Specifications

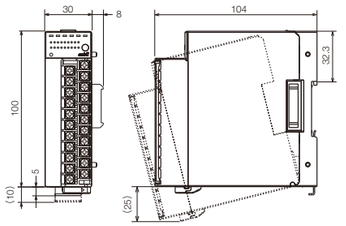
Digital Output Module ··· Digital output module (16 outputs)

Model Selection

Basic model No.	Type	Ring connection	Wiring method	Channels	Option	Addition	Description
NX–							Network Instrumentation Module
	DY1						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

(unit: mm)



Specifications overview

Individual specifications

Output specifications

Number of outputs	16
Common terminal	One for every eight channeles
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)

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.

CE : Product approved with the CE Marking. c UL us : Product listed by UL covering CSA requirements. KC : These products are compliant with Korean safety standards.

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.)

Please read “Terms and Conditions” from the following URL before ordering and use.
https://www.azbil.com/products/factory/order.html

Azbil Corporation
Advanced Automation Company

1-12-2 Kawana, Fujisawa
Kanagawa 251-8522 Japan
URL: https://www.azbil.com

1st Edition: May. 2010-KS
5th Edition: Aug. 2020-SO

azbil

Network Instrumentation Module

Better Networks for Better Results

Azbil Corporation

Enter the World of New Instrumentation

The PID controller has evolved,
and long-awaited instrumentation
for connecting networks has arrived.

1

2

3

4


5

6

1. All modules have LED indicators for easy viewing of operation status. 2. Compact and highly functional supervisor module 3. Easy to operate, and can also be used as a standalone units. 4. I/O signals can be exchanged between modules (except model NX-D15). 5. With work efficiency as a key design principle, modules can be installed and uninstalled without using tools. 6. Daisy chain Ethernet connection saves space and reduces wiring.

Network Instrumentation Module

Network Instrumentation Module offer advanced control technology
using networks to meet customers' requirements.

Communication

Support for High-capacity Communication

Ethernet interface is standard in all modules, allowing high-speed communication with a variety of devices. Full-scale distributed deployment is achieved through distribution of functions, saving space and reducing wiring. Batch management of multiple devices through Ethernet communication improves engineering efficiency.

Command

Optimization Management

The supervisor module coordinates multiloop cooperative control between the modules.

Control

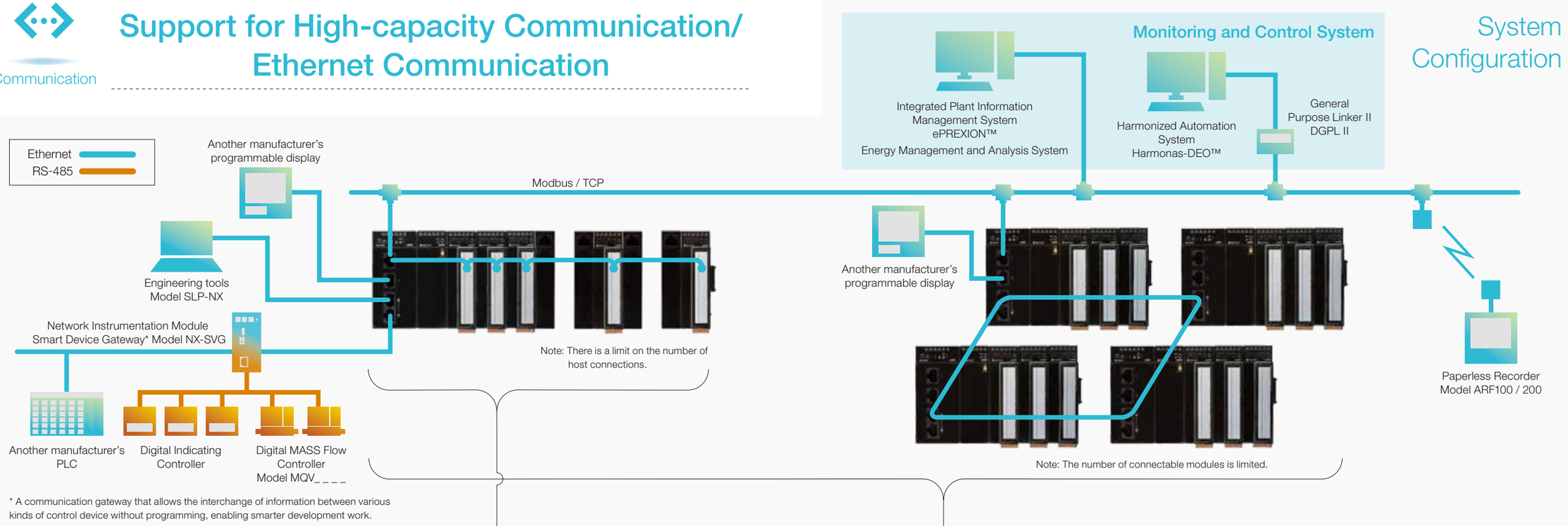
More Environmentally Friendly Control

Highly sensitive process control that is also environmentally friendly. Process simulation facilitates optimal control.

