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Specifications



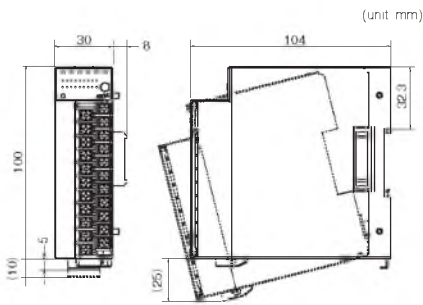
Digital Output Module ... Digital output module (16 outputs)



Model Selection

Basic model No.	Type	Ring connection	Wiring method	Channels	Option	Addition	Description	
NX-	DY1						Network Instrumentation Module	
							Digital output (Transistor output sink type)	
	DY2						Digital output (Transistor output source type)	
		N						Non-ring connection
		R						Ring connection
			T					Screw terminal block
			S					Screwless terminal block
				16				16 channels
					0			None
					0		None	
					D		Inspection certificate	
					T		Tropicalization treatment	
					K		Anti-sulfide treatment	
					B		Tropicalization treatment + inspection certificate	
					L		Anti-sulfide treatment + inspection certificate	

External dimensions



Specifications overview

Individual specifications

Output specifications

Number of outputs	16
Common terminal	One for every eight channels
Isolation between channels	Channels 1-8 isolated from 9-16
External power rated voltage	24 Vdc
Allowable output current	100 mAdc max./1ch
Output type	DY1: Transistor(sink type) DY2: Transistor(source type)

Event output

Number of outputs	1
Insulation	Yes
Output type	Photo MOS relay output (non-voltage from A contact)
Rated contact voltage	12-24 Vdc
Allowable output current	100 mAdc max.

Other

Power consumption	4W max. (under operating conditions)
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Communication specifications

Ethernet

Protocol	MODBUS/TCP, CPL/TCP
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RS-485

Protocol	MODBUS (RTU/ASCII) CPL
Signal level	RS-485 - compliant
Communication	Half-duplex, start/stop synchronization
Maximum cable length	500 m
Terminating resistor	External (150 Ω, 1/2 W min.)
Transmission speed	115,200 bps max.

CE : Product approved with the CE Marking. UL : Product listed by UL covering CSA requirements.

Peripheral tools

Engineering Tools ... Tools for monitoring and initial configuration

Model No.	Name
SLP-NX-J70	Smart Loader Package (with dedicated cable)
SLP-NX-J71	Smart Loader Package (without cable)

PID Simulator ... An engineering tool equipped with a process simulator

Model No.	Name
SLP-NX-J70PRO	Smart Loader Package + PID Simulator (with dedicated cable)
SLP-NX-J71PRO	Smart Loader Package + PID Simulator (without dedicated cable)

Parts

Model No.	Name
80700225-010	Side connector cover (for internal thread, 10 pcs.)
80700224-010	Side connector cover (for external thread, 10 pcs.)

Shared specifications (all models)

Standard conditions

Ambient temperature	23 ± 2°C
Ambient humidity	60 ± 5% RH (without condensation)
Rated supply voltage	24 Vdc
Mounting angle	Reference plane ± 3°

Operating conditions

Ambient temperature	0 to 50°C (below the installed module)
Ambient humidity	10 to 90%RH (without condensation)
Allowable supply voltage	21.6 to 26.4 Vdc
Mounting angle	Reference plane ± 3°

Other

Insulation resistance	500 Vdc, 20 MΩ min.
Dielectric strength	500 Vac, 1min
Case material	Modified PPO resin
Mounting method	DIN rail

Controller Module ... Process controller (4-channel or 2-channel)



Model Selection...NX-D15/25/35 (Model 4-channel)

(* : available soon)

