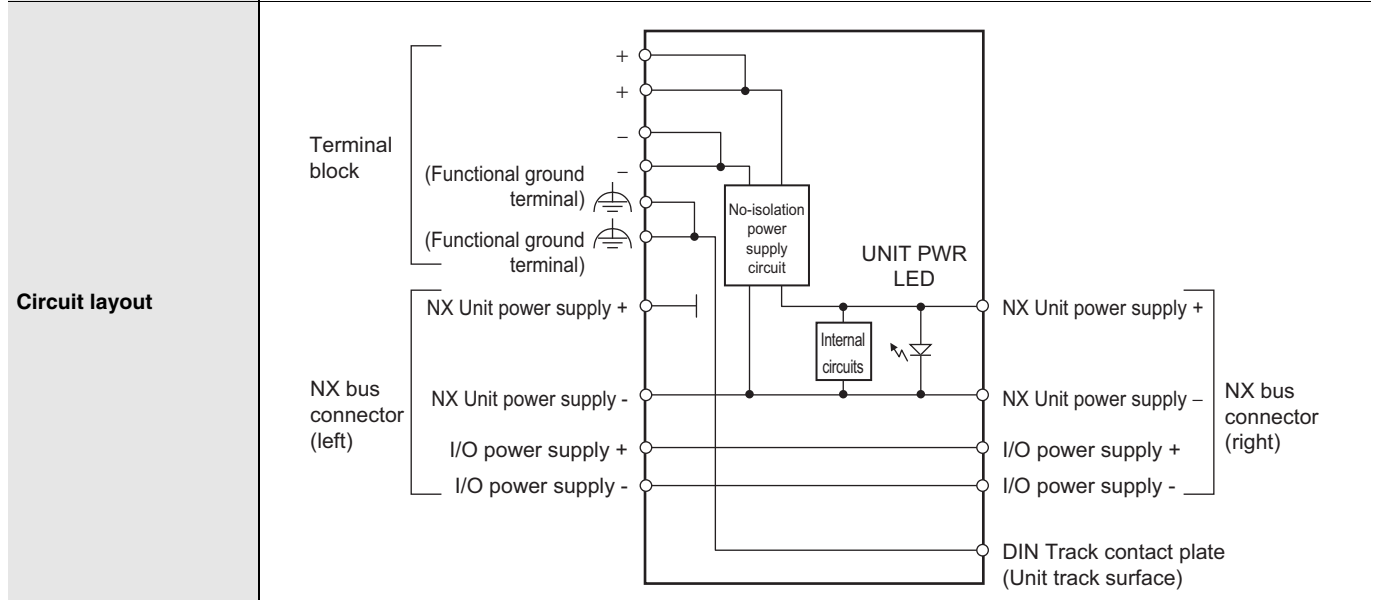
General Specification

Item		Specification
Enclosure		Mounted in a panel
Grounding method		Ground to 100 Ω 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 ² , 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 ² , 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

Specification

Additional NX Unit Power Supply Unit NX-PD1000

Unit name	Additional NX Unit Power Supply Unit
Model	NX-PD1000
External connection terminals	Screwless clamping terminal block (8 terminals)
Power supply voltage	24 VDC (20.4 to 28.8 VDC)
NX Unit power supply capacity	10 W max. (Refer to Installation orientation and restrictions for details.)
NX Unit power supply efficiency	70%
Unwired terminal current capacity	4 A max. (Including the current of through-wiring)
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	No consumption
Weight	65 g max.

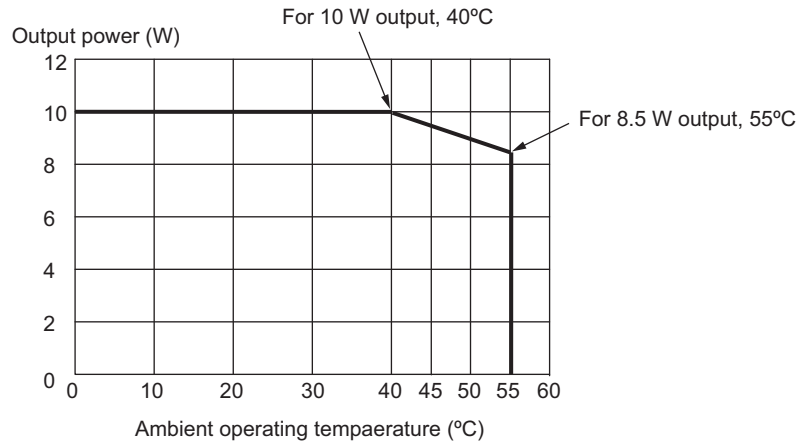


Installation orientation and restrictions

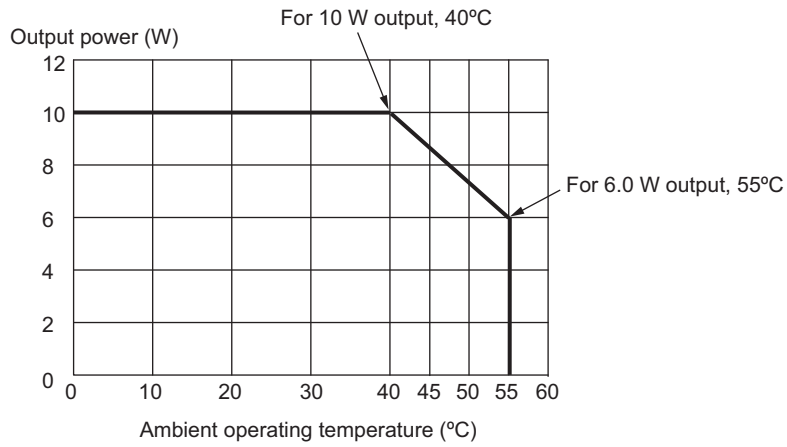
Installation orientation: Possible in 6 orientations.

