

FCN CPU SPECIFICATIONS

Items		Specification	
Model		NFCP501 CPU module for FCN (with 2 Ethernet ports)	
		NFCP502 CPU module for FCN (with 4 Ethernet ports)	
Processor		Atom E3815 1.46GHz	
Memory	Main	256MB with ECC	
	Static RAM	2MB with ECC, backed up by battery	
Secondary memory		1GB on-board flash memory	
External media		SD card 1 slot : SDHC (4 to 32GB) Class 10	
Serial port (*1)		1 RS-232-C port : D-sub 9 pins, male (*2)	
	Communication Method	Full/Half duplex (software settings)	
	Synchronisation	Asynchronous	
	Baud rate	0.3, 1.2, 2.4, 4.8, 9.6, 14.4, 19.2, 28.8, 38.4, 57.6, or 115.2 kbps	
Network interface		2 Ethernet ports : RJ45 modular jacks	4 Ethernet ports : RJ45 modular jacks
	Baud rate	1000, 100, 10 Mbps, (1000BASE-T, 100BASE-TX, 10BASE-T)	
I/O interface		SB bus (duplex)	
RAS features		Watch dog timer, temperature monitor, etc.	
Battery (*3)		1000 mAh graphite fluoride lithium battery (*4)	
Display		3 LEDs for CPU status indication, 2 LEDs for Ethernet status indication, 1 LED for SD LED, 1 LED for EXEC LED	
Switches		RESET switch, SHUT DOWN switch, FUNC switch, EXEC switch	
Protection		CPU cover (with the hole for wire lock)	
Power Supply	Supply voltage	5 V DC $\pm$ 5%	
	Current consumption	Max. 1200mA	Max. 1700mA
Duplex configuration		Possible (*5)	
Weight		0.9kg	
Size	Dimensions (W $\times$ H $\times$ D)	65.8 $\times$ 130 $\times$ 149.3 mm	
	Occupying slots	2	

*1 : A serial port cannot be used when CPU modules are configured in redundancy.

*2 : Connectors are fastened using inch screw threads (No. 4-40 UNC).

*3 : With battery exhaustion detection function.

*4 : A battery is exchangeable at on-line.

*5 : Use a couple of the CPU module of the same type (same Model and same suffix codes) for the CPU module duplex configuration.

CPU Function Specification

Common CPU Specifications

TASK EXECUTION

Execution speed:	Approx. 10 μ per Ksteps in an IL program
Number of Control Applications:	Max. 16 tasks
Task priority:	Can be specified (in 16 levels)
Task Execution Cycle:	5 msec or longer (by 5 msec. increments) (*1)

CPU MEMORY CAPACITY

Control Application capacity:	Max. 3MB (approx. 400 Ksteps in an IL program)
Data Area (*2):	Max. 8MB
Retained Data Area (*3):	Max. 700KB

*1 : When using the I/O module, task execution cycle is recommended more than 20 msec.

*2 : The data is not retained when the power is off.

*3 : The data is retained even if the power is off. The data is retained during a power failure (can be used to store tuning parameter settings for the control application).

Guideline of Control Application Capacity

As a guideline, the capacity of the control application is a total of the following:

■ Function blocks (POUs): Up to 512

- Regulator control blocks (e.g., indicator blocks, controller blocks, and manual loaders): Up to 128
- Others (e.g., calculation blocks, switch instrument blocks, and communication POU): Up to 384

■ Sequence program:

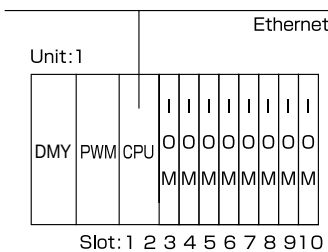
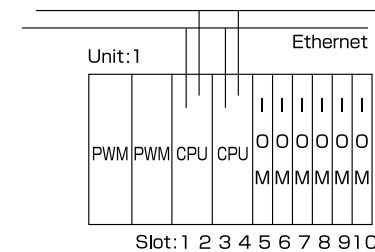
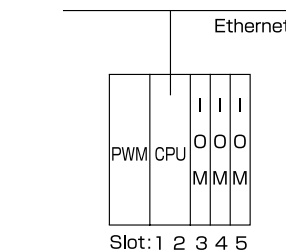
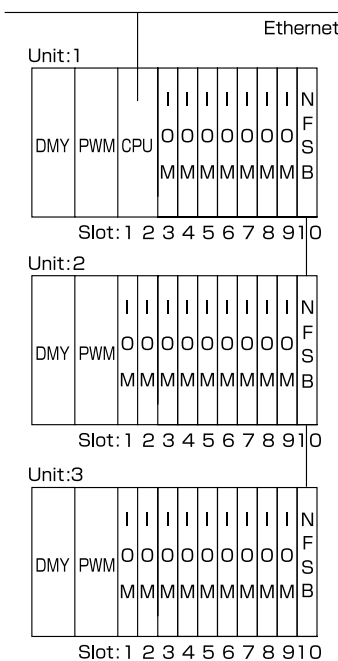
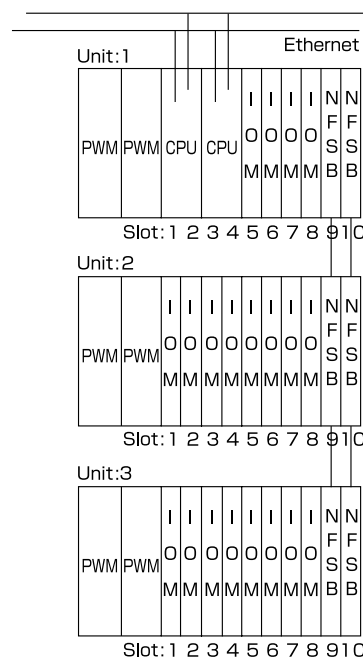
Up to 180 Ksteps in Ladder or up to 128 sequence tables each of which has 32 condition and 32 action rows.

Network (Ethernet) Specifications

- Communicate with up to 15 FCN/FCJ per FCN
- Communicate with up to 4 upper systems (*1) per FCN

*1 : Total number of VDS, FCN/FCJ OPC Server and FAST/TOOLS.

FCN Configuration (Redundant CPU, Power Supply and SB bus are all enabled)

Single Configuration
(One control unit)Redundant Configuration
(One control unit)Short Base Configuration
(One control unit: extension unit not available)Single Configuration
(One control unit + 2 extension Units)Redundant Configuration
(One control unit + 2 extension units)

■ Common modules for single and redundant configuration.

■ Common modules for single and extension unit

Occupied slot width

2 slots for CPU

1 slot for I/O

Abbr.	Description	Redundant
PWM	Power supply module	✓
CPU	CPU module	✓
IOM	I/O module	N/A
NFSB	SB bus repeat module	✓
DMY	Dummy cover	-

Maximum numbers of I/O modules

Base Module	Unit Configuration	Standard Configuration	Redundant (*1) Configuration
Base Module (NFBU200)	Control unit only	Max. 8	Max. 6
	With one extension unit (*2)	Max. 16	Max. 12
	With two extension units (*2)	Max. 25	Max. 20
Base Module (NFBU050)	Control unit only	Max. 3	N/A

*1: When CPU and SB bus repeat modules are duplexed.

*2: Wider temperature range is not available for the extension unit.