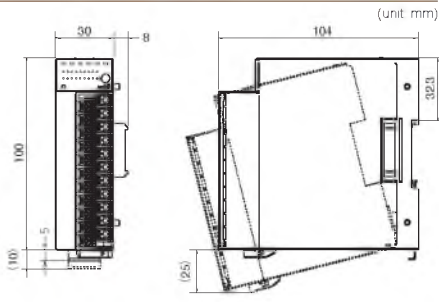
Basic model No.	Type	Ring connection	Wiring method	Control loops	Output type	Option	Addition	Description	
NX-	D15 D25 D35	N R	T S	4	T C D			Network Instrumentation Module	
								Controller module ±0.3 % FS, 500 ms sampling, 4 loops *1	
								Controller module ±0.3 % FS, 200 ms sampling, 4 loops	
								Controller module ±0.1 % FS, 100 ms sampling, 4 loops *	
									Non-ring connection
									Ring connection
									Screw terminal block
									Screwless terminal block
									4 loops
						T			Transistor output (4 points)
						C			Analog current output (4 points)
						D			Analog voltage output (4 points)
							0		None
						1		Current transformer input (4 points)	
						2		Digital output (4 points)	
						3		Digital input (4 points)	
							0	None	
							D	Inspection certificate	
							Y	Supports traceability certification	
							T	Tropicalization treatment	
							K	Anti-sulfide treatment	
							B	Tropicalization treatment + inspection certificate	
							L	Anti-sulfide treatment + inspection certificate	

*1. The NX-D15 cannot be used for multi-loop cooperative control and communication between modules.

Model Selection...NX-D35 (Model 2-channel)

Basic model No.	Type	Ring connection	Wiring method	Control loops	Output type	Option	Addition	Description	
NX-	D35	N R	T S	2	T C D M S G			Network Instrumentation Module	
								Controller module ±0.1 % FS, 100 ms sampling, 2 loops	
								Non-ring connection	
								Ring connection	
									Screw terminal block
									Screwless terminal block
									2 loops
						T			Transistor output (4 points)
						C			Analog current output (4 points)
						D			Analog voltage output (4 points)
						M			Transistor output (position proportional control) *1
						S			Isolated analog current output
						G			Isolated analog voltage output
						0		None	
						1		Current transformer input (4 points)	
						2		Digital output (4 points)	
						3		Digital input (4 points)	
						4		Digital outputs (2 points, position proportional control) *1*2	
							0	None	
							D	Inspection certificate	
							Y	Supports traceability certification	
							T	Tropicalization treatment	
							K	Anti-sulfide treatment	
							B	Tropicalization treatment + inspection certificate	
							L	Anti-sulfide treatment + inspection certificate	

External dimensions



*1. Connect an external auxiliary relay. The motor is driven via the auxiliary relay.
*2. If the output type is M, option 4 cannot be selected.

Specifications overview

Individual specifications

PV inputs

Number of inputs 4 or 2
Input types

Thermocouple

No.	Type	Range	Resolution
1	K	-200.0 °C ~ 1200.0 °C	1
2	K	0.0 °C ~ 1200.0 °C	0.1
3	K	0.0 °C ~ 800.0 °C	0.1
4	K	0.0 °C ~ 800.0 °C	0.1
5	K	0.0 °C ~ 400.0 °C	0.1
6	K	-200.0 °C ~ 400.0 °C	0.1
7	K	-200.0 °C ~ 200.0 °C	0.1
8	J	0.0 °C ~ 1200.0 °C	1
9	J	0.0 °C ~ 800.0 °C	0.1
10	J	0.0 °C ~ 800.0 °C	0.1
11	J	-200.0 °C ~ 400.0 °C	0.1
12	E	0.0 °C ~ 800.0 °C	0.1
13	E	0.0 °C ~ 800.0 °C	0.1
14	T	-200.0 °C ~ 400.0 °C	0.1
15	R	0.0 °C ~ 1800.0 °C	1
16	S	0.0 °C ~ 1800.0 °C	1
17	B	0.0 °C ~ 1800.0 °C	1
18	N	0.0 °C ~ 1300.0 °C	1
19	PL II	0.0 °C ~ 1300.0 °C	1
20	WRe5-26	0.0 °C ~ 1400.0 °C	1
21	WRe5-26	0.0 °C ~ 2300.0 °C	1
22	Ni-Ni-Mo	0.0 °C ~ 1300.0 °C	1
23	PR40-20	0.0 °C ~ 1900.0 °C	1
24	DIN U	-200.0 °C ~ 400.0 °C	0.1
25	DIN L	-100.0 °C ~ 800.0 °C	0.1
26	Gold-Iron Chromel	0.1 K ~ 360.1 K	0.1