Restrictions:

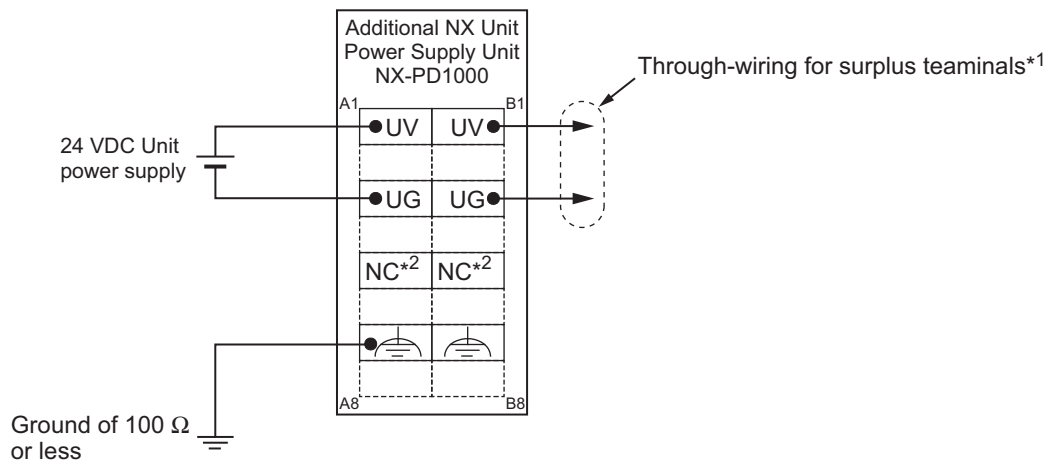
- For upright installation



- For any installation other than upright



Terminal connection diagram

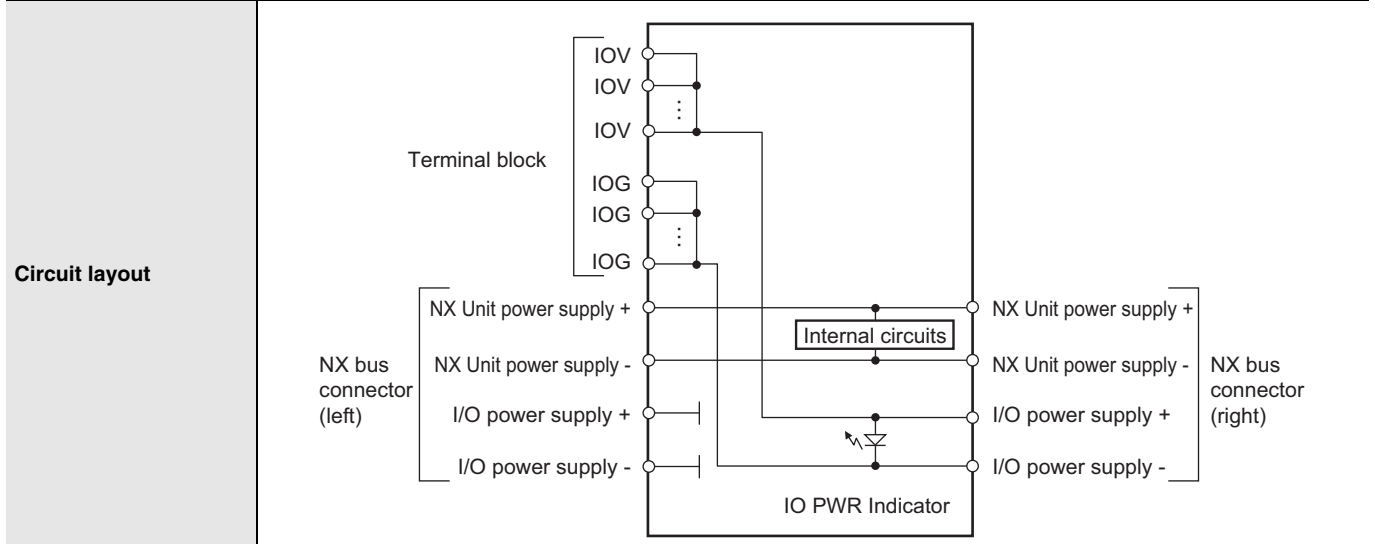


*1. You can use the unwired terminals of the Unit power supply terminals (UV/UG) for through-wiring of the Additional NX Unit Power Supply Unit or the Unit power supply terminals on the EtherCAT Coupler Unit.

