NX-series Communication Control Unit

NX-CSG

Quick, easy, and flexible to integrate safety into production lines

- Two built-in CIP Safety on EtherNet/IP™ ports
- CIP Safety on EtherNet/IP integrating safety into EtherNet/IP for safety communication between machines
- Up to 254 connections (NX-SL5700)
- Up to 32 NX Units per Communication Control Unit

For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

Features

- Feature EtherNet/IP Communications Port
- CIP Safety on EtherNet/IP Is Supported
- Allows standard units to be mixed with the NX-SL5□□□ Safety CPU Unit and safety I/O units

✻The Common Industrial Protocol (CIP™) is an industry standard open network, enabling seamless communication among CIP networks. CIP Safety™ adds safety functionality to CIP networks.

Ordering Information

NX-series Communication Control Unit

Unit type	Appearance	Supported communications protocol	Number of communications connectors	Network variables	Unit version	Model
Communication Control Unit		EtherNet/IP ✻1	3	2 ✻2	Ver. 1.01	**NX-CSG320**

Note: One NX-END02 End Cover is provided with the NX-CSG320 Communication Control Unit.
✻1. Routing of the CIP Safety protocol is supported.
✻2. PORT1 is an independent port. PORT2A and PORT2B are the ports with a built-in Ethernet switch.

Accessories

End Cover (NX-END02): 1
One End Cover is provided with the Communication Control Unit.

Automation Software Sysmac Studio

The Sysmac Studio is the software that provides an integrated environment for setting, programming, debugging and maintenance of machine automation controllers including the NJ/NX-series CPU Units, NY-series Industrial PC, EtherCAT Slave, and the HMI.

For details, refer to your local OMRON website and *Sysmac Studio Catalog* (Cat. No. P138).

Optional Products

SD Memory Card

Product name	Specification	Model
SD Memory Card	Flash Memory, 2 GB	**HMC-SD292**
	Flash Memory, 4 GB	**HMC-SD492**

Note: Refer to the HMC-SD292/492/1A2 datasheet for details on the memory card.

Unit/Terminal Block Coding Pins

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

Terminal Block

Product name	Specification				Model
	No. of terminals	Terminal number indications	Ground terminal mark	Terminal current capacity	
Terminal Block	8	A/B	Provided	10 A	**NX-TBC082**

Specifications

Regulations and Standards

Communication Control Unit NX-CSG320

Certification body	Standards
UL	• NRAG (UL 61010-1, UL 61010-2-201 and UL 121201) • NRAG7 (CSA C22.2 No. 61010-1, CSA C22.2 No. 61010-2-201 and CSA C22.2 No.213)
Shipbuilding Standards	NK, LK

The NX-series Communication Control Units is also registered for RCM and KC compliance.

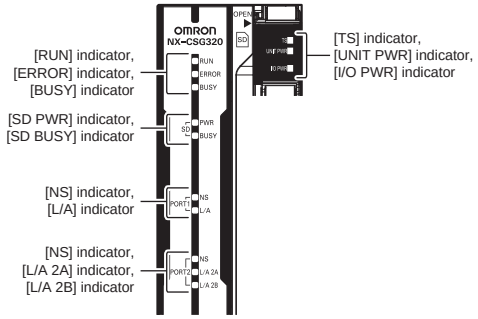
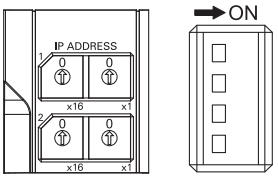
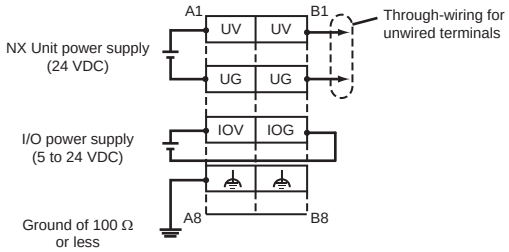
General Specifications

