NX-series Digital Output Units

NX-OD/OC

CSM NX-OD OC DS F 7 1

A Wide Range of Digital Output Units from General Purpose use to High-Speed Synchronous Control

- Transistor and relay Output Units for the NX-series modular I/O system.
- Connect to other NX-series I/O Units and EtherCAT Coupler units using the high-speed NX-bus.
- Synchronous Units update their output status according to the controller's instructions every EtherCAT cycle.



Features

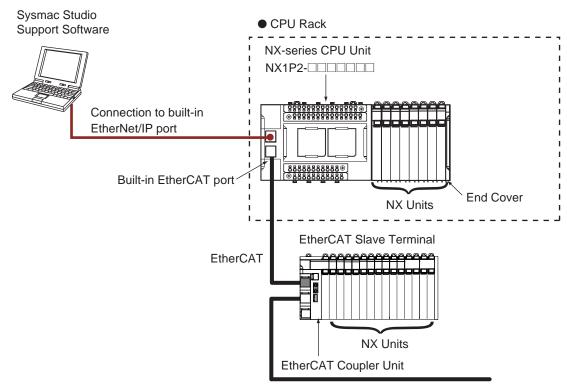
- High-speed I/O refreshing is possible by connecting with the NX-series EtherCAT Coupler.
- Output refreshing can be synchronized with the control cycle of the Controller. (Synchronous refreshing)
- ON/OFF response time of the high-speed model is 300 ns max, which enables high-speed, high-precision control.
- The screwless terminal block is detachable for easy commissioning and maintenance.
- Screwless clamp terminal block and Connector types (Units with MIL/Fujitsu Connectors) are significantly reduces wiring work.
- Up to 16 digital outputs in a space-saving 12 mm width. (Connector Types 30 mm width)
- The lineup includies 2-point, 4-point, 8-point, 16-point, and 32-point types with 3-wire, 2-wire and 1-wire connection methods.
- With output refreshing with specified time stamp, the Output Unit refreshes outputs at the time specified by the program. This enables highprecision output control independent of the control cycle of the Controller.
- \bullet Connection to the CJ-series is possible by connecting with the EtherNet/IP $^{\text{TM}}$ Coupler.

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System Configuration

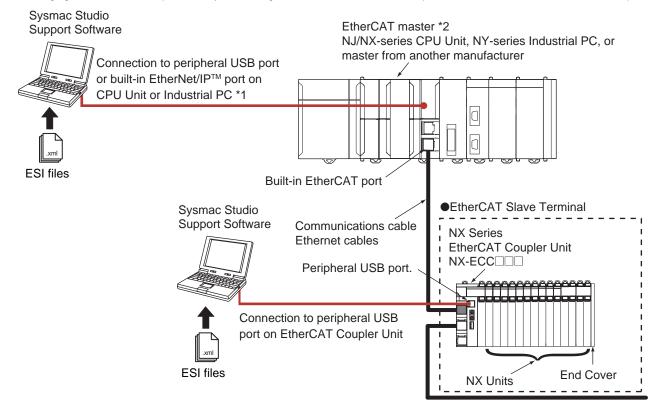
System Configuration in the Case of a CPU Unit

The following figure shows a system configuration when a group of NX Units is connected to an NX-series CPU Unit.



System Configuration of Slave Terminals

The following figure shows an example of the system configuration when an EtherCAT Coupler Unit is used as a Communications Coupler Unit.



- *1. The connection method for the Sysmac Studio depends on the model of the CPU Unit or Industrial PC.
- *2. An EtherCAT Slave Terminal cannot be connected to any of the OMRON CJ1W-NC□81/□82 Position Control Units even though they can operate as EtherCAT masters.

Note: For whether NX Units can be connected to the CPU Unit or Communications Coupler Unit to be used, refer to the user's manual for the CPU Unit or Communications Coupler Unit to be used.

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: EU Directives, RCM: Regulatory Compliance Mark, and KC: KC Registration.
- Contact your OMRON representative for further details and applicable conditions for these standards.

Digital Output Units

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

					Spec	ification			
Unit type	Product name	Number of points	Internal I/O common	Maximum value of load current	Rated voltage	I/O refreshing method	ON/OFF response time	Model	Standards
		2 nainta	NPN	0.5 A/point, 1 A/Unit	24 VDC	Output refreshing with specified time	300 ns max./	NX-OD2154	
		2 points	PNP		24 VDC	stamp only*	300 ns max.	NX-OD2258	
			NPN		12 to 24 VDC		0.1 ms max./ 0.8 ms max.	NX-OD3121	UC1, N, L,
	Transistor	Dutput	INFIN	0.5 A/point, 2 A/Unit		Switching Synchronous I/O refreshing and Free-Run refreshing	300 ns max./ 300 ns max.	NX-OD3153	CE, RCM, KC
NX-series	Unit						0.5 ms max./ 1.0 ms max.	NX-OD3256	
Digital Output			PNP				300 ns max./ 300 ns max.	NX-OD3257	
Unit				2 A/point, 8 A/Unit			0.5 ms max./ 1.0 ms max.	NX-OD3268	UC1, CE, RCM, KC
		9 nointe	NPN		12 to 24 VDC		0.1 ms max./ 0.8 ms max.	NX-OD4121	UC1, N, L, CE, RCM, KC
		8 points	PNP	0.5 A/point, 4 A/Unit	24 VDC		0.5 ms max./ 1.0 ms max.	NX-OD4256	
		16 points	NPN		12 to 24 VDC		0.1 ms max./ 0.8 ms max.	NX-OD5121	
			PNP		24 VDC		0.5 ms max./ 1.0 ms max.	NX-OD5256	

^{*} To use output refreshing with specified time stamp, the NJ-series CPU Unit with unit version 1.06 or later, EtherCAT Coupler Unit with unit version 1.1 or later, and Sysmac Studio version 1.07 or higher are required.

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

			Specification						
Unit type Product name	Product name	Number of points	Internal I/O common	Maximum value of load current	Rated voltage	I/O refreshing method	ON/OFF response time	Model	Standards
NX-series Digital	Transistor Output Unit	46 points	NPN	0.5 A/point,	12 to 24 VDC	Switching Synchronous I/O refreshing	0.1 ms max./ 0.8 ms max.	NX-OD5121-1	UC1, CE,
Output Unit	Output	16 points	PNP	5 A/Unit	24 VDC	and Free-Run refreshing	0.5 ms max./ 1.0 ms max.	NX-OD5256-1	RCM, KC

● Transistor Output Units (MIL Connector, 30 mm Width)

					Spec	ification			
Unit type	Product name	Number of points	Internal I/O common	Maximum value of load current	Rated voltage	I/O refreshing method	ON/OFF response time	Model	Standards
Transistor Output	Output	16 points	NPN	0.5 A/point, 2 A/Unit	12 to 24 VDC	Switching Synchronous I/O refreshing	0.1 ms max./ 0.8 ms max.	NX-OD5121-5	-
NX-series	Unit	nit To points	PNP		24 VDC		0.5 ms max./ 1.0 ms max.	NX-OD5256-5	
Digital Output Unit			NPN	0.5 A/point,			0.1 ms max./ 0.8 ms max.	NX-OD6121-5	UC1, CE, RCM, KC
Unit		32 points	PNP	2 A/common, 4 A/Unit	24 VDC		0.5 ms max./ 1.0 ms max.	NX-OD6256-5	

● Transistor Output Unit (Fujitsu Connector, 30 mm Width)

					Spec	ification			
Unit type Product name		Number of points	Internal I/O common	Maximum value of load current	Rated voltage	I/O refreshing method	ON/OFF response time	Model	Standards
NX-series Digital Output Unit	Transistor Output Unit	32 points	NPN	0.5 A/point, 2 A/common, 4 A/Unit	12 to 24 VDC		0.1 ms max./ 0.8 ms max.	NX-OD6121-6	UC1, CE, RCM, KC

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

				Spec	ification			
Unit type Produc name		Number of points	Relay type	Maximum switching capacity	I/O refreshing method	ON/OFF response time	Model	Standards
	NX-series Digital Output Unit 2 point		N.O. 250 VAC/2A (cosφ=1) 250 VAC/2A (cosφ=0.4)			15ms may /	NX-OC2633	UC1, N, L, CE, RCM, KC
Output		2 points	N.O.+ N.C.	24 VDC/2A 4 A/Unit	Free-Run refreshing	15ms max./ 15ms max.	NX-OC2733	UC1, N, CE, RCM, KC

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

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Unit type Product name		Number Relay type		Maximum switching capacity	I/O refreshing method	ON/OFF response time	Model	Standards
NX-series Digital Output Unit	Relay Output Unit	8 points	N.O.	250 VAC/2A (cosφ=1) 250 VAC/2A (cosφ=0.4) 24 VDC/2A 8 A/Unit	Free-Run refreshing	15ms max./ 15ms max.	NX-OC4633	UC1, CE, RCM, KC

Optional Products

Product name		Speci	fication		Model	Standards
Unit/Terminal Block Coding Pins	For 10 Units (Terminal Block:	For 10 Units (Terminal Block: 30 pins, Unit: 30 pins)				
		Specification				
Product name	No. of terminals	Terminal number indications	Ground terminal mark	Terminal current capacity	Model	Standards
	8				NX-TBA082	
Terminal Block	12	A/B	None	10 A	NX-TBA122	

Accessories

Not included.