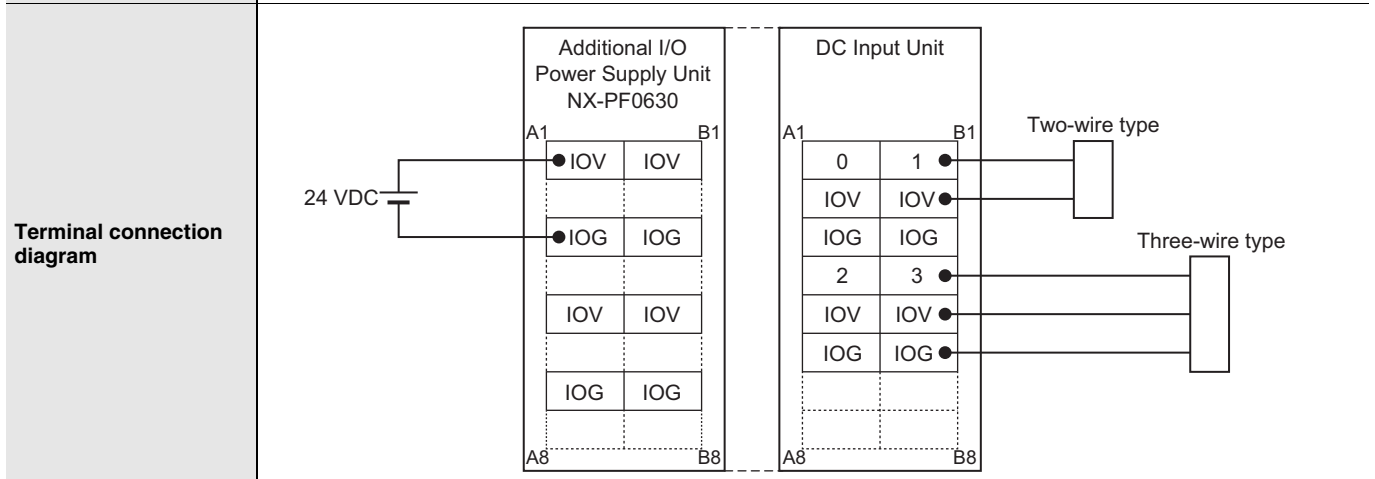
*2. The NC terminal is not connected to the internal circuit.

Additional I/O Power Supply Units NX-PF0630

Unit name	Additional I/O Power Supply Unit
Model	NX-PF0630
External connection terminals	Screwless clamping 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
Current capacity of I/O power supply terminal	4 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



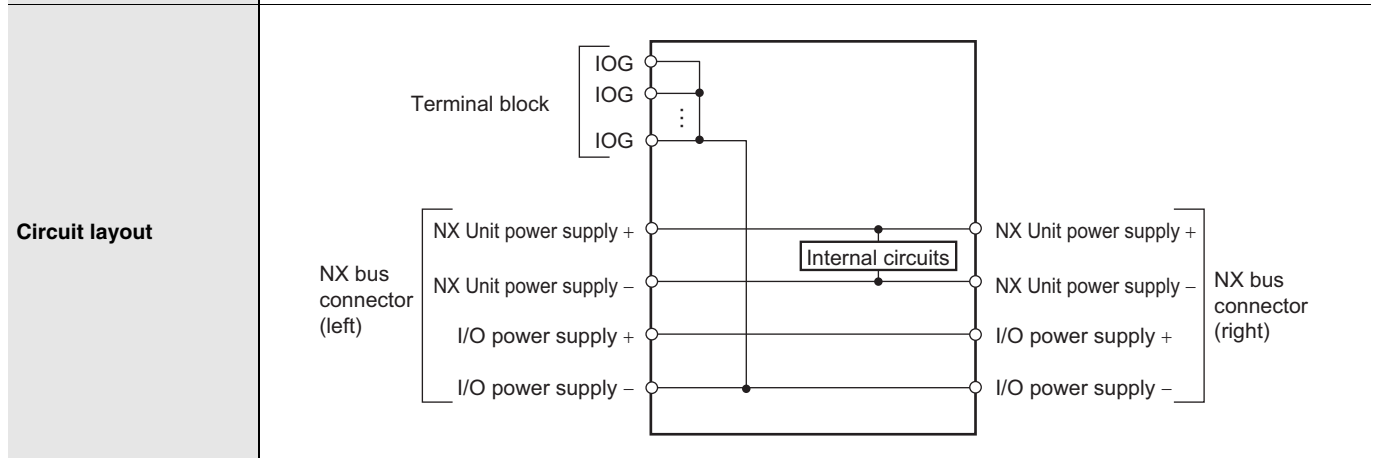
Overload/low voltage detection
 Not supported

Protective function
 Not supported.