Item		Specification
Enclosure		Mounted in a panel (open)
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
	Noise immunity	Conforms to IEC 61131-2. 2 kV on power supply line
	Insulation class	Class III (SELV)
	Overvoltage category	II
	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 minutes 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
	Insulation resistance	20 MΩ between isolated circuits (at 100 VDC)
	Dielectric strength	510 VAC for 1 min between isolated circuits, leakage current: 5 mA max.
Installation method		DIN Track (IEC 60715 TH35-7.5/TH35-15)

NX-CSG

Unit Specifications

NX-CSG320

Unit name		Communication Control Unit
Model		NX-CSG320
Indicators		[RUN] indicator, [ERROR] indicator, [BUSY] indicator, [SD PWR] indicator, [SD BUSY] indicator, [NS] indicator × 2, [L/A] indicator, [L/A 2A] indicator, [L/A 2B] indicator, [TS] indicator, [UNIT PWR] indicator, [I/O PWR] indicator 
Hardware switch settings		[IP ADDRESS 1] Switch (x16, x1), [IP ADDRESS 2] Switch (x16, x1), DIP Switch  ✻ Factory default • IP ADDRESS1: 192.168.1.1 [IP ADDRESS 1] Switch = “00” • IP ADDRESS2: 192.168.250.1 [IP ADDRESS 2] Switch = “00”
Dimensions ✻1		72 × 100 × 90 mm (W × H × D)
Weight ✻2		390 g
Number of NX Units that you can connect		32 units or less
Number of communications that can be set between NX Units		254 ports max. ✻3
Unit power supply	**Power supply voltage**	24 VDC (20.4 to 28.8 VDC)
	Unit power consumption ✻4	5.95 W
	Inrush current ✻5	For cold start at room temperature: 10 A max./0.1 ms max. and 2.5 A max./150 ms max.
	Current capacity of power supply terminal ✻6	4 A
	Isolation method	No isolation: Between the Unit power supply terminal and internal circuit
Power supply to the NX Unit power supply	**NX Unit power supply capacity**	10 W max.
	NX Unit power supply efficiency	80%
	Isolation method	No isolation: Between the Unit power supply terminal and NX Unit power supply
I/O power supply to NX Units	**Power supply voltage**	5 to 24 VDC (4.5 to 28.8 VDC)
	Maximum I/O power supply current	4 A
Current consumption from I/O power supply		10 mA max. (24 VDC)
External connection terminals		Screwless clamping terminal block (8 terminals)
Terminal connection diagram		UV/UG: Unit power supply terminals IOV/IOG: I/O power supply terminals 
Accessories		End cover (NX-END02): 1 pc.
Installation orientation and restrictions		Only upright installation orientation

✻1. Includes the End Cover, and does not include projecting parts.
✻2. Includes the End Cover. The weight of the End Cover is 82 g.
✻3. Includes the SD Memory Card. The NX Unit power consumption to NX Units is not included.
✻4. This is the inrush current value when the power supply turns ON after it has been OFF.
The inrush current may vary depending on the operating condition and other conditions. Therefore, select fuses, breakers, and external power supply devices that have enough margin in characteristic and capacity, considering the condition under which the devices are used.
Especially when you turn the power ON/OFF through a switch inserted to the external DC power supply, cycling power ON-OFF-ON within one second will cause the inrush current of approx. 30 A/0.3 mA to occur since the inrush current limiter circuit fails to limit the current.
✻5. The amount of current that can be passed constantly through the terminal. Do no exceed this current value when you use a through-wiring for the Unit power supply.
✻6. The actual configurable number can be calculated as follows: 254 - <Number of CIP Safety connections configured> - <Number of FSoE connections configured>