Long Type



Short Type



» FCN BASIC SPECIFICATIONS

CPU MODULES

WTR: Wider temperature range (-20°C to +70°C), N/A: (0°C to 55°C)

Model	Name	Suffix codes	WTR	Specification
NFCP501	CPU module for FCN (with 2 Ethernet ports)	- □ 0 □	N/A	• Duplex configuration: Possible (*1) • Hot-Swap: Possible • CPU Status LED: HRDY (Hardware Ready), RDY (System Ready), CTRL (Control Ready) • LAN Status LED: LINK (Connection Normal), ACT (Sending/Receiving) • SD Status LED: Lights (Mounted), Blinks (Accessed) • EXEC Status LED: Lights (Maintenance function Error), Blinks (Maintenance function Executed) • Max current consumption: 1200 mA (5V DC ± 5%) • Weight: 0.9 kg • Ethernet: 2 ports • RS-232-C: 1 port
		- □ 1 □	✓	
NFCP502	CPU module for FCN (with 4 Ethernet ports)	- □ 0 □	N/A	• Duplex configuration: Possible (*1) • Hot-Swap: Possible • CPU Status LED: HRDY (Hardware Ready), RDY (System Ready), CTRL (Control Ready) • LAN Status LED: LINK (Connection Normal), ACT (Sending/Receiving) • SD Status LED: Lights (Mounted), Blinks (Accessed) • EXEC Status LED: Lights (Maintenance function Error), Blinks (Maintenance function Executed) • Max current consumption: 1700 mA (5V DC ± 5%) • Weight: 0.9 kg • Ethernet: 4 ports • RS-232-C: 1 port
		- □ 1 □	✓	

*1 : Use a couple of the CPU module of the same type (same Model and same suffix codes) for the CPU module duplex configuration.

BASE MODULES

WTR: Wider temperature range (-20°C to +70°C), N/A: (0°C to 55°C)

Model	Name	Suffix codes	WTR	Specification
NFBU200	Base module (19-inch rack-mounted)	-S0 □	✓	• Max current consumption: 0.4 A (5 V) (Self-consumption) • Weight: 1.9kg
	Base module (DIN rail-mounted)	-S1 □	✓	• Max current consumption: 0.4 A (5 V) (Self-consumption) • Weight: 1.0kg
NFBU050	Short base module (DIN rail-mounted)	-S1 □	✓	• Max current consumption: 0.025 A (5 V) (Self-consumption) • Weight: 0.58kg

POWER SUPPLY MODULES

WTR: Wider temperature range (-20°C to +70°C), N/A: (0°C to 55°C)

Model	Name	WTR	Specification
NFPW441	Power supply module (100-120 V AC input)	N/A	• Duplex configuration: Possible • Hot-Swap: Possible
NFPW442	Power supply module (220-240 V AC input)	N/A	• Rated output: + 5.1 V DC, 7.8 A • Analog field power supply: Input: 24 V DC ± 10 %, 4 A, Duplexed (matching-diode) • LED: SYS (5 V system power output ON), FLD (24 V field power supply ON)
NFPW444	Power supply module (24 V DC input)	✓	• Checking terminals: + 5 V, + 24 V • Weight: 0.6 kg

SB BUS REPEAT MODULES

WTR: Wider temperature range (-20°C to +70°C), N/A: (0°C to 55°C)

Model	Name	WTR	Specification
NFSB100	SB bus repeat module	N/A	• Duplex configuration: Possible • Hot-Swap: Possible • Method: Serial communication (128 Mbps) • Distance: Max. 8 m per segment • LED: STATUS (Hardware Ready), SND (Sending), RCV (Receiving) • Max current consumption: 500mA (5 V DC) • Weight: 0.2 kg

Operation temperature range of the total component is decided by the narrowest range of each module (CPU, power supply, base, and I/O).