RTD

No.	Type	Range	Resolution
41	Pt100	-200.0 °C ~ 500.0 °C	0.1
42	JPt100	-200.0 °C ~ 500.0 °C	0.1
43	Pt100	-200.0 °C ~ 850.0 °C	0.1
44	JPt100	-200.0 °C ~ 850.0 °C	0.1
45	Pt100	-100.0 °C ~ 300.0 °C	0.1
46	JPt100	-100.0 °C ~ 300.0 °C	0.1
47	Pt100	-100.0 °C ~ 200.0 °C	0.1
48	JPt100	-100.0 °C ~ 200.0 °C	0.1
49	Pt100	-60.0 °C ~ 100.0 °C	0.1
50	JPt100	-60.0 °C ~ 100.0 °C	0.1
51	Pt100	-20.00 °C ~ 80.00 °C	0.01
52	JPt100	-20.00 °C ~ 80.00 °C	0.01

Linear

No.	Type	Range	Resolution
81	DC voltage	0 mV ~ 10 mV	
82		-10 mV ~ 10 mV	
83		0 mV ~ 100 mV	
84		0 V ~ 1 V	
85		-1 V ~ 1 V	
86		1 V ~ 5 V	
87		0 V ~ 5 V	
88		0 V ~ 10 V	
89		2 V ~ 10 V	
90	DC current	0 mA ~ 20 mA	
91		4 mA ~ 20 mA	

Indication accuracy D35 : ±0.1 % FS +1digit
D25 : ±0.3 % FS ±1digit
D15 : ±0.3 % FS ±1digit
*Accuracy may vary depending on the sensor type or range.

Sampling cycle D35 : 100 ms
D25 : 200 ms
D15 : 500 ms

Motor feedback (MFB) input (output type: M)

Allowable resistance range 100 to 2500 Ω
2.5 to 5k Ω

Control output (depending on the model number)

Transistor output or motor output
Number of outputs 4
Output type Transistor output (sink type)
External power rated voltage 5 to 24 Vdc
Allowable output current 100 mAdc max.

Analog current output
Number of outputs 4
Output current 4 to 20 mAdc
300 to 20 mAdc (6.6 Vdc max.)
600 Ω max. (13.2 Vdc max.)
(Output type "S")

Output resolution 1/10000 (range: 4 to 20 mA)
1/12500 (range: 0 to 20 mA)

Analog voltage output
Number of outputs 4
Output voltage 0 to 5 Vdc
1 to 5 Vdc
0 to 10 Vdc
2 to 10 Vdc

Allowable load resistance 4 kΩ min.
Output resolution 1/10000 (range: 0 to 5 V)
1/8000 (range: 1 to 5 V)
1/20000 (range: 0 to 10 V)
1/16000 (range: 2 to 10 V)

Optional functions (depending on the model number)

Digital output
Number of outputs 4
Output type Transistor (sink type)
External power rated voltage 5 to 24 Vdc
Allowable output current 100 mAdc max

Digital input
Number of inputs 4
Compatible output type Non-voltage contacts or transistor (sink type)
DC 5 V ±10 %

Current transformer input
Number of inputs 4
Compatible current transformers QN206A, QN212A (sold separately)
Current measurement range 0.4 to 50.0 A (RMS)

Indication accuracy ±5 % FS ±1digit
Indication resolution 0.1 A

Other
Power consumption 4 W max. (under operating conditions)
Standards compliance CE (EN61326-1)
CUL (UL61010-1)

Communication specifications

Ethernet
Protocol MODBUS/TCP, CPL/TCP

RS-485
Protocol MODBUS (RTU/ASCII)
CPL
RS-485-compliant
Half-duplex, start/stop synchronization
500 m
External (150 Ω, 1/2 W min.)
Transmission speed 115,200 bps max.



Communication Adaptor ... Ethernet interface (1 port)