Built-in EtherNet/IP Port

Item		Specification
		NX-CSG-□□□
Communications protocol		TCP/IP or UDP/IP
Supported services		Sysmac Studio connection, tag data links, CIP message communications, FTP server, automatic clock adjustment (NTP client), SNMP (agent), DNS (client), BOOTP (client), TCP/UDP message service
Number of logical ports		2 (With IP routing function)
Physical layer		100Base-TX or 10Base-T (100Base-TX is recommended.) ✻1
Transmission specifications	Media access method	CSMA/CD
	Modulation	Baseband
	Transmission paths	Star form
	Baud rate	100 Mbps (100BASE-TX)
	Transmission media	Shielded twisted-pair (STP) cable, Category 5, 5e or higher
	Transmission distance	100 m max. (distance between hub and node)
	Number of cascade connections	The built-in switching ports support up to 50 nodes. There is no limitation when an external Ethernet switch is used.
CIP Safety routing	Maximum number of routable CIP Safety connections	254 total For multi-cast connections, 128 total
	Maximum routable Safety data length per connection	32 bytes
CIP service: Tag data links (cyclic communications)	Number of connections	32/Logical ports (total of 64 with two logical ports)
	Packet interval (refresh cycle)	1 to 10,000 ms in 1-ms increments Packet intervals can be set independently for each connection. (Data is refreshed over the network at preset intervals and does not depend on the number of nodes.)
	Allowed communications bandwidth per Unit	12,000 pps ✻2 Note: The heartbeat and CIP Safety routing are included.
	Number of registrable tags	1024/Logical ports (total of 2048 with two logical ports)
	Tag types	Network variables
	Number of tags per connection (=1 tag set)	32 (31 tags if Controller status is included in the tag set.)
	Maximum link data size per node	46,208 bytes/Logical ports 92,416 bytes total
	Maximum data size per connection	1,444 bytes ✻3 Data concurrency is maintained within each connection.
	Number of registrable tag sets	32 per port (1 connection = 1 tag set) (total of 40 with two logical ports) ✻4
	Maximum size of 1 tag set	1,444 bytes (Two bytes are used if Controller status is included in the tag set.)
	Multi-cast packet filter ✻5	Supported.
CIP message service: Explicit messages ✻6	Class 3 (number of connections)	Connections: 16/Logical ports (total of 32 with two logical ports) (server only)
	UCMM (unconnected)	Maximum number of clients that can communicate at one time: 16 per port (total of 32 with two logical ports) Maximum number of servers that can communicate at one time: 16 per port (total of 32 with two logical ports)
TCP/UDP message service	Maximum number of clients that can communicate at one time	16 per port (total of 32 with two logical ports)
	Maximum message size	Request: 492 bytes Response: 496 bytes
SNMP	Agent	SNMPv1, SNMPv2c
	MIB	MIB-II
EtherNet/IP conformance test		Conforms to CT14
Ethernet interface		10BASE-T or 100BASE-TX Auto negotiation or fixed settings

✻1. If tag data links are being used, use 100Base-TX.
✻2. Here, pps means “packets per second” and indicates the number of packets that can be processed in one second.
✻3. To use a data size of 505 bytes or higher, the system must support a large forward open (an optional CIP specification).
The CS, CJ, NJ, and NX-series Units support a large forward open, but before connecting to nodes of other companies, confirm that those devices also support it.
✻4. If more than 40 tag sets are registered in total, the *Tag Data Link, Too Many Tag Sets Registered (840E0000 hex)* event will occur.
✻5. Because the built-in EtherNet/IP port is equipped with an IGMP client (version 2), unnecessary multicast packets can be filtered out by an Ethernet switch that supports IGMP Snooping.
✻6. The TCP/UDP port numbers to use are shown in the table on the next page.

TCP/UDP Port Numbers

The built-in EtherNet/IP port uses the TCP/UDP port numbers shown in the following table.
Do not set the same port number for more than one TCP/UDP service.

Service	Type	Port number	Remarks
Tag data links	UDP	2222	Fixed values
Used by system	UDP	2223, 2224	
	TCP	9610	
CIP messages	TCP	44818	
FTP client (Data transfer port)	TCP	20	
DNS client	TCP/UDP	53	
BOOTP client	UDP	68	
HTTP server	TCP	80	
Used by system, other	TCP/UDP	9600	You can change the port number in the Unit Settings on the Sysmac Studio.
FTP client (Control port)	TCP	21	
TCP/UDP message service	TCP/UDP	64000	
NTP client	UDP	123	
SNMP agent	UDP	161	
SNMP trap	UDP	162	

Configuration Unit

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

Safety Control Units

Unit	Model
Safety CPU Unit	NX-SL5500, NX-SL5700
Safety Input Unit	NX-SIH400, NX-SID800
Safety Output Unit	NX-SOH200, NX-SOD400

I/O Units

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

System Units

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

Version Information

The following table shows the possible combinations of versions of NX-series Safety Control Units, Communication Control Unit, and Sysmac Studio. Available functions that are related to safety control vary depending on the versions of the units and Sysmac Studio. Refer to the *NX-series Safety Control Unit/Communication Control Unit User's Manual* (Cat. No. Z395) for details.