NX-TBA162

Connection Patterns for Connector-Terminal Block Conversion Units

Pattern	Configuration	Number of connectors	Branching
А	Connecting Cable Connector-Terminal Block Conversion Unit 20 or 40 terminals	4	None
В	Connecting Cable with two branches Connector-Terminal Block Conversion Unit 20 terminals 20 terminals		2 branches

Connections to Connector-Terminal Block Conversion Units

Unit	I/O capacity	Number of connectors	Polarity	Connection pattern	Number of branches	Connecting Cable	Connector-Terminal Block Conversion Unit	Common terminal
				Α	None	XW2Z-□□□X	XW2B-20G4	None
NX-OD5121-5	16 outputs	1 MIL	NPN	Α	None	XW2Z-□□□X	XW2B-20G5	None
NA-OD3121-3	16 outputs	connector	INI IN	Α	None	XW2Z-□□□X	XW2D-20G6	None
				Α	None	XW2Z-□□□X	XW2R-J20G-T	None
				A	None	XW2Z-□□□X	XW2B-20G4	None
NX-OD5256-5	16 outputs	1 MIL	PNP	Α	None	XW2Z-□□□X	XW2B-20G5	None
NA-OD5250-5	16 outputs	connector	FINE	Α	None	XW2Z-□□□X	XW2D-20G6	None
				Α	None	XW2Z-□□□X	XW2R-J20G-T	None
				Α	None	XW2Z-□□□K	XW2B-40G4	None
				Α	None	XW2Z-□□□K	XW2B-40G5	None
				Α	None	XW2Z-□□□K	XW2D-40G6	None
				Α	None	XW2Z-□□□K	XW2R-J40G-T	None
NX-OD6121-5	32 outputs	1 MIL	NPN	В	2	XW2Z-□□□N	XW2B-20G4 (2 Units)	None
NA-OD6121-5	32 Outputs	connector	INFIN	В	2	XW2Z-□□□N	XW2B-20G5 (2 Units)	None
				В	2	XW2Z-□□□N	XW2C-20G6-IO16 (2 Units)	Yes
				В	2	XW2Z-□□□N	XW2D-20G6 (2 Units)	None
				В	2	XW2Z-□□□N	XW2F-20G7-OUT16 (2 Units)	Yes
				В	2	XW2Z-□□□N	XW2R-J20G-T (2 Units)	None
				Α	None	XW2Z-□□□B	XW2B-40G4	None
				Α	None	XW2Z-□□□B	XW2B-40G5	None
				Α	None	XW2Z-□□□B	XW2D-40G6	None
				Α	None	XW2Z-□□□B	XW2R-J40G-T	None
				Α	None	XW2Z-□□□BU	XW2D-40C6	None
NX-OD6121-6	32 outputs	1 Fujitsu connector	NPN	В	2	XW2Z-□□□L	XW2B-20G4 (2 Units)	None
		connector		В	2	XW2Z-□□□L	XW2B-20G5 (2 Units)	None
				В	2	XW2Z-□□□L	XW2C-20G6-IO16 (2 Units)	Yes
				В	2	XW2Z-□□□L	XW2D-20G6 (2 Units)	None
				В	2	XW2Z-□□□L	XW2F-20G7-OUT16 (2 Units)	Yes
				В	2	XW2Z-□□□L	XW2R-J20G-T (2 Units)	None
				Α	None	XW2Z-□□□K	XW2B-40G4	None
				Α	None	XW2Z-□□□K	XW2B-40G5	None
				Α	None	XW2Z-□□□K	XW2D-40G6	None
				Α	None	XW2Z-□□□K	XW2R-J40G-T	None
NX-OD6256-5	32 outpute	1 MIL	PNP	В	2	XW2Z-□□□N	XW2B-20G4 (2 Units)	None
NA-OD0230-3	32 outputs	connector	1 141	В	2	XW2Z-□□□N	XW2B-20G5 (2 Units)	None
				В	2	XW2Z-□□□N	XW2C-20G6-IO16 (2 Units)	Yes
				В	2	XW2Z-□□□N	XW2D-20G6 (2 Units)	None
				В	2	XW2Z-□□□N	XW2F-20G7-OUT16 (2 Units)	Yes
				В	2	XW2Z-□□□N	XW2R-J20G-T (2 Units)	None

General Specification

	Item	Specification		
Enclosure		Mounted in a panel		
Grounding n	nethod	Ground to 100 Ω or less		
	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.		
Operating environment	Noise immunity	2 kV on power supply line (Conforms to IEC61000-4-4.)		
environment	Overvoltage category	Category II: Conforms to JIS B3502 and IEC 61131-2.		
	EMC immunity level	Zone B		
	Vibration resistance *1	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/s², 100 min each in X, Y, and Z directions (10 sweeps of 10 min each = 100 min total)		
	Shock resistance *1	Conforms to IEC 60068-2-27. 147 m/s², 3 times each in X, Y, and Z directions		
Applicable standards *2		cULus: Listed (UL508) or Listed (UL 61010-2-201), ANSI/ISA 12.12.01, EU: EN 61131-2 or EN 61010-2-201, C-Tick or RCM, KC: KC Registration, NK, LR		

^{*1.} For the Relay Output Unit, refer to the Digital Input Unit Specifications.
*2. Refer to the OMRON website or consult your OMRON representative for the most recent applicable standards for

Digital Output Unit Specifications

● Transistor Output Unit (Screwless Clamping Terminal Block 12 mm, Width) NX-OD2154

Unit name	Transistor Output Unit	Model	NX-OD2154
	·	External connection	Screwless clamping terminal block
Number of points	2 points	terminals	(8 terminals)
I/O refreshing method	Output refreshing with specified time stamp TS indicator, output indicator	Internal I/O common	NPN
	OD2154	Rated voltage	24 VDC
	□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	Operating load voltage range	15 to 28.8 VDC
Indicators		Maximum value of load current	0.5 A/point, 1 A/Unit
		Maximum inrush current	4.0 A/point, 10 ms max.
		Leakage current	0.1 mA max.
		Residual voltage ON/OFF response time	1.5 V max. 300 ns max./300 ns max.
Dimensions	12 (W) x 100 (H) x 71 (D)	Isolation method	Digital isolator isolation
Insulation resistance	$20~M\Omega$ 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.
I/O power supply method	Supply from the NX bus	Current capacity of I/O power supply terminal	IOV: 0.5 A/terminal max., IOG: 0.5 A/terminal max.
	Connected to a CPU Unit		
NX Unit power consumption	0.85 W max. Connected to a Communications Coupler Unit 0.45 W max.	I/O current consumption	30 mA max.
Weight	70 g max.		
Circuit layout	NX bus connector (left) NX bus connector (left) I/O power supply - This unit uses a publication orientation:	oush-pull output circuit.	OUT0 to OUT1 Terminal block I/O power supply + NX bus connector (right)
Installation orientation and restrictions	Connected to a CPU Unit: Possible in up Connected to a Communications Couple Restrictions: No restrictions		ions.
Terminal connection diagram	Power Supply Unit	ransistor Output Unit NX-OD2154 DUT0 OUT1 IOV IOV IOG IOG NC NC B8	Three-wire type
Disconnection/ Short-circuit detection	Not supported.	Protective function	Not supported.

Unit name	Transistor Output Unit	Model	NX-OD2258		
Number of points	2 points	External connection terminals	Screwless clamping terminal block (8 terminals)		
I/O refreshing method	Output refreshing with specified time stamp)			
	TS indicator, output indicator	Internal I/O common	PNP		
	OD2258	Rated voltage	24 VDC		
	■TS ■0 ■1	Operating load voltage range	15 to 28.8 VDC		
Indicators		Maximum value of load current	0.5 A/point, 1 A/Unit		
		Maximum inrush current	4.0 A/point, 10 ms max.		
		Leakage current	0.1 mA max.		
		Residual voltage	1.5 V max.		
		ON/OFF response time	300 ns max./300 ns max.		
Dimensions	12 (W) x 100 (H) x 71 (D)	Isolation method	Digital isolator isolation		
Insulation resistance	20 M Ω 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.		
I/O power supply method	Supply from the NX bus	Current capacity of I/O power supply terminal	IOV: 0.5 A/terminal max., IOG: 0.5 A/terminal max.		
NX Unit power	Connected to a CPU Unit 0.85 W max.				
consumption	Connected to a Communications Coupler Unit 0.50 W max.	I/O current consumption	40 mA max.		
Weight	70 g max.				
Circuit layout	NX bus connector (left) I/O power supply - This unit uses a p	oush-pull output circuit.	OUT0 to OUT1 Terminal block I/O power supply + NX bus connector (right)		
Installation orientation and restrictions	Installation orientation: Connected to a CPU Unit: Possible in up Connected to a Communications Couple Restrictions: No restrictions	oright installation. er Unit: Possible in 6 orientat	ions.		
Terminal connection diagram	Power Supply Unit A1 B1 OIOV IOV OIOG IOG 24 VDC	ransistor Output Unit NX-OD2258 Two-wire ty OUT0 OUT1 IOV IOV IOG IOG NC NC NC	Three-wire type		
Disconnection/ Short-circuit detection	Not supported.	Protective function	With load short-circuit protection.		