Communication

Support for High-capacity Communication/ Ethernet Communication

System Configuration



* A communication gateway that allows the interchange of information between various kinds of control device without programming, enabling smarter development work.

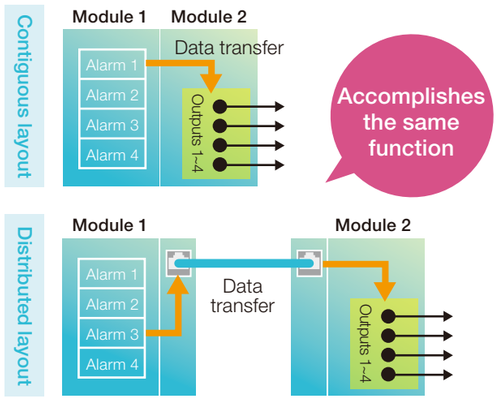
Communication 1 Standard Ethernet Hardware

Each module can communicate through Ethernet.
High-speed communications at up to 100 Mbps.

- Whether modules are linked or dispersed, wiring can be greatly reduced by using a daisy chain configuration.
- Each module also has an RS-485 communication function.
  RS-485 and Ethernet communications can be used at the same time.
- Modules are capable of high-speed communications with host systems, programmable logic controllers (PLCs), display devices, etc.
- A network equipped with Network Instrumentation Modules can be upgraded to use Azbil Corporation's monitoring and control system.

Communication 2 Full-fledged Distributed Layout

With Ethernet connections, there is no difference in function between distributed and contiguous layouts.



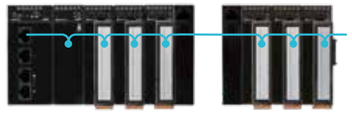
Communication 3 Redundant Communications

Either ring or non-ring connection is possible on an Ethernet network.

Type A

A non-ring connection

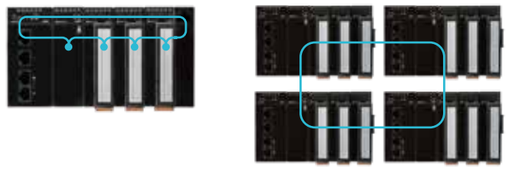
is a daisy chain connection.

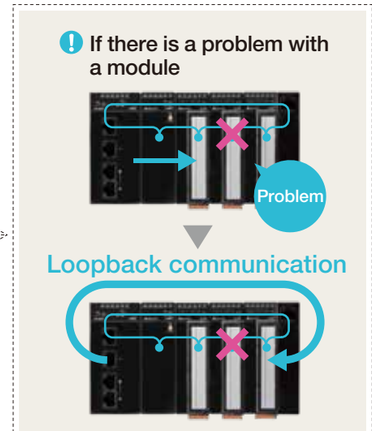


Type B

Ring connection

An Ethernet network in a ring topology. If an error occurs along the communication path, loopback ensures communications.



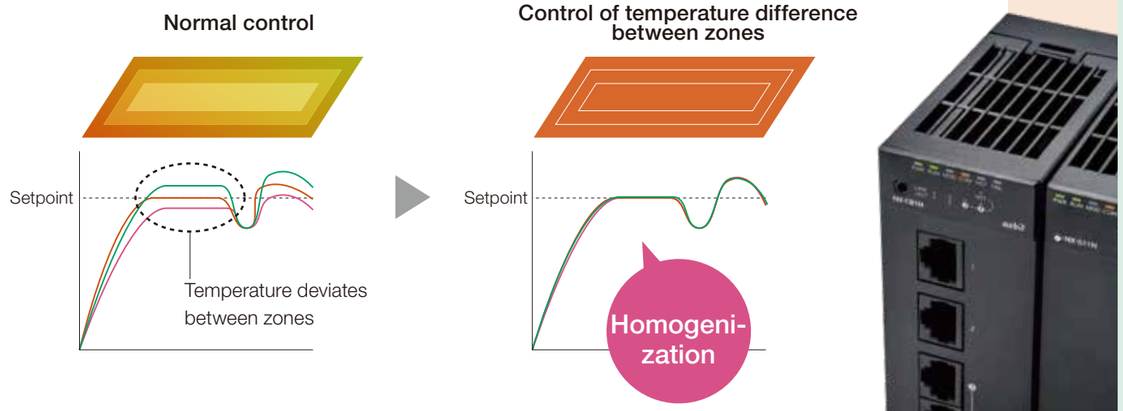


Command

Optimization Management

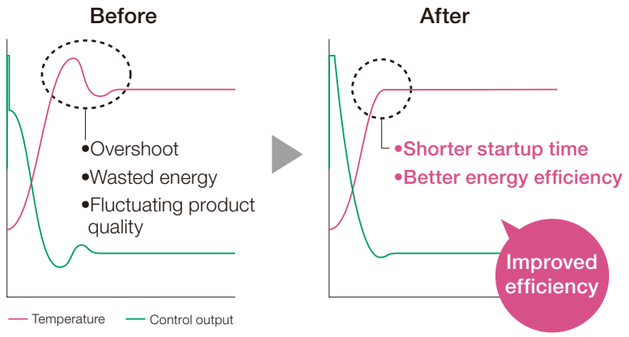
Command 1 Control of Temperature Difference between Zones