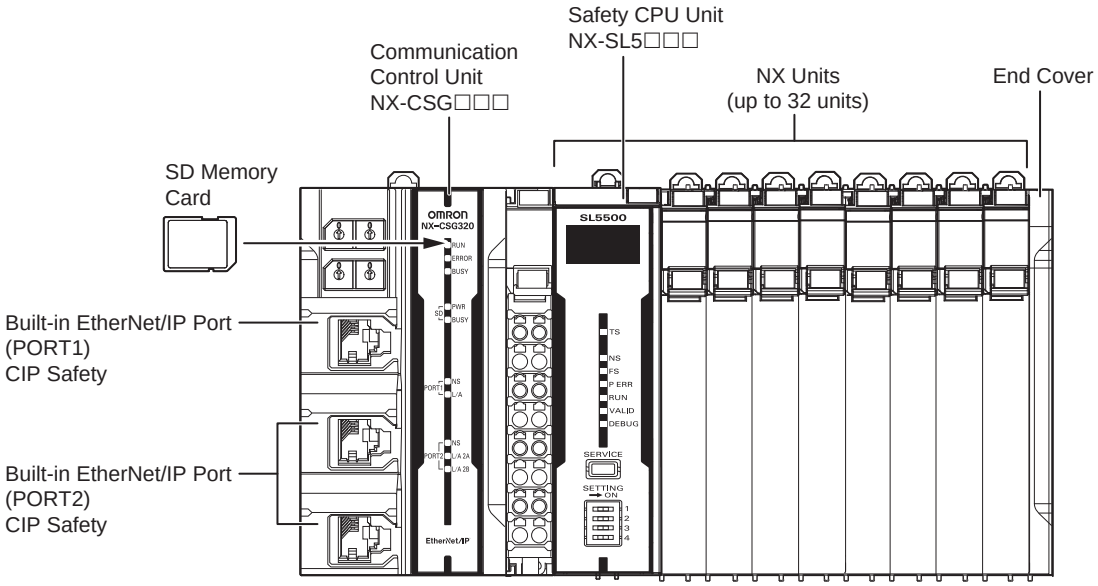
Safety Control Unit model and version		**NX bus master: Communication Control Unit**	
Model	**Unit Version**	**Communication Control Unit NX-CSG**	**Sysmac Studio ✻1**
NX-SL5500	Ver.1.3	Ver.1.01 or later	Ver.1.24 or higher
	Ver.1.4		Ver.1.40 or higher
NX-SL5700	Ver.1.2	Ver.1.00 only	Ver.1.24 or higher
	Ver.1.3	Ver.1.01 or later	Ver.1.24 or higher
	Ver.1.4	Ver.1.01 or later	Ver.1.40 or higher
NX-SIH400	Ver.1.0	Ver.1.00 or later	Ver.1.24 or higher
	Ver.1.1		Ver.1.24 or higher
NX-SID800	Ver.1.0	Ver.1.00 or later	Ver.1.24 or higher
NX-SOH200	Ver.1.0	Ver.1.00 or later	Ver.1.24 or higher
NX-SOD400	Ver.1.0	Ver.1.00 or later	Ver.1.24 or higher

✻1. The Sysmac Studio Standard Edition License (SYSMAC-SE2□□L) includes functions that the Safety Edition (SYSMAC-FE001L) provides.
The Communication Control Unit can be used with the Sysmac Studio version 1.24 or higher.
The Safety Edition can be used with a safety control system using the Communication Control Unit or EtherNet/IP Coupler Unit.