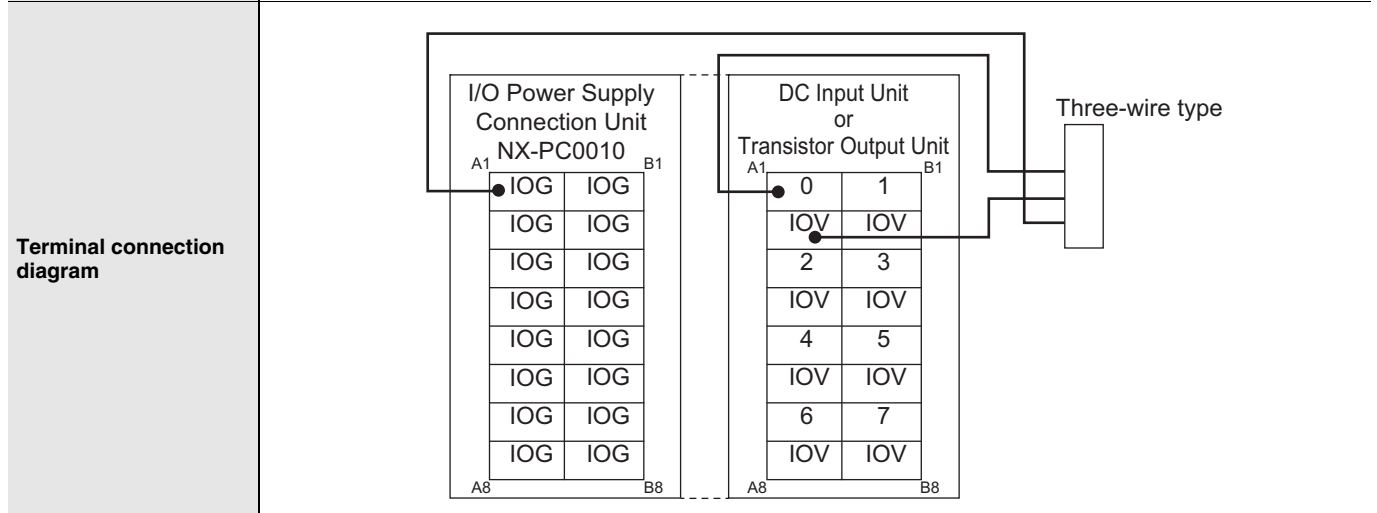
* Use an output voltage that is appropriate for the I/O circuits of the NX Units and the connected external devices.

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

Unit name	I/O Power Supply Connection Unit
Model	NX-PC0010
External connection terminals	Screwless clamping terminal block (16 terminals)
Number of I/O power supply terminals	IOG: 16 terminals
Current capacity of I/O power supply terminal	4 A/terminal 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	No consumption
Weight	65 g max.

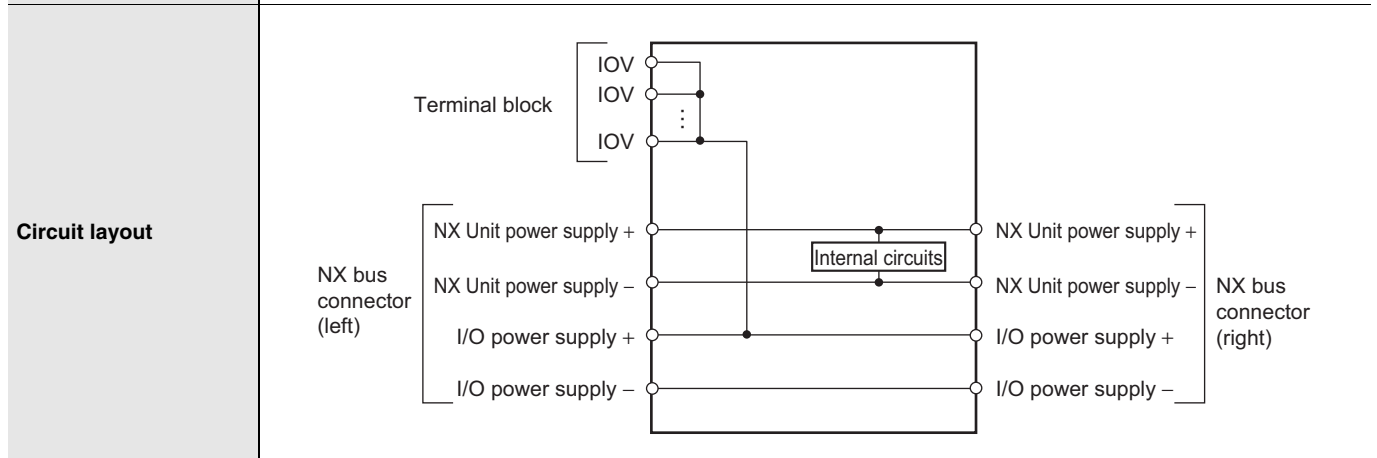


Installation orientation and restrictions
 Installation orientation: Possible in 6 orientations.
 Restrictions: No restrictions