Mutual interference among multiple control loops is prevented, and a constant difference in temperature is maintained between the controlled variables (temperatures) of the loops when the temperature is rising or when responding to disturbances. Yield can be expected to improve due to energy savings and quality improvement.



Command 2 Process Simulation (PID Simulator)

PID Simulator collects Process Variable (PV) and Manipulated Variable (MV) and reproduces the equipment's characteristics on a personal computer.
The optimum PID values and the start-up characteristics of the equipment can be adjusted on the PC.



Better control characteristics

Overshoot suppression and disturbance response characteristics can be freely adjusted.

Fewer man-hours required for adjustment

Shorter adjustment time for equipment like large heat treating furnaces.

Energy control

By setting an appropriate PID, energy loss is minimized.

Available controller modules: ● Model NX-D25 ● Model NX-D35

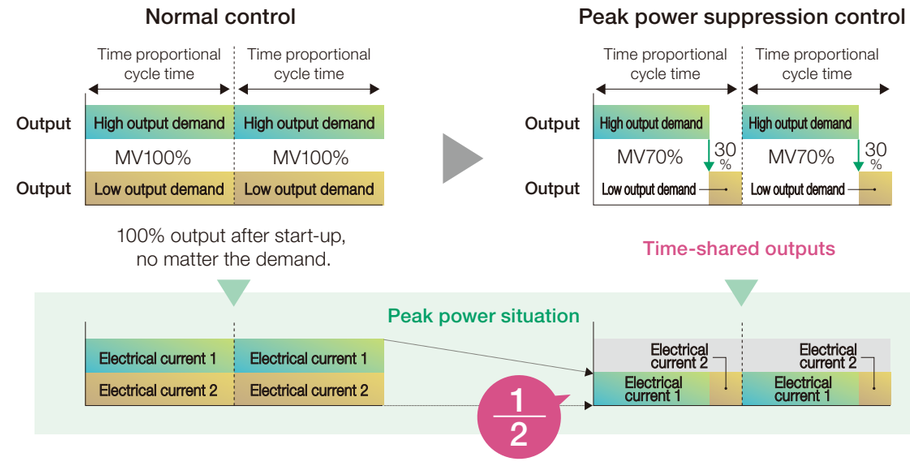
Note: Some processes may not be suitable for PID Simulator use.

Control

More Environmentally Friendly Control

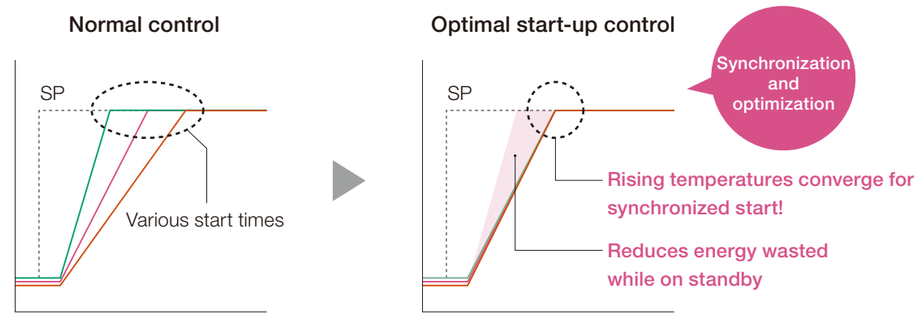
Control 1 Peak Power Suppression Control

This function controls peak power by means of time-sharing of the output of 2 loops within the time proportional output cycle time.
The supervisor module selects the optimal loop combination from multiple loops.
Peak power for start-up heating is dramatically reduced (up to 50 %).



Control 2 Optimal Start-up Control

Synchronized or optimized start-up control reduces energy losses.
When fast and slow rising loops coexist in the same equipment or process (multiple pieces of equipment), this helps greatly in reducing energy consumption.