NX-CSG

NX Unit Configuration

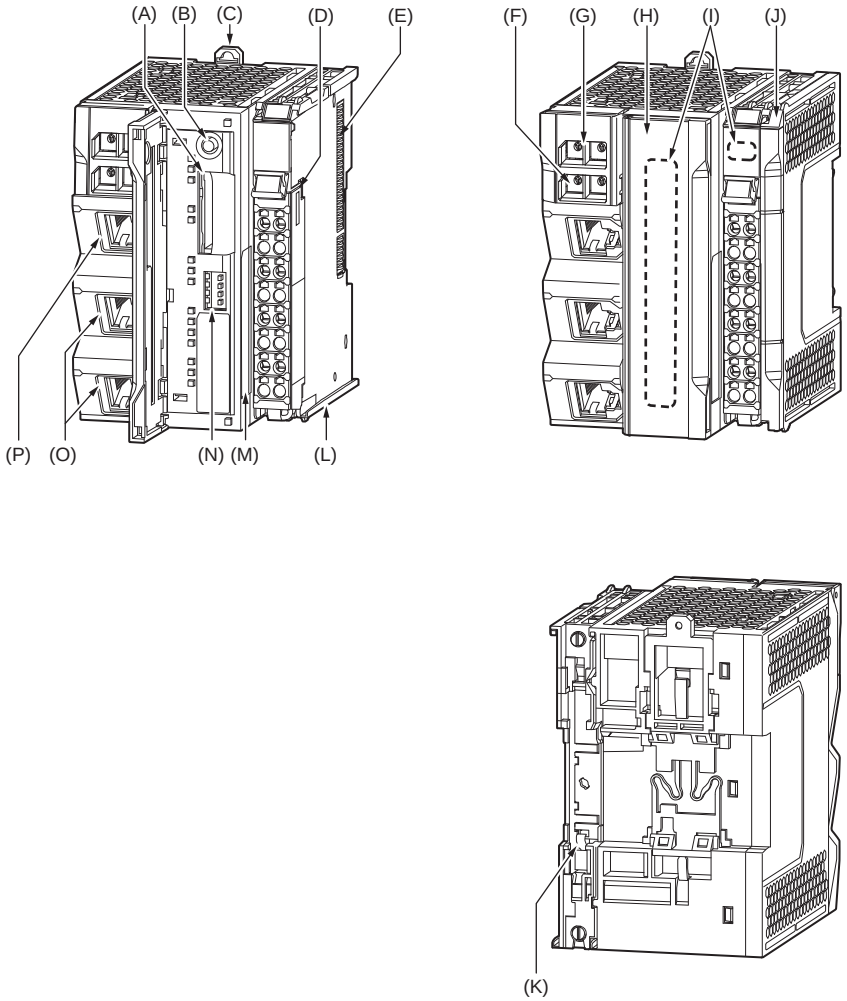
The following shows the CPU Rack Configuration, where NX Units are mounted to a CPU Rack. The CPU Rack is configured with a Communication Control Unit, a Safety CPU Unit, Safety I/O Units, other NX Units, and an End Cover mounted to it.
The number of NX Unit connections is up to 32 units.



Configuration		Remarks
Communication Control Unit NX-CSG□□□		One required for every CPU Rack.
End Cover		Must be connected to the right side of the CPU Rack. One end cover is provided with the Communication Control Unit as a standard accessory.
NX Unit	Safety CPU Unit NX-SL5□□□	Up to 32 units can be mounted onto the CPU Rack. One Safety CPU Unit is required for each CPU Rack. Refer to *NX-series Safety Control Unit/Communication Control Unit User's Manual* (Cat. No. Z395) for the NX Units that you can connect.
	Safety Input Unit	
	Safety Output Unit	
	Other NX Units	
SD Memory Card		Install as required.