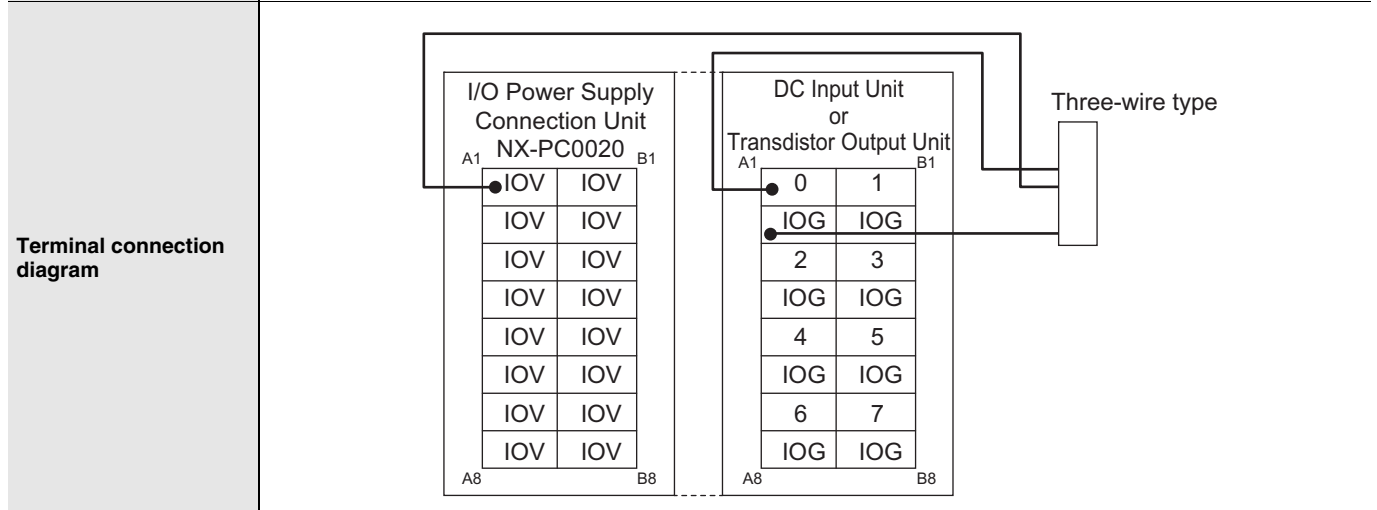


I/O Power Supply Connection Unit IOV terminal type NX-PC0020

Unit name	I/O Power Supply Connection Unit
Model	NX-PC0020
External connection terminals	Screwless clamping terminal block (16 terminals)
Number of I/O power supply terminals	IOV: 16 terminals
Current capacity of I/O power supply terminal	4 A/terminal max.
Dimensions	12 (W) × 100 (H) 71 × (D)
Isolation method	No-isolation
Isolation 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.

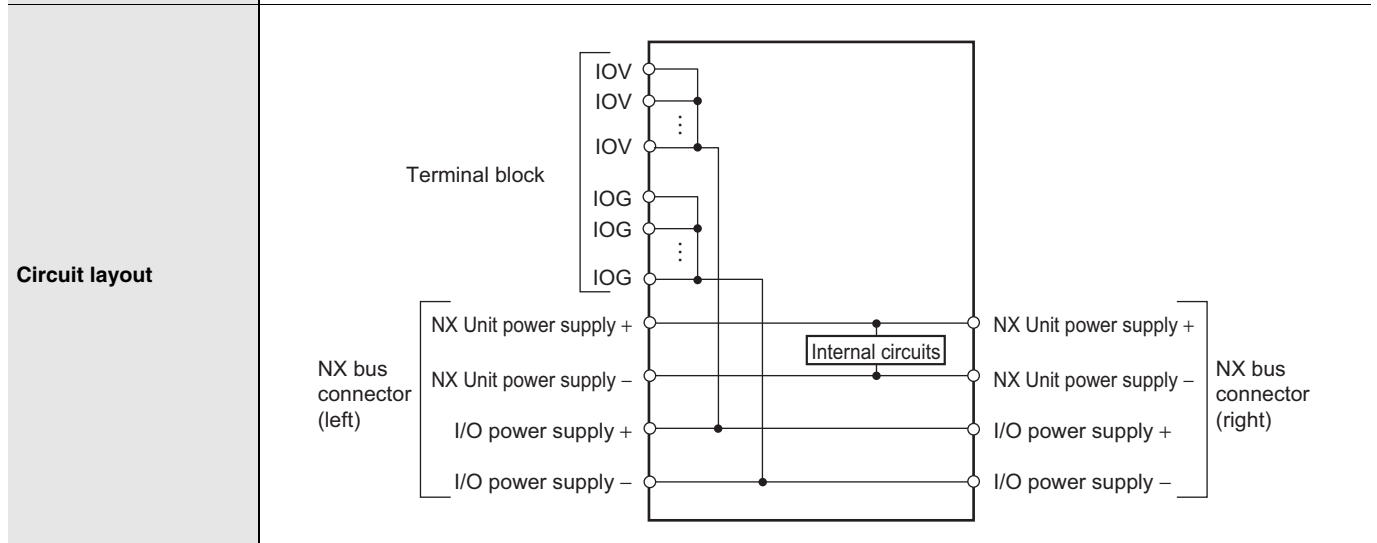


Installation orientation and restrictions
 Installation orientation: Possible in 6 orientations.
 Restrictions: No restrictions

