

Digital I/O

Type	Channels, signal type	Performance ¹ , I/O refresh method	Connection type ²	Width	Model	NPN type ³
DC digital input	4 inputs, 3-wire connection	High-speed synchronous time stamp	Screwless push-in (NX-TBA122)	12 mm	NX-ID3444	NX-ID3344
		High-speed synchronous/free run	Screwless push-in (NX-TBA122)	12 mm	NX-ID3443	NX-ID3343
	8 inputs, 2-wire connection	Synchronous/free run	Screwless push-in (NX-TBA122)	12 mm	NX-ID3417	NX-ID3317
			Screwless push-in (NX-TBA162)	12 mm	NX-ID4442	NX-ID4342
	16 inputs, 1-wire connection	Synchronous/free run	Screwless push-in (NX-TBA162)	12 mm	NX-ID5442	NX-ID5342
			M3 screw terminal block	30 mm	NX-ID5142-1	NX-ID5142-1
	32 inputs, 1-wire connection	Synchronous/free run	1 x 20-pin MIL connector	30 mm	NX-ID5142-5	NX-ID5142-5
			1 x 40-pin MIL connector	30 mm	NX-ID6142-5	NX-ID6142-5
			1 x 40-pin Fujitsu connector	30 mm	NX-ID6142-6	NX-ID6142-6
			1 x 40-pin Fujitsu connector	30 mm	-	-
AC digital input	4 inputs, 200-240 VAC, 50/60 Hz	Free run	Screwless push-in (NX-TBA082)	12 mm	NX-IA3117	-
DC digital output	2 outputs 0.5 A, 3-wire connection	High-speed synchronous time stamp	Screwless push-in (NX-TBA082)	12 mm	NX-OD2258	NX-OD2154
	4 outputs 0.5 A, 3-wire connection	High-speed synchronous/free run	Screwless push-in (NX-TBA122)	12 mm	NX-OD3257	NX-OD3153
	4 outputs 2 A, 3-wire connection	Synchronous/free run	Screwless push-in (NX-TBA122)	12 mm	NX-OD3256	NX-OD3121
			Screwless push-in (NX-TBA162)	12 mm	NX-OD3268	-
	8 outputs 0.5 A, 2-wire connection	Synchronous/free run	Screwless push-in (NX-TBA162)	12 mm	NX-OD4256	NX-OD4121
	16 outputs 0.5 A, 1-wire connection		Screwless push-in (NX-TBA162)	12 mm	NX-OD5256	NX-OD5121
	32 outputs 0.5 A, 1-wire connection	Synchronous/free run	M3 screw terminal block	30 mm	NX-OD5256-1	NX-OD5121-1
			1 x 20-pin MIL connector	30 mm	NX-OD5256-5	NX-OD5121-5
			1 x 40-pin MIL connector	30 mm	NX-OD6256-5	NX-OD6121-5
			1 x 40-pin Fujitsu connector	30 mm	-	NX-OD6121-6
Relay digital output	2 outputs, N.O., 2.0 A	Free run	Screwless push-in (NX-TBA082)	12 mm	NX-OC2633	-
	2 outputs, N.O. + N.C., 2.0 A		Screwless push-in (NX-TBA082)	12 mm	NX-OC2733	-
	8 outputs, N.O., 2.0 A		Screwless push-in (NX-TBA082 x 2)	24 mm	NX-OC4633	-
DC Digital I/O	16 inputs + 16 outputs, 1-wire connection + common	Synchronous/free run	2 x 20-pin MIL connector	30 mm	NX-MD6256-5	NX-MD6121-5
			2 x 24-pin Fujitsu connector	30 mm	-	NX-MD6121-6

¹. Digital I/O performance, ON/OFF delay:
High speed PNP/NPN input: 100 ns/100 ns
Standard PNP/NPN input: 0.02 ms/0.4 ms
AC input: 10 ms/40 ms
High speed PNP/NPN output: 300 ns/300 ns
Standard PNP output: 0.5 ms/1.0 ms
Standard NPN output: 0.1 ms/0.8 ms
Relay output: 15 ms/15 ms

². Units with Screwless push-in connections are supplied with the appropriate terminal connector. Units with MIL connectors are supplied without matching plugs.

³. Model codes are for PNP type signals (positive switching, 0 V common). Most models are also available as NPN type (negative switching, 24 V common). Inputs of MIL connector versions can be used as NPN or PNP.