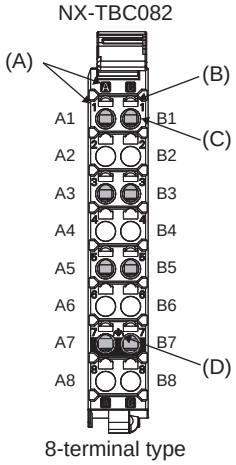
Part Names and Functions

Communication Control Unit NX-CSG320



Letter	Name	Function
(A)	SD Memory Card connector	Connects the SD Memory Card to the Communication Control Unit.
(B)	SD Memory Card power supply switch	Turns OFF the power supply so that you can remove the SD Memory Card.
(C)	DIN Track mounting hooks	These hooks are used to mount the Unit to a DIN Track.
(D)	Terminal Block	Used for wiring the power supply and functional grounding wire.
(E)	NX bus connector	This connector is used to connect the Communication Control Unit to the NX Unit on the right of the Communication Control Unit.
(F)	IP Address Switch 2 (x16, x1)	Used for setting an IP address for the built-in EtherNet/IP port (PORT2A and PORT2B). Use the rotary switches and specify a two-digit hexadecimal number.
(G)	IP Address Switch 1 (x16, x1)	Used for setting an IP address for the built-in EtherNet/IP port (PORT1). Use the rotary switches and specify a two-digit hexadecimal number.
(H)	SD Memory Card cover	A cover for the SD Memory Card DIP switch area. It opens in the horizontal direction.
(I)	Operation Status Indicators	Show the operation status of Communication Control Unit by multiple indicators.
(J)	End Cover	A cover to protect the Communication Control Unit and NX Unit. One End Cover is provided with the Communication Control Unit as a standard accessory.
(K)	DIN Track contact plate	This plate is used to contact the functional ground terminal with a DIN Track.
(L)	Unit hookup guides	These guides are used to mount NX Units or End Cover.
(M)	ID Information Indication	Shows the ID information of the Unit.
(N)	DIP Switch	Used for backups. Normally, turn OFF all of the pins.
(O)	Built-in EtherNet/IP Port (PORT2)	Connects the built-in EtherNet/IP with an Ethernet cable. PORT2 consists of two RJ45 connectors (PORT2A and PORT2B) and has a built-in Ethernet switch.
(P)	Built-in EtherNet/IP Port (PORT1)	Connects the built-in EtherNet/IP with an Ethernet cable.

Terminal Blocks



Letter	Name	Function
(A)	Terminal number indications	The terminal numbers are given by column letters A and B, and row numbers 1 to 8. The combination of the "column" and "row" gives the terminal numbers from A1 to A8 and B1 to B8. The terminal number indicators are the same regardless of the number of terminals on the terminal block, as shown above.
(B)	Release hole	Insert a flat-blade screwdriver into these holes to connect or remove the wires.
(C)	Terminal hole	The wires are inserted into these holes.
(D)	Ground terminal mark	This mark indicates the ground terminals.

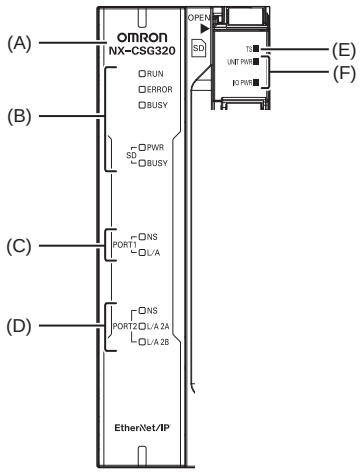
Terminal Blocks come in three types depending on the number of terminals that can be used. There are 8-terminal, 12-terminal, and 16-terminal Terminal Blocks.
Only the 8-terminal type terminal block is compatible with Communication Control Unit.
To prevent incorrect insertion, terminal blocks in any other types besides the 8-terminal type cannot be mounted.

Applicable Terminal Blocks for Each Model

Current capacity of power supply terminals and applicable terminal blocks for each model of Communication Control Unit are shown in the following table.

Unit model number	Current capacity of power supply terminal for the Unit		Terminal block			
	Unit power supply	I/O power supply	Terminal block model	Number of terminals	Ground terminal mark	Terminal current capacity
NX-CSG320	4 A		NX-TBC082	8	Provided	10 A

Indicators



Letter	Name	Function
(A)	Model number display	Displays the model information of Communication Control Unit.
(B)	Communication Control Unit Status Indicators	The indicators show the current operating status of Communication Control Unit.
(C)	Built-in EtherNet/IP Status Indicators (PORT1)	The indicators show the communications status of Built-in EtherNet/IP Port (PORT1).
(D)	Built-in EtherNet/IP Status Indicators (PORT2)	The indicators show the communications status of Built-in EtherNet/IP Port (PORT2).
(E)	NX Bus Status Indicators	These indicators show the communications status with Communication Control Unit and NX Units.
(F)	Power Status Indicators	Show the power supply status of the Unit and I/O power supply.