Unit name	Transistor Output Unit	Model	NX-OD3121
Number of points	4 points	External connection terminals	Screwless clamping terminal block (12 terminals)
I/O refreshing method	Selectable Synchronous I/O refreshing or F	ree-Run refreshing	
	TS indicator, output indicator	Internal I/O common	NPN
	OD3121 ■TS	Rated voltage	12 to 24 VDC
	=0 =1 =2 =3	Operating load voltage range	10.2 to 28.8 VDC
Indicators		Maximum value of load current	0.5 A/point, 2 A/Unit
		Maximum inrush current	4.0 A/point, 10 ms max.
		Leakage current	0.1 mA max.
		Residual voltage	1.5 V max.
		ON/OFF response time	0.1 ms max./0.8 ms max.
Dimensions	12 (W) x 100 (H) x 71 (D)	Isolation method	Photocoupler isolation
Insulation resistance	20 M Ω 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.
I/O power supply method	Supply from the NX bus	Current capacity of I/O power supply terminal	IOV: 0.5 A/terminal max., IOG: 0.5 A/terminal max.
NX Unit power consumption	Connected to a CPU Unit 0.90 W max. Connected to a Communications Coupler Unit 0.55 W max.	I/O current consumption	10 mA max.
Weight	70 g max.		
Circuit layout	NX bus connector (left) NX bus connector (left)		IOV0 to 3 OUT0 to OUT3 Terminal block I/O power supply + I/O power supply - I/O power supply - I/O power supply -
Installation orientation and restrictions	Installation orientation: Connected to a CPU Unit: Possible in up Connected to a Communications Couple Restrictions: No restrictions		ions.
Terminal connection diagram	Power Supply Unit A1 B1 OIOV IOV I2 to 24 VDC IOV IOV	Ansistor Output Unit NX-OD3121 Two-wire typ DUT0 OUT1 IOV0 IOV1 IOG0 IOG1 DUT2 OUT3 IOV2 IOV3 IOG2 IOG3 B8	e Three-wire type
Disconnection/ Short-circuit detection	Not supported.	Protective function	Not supported.

Unit name	Transistor Output Unit	Model	NX-OD3153
Number of points	4 points	External connection terminals	Screwless clamping terminal block (12 terminals)
I/O refreshing method	Selectable Synchronous I/O refreshing or F	ree-Run refreshing	
	TS indicator, output indicator	Internal I/O common	NPN
	OD3153 ■TS	Rated voltage	24 VDC
	■0 ■1 ■2 ■3	Operating load voltage range	15 to 28.8 VDC
Indicators		Maximum value of load current	0.5 A/point, 2 A/Unit
		Maximum inrush current	4.0 A/point, 10 ms max.
		Leakage current	0.1 mA max.
		Residual voltage	1.5 V max.
D. .	10 (11) 100 (11) 71 (7)	ON/OFF response time	300 ns max./300 ns max.
Dimensions	12 (W) x 100 (H) x 71 (D)	Isolation method	Digital isolator isolation
Insulation resistance	20 M Ω 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.
I/O power supply method	Supply from the NX bus	Current capacity of I/O power supply terminal	IOV: 0.5 A/terminal max., IOG: 0.5 A/terminal max.
NX Unit power consumption	Connected to a CPU Unit 0.90 W max. Connected to a Communications Coupler Unit 0.50 W max.	I/O current consumption	30 mA max.
Weight	70 g max.		
Circuit layout	NX bus connector (left) NX bus connector (left) I/O power supply - This unit uses a push	n-pull output circuit.	OUT0 to OUT3 Terminal block IOG0 to 3 I/O power supply + NX bus connector (right)
Installation orientation and restrictions	Installation orientation: Connected to a CPU Unit: Possible in upright installation. Connected to a Communications Coupler Unit: Possible in 6 orientations. Restrictions: No restrictions		
Terminal connection diagram	Additional I/O Power Supply Unit A1 B1 A1 IOV IOV IOV IOV IOG IOG A8 B8 A8	Transistor Output Unit NX-OD3153 B1 Two-wire ty OUT0 OUT1 IOV0 IOV1 IOG0 IOG1 OUT2 OUT3 IOV2 IOV3 IOG2 IOG3 B8	Three-wire type
Short-circuit detection	Not supported.	Protective function	Not supported.

Unit name	Transistor Output Unit	Model	NX-OD3256
Number of points	4 points	External connection terminals	Screwless clamping terminal block (12 terminals)
I/O refreshing method	Selectable Synchronous I/O refreshing or F	ree-Run refreshing	
	TS indicator, output indicator	Internal I/O common	PNP
	OD3256 ■TS	Rated voltage	24 VDC
	■0 ■1 ■2 ■3	Operating load voltage range	15 to 28.8 VDC
Indicators		Maximum value of load current	0.5 A/point, 2 A/Unit
		Maximum inrush current	4.0 A/point, 10 ms max.
		Leakage current	0.1 mA max.
		Residual voltage	1.5 V max.
D. .	10 (11) 100 (11) 71 (7)	ON/OFF response time	0.5 ms max./1.0 ms max.
Dimensions	12 (W) x 100 (H) x 71 (D)	Isolation method	Photocoupler isolation
Insulation resistance	20 M Ω 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.
I/O power supply method	Supply from the NX bus	Current capacity of I/O power supply terminal	IOV: 0.5 A/terminal max., IOG: 0.5 A/terminal max.
NX Unit power consumption	Connected to a CPU Unit 0.90 W max. Connected to a Communications Coupler Unit 0.55 W max.	I/O current consumption	20 mA max.
Weight	70 g max.		
Circuit layout	NX bus connector (left) I/O power supply –	Short-circuit protection	IOV0 to 3 OUT0 to OUT3 IOG0 to 3 I/O power supply + NX bus connector (right)
Installation orientation and restrictions	Installation orientation: Connected to a CPU Unit: Possible in upright installation. Connected to a Communications Coupler Unit: Possible in 6 orientations. Restrictions: No restrictions		
Terminal connection diagram	Power Supply Unit A1 B1 OIOV IOV II II II II II II II II II	Insistor Output Unit NX-OD3256 B1 Two-wire type UTTO OUT1 OGO IOG1 UTT2 OUT3 OV2 IOV3 DG2 IOG3 B8	Three-wire type
Disconnection/ Short-circuit detection	Not supported.	Protective function	With load short-circuit protection.

Unit name	Transistor Output Unit	Model	NX-OD3257
Number of points	4 points	External connection	Screwless clamping terminal block (12
	'	terminals	terminals)
I/O refreshing method	Selectable Synchronous I/O refreshing or F	Internal I/O common	PNP
	TS indicator, output indicator OD3257	Rated voltage	24 VDC
	UD3257 ■TS	Operating load voltage	15 to 28.8 VDC
	■0 ■1 ■2 ■3	range	13 to 26.6 VDC
Indicators		Maximum value of load current	0.5 A/point, 2 A/Unit
		Maximum inrush current	4.0 A/point, 10 ms max.
		Leakage current	0.1 mA max.
		Residual voltage	1.5 V max.
		ON/OFF response time	300 ns max./300 ns max.
Dimensions	12 (W) x 100 (H) x 71 (D)	Isolation method	Digital isolator isolation
Insulation resistance	$20~\text{M}\Omega$ 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.
I/O power supply	,	Current capacity of I/O	IOV: 0.5 A/terminal max.,
method	Supply from the NX bus	power supply terminal	IOG: 0.5 A/terminal max.
	Connected to a CPU Unit 0.85 W max.		
NX Unit power consumption	Connected to a Communications	I/O current consumption	40 mA max.
consumption	Coupler Unit 0.50 W max.		
Weight	70 g max.		
Circuit layout	NX bus connector (left) NX bus connector (left) I/O power supply - This unit uses a push Installation orientation:	Depul output circuit.	I/O power supply + NX bus connector (right)
Installation orientation and restrictions	Connected to a CPU Unit: Possible in up Connected to a Communications Couple Restrictions: No restrictions		ions.
Terminal connection diagram	Power Supply Unit A1 B1 OIOV IOV OIOG IOG	ransistor Output Unit NX-OD3257 OUT0 OUT1 IOV0 IOV1 IOG0 IOG1 OUT2 OUT3 IOV2 IOV3 IOG2 IOG3 B8	Three-wire type
Disconnection/ Short-circuit detection	Not supported.	Protective function	With load short-circuit protection.

Unit name	Transistor Output Unit	Model	NX-OD3268
Number of points	4 points	External connection terminals	Screwless clamping terminal block (16 terminals)
I/O refreshing method	Switching Synchronous I/O refreshing and	I	
	TS indicator, output indicator	Internal I/O common	PNP 24 VDC
	OD3268	Rated voltage Operating load voltage	24 VDC
	■TS ■0 ■1	range	15 to 28.8 VDC
Indicators	■2 ■3	Maximum value of load current	2 A/point, 8 A/Unit
		Maximum inrush current	4.0 A/point, 10 ms max.
		Leakage current	0.1 mA max.
		Residual voltage	1.5 V max.
	10 (14) 100 (11) 74 (7)	ON/OFF response time	0.5 ms max./1.0 ms max.
Dimensions	12 (W) x 100 (H) x 71 (D)	Isolation method	Photocoupler isolation
Insulation resistance	20 M Ω 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.
I/O power supply method	Supply from external source	Current capacity of I/O power supply terminal	IOV: 2 A/terminal max., IOG: 2 A/terminal max., COM (+V): 4 A/terminal max., 0V: 4 A/terminal max.
NX Unit power consumption	 Connected to a CPU Unit 0.85 W max. Connected to a Communications Coupler Unit 0.50 W max. 	Current consumption from I/O power supply	20 mA max.
Weight	70 g max.		
Circuit layout	NX bus connector (left) NX bus connector supply + I/O power supply -	Short-circuit	OUT 0 to IOV 3 COM (+V) Terminal block OUT 0 to OUT 3 OV I/O power supply + I/O power supply - I/O power supply - I/O power supply -
Installation orientation and restrictions	Installation orientation: Connected to a CPU Unit: Possible in upright installation. Connected to a Communications Coupler Unit: Possible in 6 orientations. Restrictions: No restrictions		
Terminal connection diagram	OUT0 OUT1 • IOV0 IOV1		
	, ,		