Analog I/O

Type	Signal type	Performance, I/O refresh method	Channels	Connection type ¹	Width	Model
Analog input	4 to 20 mA single ended	1/8,000 resolution, 250 μs/channel Free run	2	Screwless push-in (NX-TBA082)	12 mm	NX-AD2203
			4	Screwless push-in (NX-TBA122)	12 mm	NX-AD3203
			8	Screwless push-in (NX-TBA162)	12 mm	NX-AD4203
	4 to 20 mA differential	1/8,000 resolution, 250 μs/channel Free run	2	Screwless push-in (NX-TBA082)	12 mm	NX-AD2204
			4	Screwless push-in (NX-TBA122)	12 mm	NX-AD3204
			8	Screwless push-in (NX-TBA162)	12 mm	NX-AD4204
	1/30,000 resolution, 10 μs/channel Synchronous/free run	1/30,000 resolution, 10 μs/channel Synchronous/free run	2	Screwless push-in (NX-TBA082)	12 mm	NX-AD2208
			4	Screwless push-in (NX-TBA122)	12 mm	NX-AD3208
			8	Screwless push-in (NX-TBA162)	12 mm	NX-AD4208
	±10 V single ended	1/8,000 resolution, 250 μs/channel Free run	2	Screwless push-in (NX-TBA082)	12 mm	NX-AD2603
			4	Screwless push-in (NX-TBA122)	12 mm	NX-AD3603
			8	Screwless push-in (NX-TBA162)	12 mm	NX-AD4603
	±10 V differential	1/8,000 resolution, 250 μs/channel Free run	2	Screwless push-in (NX-TBA082)	12 mm	NX-AD2604
			4	Screwless push-in (NX-TBA122)	12 mm	NX-AD3604
			8	Screwless push-in (NX-TBA162)	12 mm	NX-AD4604
		1/30,000 resolution, 10 μs/channel Synchronous/free run	1/30,000 resolution, 10 μs/channel Synchronous/free run	2	Screwless push-in (NX-TBA082)	12 mm
4				Screwless push-in (NX-TBA122)	12 mm	NX-AD3608
8				Screwless push-in (NX-TBA162)	12 mm	NX-AD4608
Analog output	4 to 20 mA	1/8,000 resolution, 250 μs/channel Free run	2	Screwless push-in (NX-TBA082)	12 mm	NX-DA2203
			4	Screwless push-in (NX-TBA122)	12 mm	NX-DA3203
			8	Screwless push-in (NX-TBA162)	12 mm	NX-DA4203
	1/30,000 resolution, 10 μs/channel Synchronous/free run	1/30,000 resolution, 10 μs/channel Synchronous/free run	2	Screwless push-in (NX-TBA082)	12 mm	NX-DA2205
			4	Screwless push-in (NX-TBA122)	12 mm	NX-DA3205
			8	Screwless push-in (NX-TBA162)	12 mm	NX-DA4205
	±10 V	1/8,000 resolution, 250 μs/channel Free run	2	Screwless push-in (NX-TBA082)	12 mm	NX-DA2603
			4	Screwless push-in (NX-TBA122)	12 mm	NX-DA3603
			8	Screwless push-in (NX-TBA162)	12 mm	NX-DA4603
1/30,000 resolution, 10 μs/channel Synchronous/free run	1/30,000 resolution, 10 μs/channel Synchronous/free run	2	Screwless push-in (NX-TBA082)	12 mm	NX-DA2605	
		4	Screwless push-in (NX-TBA122)	12 mm	NX-DA3605	
		8	Screwless push-in (NX-TBA162)	12 mm	NX-DA4605	

¹. Units with Screwless push-in connections are supplied with the appropriate terminal connector.

Digital I/O unit

Digital input unit (24 VDC)