Terminal Adaptor ... An adaptor used as a ring communications terminal

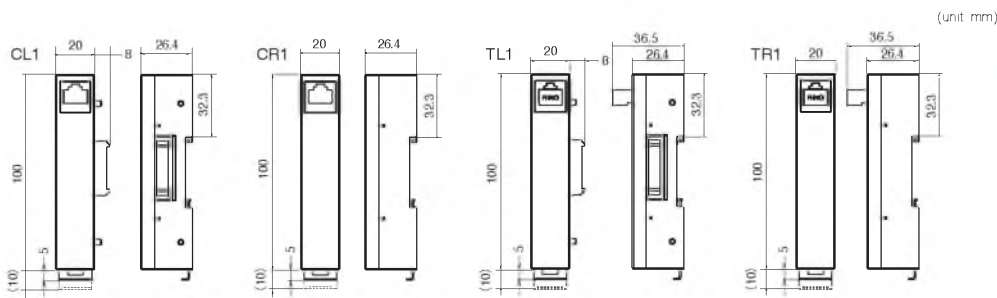
Model Selection

Basic model No.	Type	Option 1	Option 2	Option 3	Option 4	Addition	Description
NX-	CL1						Network Instrumentation Module
	CR1						Communication adaptor for left side *1
	TL1						Communication adaptor for right side *1
	TR1						Terminal adaptor for left side (for chain ring connection using side connector) *1
	TR1						Terminal adaptor for right side (for chain ring connection using side connector) *1
		0					None
			0				None
				00			None
					0		None
						0	None
						D	Inspection certificate
						T	Tropicalization treatment
						K	Anti-sulfide treatment
						B	Tropicalization treatment + inspection certificate
						L	Anti-sulfide treatment + inspection certificate

Photo: Communication Adaptor NX-CL1.

*1. Left and right are defined as seen when viewing the front of the unit.

External dimensions



Specifications overview

Individual specifications	
(Communication adaptor)	
● Ethernet interface	
Number of ports	1
Communication path type	IEEE802.3u 100BASE-TX (full duplex, with Auto-MDI/MDI-X)
Connector	RJ-45
Cable	UPT cable (4P) Category 5e min. (straight) (both ends, ANS/TIA/ EIA-568-B)



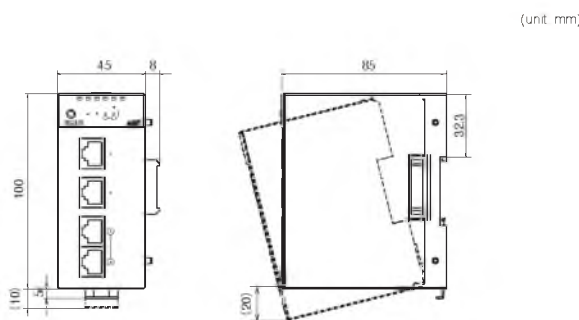
Communication Box ... Ethernet interface (switching hub)



Model Selection

Basic model No.	Type	Ring connection 1	Ring connection 2	Ports	Option	Addition	Description	
NX-	CB2						Network Instrumentation Module	
							4-port switching hub (with status output)	
		N						Chain (side connector) non-ring connection communications
		R						Chain (side connector) ring connection communications
			N					Inter-chain (front port) non-ring connection communications
		R				Inter-chain (front port) ring connection communications		
				04			4 ports	
					0		RJ-45×4	
					1		RJ-45×3, 2-core LC×1	
						0	None	
						D	Inspection certificate	
						T	Tropicalization treatment	
						K	Anti-sulfuration treatment	
						B	Tropicalization treatment + inspection certificate	
						L	Anti-sulfide treatment + inspection certificate	

External dimensions



Specifications overview

Individual specifications	
● Ethernet interface	
Number of ports	4 (2 of 4 ports are used for ring connection between chains.)
Communication path type	Ethernet ports 1 and 2 IEEE802.3/IEEE802.3u 10BASE-T/100BASE-TX (with auto-negotiation and Auto-MDI/MDI-X) Ethernet ports 3 and 4 (option 0) IEEE802.3u 100BASE-TX (full duplex, with Auto-MDI/MDI-X) Ethernet port 4 (option 1) IEEE802.3u 100BASE-FX (full duplex, wavelength 1300 nm)
Connector	100BASE-TX connector: RJ-45 100BASE-FX connector: 2-core LC
Cable	100BASE-TX cable UTP cable (4P), category 5e min. (straight) (both ends, ANSI/TIA/EIA-568-B), 100 m max. 100BASE-FX cable Multi-mode graded index optical fiber, GI-50/125 or GI-62.5/125 (2-cores), 2 km max.
● Other	
Power consumption	4 W max. (option 0 under operating conditions) 5 W max. (option 1 under operating conditions)