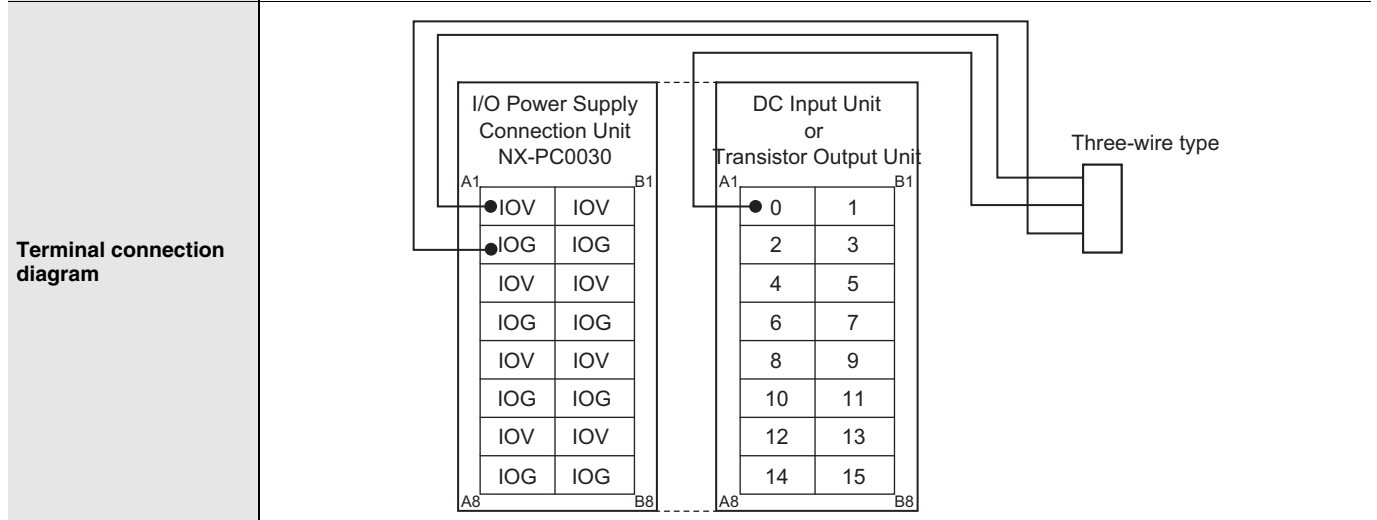


I/O Power Supply Connection Unit IOV/IOG terminal type NX-PC00300

Unit name	I/O Power Supply Connection Unit
Model	NX-PC0030
External connection terminals	Screwless clamping terminal block (16 terminals)
Number of I/O power supply terminals	IOV: 8 terminals IOG: 8 terminals
Current capacity of I/O power supply terminal	4 A/terminal 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	No consumption
Weight	65 g max.