Item	Specifications							
Model	NX-ID3317	NX-ID4342	NX-ID5342	NX-ID3343	NX-ID3417	NX-ID4442	NX-ID5442	NX-ID3443
Name	DC input unit							
Internal I/O common	NPN				PNP			
Capacity	4 points	8 points	16 points	4 points	4 points	8 points	16 points	4 points
Rated input voltage	12 to 24 VDC (9 to 28.8 VDC)		24 VDC (15 to 28.8 VDC)		12 to 24 VDC (9 to 28.8 VDC)		24 VDC (15 to 28.8 VDC)	
Input current ^{*1}	6 mA	3.5 mA	2.5 mA	3.5 mA	6 mA	3.5 mA	2.5 mA	3.5 mA
ON voltage	9 VDC min.		15 VDC min.		9 VDC min.		15 VDC min.	
ON current	3 mA min.	3 mA min.	2 mA min.	3 mA min.	3 mA min.	3 mA min.	2 mA min.	3 mA min.
OFF voltage	2 VDC max.		5 VDC max.		2 VDC max.		5 VDC max.	
OFF current	1 mA max.		0.5 mA max.	1 mA max.	1 mA max.		0.5 mA max.	1 mA max.
ON/OFF response time	20 μs max./400 μs max.			100 ns max.	20 μs max./400 μs max.			100 ns max.
Input filter time	Default setting: 1 ms ^{*2}			Default setting: 8 μs ^{*3}	Default setting: 1 ms ^{*2}			Default setting: 8 μs ^{*3}
Dielectric strength	510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max.							
Insulation resistance	20 MΩ min. between isolated circuits (at 100 VDC)							
Isolation method	Photocoupler isolation			Digital isolator	Photocoupler isolation			Digital isolator
Unit power consumption	0.50 W max.	0.50 W max.	0.55 W max.	0.55 W max.	0.50 W max.	0.50 W max.	0.55 W max.	0.55 W max.
I/O power supply method	Supply from the NX bus							
I/O current consumption	No consumption			30 mA max.	No consumption			30 mA max.
Current capacity of I/O power supply terminal	0.1 A/terminal max.		Without I/O power supply terminals	0.1 A/terminal max.	0.1 A/terminal max.		Without I/O power supply terminals	0.1 A/terminal max.
I/O refreshing method	Switching synchronous I/O refreshing and free-run refreshing							
Terminal block type	Screwless push-in terminal 12 terminals (A + B)	Screwless push-in terminal 16 terminals (A + B)	Screwless push-in terminal 16 terminals (A + B)	Screwless push-in terminal 12 terminals (A + B)	Screwless push-in terminal 12 terminals (A + B)	Screwless push-in terminal 16 terminals (A + B)	Screwless push-in terminal 16 terminals (A + B)	Screwless push-in terminal 12 terminals (A + B)
Dimensions (W x H x D)	12 x 100 x 71 mm							
Weight	65 g max.							
Disconnection/short-circuit detection	Not supported							
Protective function	Not supported							

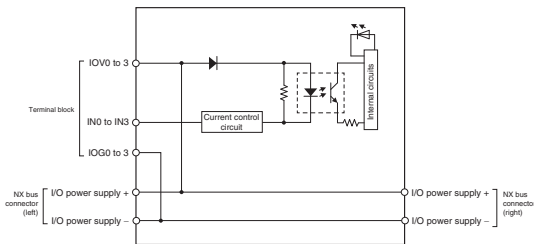
*1. Typical rated current at 24 VDC.

*2. Input filter time: No filter, 0.25, 0.5, 1, 2, 4, 8, 16, 32, 64, 128, 256 ms.

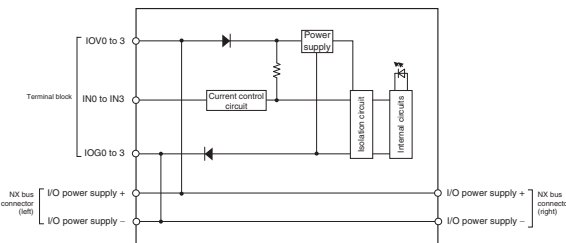
*3. Input filter time: No filter, 1, 2, 4, 8, 16, 32, 64, 128, 256 μs.

Circuit layout

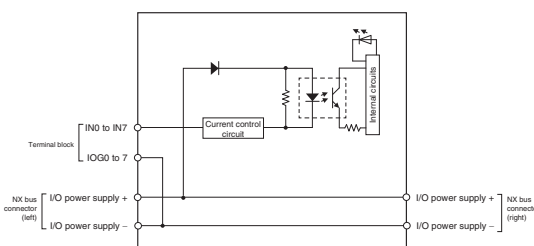
NX-ID3317



NX-ID3343

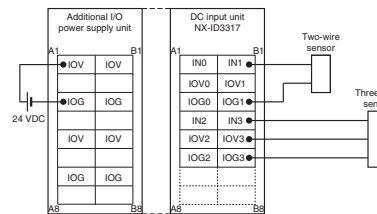


NX-ID4342

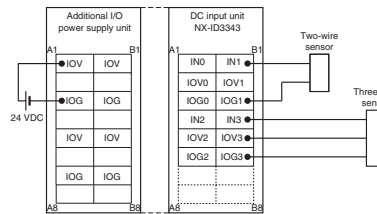


Terminal wiring

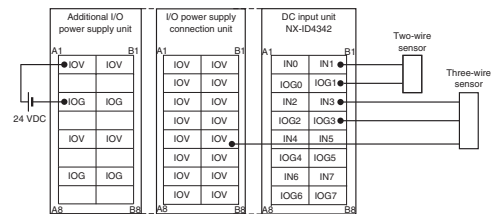
NX-ID3317



NX-ID3343



NX-ID4342



Ordering information

EtherCAT coupler unit

Type	Protocol	Communications cycle in DC mode ^{*1}	Specifications	Connection	I/O power supply	Width	Model
Communication coupler	EtherCAT slave	125 to 10,000 μs	Up to 63 I/O units Max. 1024 bytes in + 1024 bytes out Supports distributed clock	2 RJ45 ports (in + out)	10.0 A max.	46 mm	NX-ECC203

*1. This depends on the specifications of the EtherCAT master and the unit configuration.