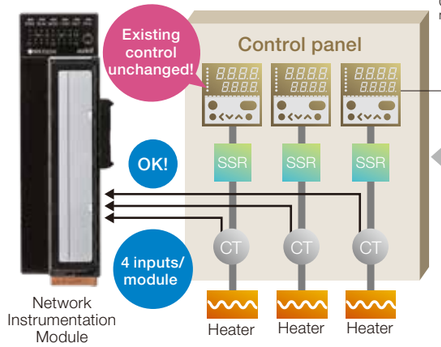


Advanced Functions

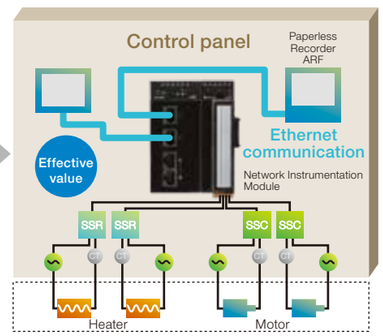
Function 1 Measurement of AC Current (RMS)

- Up to four current transformer inputs (optional)
- Both phase-controlled and cycle-controlled heater current
- Other AC current (fan, compressor, etc. load current) can also be measured

Type A Added as a measuring instrument



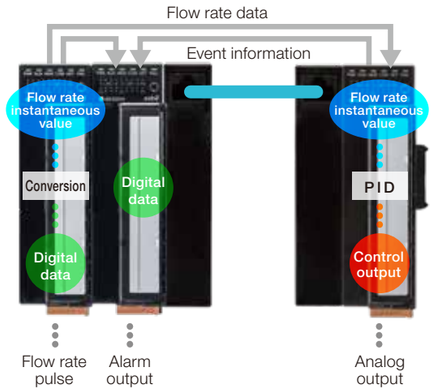
Type B Control panel upgraded with Network Instrumentation Module



SSR: solid state relay. SSC: solid state contactor.
CT : current transformer.

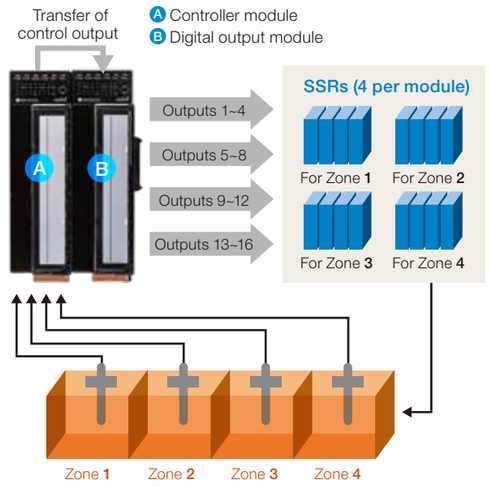
Function 2 Data Transfer between Modules

- Analog/digital values, etc. can be exchanged between modules.
- Data update frequency of 400 ms.
- Data can be sent to 4 modules (max.) from a single module.



Note: Does not apply to supervisor modules.

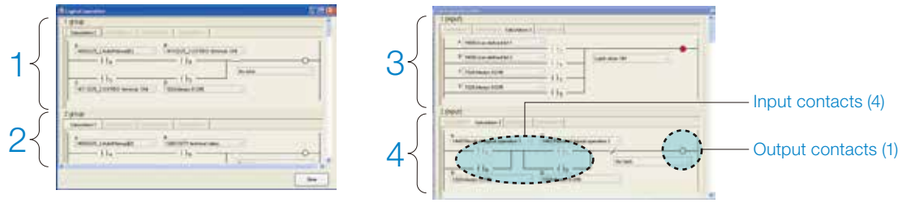
- Multi-point control of heater is also possible (e.g., for continuous tunnel furnace [see figure below]).



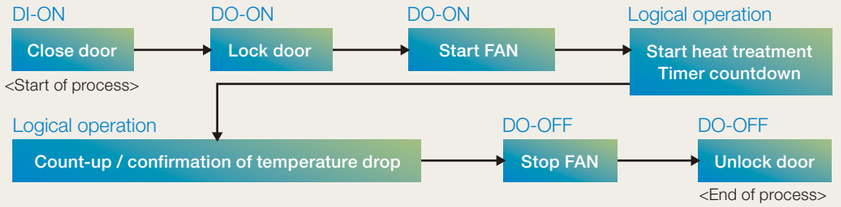
Function 3 Logical Operations (simple logic)

- Up to 32 logical operations with a circuit containing 4 inputs and 1 output can be preset (model NX-DY_).
- Logical operations can be selected from among 4 types.
- Simple logical actions can be carried out by combining logical operations.

Types of logical operations (4)

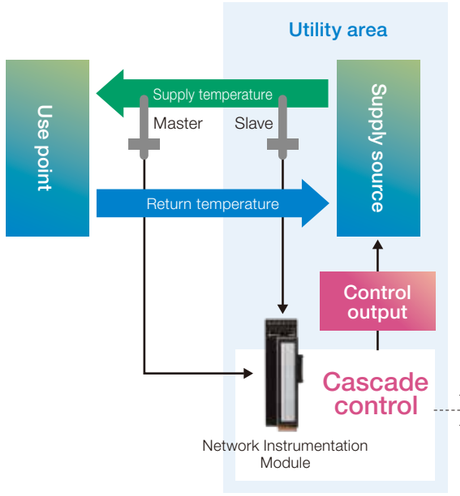


Logic diagram



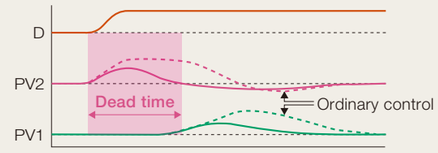
Function 4 Cascade Control

- Improves the controllability of control systems that have a large amount of dead time.



