

# NX-series Digital Input Unit

## NX-ID/IA

CSM\_NX-ID\_IA\_DS\_E\_4\_1

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

- Digital Input 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 the status of input devices to the controller every EtherCAT cycle.

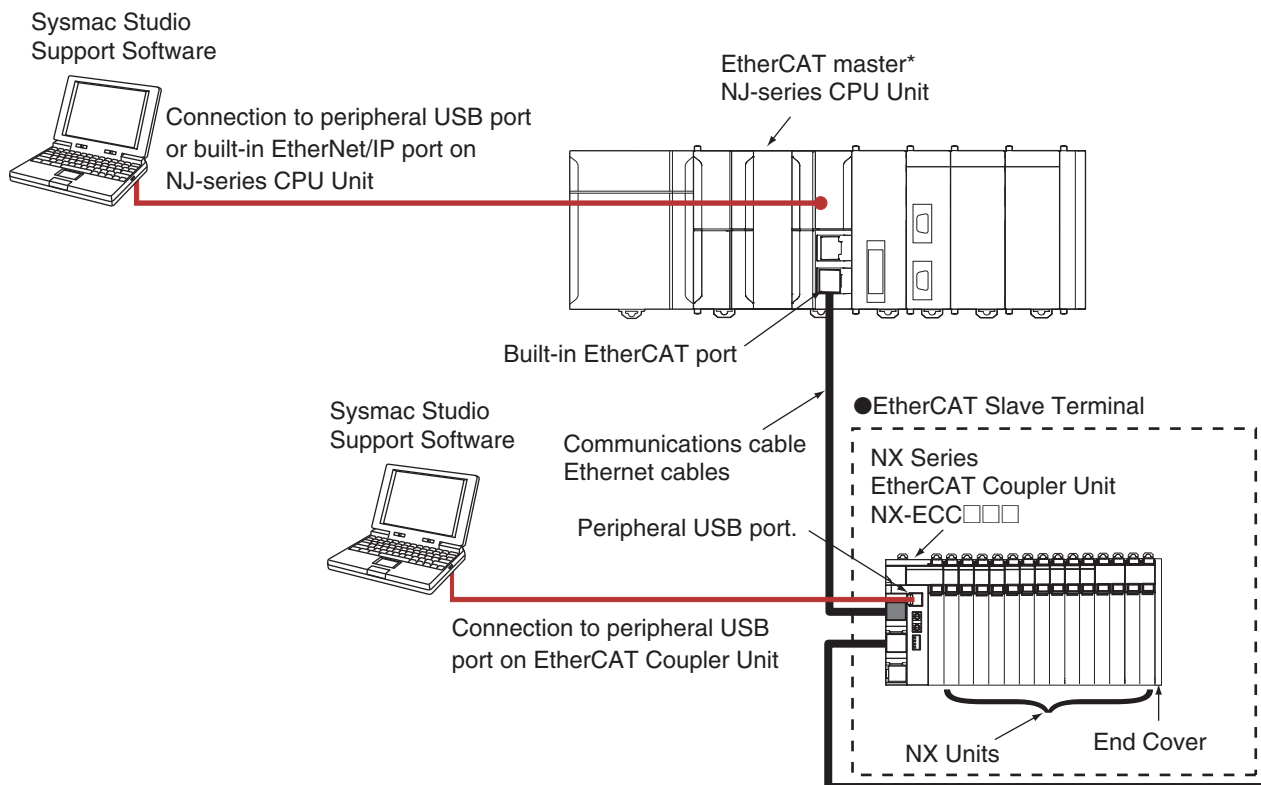


**NEW**

### Features

- High-speed I/O refreshing is possible by connecting with the NX-series EtherCAT Coupler.
- I/O refreshing can be synchronized with the control cycle of the Controller. (Synchronous refreshing)
- ON/OFF response time of the high-speed model is 100 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 are significantly reduces wiring work.
- Up to 16 digital inputs in a space-saving 12 mm width. (Connector Types 30 mm width)
- The lineup includes 4-point, 8-point, 16-point, and 32-point types with 3-wire, 2-wire and 1-wire connection methods.
- With input refreshing with input changed time, the Input Unit records the time when the input is changed and the changed time with the input value is read into the Controller.
- Using with the Unit that supports output refreshing with specified time stamp enables high-precision I/O control independent of the control cycle of the Controller.