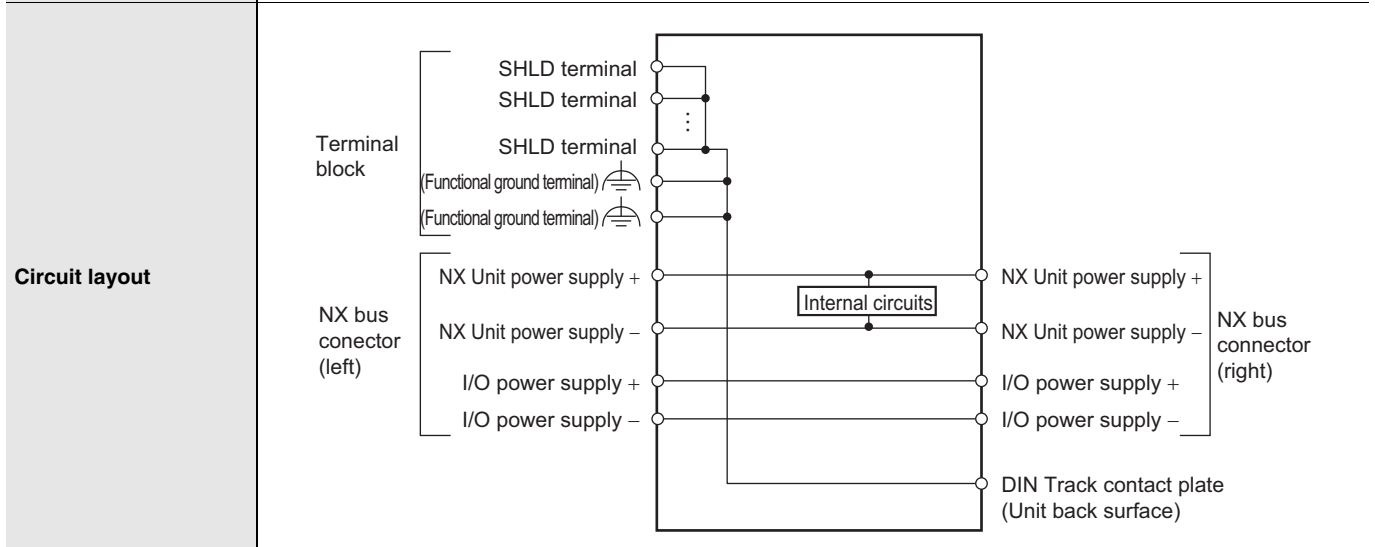


Installation orientation and restrictions	Installation orientation: Possible in 6 orientations. Restrictions: No restrictions
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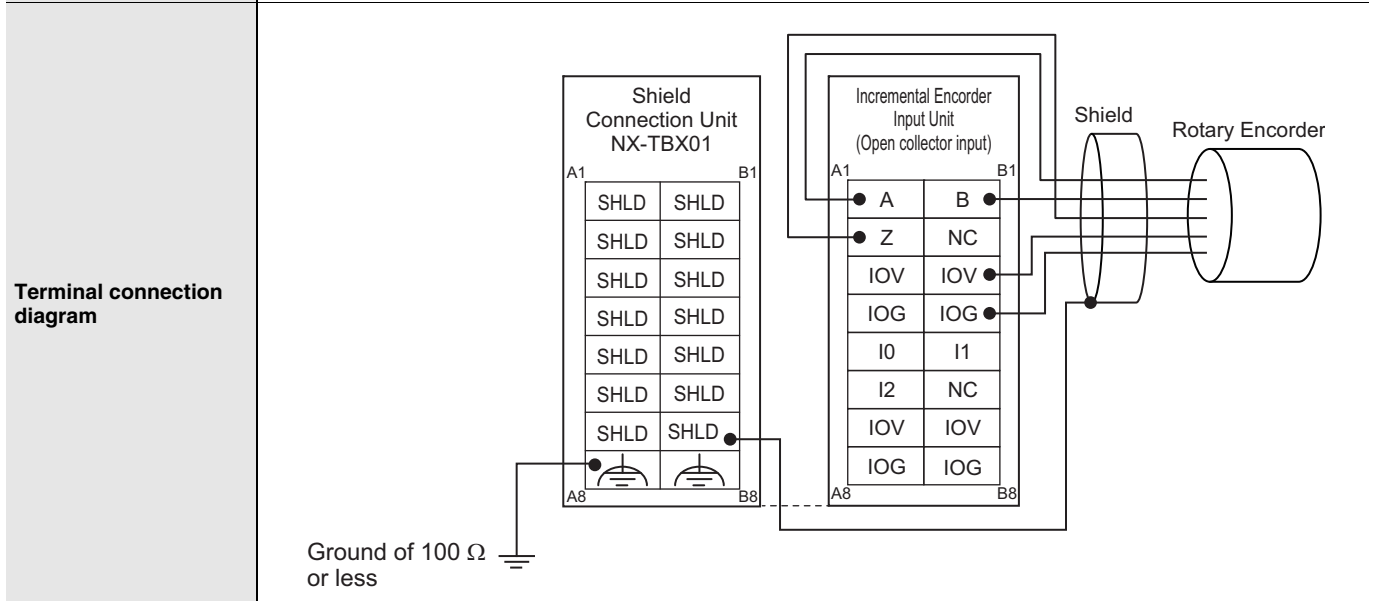


Shield Connection Unit NX-TBX01

Unit name	Shield Connection Unit
Model	NX-TBX01
External connection terminals	Screwless clamping 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



Version Information

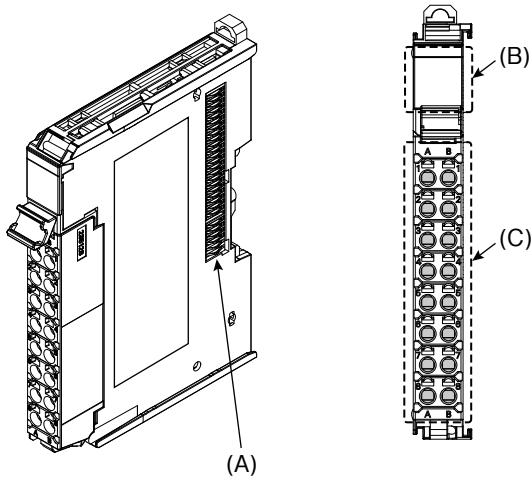
NX-series System Unit and Sysmac Studio

NX-series System Unit	Sysmac Studio	
	Version 1.05 or lower	Version 1.06 or higher
NX-PD1□□□	Not supported	Supported
NX-PF0□□□	Not supported	Supported
NX-PC0□□□	Not supported	Supported
NX-TBX01	Not supported	Supported

External Interface

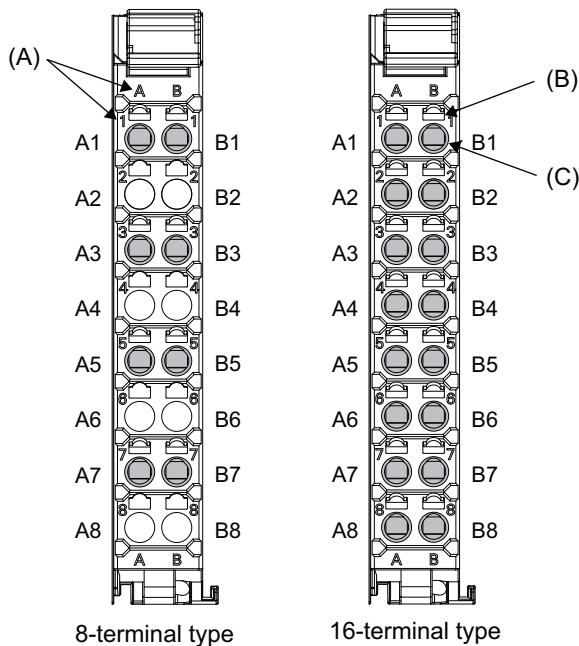
Additional NX Unit Power Supply Unit, Additional I/O Power Supply Unit, I/O Power Supply Connection Unit, and Shield Connection Unit

NX-PD1000/NX-PF0630/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 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.