Effectiveness of cascade control

In an ordinary control system, if a disturbance (D) occurs, the controlled variable (PV1) changes after the dead time elapses and then corrective action is taken by the feedback control starting from this point. In a cascade control system, the controlled variable (PV2) in the secondary control system changes immediately and corrective action starts at this point, resulting in less variation of the controlled variable (PV1) in the primary control system.

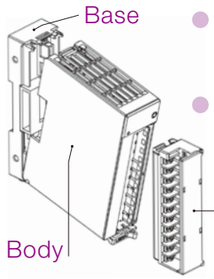


Hardware

Hardware 1 Small but Mighty

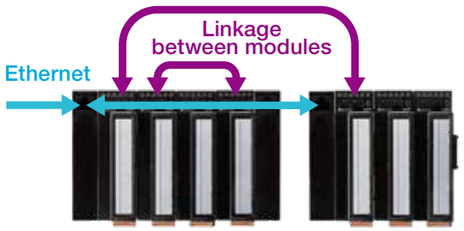
- Compact body (30 x 100 x 104 mm)
- Up to 4 analog inputs and 4 analog outputs
- 4 current transformer inputs (option)
- High accuracy: 0.1% FS*
- High-speed sampling: 100 ms*
  (*for model NX-D35)

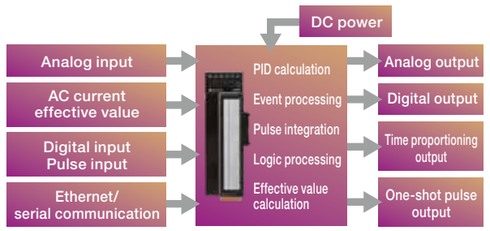
Hardware 2 Easy Assembly



- Each module consists of a base, a body, and a terminal block.
- Modules can be easily installed and uninstalled without tools.

Hardware 3 Flexible Layout



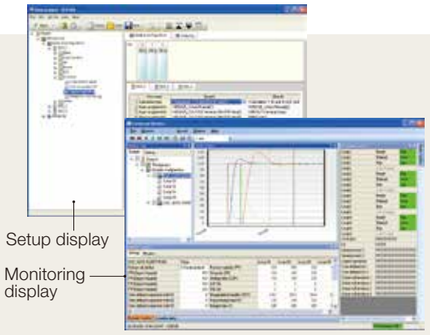


Contiguous modules or distributed layout

- Input/output signals can be shared between modules.
  * Using Ethernet connections, wiring (for communications) is reduced and space is saved.
- In a distributed layout, modules can be linked as well as when they are physically contiguous.

Stand-alone modules

- Power supply, control, and communication functions are consolidated into 1 module.
- In addition to PID control, standalone modules can monitor analog values, totalize flow rate based on pulse input, and perform simple logical actions via digital I/O (available functions differ depending on the module).
- Module are operated based on parameter settings only, making them simpler to operate than a PLC.