### System Configuration



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


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## Ordering Information

### International Standards


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

### Digital Input Unit (Screwless Clamping Terminal Block, 12 mm Width)


Unit type	Product Name	Specification					Model	Standards	
		Number of points	Internal I/O common	Rated input voltage	I/O refreshing method	ON/OFF response time			
NX Series Digital Input Units		4 points	NPN	12 to 24 VDC	Switching Synchronous I/O refreshing and Free-Run refreshing	20 µs max./400 µs max.	NX-ID3317	UC1, N, L, CE, KC	
				24 VDC		100 ns max./100 ns max.			
			PNP	12 to 24 VDC	Switching Synchronous I/O refreshing and Free-Run refreshing	20 µs max./400 µs max.			
				24 VDC		100 ns max./100 ns max.			
		8 points	NPN	24 VDC	Switching Synchronous I/O refreshing and Free-Run refreshing	20 µs max./400 µs max.	100 ns max./100 ns max.		NX-ID3417
			PNP						NX-ID3443
			NPN						NX-ID3444
		16 points	PNP	24 VDC	Switching Synchronous I/O refreshing and Free-Run refreshing	20 µs max./400 µs max.	100 ns max./100 ns max.		NX-ID4342
									NX-ID4442
									NX-ID5342
						NX-ID5442			

\* To use input refreshing with input changed time, NJ 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.

### DC Input Units (MIL Connector, 30 mm Width)

Unit type	Product Name	Specification					Model	Standards
		Number of points	Internal I/O common	Rated input voltage	I/O refreshing method	ON/OFF response time		
NX Series Digital Input Units		16 points	For both NPN/PNP	24 VDC	Switching Synchronous I/O refreshing and Free-Run refreshing	20 µs max./400 µs max.	NX-ID5142-5	UC1, CE, KC
		32 points					NX-ID6142-5	

### Analog Input Unit (Screwless Clamping Terminal Block, 12 mm Width)

Unit type	Product Name	Specification				Model	Standards
		Number of points	Rated input voltage	I/O refreshing method	ON/OFF response time		
NX Series Analog Input Units		4 points	200 to 240 VAC, 50/60 Hz (170 to 264 VAC, ±3 Hz)	Free-Run refreshing	10 ms max./40 ms max.	NX-IA3317	UC1, N, CE, KC


### Option

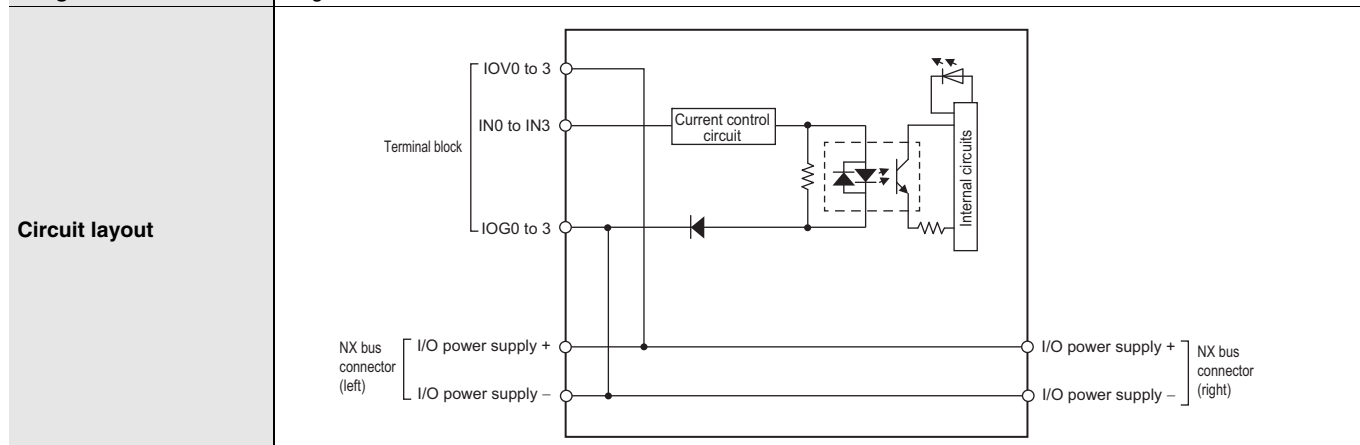
Product Name	Specification				Model	Standards
Unit/Terminal Block Coding Pins	For 10 Units (Terminal Block: 30 pins, Unit: 30 pins)				NX-AUX02	---
Product Name	Specification				Model	Standards
	No. of terminals	Terminal number indications	Ground terminal mark	Terminal current capacity		
Terminal Block	8	A/B	None	10 A	NX-TBA082	---
	12				NX-TBA122	
	16				NX-TBA162	