Unit name	Transistor Output Unit	Model	NX-OD4121
Number of points	8 points	External connection	Screwless clamping terminal block (16
·	'	terminals	terminals)
I/O refreshing method	Selectable Synchronous I/O refreshing or F TS indicator, output indicator	Internal I/O common	NPN
	OD4121	Rated voltage	12 to 24 VDC
	■TS ■0 ■1	Operating load voltage	10.2 to 28.8 VDC
	■0 ■7 ■2 ■3 ■4 ■5	range	10.2 to 28.6 VDC
Indicators	■4 ■3 ■6 ■7	Maximum value of load current	0.5 A/point, 4 A/Unit
		Maximum inrush current	4.0 A/point, 10 ms max.
		Leakage current	0.1 mA
		Residual voltage	1.5 V max. 0.1 ms max./0.8 ms max.
Dimensions	12 (W) x 100 (H) x 71 (D)	ON/OFF response time Isolation method	Photocoupler isolation
	20 MΩ min. between isolated circuits (at		510 VAC between isolated circuits for 1
Insulation resistance	100 VDC)	Dielectric strength	minute at a leakage current of 5 mA max.
I/O power supply method	Supply from the NX bus	Current capacity of I/O power supply terminal	IOV: 0.5 A/terminal max.
NX Unit power consumption	Connected to a CPU Unit 0.90 W max. Connected to a Communications Coupler Unit 0.55 W max.	I/O current consumption	10 mA max.
Weight	70 g max.		
Circuit layout	NX bus connector (left) NX bus connector (left) I/O power supply -		I/O power supply + NX bus connector (right)
Installation orientation and restrictions	Installation orientation: Connected to a CPU Unit: Possible in up Connected to a Communications Couple Restrictions: No restrictions		ions.
Terminal connection diagram	Power Supply Unit A1	G IOG OUT2 OIG OUT4 OIG OUT6 OIG OUT6 OIG	Three-wire type Three-wire type Three-wire type Three-wire type Three-wire type
Disconnection/ Short-circuit detection	Not supported.	Protective function	Not supported.

Unit name	Transistor Output Unit	Model	NX-OD4256
Number of points	8 points	External connection terminals	Screwless clamping terminal block (16 terminals)
I/O refreshing method	Selectable Synchronous I/O refreshing or F	ree-Run refreshing	
	TS indicator, output indicator	Internal I/O common	PNP
	OD4256 ■TS	Rated voltage	24 VDC
	■0 ■1 ■2 ■3	Operating load voltage range	15 to 28.8 VDC
Indicators	=4 =5 =6 =7	Maximum value of load current	0.5 A/point, 4 A/Unit
		Maximum inrush current	4.0 A/point, 10 ms max.
		Leakage current	0.1 mA
		Residual voltage	1.5 V max.
	12 (1) 12 (1) 7 (2)	ON/OFF response time	0.5 ms max./1.0 ms max.
Dimensions	12 (W) x 100 (H) x 71 (D)	Isolation method	Photocoupler isolation
Insulation resistance	20 M Ω 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.
I/O power supply method	Supply from the NX bus	Current capacity of I/O power supply terminal	IOG: 0.5 A/terminal max.
NX Unit power consumption	Connected to a CPU Unit 1.00 W max. Connected to a Communications Coupler Unit 0.65 W max.	I/O current consumption	30 mA max.
Weight	70 g max.		
Circuit layout	NX bus connector (left) I/O power supply -	Short-circuit protection	OUT0 to OUT7 Terminal block IOG0 to 7 I/O power supply + NX bus connector (right)
Installation orientation and restrictions	Installation orientation: Connected to a CPU Unit: Possible in up Connected to a Communications Couple Restrictions: No restrictions		ions.
Terminal connection diagram	IOV		Three-wire type
Disconnection/ Short-circuit detection	Not supported.	Protective function	With load short-circuit protection.

Unit name	Transistor Output Unit	Model	NX-OD5121
Number of points	16 points	External connection terminals	Screwless clamping terminal block (16 terminals)
I/O refreshing method	Selectable Synchronous I/O refreshing or FTS indicator, output indicator	ree-Run refreshing	NPN
	OD5121	Rated voltage	12 to 24 VDC
	■TS ■0 ■1 ■2 ■3	Operating load voltage range	10.2 to 28.8 VDC
Indicators	#4 #5 #6 #7 #8 #9 #10 #11 #12 #13 #14 #15	Maximum value of load current	0.5 A/point, 4 A/Unit
		Maximum inrush current	4.0 A/point, 10 ms max.
		Leakage current	0.1 mA max.
		Residual voltage	1.5 V max.
		ON/OFF response time	0.1 ms max./0.8 ms max.
Dimensions	12 (W) x 100 (H) x 71 (D)	Isolation method	Photocoupler isolation
Insulation resistance	20 M Ω 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.
I/O power supply method	Supply from the NX bus	Current capacity of I/O power supply terminal	Without I/O power supply terminals
NX Unit power consumption	Connected to a CPU Unit 1.00 W max. Connected to a Communications Coupler Unit 0.65 W max.	I/O current consumption	20 mA max.
Weight	70 g max.		
Circuit layout	NX bus connector (left) I/O power supply -		OUT0 to OUT15 Terminal block I/O power supply + NX bus connector (right)
Installation orientation and restrictions	Installation orientation: Connected to a CPU Unit: Possible in up Connected to a Communications Couple Restrictions: No restrictions		ions.
Terminal connection diagram	12 to 24 VDC	DOV DOG DOG DOG DOV DOG DOG DOG DOG DOG DOV DOG DOG DOG DOV DOG DOG DOG DOV DOG DOG	Tansistor Output Unit NX-OD5121 Two-wire type OUT0 OUT1 OUT2 OUT3 OUT4 OUT5 OUT6 OUT7 OUT8 OUT9 OUT10 OUT11 OUT12 OUT13 OUT114 OUT15 B8
Disconnection/ Short-circuit detection	Not supported.	Protective function	Not supported.

Unit name	Transistor Output Unit	Model	NX-OD5256
Number of points	16 points	External connection terminals	Screwless clamping terminal block (16 terminals)
I/O refreshing method	Selectable Synchronous I/O refreshing or I	ree-Run refreshing	,
	TS indicator, output indicator	Internal I/O common	PNP
	OD5256	Rated voltage	24 VDC
	=TS =0 =1 =2 =3 =4 =5 =6 =7	Operating load voltage range	15 to 28.8 VDC
Indicators	■8 ■9 ■10 ■11 ■12 ■13 ■14 ■15	Maximum value of load current	0.5 A/point, 4 A/Unit
		Maximum inrush current	4.0 A/point, 10 ms max.
		Leakage current	0.1 mA max.
		Residual voltage	1.5 V max.
		ON/OFF response time	0.5 ms max./1.0 ms max.
Dimensions	12 (W) x 100 (H) x 71 (D)	Isolation method	Photocoupler isolation
Insulation resistance	20 M Ω 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.
I/O power supply method	Supply from the NX bus	Current capacity of I/O power supply terminal	Without I/O power supply terminals
NX Unit power consumption	Connected to a CPU Unit 1.10 W max. Connected to a Communications Coupler Unit 0.70 W max.	I/O current consumption	40 mA max.
Weight	70 g max.		
Circuit layout	NX bus connector (left) N/O power supply + 1/O power supply - 1/O pow	Short-circuit protection Short-circuit protection	OUT0 to OUT15 Terminal block I/O power supply + NX bus connector (right)
Installation orientation and restrictions	Installation orientation: Connected to a CPU Unit: Possible in u Connected to a Communications Couple Restrictions: No restrictions		ions.
Terminal connection diagram	IOV	Connection Unit NX-O 11 A1 IOG IOG IOG IOG	OUT3
Disconnection/ Short-circuit detection	Not supported.	Protective function	With load short-circuit protection.

● Transistor Output Units (M3 Screw Terminal Block, 30 mm Width) NX-OD5121-1

Unit name	Transistor Output Unit	Model	NX-OD5121-1
Number of points	16 points	External connection terminals	M3 screw terminal block (18 terminals)
I/O refreshing method	Switching Synchronous I/O refreshing and		
	TS indicator, output indicator	Internal I/O common	NPN
	OD5121−1	Rated voltage	12 to 24 VDC
	■0 ■1 ■2 ■3 ■4 ■5 ■6 ■7	Operating load voltage range	10.2 to 28.8 VDC
Indicators	■8 ■9 ■10 ■11 ■12 ■13 ■14 ■15	Maximum value of load current	0.5 A/point, 5 A/Unit
		Maximum inrush current	4.0 A/point, 10 ms max.
		Leakage current	0.1 mA max.
		Residual voltage	1.5 V max.
		ON/OFF response time	0.1 ms max./0.8 ms max.
Dimensions	30 (W) x 100 (H) x 71 (D)	Isolation method	Photocoupler isolation
Insulation resistance	20 M Ω 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.
I/O power supply method	Supply from the external source	Current capacity of I/O power supply terminal	Without I/O power supply terminals
NX Unit power consumption	Connected to a CPU Unit 0.90 W max. Connected to a Communications Coupler Unit 0.60 W max.	Current consumption from I/O power supply	30 mA max.
Weight	125 g max.		
Circuit layout	NX bus connector (left) I/O power supply + I/O power supply -		OUT0 to OUT15 Terminal block COM I/O power supply + I/O power supply - I/O power suppl
Installation orientation and restrictions	Installation orientation: Connected to a CPU Unit: Possible in upright installation. Connected to a Communications Coupler Unit: Possible in 6 orientations. Restrictions: No restrictions		
Terminal connection diagram	Terminal A B Signal name A Sig		
Disconnection/ Short-circuit detection	Not supported.	Protective function	Not supported.