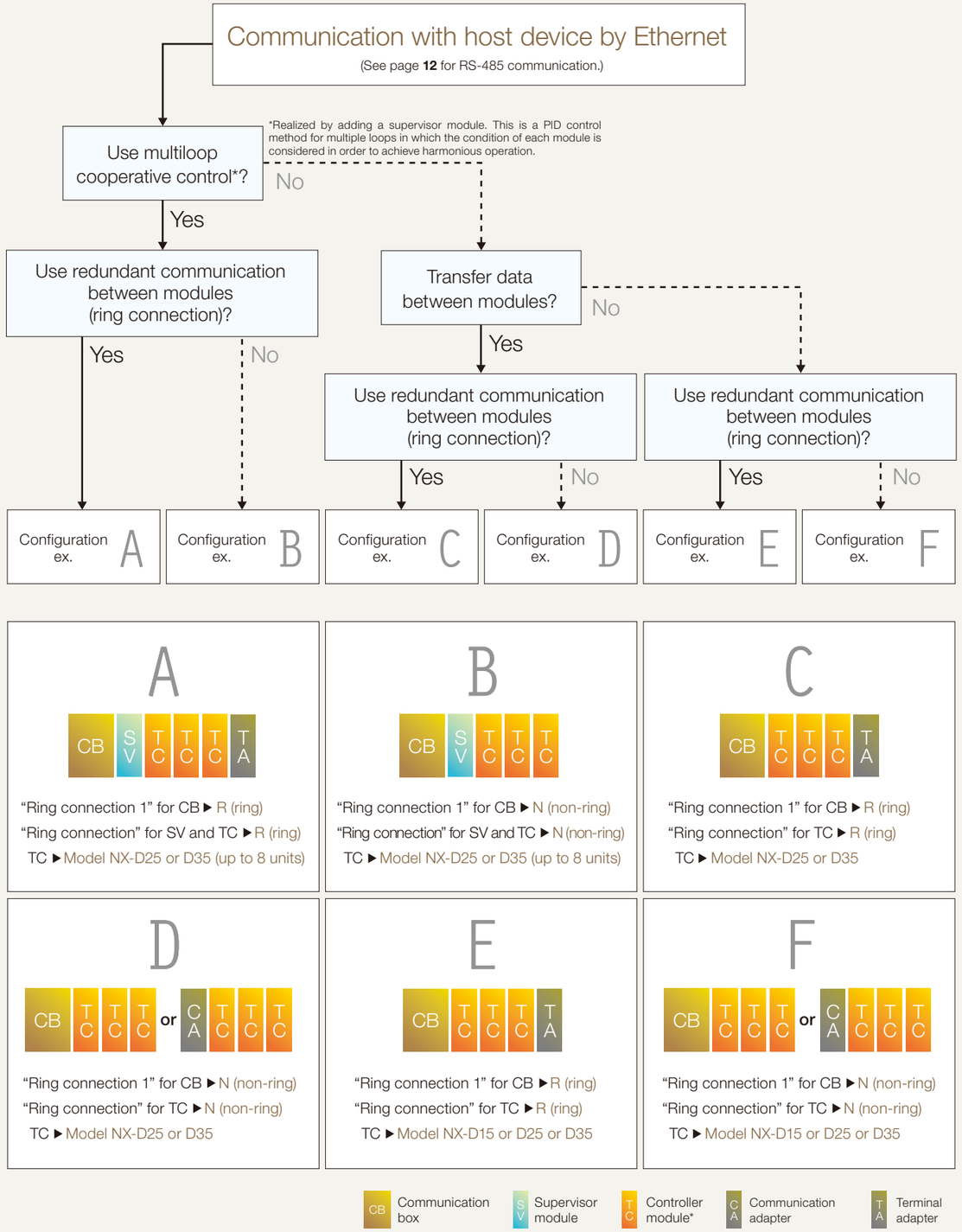
Engineering tools

The Smart Loader Package model SLP-NX (sold separately) is available for use with Network Instrumentation Modules.

- A PC can be connected to modules via Ethernet.
- Multiple modules* can be controlled at the same time.
  This reduces engineering time and improves the efficiency of testing operations too.
- Individual modules can also be set up by connection a dedicated loader cable.

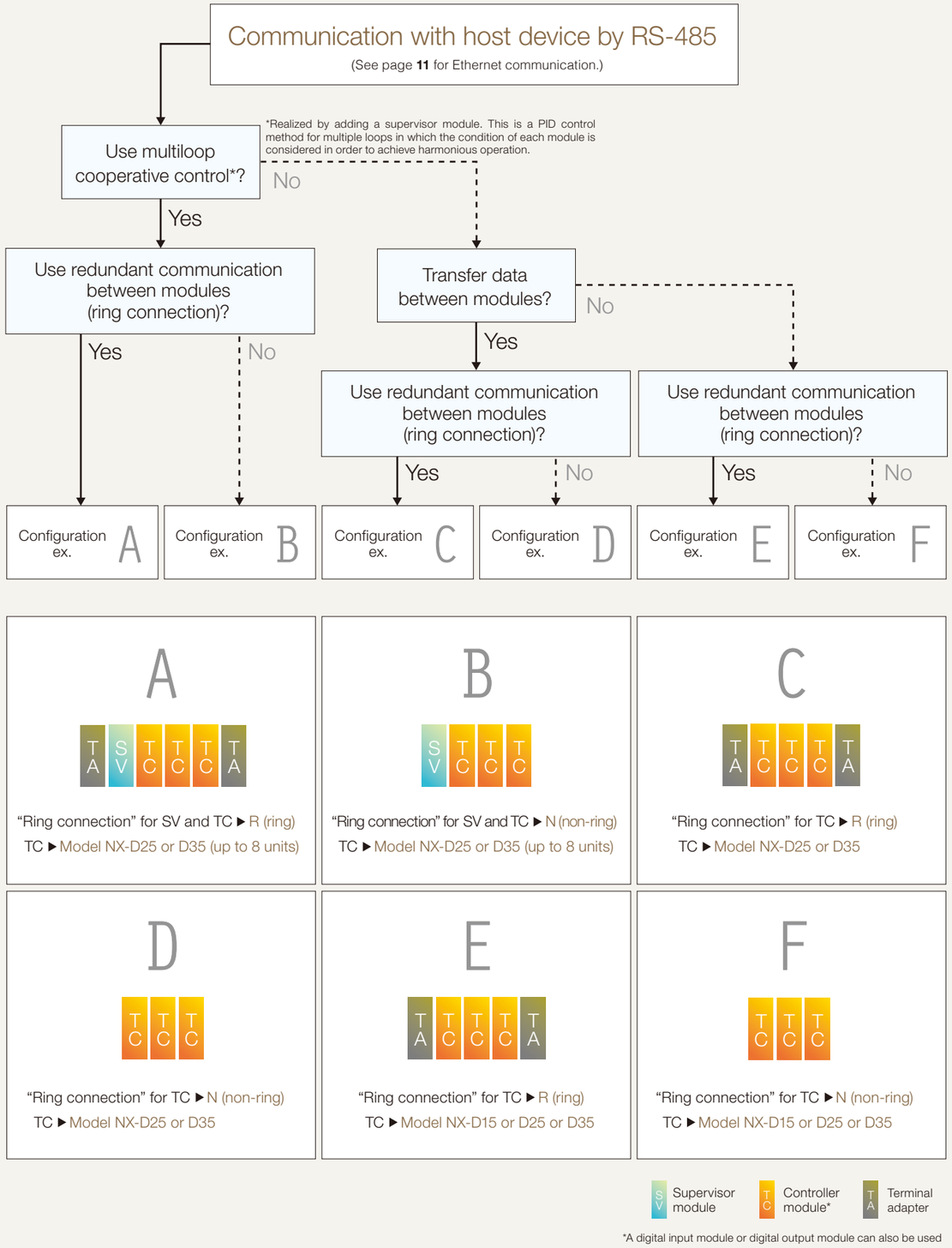
*The maximum number of modules is 31(excluding communication box/adapter and terminal adapter).