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.

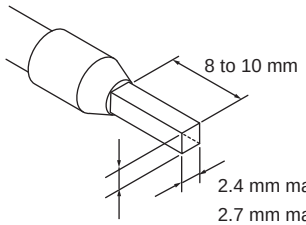
The applicable ferrules, wires, and crimping tool are given in the following table.

Terminal types	Manufacturer	Ferrule model number	Applicable wire (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, AWG24 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)	
		AI1,5-10		
Ground terminals		AI2,5-10	2.0 ✻	
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		

✻ Some AWG 14 wires exceed 2.0 mm^2 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



1.6 mm max. (except ground terminals)
2.0 mm max. (ground terminals)

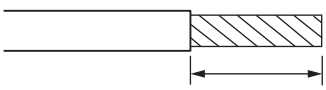
2.4 mm max. (except ground terminals)
2.7 mm max. (ground terminals)

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 size	Conductor length (stripping length)
		Twisted wires		Solid wire			
Classification	Current capacity	Plated	Unplated	Plated	Unplated		
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	Possible ✻1	Not Possible		
	Greater than 4 A	Possible ✻1		Not 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 (Cat. No. Z395) 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.

Selecting the Network Devices

Recommended Ethernet Switches

We recommend products that have passed the ODVA's conformance tests for Managed Ethernet Switch Device Profile.
For more information, contact ODVA.
ODVA website: https://www.odva.org

Recommended Twisted-pair Cables and Connectors

Applicable EtherNet/IP communications cables and connectors vary depending on the used baud rate.
For 100Base-TX and 10Base-T, use an STP (shielded twisted-pair) cable of category 5 or higher.
You can use either a straight or cross cable.
Cabling materials used for EtherNet/IP communication cables are shown in the table below.
100Base-TX in the Product name column of the table below indicates that either 100Base-TX or 10Base-T can be used.

Product name			Manufacturer	Model
For 1000Base-T and 100Base-TX	Size and conductor pairs: AWG 24 × 4 pairs ✻	Cables	Hitachi Metals, Ltd.	NETSTAR-C5E SAB 0.5 × 4P CP
			Kuramo Electric Co., Ltd.	KETH-SB
			JMACS Japan Co., Ltd.	IETP-SB
		RJ45 Connectors	Panduit Corporation	MPS588-C
For 100Base-TX	Size and conductor pairs: AWG 22 × 2 pairs ✻	Cables	Kuramo Electric Co., Ltd.	KETH-PSB-OMR
			JMACS Japan Co., Ltd.	PNET/B
		RJ45 Assembly Connectors 	OMRON	XS6G-T421-1

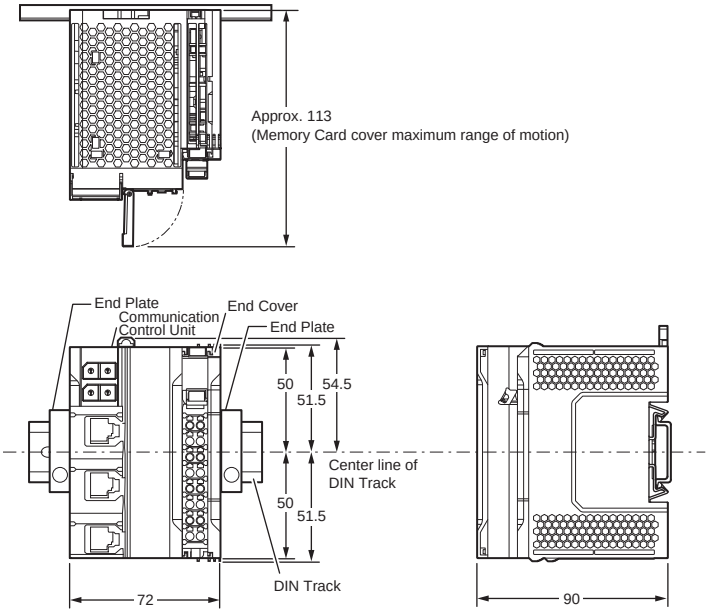
✻ We recommend that you use cables and connectors in above combinations.