NX-OD5256-1

Unit name	Transistor Output Unit	Model	NX-OD5256-1
	•	External connection	
Number of points	16 points	terminals	M3 screw terminal block (18 terminals)
I/O refreshing method	Switching Synchronous I/O refreshing and	_	
	TS indicator, output indicator	Internal I/O common	PNP
	OD5256-1	Rated voltage	24 VDC
	■ TS ■ 0 ■ 1 ■ 2 ■ 3 ■ 4 ■ 5 ■ 6 ■ 7	Operating load voltage range	20.4 to 28.8 VDC
Indicators	■8 ■9 ■10 ■11 ■12 ■13 ■14 ■15	Maximum value of load current	0.5 A/point, 5 A/Unit
		Maximum inrush current	4.0 A/point, 10 ms max.
		Leakage current	0.1 mA max.
		Residual voltage	1.5 V max.
		ON/OFF response time	0.5 ms max./1.0 ms max.
Dimensions	30 (W) x 100 (H) x 71 (D)	Isolation method	Photocoupler isolation
Insulation resistance	20 M Ω 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.
I/O power supply method	Supply from external source	Current capacity of I/O power supply terminal	Without I/O power supply terminals
NX Unit power consumption	 Connected to a CPU Unit 0.95 W max. Connected to a Communications Coupler Unit 0.65 W max. 	Current consumption from I/O power supply	30 mA max.
Weight	125 g max.		
Circuit layout	NX bus connector (left) I/O power supply + I/O power supply -	Short-circuit	OUT0 to OUT15 OV I/O power supply + I/O power supply - I/O power sup
Installation orientation and restrictions	Installation orientation: Connected to a CPU Unit: Possible in upright installation. Connected to a Communications Coupler Unit: Possible in 6 orientations. Restrictions: No restrictions		
Terminal connection diagram	Terminal		
Disconnection/ Short-circuit detection	Not supported.	Protective function	With load short-circuit protection.

● Transistor Output Units (MIL Connector, 30 mm Width) NX-OD5121-5

Unit name	Transistor Output Unit	Model	NX-OD5121-5
Number of points	16 points	External connection terminals	MIL connector (20 terminals)
I/O refreshing method	Switching Synchronous I/O refreshing and Free	e-Run refreshing	
	TS indicator, output indicator	Internal I/O common	NPN
	OD5121-5	Rated voltage	12 to 24 VDC
	■TS ■0 ■1 ■2 ■3 ■4 ■5 ■6 ■7	Operating load voltage range	10.2 to 28.8 VDC
Indicators	■8 ■9 ■10 ■11 ■12 ■13 ■14 ■15	Maximum value of load current	0.5 A/point, 2 A/Unit
		Maximum inrush current	4.0 A/point, 10 ms max.
		Leakage current	0.1 mA max.
		Residual voltage	1.5 V max.
Dimensions	30 (W) x 100 (H) x 71 (D)	ON/OFF response time Isolation method	0.1 ms max./0.8 ms max. Photocoupler isolation
	20 MΩ min. between isolated circuits		510 VAC between isolated circuits for 1 minute at
Insulation resistance	(at 100 VDC)	Dielectric strength	a leakage current of 5 mA max.
I/O power supply method	Supply from external source	Current capacity of I/O power supply terminal	Without I/O power supply terminals
NX Unit power consumption	Connected to a CPU Unit 0.95 W max. Connected to a Communications Coupler Un 0.60 W max.	Current consumption from I/O power supply	30 mA max.
Weight	80 g max.		4
Circuit layout	NX bus connector (left) NX bus connector (left)		COnnector COM COM COM VO power supply + NX bus connector (right)
Installation orientation and restrictions	Installation orientation: Connected to a CPU Unit: Possible in uprig Connected to a Communications Coupler U Restrictions: No restrictions		
Terminal connection diagram	COM 3 4 COUT15 5 6 COUT14 7 8 COUT14 7 8 COUT13 9 10 COUT12 11 12 COUT11 13 14 COUT10 15 16 COUT10 15 16 COUT10 17 18 COUT10 19 20 COUT	Signal name FV COM DUT07 DUT06 L DUT05 L DUT04 L DUT03 DUT02 L DUT01 L DUT00 L	
Disconnection/Short-circuit detection	Be sure to wire both pins 1 and 2 (+V). Not supported.	Protective function	Not supported.

NX-OD5256-5 Unit name Transistor Output Unit Model NX-OD5256-5 **External connection Number of points** MIL connector (20 terminals) terminals I/O refreshing method Switching Synchronous I/O refreshing and Free-Run refreshing TS indicator, output indicator Internal I/O common PNP 24 VDC Rated voltage OD5256-5 \Box TS Operating load voltage 20.4 to 28.8 VDC ■0 ■1 ■2 ■3 ■4 ■5 ■6 ■7 ■8 ■9 ■10 ■11 ■12 ■13 ■14 ■15 Maximum value of load 0.5 A/point, 2 A/Unit Indicators current Maximum inrush current 4.0 A/point, 10 ms max. Leakage current 0.1 mA max Residual voltage 1.5 V max. 0.5 ms max./1.0 ms max. ON/OFF response time **Dimensions** 30 (W) x 100 (H) x 71 (D) Isolation method Photocoupler isolation $20~\text{M}\Omega$ min. between isolated circuits (at 100 510 VAC between isolated circuits for 1 minute at Insulation resistance Dielectric strength a leakage current of 5 mA max. Current capacity of I/O I/O power supply method Supplied from external source. Without I/O power supply terminals power supply terminal Connected to a CPU Unit 1.00 W max. Connected to a Communications Coupler Unit 0.70 W max. **Current consumption from** NX Unit power consumption 40 mA max. I/O power supply Weight 85 g max. COM (+V) COM (+V) Internal circuits Connector Circuit layout OUT0 to OUT15 NX bus I/O power supply + I/O power supply + connector connector (left) I/O power supply I/O power supply (right) Installation orientation: Connected to a CPU Unit: Possible in upright installation. Connected to a Communications Coupler Unit: Possible in 6 orientations. Installation orientation and restrictions Restrictions: No restrictions Connector Signal Signal pin name 24 VDC COM (+V COM (+V) 0V 3 0V OUT15 OUT07 OUT14 OUT06 8 L Terminal connection OUT13 OUT05 9 10 diagram L L OUT12 OUT04 11 12 OUT11 OUT03 L OUT10 OUT02 15 16 L L OUT09 OUT01 17 18 L OUT08 OUT00 20 Be sure to wire both pins 1 and 2 (COM (+V)).

Protective function

Be sure to wire both pins 3 and 4 (0V).

Not supported.

Disconnection/Short-circuit

detection

With load short-circuit protection.

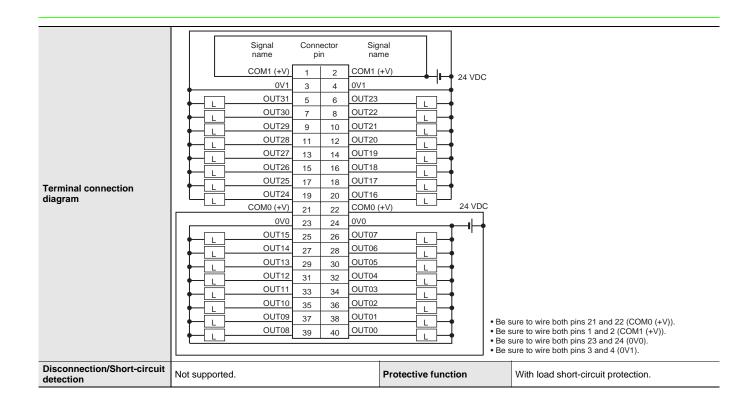
NX-OD6121-5

Unit name	Transistor Output Unit	Model	NX-OD6121-5
Number of points	32 points	External connection terminals	MIL connector (40 terminals)
I/O refreshing method	Switching Synchronous I/O refreshing and Free-F		
	TS indicator, output indicator	Internal I/O common	NPN
	OD6121-5	Rated voltage	12 to 24 VDC
	■TS ■0 ■1 ■2 ■3 ■4 ■5 ■6 ■7	Operating load voltage range	10.2 to 28.8 VDC
Indicators	■8 ■9 ■10 ■11 ■12 ■13 ■14 ■15 ■16 ■17 ■18 ■19 ■20 ■21 ■22 ■23	Maximum value of load current	0.5 A/point, 2 A/common, 4 A/Unit
	■24 ■25 ■26 ■27 ■28 ■29 ■30 ■31	Maximum inrush current	4.0 A/point, 10 ms max.
		Leakage current	0.1 mA max.
		Residual voltage	1.5 V max.
		ON/OFF response time	0.1 ms max./0.8 ms max.
Dimensions	30 (W) x 100 (H) x 71 (D)	Isolation method	Photocoupler isolation
Insulation resistance	$20~\text{M}\Omega$ 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.
I/O power supply method	Supply from external source	Current capacity of I/O power supply terminal	Without I/O power supply terminals
NX Unit power consumption	Connected to a CPU Unit 1.00 W max. Connected to a Communications Coupler Unit 0.80 W max.	Current consumption from I/O power supply	50 mA max.
Weight	90 g max.		
Circuit layout	NX bus connector I/O power supply +	+V0 +V0 OUT0 to OUT15 COM0 COM0 +V1 +V1 OUT16 to OUT31 COM1 COM1	Connector supply + NX bus connector
Installation orientation and restrictions	Installation orientation: Connected to a CPU Unit: Possible in upright in Connected to a Communications Coupler Unit Restrictions: No restrictions	installation. : Possible in 6 orientations.	supply – _ (right)