Module Selection Flow Chart [for Ethernet communication]



*A digital input module or digital output module can also be used

Module Selection Flow Chart [for RS-485 communication]



*A digital input module or digital output module can also be used

Shared specifications (all models)

Standard conditions		Operating conditions		Other	
Ambient temperature	23 ± 2℃	Ambient temperature	0 to 50℃ (below the installed module)	Insulation resistance	500 Vdc, 20 MΩ min.
Ambient humidity	60 ± 5% RH (without condensation)	Ambient humidity	10 to 90%RH (without condensation)	Dielectric strength	500 Vac, 1min
Rated supply voltage	24 Vdc	Allowable supply voltage	21.6 to 26.4 Vdc	Case material	Modified PPO resin
Mounting angle	Reference plane ± 3°	Mounting angle	Reference plane ± 3°	Mounting method	DIN rail

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

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

Basic model No.	Type	Ring connection	Wiring method	Control loops	Output type	Option	Addition	Description
NX–								Network Instrumentation Module
	D15							Controller module ±0.3 % FS, 500 ms sampling, 4 loops *1
	D25							Controller module ±0.3 % FS, 200 ms sampling, 4 loops
	D35							Controller module ±0.1 % FS, 100 ms sampling, 4 loops
		N						Non-ring connection
		R						Ring connection
			T					Screw terminal block
			S					Screwless terminal block
				4				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

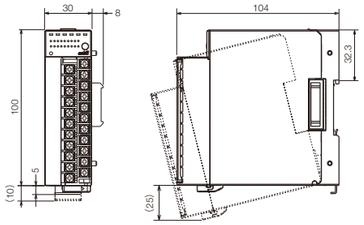
*1. The model NX-D15 cannot be used for multi-loop cooperative control and communication between modules.

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

Basic model No.	Type	Ring connection	Wiring method	Control loops	Output type	Option	Addition	Description
NX–								Network Instrumentation Module
	D35							Controller module ±0.1 % FS, 100 ms sampling, 2 loops
		N						Non-ring connection
		R						Ring connection
			T					Screw terminal block
			S					Screwless terminal block
				2				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

(unit: mm)



*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 ℃	1200 ℃	1
2	K	0 ℃	1200 ℃	1
3	K	0.0 ℃	800.0 ℃	0.1
4	K	0.0 ℃	600.0 ℃	0.1
5	K	0.0 ℃	400.0 ℃	0.1
6	K	-200.0 ℃	400.0 ℃	0.1
7	K	-200.0 ℃	200.0 ℃	0.1
8	J	0 ℃	1200 ℃	1
9	J	0.0 ℃	800.0 ℃	0.1
10	J	0.0 ℃	600.0 ℃	0.1
11	J	-200.0 ℃	400.0 ℃	0.1
12	E	0.0 ℃	800.0 ℃	0.1
13	E	0.0 ℃	600.0 ℃	0.1
14	T	-200.0 ℃	400.0 ℃	0.1
15	R	0 ℃	1600 ℃	1
16	S	0 ℃	1600 ℃	1
17	B	0 ℃	1800 ℃	1
18	N	0 ℃	1300 ℃	1
19	PL Ⅱ	0 ℃	1300 ℃	1
20	WRe5-26	0 ℃	1400 ℃	1
21	WRe5-26	0 ℃	2300 ℃	1
22	Ni - Mo-Ni	0 ℃	1300 ℃	1
23	PR40-20	0 ℃	1900 ℃	1
24	DIN U	-200.0 ℃	400.0 ℃	0.1
25	DIN L	-100.0 ℃	800.0 ℃	0.1
26	Gold-iron Chromel	0.1 K	360.1 K	0.1