### Accessories

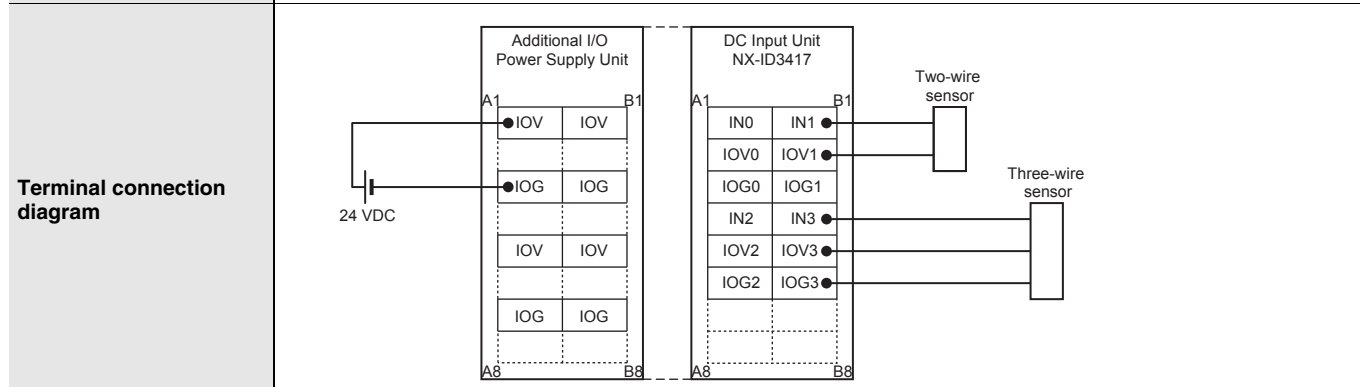
Not included.

## NX-ID3417

<b>Unit name</b>	DC Input Unit	<b>Model</b>	NX-ID3417
<b>Capacity</b>	4 points	<b>External connection terminals</b>	Screwless clamping terminal block (12 terminals)
<b>I/O refreshing method</b>	Selectable Synchronous I/O refreshing or Free-Run refreshing		
<b>Indicators</b>	TS indicator, input indicator 	<b>Internal I/O common</b>	PNP
		<b>Rated input voltage</b>	12 to 24 VDC (9 to 28.8 VDC)
		<b>Input current</b>	6 mA typical (at 24 VDC), rated current
		<b>ON voltage/ON current</b>	9 VDC min./3 mA min. (between IOG and each signal)
		<b>OFF voltage/OFF current</b>	2 VDC max./1 mA max. (between IOG and each signal)
		<b>ON/OFF response time</b>	20 μs max./400 μs max.
		<b>Input filter time</b>	Without filter, 0.25 ms, 0.5 ms, 1 ms (factory setting), 2 ms, 4 ms, 8 ms, 16 ms, 32 ms, 64 ms, 128 ms, 256 ms
<b>Dimensions</b>	12 (W) x 100 (H) x 71 (D)	<b>Isolation method</b>	Photocoupler isolation
<b>Insulation resistance</b>	20 MΩ min. between isolated circuits (at 100 VDC)	<b>Dielectric strength</b>	510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max.
<b>I/O power supply method</b>	Supply from the NX bus	<b>Current capacity of I/O power supply terminal</b>	IOV: 0.1 A/terminal max., IOG: 0.1 A/terminal max.
<b>NX Unit power consumption</b>	0.50 W max.	<b>Current consumption from I/O power supply</b>	No consumption
<b>Weight</b>	65 g max.		



<b>Installation orientation and restrictions</b>	Installation orientation: Possible in 6 orientations. Restrictions: No restrictions
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<b>Disconnection/Short-circuit detection</b>	Not supported.	<b>Protective function</b>	Not supported.
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