	ı							
	12 to	Signal name		nector	Signal name			
	24 VD0	+V1	1	2	+V1			
		COM1	3	4	COM1			
		OUT31	5	6	OUT23			
		L OUT30	7	8	OUT22			
		OUT29	9	10	OUT21			
		L OUT28	11	12	OUT20			
		L OUT27	13	14	OUT19			
		L OUT26		16	OUT18			
		L OUT25	_	18	OUT17			
Terminal connection		L OUT24	─	20	OUT16			
diagram		+V0		22	+V0			
		COM0		24	COM0			
		OUT15	-	26	OUT07		1	
		OUT14	-	28	OUT06			
		DUT13		30	OUT05			
		L OUT12	_	32	OUT04			
		L OUT11	<u> </u>	34	OUT03			
		OUT10		36	OUT02			
		L OUT09		38	OUT01			
	12 to L	L OUT08	<u> </u>	40	OUT00	1		sure to wire both pins 21 and 22 (+V0). sure to wire both pins 23 and 24 (COM0).
		L 23.00		1 40	1		• Be	sure to wire both pins 1 and 2 (+V1).
	[• Be	sure to wire both pins 3 and 4 (COM1).
Disconnection/Short-circuit detection	Not supported.				Protecti	ve function		Not supported.

NX-OD6256-5

Unit name	Transistor Output Unit	Model	NX-OD6256-5	
Number of points	32 points	External connection terminals	MIL connector (40 terminals)	
/O refreshing method	Switching Synchronous I/O refreshing and Free-F	Run refreshing		
	TS indicator, output indicator	Internal I/O common	PNP	
	OD6256-5	Rated voltage	24 VDC	
	■TS ■0 ■1 ■2 ■3 ■4 ■5 ■6 ■7	Operating load voltage range	20.4 to 28.8 VDC	
Indicators	■8 ■9 ■10 ■11 ■12 ■13 ■14 ■15 ■16 ■17 ■18 ■19 ■20 ■21 ■22 ■23	Maximum value of load current	0.5 A/point, 2 A/common, 4 A/Unit	
	■24 ■25 ■26 ■27 ■28 ■29 ■30 ■31	Maximum inrush current	4.0 A/point, 10 ms max.	
		Leakage current	0.1 mA max.	
		Residual voltage	1.5 V max.	
		ON/OFF response time	0.5 ms max./1.0 ms max.	
Dimensions	30 (W) x 100 (H) x 71 (D)	Isolation method	Photocoupler isolation	
Insulation resistance	20 M Ω 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.	
I/O power supply method	Supply from external source	Current capacity of I/O power supply terminal	Without I/O power supply terminals	
NX Unit power consumption	Connected to a CPU Unit 1.30 W max. Connected to a Communications Coupler Unit 1.00 W max.	Current consumption from I/O power supply	80 mA max.	
Weight	95 g max.			
Circuit layout	NX bus connector (left) I/O power supply +	Short-circuit protection protecti	COM0 (+V) OUT0 to OUT15 OV0 COM1 (+V) COM1 (+V) COM1 (+V) OUT16 to OUT31 OV1 OV1 OV1 OV1 OV1 OV1 OV1 O	
Installation orientation and restrictions	Installation orientation: Connected to a CPU Unit: Possible in upright Connected to a Communications Coupler Unit Restrictions: No restrictions			



● Transistor Output Units (Fujitsu Connector, 30 mm Width) NX-OD6121-6

Unit name	Transistor Output Unit	Model	NX-OD6121-6	
Number of points	32 points	External connection terminals	Fujitsu connector (40 terminals)	
I/O refreshing method	Switching Synchronous I/O refreshing and Free-R	Run refreshing		
	TS indicator, output indicator	Internal I/O common	NPN	
	OD6121-6	Rated voltage	12 to 24 VDC	
	□ □ □ 1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7	Operating load voltage range	10.2 to 28.8 VDC	
Indicators	■8 ■9 ■10 ■11 ■12 ■13 ■14 ■15	Maximum value of load current	0.5 A/point, 2 A/common, 4 A/Unit	
	■16 ■17 ■18 ■19 ■20 ■21 ■22 ■23 ■24 ■25 ■26 ■27 ■28 ■29 ■30 ■31	Maximum inrush current	4.0 A/point, 10 ms max.	
	_21 _20 _20 _2, _20 _20 _00 _01	Leakage current	0.1 mA max.	
		Residual voltage	1.5 V max.	
Dimensions	30 (M) × 100 (H) × 71 (D)	ON/OFF response time Isolation method	0.1 ms max./0.8 ms max.	
	30 (W) x 100 (H) x 71 (D) 20 MΩ min. between isolated circuits (at 100		Photocoupler isolation 510 VAC between isolated circuits for 1 minute at	
Insulation resistance	VDC)	Dielectric strength Current capacity of I/O	a leakage current of 5 mA max.	
I/O power supply method	Supply from external source	power supply terminal	Without I/O power supply terminals	
NX Unit power consumption	Connected to a CPU Unit 1.10 W max. Connected to a Communications Coupler Unit 0.80 W max.	Current consumption from I/O power supply	50 mA max.	
Weight	90 g max.			
Circuit layout	NX bus connector (left) Installation orientation:	Internal circuits	> +V0 +V0 +V0 +V0 > OUT0 to OUT15 COM0 +V1 > +V1 > OUT16 to OUT31 COM1 COM1 VO power supply + VO power supply - VX bus connector (right)	
Installation orientation and restrictions	Connected to a CPU Unit: Possible in upright i Connected to a Communications Coupler Unit Restrictions: No restrictions	nstallation. : Possible in 6 orientations.		
Terminal connection diagram	12 to 24 VDC Signal name Pin Name N			
Disconnection/	. , ,	Destantive from the	Not our ported	
Short-circuit detection	Not supported.	Protective function	Not supported.	

● Relay Output Unit (Screwless Clamping Terminal Block 12 mm, Width) NX-OC2633

Unit name	Relay Output Units	Model	NX-OC2633		
Number of points	2 points, independent contacts	External connection terminals	Screwless clamping terminal block (8 terminals)		
I/O refreshing method	Free-Run refreshing	torrinialo			
	TS indicator, output indicator	Relay type	N.O. contact		
Indicators	OC2633 =TS =0 =1	Maximum switching capacity	250 VAC/2 A (cosφ = 1), 250 VAC/2 A (cosφ = 0.4), 24 VDC/2 A, 4 A/Unit		
		Minimum switching capacity	5 VDC, 1 mA		
Relay service life	Electrical: 100,000 operations* Mechanical: 20,000,000 operations	ON/OFF response time	15 ms max./15 ms max.		
Dimensions	12 (W) x 100 (H) x 71 (D)	Isolation method	Relay isolation		
Insulation resistance	Between A1/B1 terminals and A3/B3 terminals: $20~M\Omega$ min. (500 VDC) Between the external terminals and internal circuits: $20~M\Omega$ min. (500 VDC) Between the internal circuit and GR terminal: $20~M\Omega$ min. (100 VDC) Between the external terminals and GR terminal: $20~M\Omega$ min. (500 VDC)	Dielectric strength	Between A1/B1 terminals and A3/B3 terminals: 2300 VAC for 1 min at a leakage current of 5 mA max. Between the external terminals and GR terminal 2300 VAC for 1 min at a leakage current of 5 mA max. Between the external terminals and internal circuits: 2300 VAC for 1 min at a leakage curren of 5 mA max. Between the internal circuit and GR terminal: 510 VAC for 1 min at a leakage current of 5 mA max.		
Vibration resistance	Conforms to IEC60068-2-6. 5 to 8.4 Hz with amplitude of 3.5 mm, 8.4 to 150 Hz, acceleration of 9.8 m/s² 100 min each in X, Y, and Z directions (10 sweeps of 10 min each = 100 min total)	Shock resistance	100 m/s², 3 times each in X, Y, and Z directions		
I/O power supply method	Supply from external source	Current capacity of I/O power supply terminal	Without I/O power supply terminals		
NX Unit power consumption	Connected to a CPU Unit 1.20 W max. Connected to a Communications Coupler Unit 0.80 W max.	I/O current consumption	No consumption		
Weight	65 g max.				
Circuit layout	Interna	I power pply	0 to 1 Terminal block C0 to C1 I/O power supply + NX bus connector (right)		
Installation orientation and restrictions	Installation orientation: Connected to a CPU Unit: Possible in upright in Connected to a Communications Coupler Unit: Restrictions: No restrictions				
Terminal connection diagram	Relay Output Unit NX-OC2633 A1				
Disconnection/					

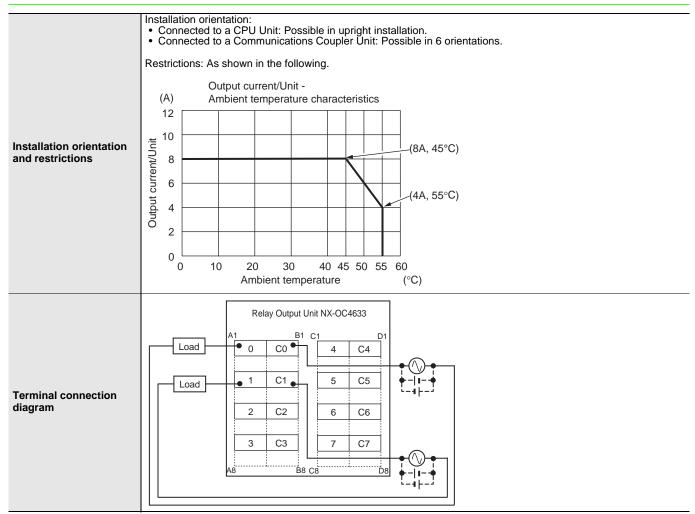
^{*} Electrical service life will vary depending on the current value. Refer to "NX-series Digital I/O Units User's Manual" for details.