RTD

No.	Type	Range		Resolution
41	Pt100	-200.0 ℃	500.0 ℃	0.1
42	JPt100	-200.0 ℃	500.0 ℃	0.1
43	Pt100	-200.0 ℃	850.0 ℃	0.1
44	JPt100	-200.0 ℃	640.0 ℃	0.1
45	Pt100	-100.0 ℃	300.0 ℃	0.1
46	JPt100	-100.0 ℃	300.0 ℃	0.1
47	Pt100	-100.0 ℃	200.0 ℃	0.1
48	JPt100	-100.0 ℃	200.0 ℃	0.1
49	Pt100	-50.0 ℃	100.0 ℃	0.1
50	JPt100	-50.0 ℃	100.0 ℃	0.1
51	Pt100	-20.00 ℃	60.00 ℃	0.01
52	JPt100	-20.00 ℃	60.00 ℃	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; 0 to 20 mAdc
Allowable load resistance: 300 Ω max. (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)
Open terminal voltage: 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
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.

CE : Product approved with the CE Marking. cULus : Product listed by UL covering CSA requirements. : These products are compliant with Korean safety standards.

Communication Adaptor ··· Ethernet interface (1 port)

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

Model Selection

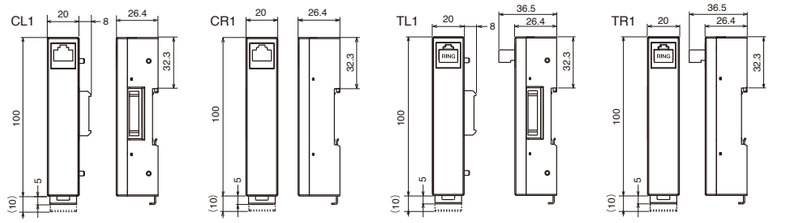
Basic model No.	Type	Option 1	Option 2	Option 3	Option 4	Addition	Description
NX–							Network Instrumentation Module
	CL1						Communication adaptor for left side *1
	CR1						Communication adaptor for right side *1
	TL1						Terminal adaptor for left side (for chain ring connection using side connector) *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 model NX-CL1.

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

External dimensions

(unit: mm)



Specifications overview

Individual specifications

(Communication adapter)

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, ANSI/TIA/EIA-568-B)

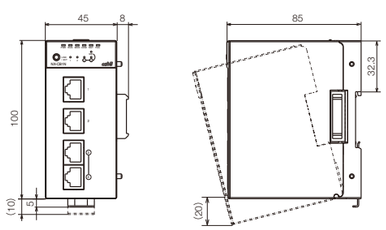
Communication Box ··· Ethernet interface (switching hub)

Model Selection

Basic model No.	Type	Ring connection 1	Ring connection 2	Ports	Option	Addition	Description
NX–							Network Instrumentation Module
	CB2						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

(unit: mm)



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)

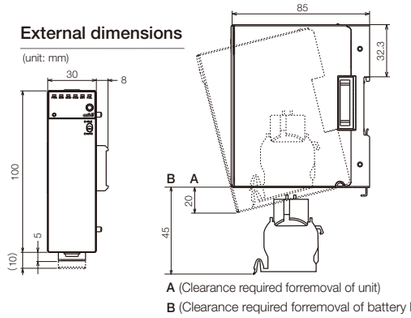
Supervisor Module ··· Multi-loop harmonized operation controller

Model Selection

Basic model No.	Type	Ring connection	Option 1	Option 2	Option 3	Addition	Description
NX–							Network Instrumentation Module
	S11						Supervisor module control of temperature difference between zones
	S12						Supervisor module optimal start-up control
	S21						Supervisor module peak power suppression control
		N					Non-ring connection
		R					Ring connection
			0				None
				00			None
					0		None
					1		With fault DO
						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

(unit: mm)



A (Clearance required forremoval of unit)

B (Clearance required forremoval 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)

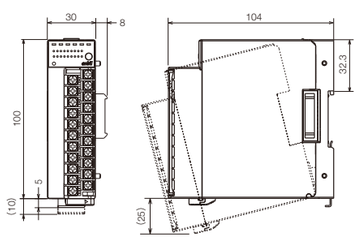
Model Selection

Basic model No.	Type	Ring connection	Wiring method	Channels	Option	Addition	Description
NX–							Network Instrumentation Module
	DX1						Digital input (shared by + common and – common)
	DX2						Pulse input (shared by + common and – common) *1
		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

*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 kΩ approx. DX2: channels 1-8, 3.3 kΩ approx. channels 9-16, 4.7 kΩ 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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