Supervisor Module ... Multi-loop harmonized operation controller

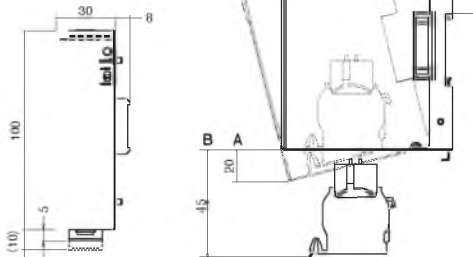


Model Selection

Basic model No.	Type	Ring connection	Option 1	Option 2	Option 3	Addition	Description	
NX-	S11 S12 S21						Network Instrumentation Module	
							Supervisor module control of temperature difference between zones	
							Supervisor module optimal start-up control	
		N R						Supervisor module peak power suppression control
								Non-ring connection
			0		00			Ring connection
								None
						0		None
								None
							0	None
								None
							D	Inspection certificate
T								Tropicalization treatment
						K	Anti-sulfide treatment	
							B	Tropicalization treatment + inspection certificate
						L	Anti-sulfide treatment + inspection certificate	

External dimensions

(unit: mm)



A (Clearance required for removal of unit)
B (Clearance required for removal of battery holder)

Specifications overview

Individual specifications

- Other**
 - Power consumption: 4 W max. (under operating conditions)
 - Timekeeper IC: Built-in RTC, ± 2.2 s/day, with calendar
 - Battery life: 3 years (without power-on, under standard conditions)

Communication specifications

- Ethernet**
 - Protocol: MODBUS/TCP, CPL/TCP
- RS-485**
 - Protocol: MODBUS (RTU/ASCII) CPL
 - Signal level: RS-485 – compliant
 - Communication /synchronization type: Half-duplex, start/stop synchronization
 - Maximum cable length: 500 m
 - Terminating resistor: External (150 Ω , 1/2 W min.)
 - Transmission speed: 115,200 bps max.



Digital Input Module ... Digital and pulse input module (16 inputs)



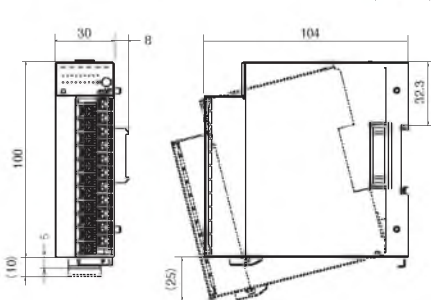
Model Selection

Basic model No.	Type	Ring connection	Wiring method	Channels	Option	Addition	Description	
NX-	DX1 DX2						Network Instrumentation Module	
							Digital input (shared by + common and – common)	
							Pulse input (shared by + common and – common) *1	
		N R						Non-ring connection
								Ring connection
				T S				Screw terminal block
								Screwless terminal block
					16			16 channels
								None
						0		None
								None
							D	Inspection certificate
T								Tropicalization treatment
						K	Anti-sulfide treatment	
							B	Tropicalization treatment + inspection certificate
						L	Anti-sulfide treatment + inspection certificate	

*1. Channels 1–8 : 5 kHz. Channels 9–16 : 100 Hz.

External dimensions

(unit: mm)



Specifications overview

Individual specifications

- Input specifications**
 - Number of inputs: 16
 - Pulse input frequency: DX2 : 5 kHz (max.) channels 1–8; DX2 : 100 Hz (max.) channels 9–16
 - Common terminal: 2 common terminals for every 8 inputs
 - Insulation between channels: On basis of channels 1–8 and 9–16
 - Rated input voltage: 24 Vdc
 - Rated input current (at 24 Vdc): DX1: channels 1–16, 4.5 mA approx.; DX2: channels 1–8, 6.4 mA approx.; channels 9–16, 4.5 mA approx.
 - Input impedance: DX1: channels 1-16, 4.7 k Ω approx.; DX2: channels 1-8, 3.3 k Ω approx.; channels 9-16, 4.7 k Ω approx.
 - Input type: Shared by + common and – common
 - Compatible output type: Dry contact or transistor
- Event output (for DX2 only)**
 - Number of outputs: 1
 - Insulation: Yes
 - Output type: Photo MOS relay output (non-voltage From A contact)
 - Rated contact voltage: 12-24 Vdc
 - Allowable output current: 100 mAdc max.
- Other**
 - Power consumption: 4 W max. (under operating conditions)

Communication specifications

- Ethernet**
 - Protocol: MODBUS/TCP, CPL/TCP
- RS-485**
 - Protocol: MODBUS (RTU/ASCII) CPL
 - Signal level: RS-485 – compliant
 - Communication /synchronization type: Half-duplex, start/stop synchronization
 - Maximum cable length: 500 m
 - Terminating resistor: External (150 Ω , 1/2 W min.)
 - Transmission speed: 115,200 bps max.

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