● Relay Output Unit NX-OC2733

Unit name	Relay Output Unit	Model	NX-OC2733		
Number of points	2 points, independent contacts	External connection terminals	Screwless clamping terminal block (8 terminals)		
I/O refreshing method	Free-Run refreshing		1050 \(\(\text{10} \) \(\text{10} \)		
Indicators	TS indicator, output indicator OC2733 TS TS 0 1	Maximum switching capacity	250 VAC/2 A (cosφ = 1), 250 VAC/2 A (cosφ = 0.4), 24 VDC/2 A, 4 A/Unit		
		Minimum switching capacity	5 VDC, 10 mA		
Relay service life	Electrical: 100,000 operations Mechanical: 20,000,000 operations	ON/OFF response time	15 ms max./15 ms max.		
Dimensions	12 (W) x 100 (H) x 71 (D)	Isolation method	Relay isolation		
Insulation resistance	Between A1/3, B1/3 terminals and A5/7, B5/7 terminals: $20~M\Omega$ min. (at $500~VDC$) Between the external terminals and functional ground terminal: $20~M\Omega$ min. (at $500~VDC$) Between the external terminals and internal circuits: $20~M\Omega$ min. (at $500~VDC$) Between the internal circuit and the functional ground terminal: $20~M\Omega$ min. (at $100~VDC$)	Dielectric strength	Between A1/3, B1/3 terminals and A5/7, B5/7 terminals: 2300 VAC for 1 min at a leakage current of 5 mA max. Between the external terminals and the functional ground terminal: 2300 VAC for min at a leakage current of 5 mA max. Between the external terminals and internal circuits: 2300 VAC for 1 min at a leakage current of 5 mA max. Between the internal circuit and the functional ground terminal: 510 VAC for 1 min at a leakage current of 5 mA max.		
I/O power supply method	Supply from external source	Current capacity of I/O power supply terminal	Without I/O power supply terminals		
NX Unit power consumption	Connected to a CPU Unit 1.30 W max. Connected to a Communications Coupler Unit 0.95 W max.	Current consumption from I/O power supply	No consumption		
Weight	70 g max.				
Circuit layout			NO0 to NO1 C0 to C1 Terminal block I/O power supply + I/O power supply - I/O power suppl		
Installation orientation and restrictions	Installation orientation: Connected to a CPU Unit: Possible in up Connected to a Communications Couple Restrictions: No restrictions	oright installation.	tions.		
Terminal connection diagram	Relay Output Unit NX-OC2733 B1 C0 C0 NO1 NC1 C1 C1 A8 B8				
Disconnection/Short- circuit detection	Not supported.	Protective function	Not supported.		

● Relay Output Units (Screwless Clamping Terminal Block, 24 mm Width) NX-OC4633

Unit name	Relay Output Unit	Model	NX-OC4633		
Number of points	8 points, independent contacts	External connection terminals	Screwless clamping terminal block (8 terminals x 2)		
I/O refreshing method	Free-Run refreshing		,		
Indicators	OC4633 ■TS		OC4633 ■TS capa		N.O. contact 250 VAC/2 A (cosφ = 1), 250 VAC/2 A (cosφ = 0.4), 24 VDC/2 A, 8 A/Unit
	■4 ■5 ■6 ■7	Minimum switching capacity	5 VDC, 1 mA		
Relay service life	Electrical: 100,000 operations* Mechanical: 20,000,000 operations	ON/OFF response time	15 ms max./15 ms max.		
Dimensions	24 (W) x 100 (H) x 71 (D)	Isolation method	Relay isolation		
Insulation resistance	Between output bits: $20~\text{M}\Omega$ min. (at $500~\text{VDC}$) Between the external terminals and the functional ground terminal: $20~\text{M}\Omega$ min. (at $500~\text{VDC}$) Between the external terminals and internal circuits: $20~\text{M}\Omega$ min. (at $500~\text{VDC}$) Between the internal circuit and the functional ground terminal: $20~\text{M}\Omega$ min. (at $100~\text{VDC}$)	Dielectric strength	Between output bits: 2300 VAC for 1 min at a leakage current of 5 mA max. Between the external terminals and the functional ground terminal: 2300 VAC for 1 min at a leakage current of 5 mA max. Between the external terminals and internal circuits: 2300 VAC for 1 min at a leakage current of 5 mA max. Between the internal circuit and the functional ground terminal: 510 VAC for 1 min at a leakage current of 5 mA max.		
Vibration resistance	Conforms to IEC 60068-2-6. 5 to 8.4 Hz with amplitude of 3.5 mm, 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	100 m/s², 3 times each in X, Y, and Z directions		
I/O power supply method	Supply from external source	Current capacity of I/O power supply terminal	Without I/O power supply terminals		
NX Unit power consumption	Connected to a CPU Unit 2.00 W max. Connected to a Communications Coupler Unit 1.65 W max.	Current consumption from I/O power supply	No consumption		
Weight	140 g max.				
Circuit layout	NX bus connector (left) I/O power supply +		O to 7 Terminal block C0 to C7 I/O power supply + NX bus connector (right)		
	You cannot r	eplace the relay.			



^{*} Electrical service life will vary depending on the current value. Refer to "NX-series Digital I/O Units User's Manual" for details.

Version Information

Connecting with CPU Units

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

NX Un	it	Corresponding versions *				
Model	Unit version	CPU Unit	Sysmac Studio			
NX-OD2154						
NX-OD2258						
NX-OD3121						
NX-OD3153						
NX-OD3256						
NX-OD3257						
NX-OD3268						
NX-OD4121						
NX-OD4256						
NX-OD5121						
NX-OD5121-1	Ver.1.0	Ver.1.13 or later	Ver.1.17 or higher			
NX-OD5121-5						
NX-OD5256						
NX-OD5256-1						
NX-OD5256-5						
NX-OD6121-5						
NX-OD6121-6						
NX-OD6256-5						
NX-OC2633	1					
NX-OC2733	1					
NX-OC4633]					

^{*} 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.

Connecting with Coupler Units

NX Unit		Corresponding versions *1						
		EtherCAT			EtherN	et/IP		
Model	Unit version	Communications Coupler Unit	NJ/NX-series CPU Units or NY-series Industrial PCs	Sysmac Studio	Communications Coupler Unit	Sysmac Studio		
NX-OD2154		Ver.1.1 or later	Ver.1.06 or later	Ver.1.07 or higher				
NX-OD2258		ver. i. i oi iatei	*2	ver.1.07 or nigher				
NX-OD3121								
NX-OD3153				Ver.1.06 or higher		Ver.1.10 or higher		
NX-OD3256				ver. 1.00 or riigher		ver. i. io or migner		
NX-OD3257								
NX-OD3268				Ver.1.13 or higher		Ver.1.13 or higher		
NX-OD4121								
NX-OD4256				Ver.1.06 or higher		Ver.1.10 or higher		
NX-OD5121								
NX-OD5121-1	Ver.1.0			Ver.1.13 or higher		Ver.1.13 or higher		
NX-OD5121-5		Ver.1.0 or later	Ver.1.05 or later	Ver.1.10 or higher	Ver.1.0 or later	Ver.1.10 or higher		
NX-OD5256				Ver.1.06 or higher		voi. i. io oi iligiloi		
NX-OD5256-1				Ver.1.13 or higher		Ver.1.13 or higher		
NX-OD5256-5				Ver.1.10 or higher		Ver.1.10 or higher		
NX-OD6121-5				ver.1.10 or riigher		ver. i. io or riigher		
NX-OD6121-6				Ver.1.13 or higher		Ver.1.13 or higher		
NX-OD6256-5				Ver.1.10 or higher				
NX-OC2633				Ver.1.06 or higher		Ver.1.10 or higher		
NX-OC2733				Ver.1.08 or higher				
NX-OC4633				Ver.1.17 or higher		Ver.1.17 or higher		

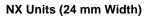
^{*1.} Some Units do not have all of the versions given in the above table. If a Unit does not have the specified version, support is provided by the oldest available version after the specified version. Refer to the user's manuals for the specific Units for the relation between models and versions.

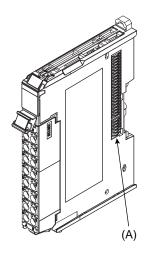
^{*2.} If you use a CPU Unit, the instructions for time stamp refreshing are supported by CPU Units with unit version 1.06 or later. If you do not use instructions for time stamp refreshing, you can use version 1.05. Refer to the instructions reference manual for the connected CPU Unit or Industrial PC for details on the instructions for time stamp refreshing.