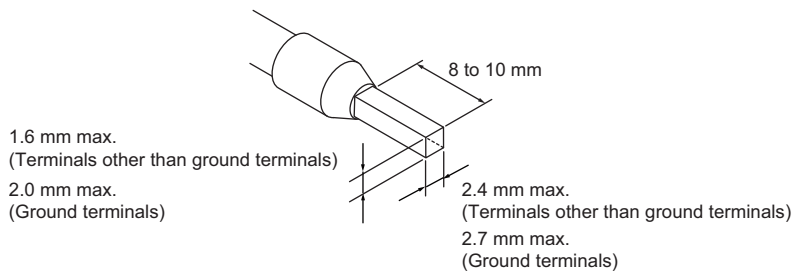
Always use one-pin ferrules. Do not use two-pin ferrules.

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

Terminal types	Manufacturer	Ferrule model	Applicable wire (mm ² (AWG))	Crimping tool
Terminals other than ground terminals	Phoenix Contact	AI0,34-8	0.34 (#22)	Phoenix Contact (The figure in parentheses is the applicable wire size.) CRIMPFOX 6 (0.25 to 6 mm ² , AWG 24 to 10)
		AI0,5-8	0.5 (#20)	
		AI0,5-10		
		AI0,75-8	0.75 (#18)	
		AI0,75-10		
		AI1,0-8	1.0 (#18)	
		AI1,0-10		
		AI1,5-8	1.5 (#16)	
Ground terminals	Phoenix Contact	AI1,5-10		
		AI2,5-10	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 mm ² , 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 mm² 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.

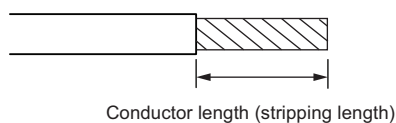


Using Twisted Wires/Solid Wires

If you use the twisted wires or the solid wires, the applicable wire range and conductor length (stripping length) are as follows.

Use the twisted wires to connect the ground wire to a ground of 100 Ω or less. Do not use the solid wires.

Terminal types	Applicable wires range	Conductor length (stripping length)
Ground terminals	2.0 mm ²	9 to 10 mm
Terminals other than ground terminals	0.08 to 1.5 mm ² AWG28 to 16	8 to 10 mm



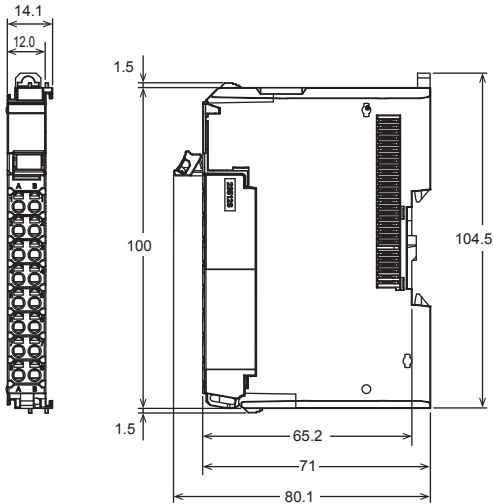
Dimensions

(Unit: mm)

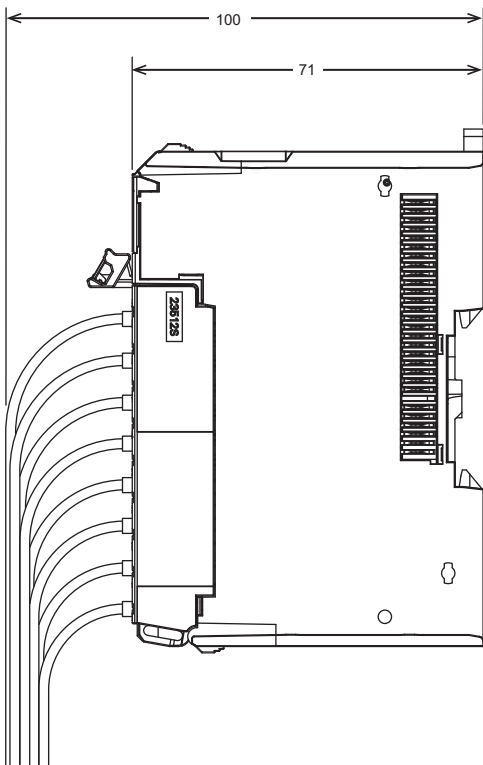
Additional NX Unit Power Supply Unit, Additional I/O Power Supply Unit, I/O Power Supply Connection Unit, and Shield Connection Unit

NX-PD1000/NX-PF0630/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.