IO-Link master unit

Type	No. of ports	I/O refresh method	Connection type ^{*1}	Width	Model
IO-Link master	4	Free run	Screwless push-in (NX-TBA162)	12 mm	NX-ILM400

*1. Units with Screwless push-in connections are supplied with the appropriate terminal connector.

Note: For more detailed information about IO-Link master unit, refer to "IO-Link master datasheet (I191E-EN)".

I/O unit

Digital I/O

Type	Channels, signal type	Performance ^{*1} , I/O refresh method	Connection type ^{*2}	Width	Model	NPN type ^{*3}
DC digital input	4 inputs, 3-wire connection	High-speed synchronous time stamp	Screwless push-in (NX-TBA122)	12 mm	NX-ID3444	NX-ID3344
		High-speed synchronous/free run	Screwless push-in (NX-TBA122)	12 mm	NX-ID3443	NX-ID3343
		Synchronous/free run	Screwless push-in (NX-TBA122)	12 mm	NX-ID3417	NX-ID3317
	8 inputs, 2-wire connection	Synchronous/free run	Screwless push-in (NX-TBA162)	12 mm	NX-ID4442	NX-ID4342
			Screwless push-in (NX-TBA162)	12 mm	NX-ID5442	NX-ID5342
	16 inputs, 1-wire connection	Synchronous/free run	M3 screw terminal block	30 mm	NX-ID5142-1	NX-ID5142-1
			1 x 20-pin MIL connector	30 mm	NX-ID5142-5	NX-ID5142-5
32 inputs, 1-wire connection	Synchronous/free run	1 x 40-pin MIL connector	30 mm	NX-ID6142-5	NX-ID6142-5	
		1 x 40-pin Fujitsu connector	30 mm	NX-ID6142-6	NX-ID6142-6	
		Screwless push-in (NX-TBA082)	12 mm	NX-IA3117	-	
AC digital input	4 inputs, 200-240 VAC, 50/60 Hz	Free run	Screwless push-in (NX-TBA082)	12 mm	NX-OD2258	NX-OD2154
	2 outputs 0.5 A, 3-wire connection	High-speed synchronous time stamp	Screwless push-in (NX-TBA082)	12 mm	NX-OD3257	NX-OD3153
			Screwless push-in (NX-TBA122)	12 mm	NX-OD3256	NX-OD3121
	4 outputs 0.5 A, 3-wire connection	High-speed synchronous/free run	Screwless push-in (NX-TBA122)	12 mm	NX-OD3268	-
			Screwless push-in (NX-TBA162)	12 mm	NX-OD4256	NX-OD4121
	8 outputs 0.5 A, 2-wire connection	Synchronous/free run	Screwless push-in (NX-TBA162)	12 mm	NX-OD5256	NX-OD5121
			M3 screw terminal block	30 mm	NX-OD5256-1	NX-OD5121-1
16 outputs 0.5 A, 1-wire connection	Synchronous/free run	1 x 20-pin MIL connector	30 mm	NX-OD5256-5	NX-OD5121-5	
		1 x 40-pin MIL connector	30 mm	NX-OD6256-5	NX-OD6121-5	
Relay digital output	2 outputs, N.O., 2.0 A	Free run	1 x 40-pin Fujitsu connector	30 mm	-	NX-OD6121-6
	2 outputs, N.O. + N.C., 2.0 A		Screwless push-in (NX-TBA082)	12 mm	NX-OC2633	-
	8 outputs, N.O., 2.0 A		Screwless push-in (NX-TBA082)	12 mm	NX-OC2733	-
DC Digital I/O	16 inputs + 16 outputs, 1-wire connection + common	Synchronous/free run	Screwless push-in (NX-TBA082 x 2)	24 mm	NX-OC4633	-
			2 x 20-pin MIL connector	30 mm	NX-MD6256-5	NX-MD6121-5
			2 x 24-pin Fujitsu connector	30 mm	-	NX-MD6121-6

*1. Digital I/O performance, ON/OFF delay:

High speed PNP/NPN input: 100 ns/100 ns

Standard PNP/NPN input: 0.02 ms/0.4 ms

AC input: 10 ms/40 ms

High speed PNP/NPN output: 300 ns/300 ns

Standard PNP output: 0.5 ms/1.0 ms

Standard NPN output: 0.1 ms/0.8 ms

Relay output: 15 ms/15 ms

*2. Units with Screwless push-in connections are supplied with the appropriate terminal connector. Units with MIL connectors are supplied without matching plugs.

*3. Model codes are for PNP type signals (positive switching, 0 V common). Most models are also available as NPN type (negative switching, 24 V common). Inputs of MIL connector versions can be used as NPN or PNP.