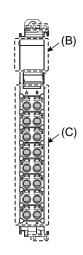
External Interface

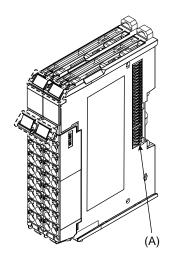
Screwless Clamping Terminal Block Type

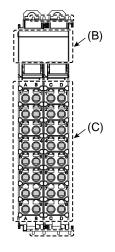
NX Units (12 mm Width)





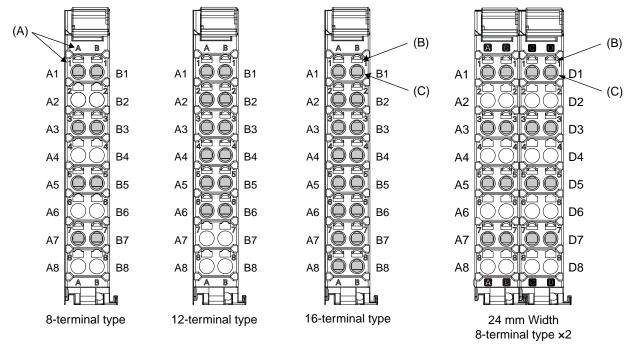






Symbol	Name	Function
(A)	NX bus connector	This connector is used to connect each Unit.
(B)	Indicators	The indicators show the current operating status of the Unit.
(C)	Terminal block	The terminal block is used to connect external devices. The number of terminals depends on the type of Unit.

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, i.e. A1 to A8 and B1 to B8. 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						
Onit model	Model	No. of terminals	Ground terminal mark	Terminal current capacity			
NX-OD2	NX-TBA082	8	None	10 A			
NX-OD3□□□ (any model other than NX-OD3268)	NX-TBA122	12	None	10 A			
NX-OD3268 NX-OD4□□□	NX-TBA162	16	None	10 A			
NX-OD5□□□	NX-TBA162	16	None	10 A			
NX-OC2	NX-TBA082	8	None	10 A			
NX-OC4633	NX-TBA082	8	None	10 A			
	NX-TBB082	8	None	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.

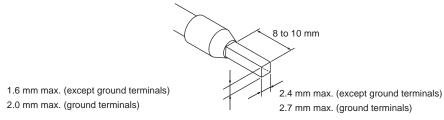
The applicable ferrules, wires, and crimping tool are given in the following table.

Terminal types	Manufacturer	Ferrule model number	Applicable wire (mm² (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.)
		AI0,5-8	0.5 (#20)	CRIMPFOX 6 (0.25 to 6 mm ² , AWG24 to 10)
		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)	
		AI1,5-10		
Ground terminals		AI2,5-10	2.0 *	
Terminals other	Weidmuller	H0.14/12	0.14 (#26)	Weidmuller (The figure in parentheses is the applicable wire size.)
than ground terminals		H0.25/12	0.25 (#24)	PZ6 Roto (0.14 to 6 mm ² , AWG 26 to 10)
terminais		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		

^{*} 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.

Finished Dimensions of Ferrules



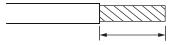
Using Twisted Wires/Solid Wires

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

Torn	Wire type						
Terminals		Twisted wires		Solid wire		Wire size	Conductor length (stripping length)
Classification	Current capacity	Plated	Unplated	Plated	Unplated		(Stripping length)
All terminals except ground terminals	2 A max.	Possible	Possible	Possible	Possible	0.08 to 1.5 mm ² AWG28 to 16	8 to 10 mm
	Greater than 2 A and 4 A or less		Not	Possible *1	Not		
ground terrimais	Greater than 4 A	Possible *1	Possible	Not Possible	Possible		
Ground terminals		Possible	Possible	Possible *2	Possible *2	2.0 mm ²	9 to 10 mm

^{1.} Secure wires to the screwless clamping terminal block. Refer to the Securing Wires in the USER'S MANUAL for how to secure wires.

^{*2} With the NX-TB□□□1 Terminal Block, use twisted wires to connect the ground terminal. Do not use a solid wire.

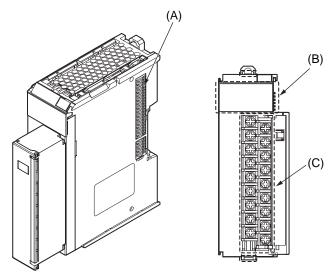


Conductor length (stripping length)

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

M3 Screw Terminal Block Type

NX Units (30 mm Width)

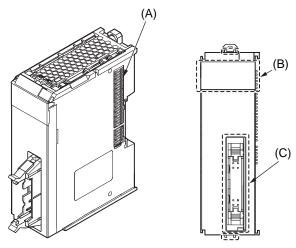


Letter	Name	Function	
(A)	NX bus connector	This connector is used to connect each Unit.	
(B)	Indicators	The indicators show the current operating status of the Unit.	
(C) Screw terminals		These screw terminals are used to connect the wires.	

Connector Types

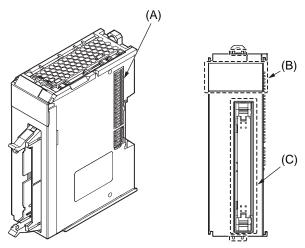
NX Units (30 mm Width)

• Units with MIL Connectors (1 Connector with 20 Terminals)



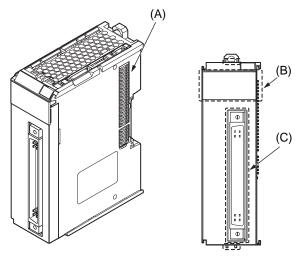
Letter	Name	Function		
(A)	NX bus connector	This connector is used to connect each Unit.		
(B)	Indicators	The indicators show the current operating status of the Unit.		
(C) Connectors		The connectors are used to connect to external devices.		

• Units with MIL Connectors (1 Connector with 40 Terminals)



Letter	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)	Connectors	The connectors are used to connect to external devices.	

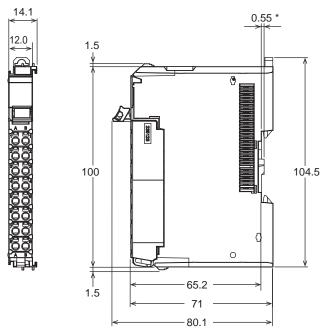
• Units with Fujitsu Connectors (1 Connector with 40 Terminals)



Letter	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) Connectors		The connectors are used to connect to external devices.	

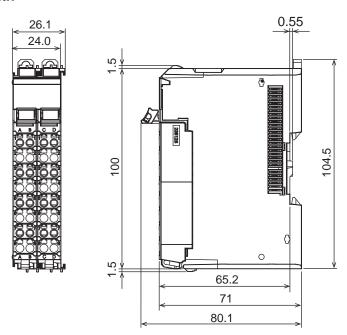
Dimensions (Unit/mm)

Screwless Clamping Terminal Block Type 12 mm Width

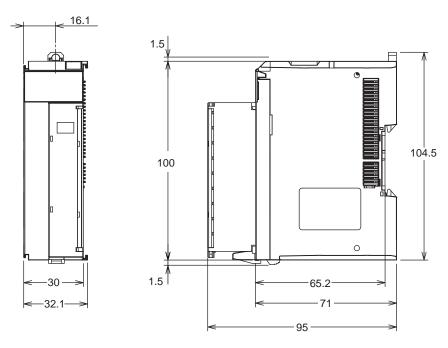


^{*} The dimension is 1.35 mm for Units with lot numbers through December 2014.

24 mm Width



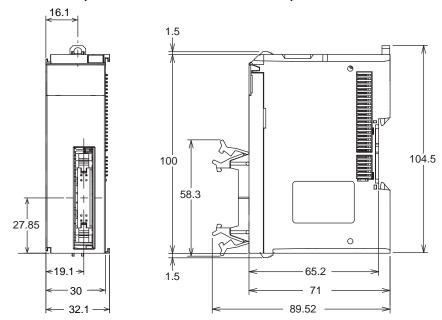
M3 Screw Terminal Block Type 30 mm Width



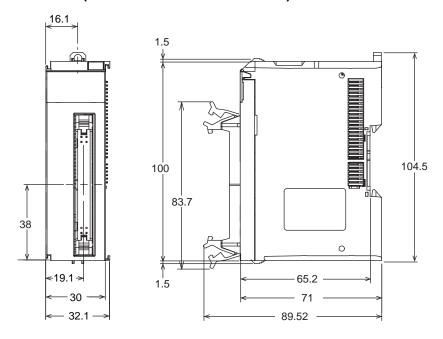
Connector Types

30 mm Width

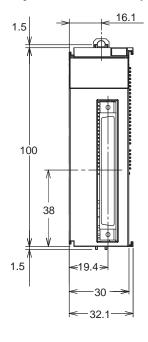
• Units with MIL Connectors (1 Connector with 20 Terminals)

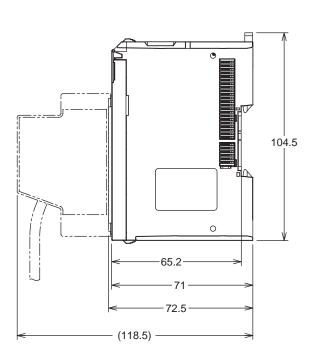


• Units with MIL Connectors (1 Connector with 40 terminals)



●Units with Fujitsu Connectors (1 Connector with 40 Terminals)





Related Manuals

Cat. No.	Model number	Manual name	Application	Description
W521	NX-IA O O O O O O O O O O O O O O O O O O O	NX-series Digital I/O Units User's Manual	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.

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