Dimensions

(Unit: mm)

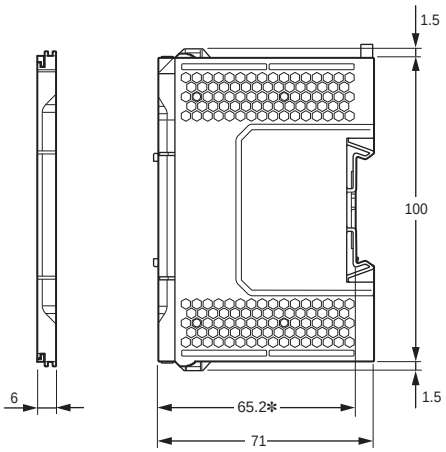
Communication Control Unit

NX-CSG320



Note: For dimensions with the communications cable connected, refer to *NX-series User's Manual Safety Control Unit/Communication Control Unit* (Cat. No.Z395)

End Cover NX-END02



* The dimension from the attachment surface of the DIN Track to the front surface of the end cover.

Related Manuals

Related Manuals	Cat. No.	Model numbers	Application	Description
NX-series Safety Control Unit / Communication Control Unit User's Manual	Z395	NX-SL5□□□ NX-SI□□□□ NX-SO□□□□ NX-CSG□□□	Learning how to use the NX-series Safety Control Units and Communications Control Units.	Describes the hardware, setup methods, and functions of the NX-series Safety Control Units and Communications Control Units.
NX-series Communication Control Unit Built-in Function User's Manual	Z396	NX-CSG□□□	Learning about the built-in functions of an NX-series Communications Control Unit.	Describes the software setup methods and communications functions of an NX-series Communications Control Unit.

Safety Precautions

Be sure to read the *Common Precautions for Safety Warning* at the following URL: http://www.ia.omron.com/.
Be sure to read the following user's manual for other details required for correct use of the Communication Control Unit.

Terms and Conditions Agreement

Read and understand this catalog.

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

Warranties.

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

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

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

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

Limitation on Liability; Etc.

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

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

Suitability of Use.

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

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

Programmable Products.

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

Performance Data.

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

Change in Specifications.

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

Errors and Omissions.

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

OMRON's Products Suppot IoT for Control Panels and Production Lines

NX-series Safety Controller
CIP Safety System
Brochure

Cat. No. F104

Safety I/O Unit
NX-SI/SO Datasheet

Cat. No. F123

Safety CPU Unit
NX-SL5□□□ Datasheet

Cat. No. F124

Safety I/O Terminal
GI-S Series Datasheet

Cat. No. F126

NX-series
I/O System Brochure

Cat. No. R183

Automation Software
Sysmac Studio Brochure

Cat. No. P138

Automation Software
Sysmac Studio Ver.1.□□
Datasheet

Note: Do not use this document to operate the Unit.

OMRON Corporation **Industrial Automation Company**

Kyoto, JAPAN **Contact : www.ia.omron.com**

Regional Headquarters

OMRON EUROPE B.V.
Wegalaan 67-69, 2132 JD Hoofddorp
The Netherlands
Tel: (31) 2356-81-300 Fax: (31) 2356-81-388

OMRON ELECTRONICS LLC
2895 Greenspoint Parkway, Suite 200
Hoffman Estates, IL 60169 U.S.A.
Tel: (1) 847-843-7900 Fax: (1) 847-843-7787

OMRON ASIA PACIFIC PTE. LTD.
438B Alexandra Road, #08-01/02 Alexandra
Technopark, Singapore 119968
Tel: (65) 6835-3011 Fax: (65) 6835-3011

OMRON (CHINA) CO., LTD.
Room 2211, Bank of China Tower,
200 Yin Cheng Zhong Road,
PuDong New Area, Shanghai, 200120, China
Tel: (86) 21-6023-0333 Fax: (86) 21-5037-2388

Authorized Distributor:

CSM_4_1
Cat. No. F125-E1-05 0625 (0223)