» FCN MODULE SPECIFICATIONS

DIGITAL I/O MODULES

WTR : Wider temperature range (-20°C to +70°C), N/A: (0°C to 55°C), PCT : Pressure Clamp Terminal available

Model	Description	WTR	PCT	MIL	Basic Specification	Specification	Common
NFDV141	Digital Input • 16 ch. • 100V to 120 V AC • Isolated	N/A	✓	N/A	• Functions: Status and Push button (edge count) • Max current consumption: 500 mA (5 V DC) • Weight: 0.3 kg	• Input response time: 160 ms or less (for status input) • Min. ON detection time: 200 ms (for push button input) • Max. ON/OFF cycle: 2.5 Hz (for push button input)	per 8 ch.
NFDV142	Digital Input • 16 ch. • 200 V to 240 V AC • Isolated	N/A	✓	N/A	• Functions: Status and Push button (edge count) • Max current consumption: 500 mA (5 V DC) • Weight: 0.3 kg	• Input response time: 160 ms or less (for status input) • Min. ON detection time: 200 ms (for push button input) • Max. ON/OFF cycle: 2.5 Hz (for push button input)	per 8 ch.
NFDV151	Digital Input • 32 ch. • 24 V DC • Isolated	✓	✓	✓ 50 pins	• Functions: Status and Push button (edge count) • Max current consumption: 500 mA (5 V DC) • Weight: 0.3 kg	• Input response time: 8 ms or less (for status input) • Min. ON detection time: 20 ms (for push button input) • Max. ON/OFF cycle: 25 Hz (for push button input)	per 16 ch. (Plus or Minus)
NFDV157	Digital Input • 32 ch. • 24V DC • Isolated	N/A	✓	N/A	• Functions: Status • Max current consumption: 350 mA (5 V DC) • Weight: 0.4 kg	• Input response time: 8 ms or less (for status input) • Min. ON detection time: 20 ms (for push button input) • Max. ON/OFF cycle: 25 Hz (for push button input)	per 16 ch. (Plus or Minus)
NFDV161	Digital Input • 64 ch. • 24V DC • Isolated	N/A	N/A	✓ 50 pins 2 sets	• Functions: Status and Push button (edge count) (*2) • Max current consumption: 550 mA (5 V DC) • Weight: 0.3 kg	• Input response time: 8 ms or less (for status input) • Min. ON detection time: 20 ms (for push button input) • Max. ON/OFF cycle: 25 Hz (for push button input)	per 16 ch. (Plus or Minus)
NFDV551	Digital Output • 32 ch. • 24 V DC • Isolated	✓	✓	✓ 50 pins	• Output fallback: Set to all channels • Max current consumption: 700 mA (5 V DC), 60 mA (24V DC) • Weight: 0.2 kg	• Output response time: 3 ms or less (for status output)	per 16 ch. (Minus)
NFDV557	Digital Output • 32 ch. • 24V DC • Isolated	N/A	✓	N/A	• Output fallback: Set to all channels • Max current consumption: 550mA (5 V DC), 60 mA (24V DC) • Weight: 0.3 kg	• Output response time: 3 ms or less (for status output)	per 16 ch. (Minus)
NFDV561	Digital Output • 64 ch. • 24V DC • Isolated	N/A	N/A	✓ 50 pins 2 sets	• Output fallback: Set to all channels • Max current consumption: 780 mA (5 V DC), 120 mA (24V DC) • Weight: 0.3 kg	• Output response time: 3 ms or less (for status output)	per 16 ch. (Minus)
NFDV532	Pulse Width Output • 4 ch. : UP/DOWN Pulse • 24 V DC • Isolated	N/A	✓	✓ 50 pins	• Output fallback: Set to all channels • Max current consumption: 550mA (5 V DC), 25 mA (24V DC) • Weight: 0.2 kg	• Pulse output accuracy: Min. 2 ms, 2 ms increments (error: Max. ± 1 ms)	for all ch. (Minus)
NFDR541	Relay Output • 16 ch. • 24 to 110 V DC or 100 to 240 V AC • Isolated	✓	✓	N/A	• Rated applied voltage: 24 to 110 V DC, 100 to 240 V AC • Output fallback: Set to all channels • Max current consumption: 780 mA (5 V DC) • Weight: 0.3 kg	• Output response time: 12 ms or less (for status output)	per 8 ch. (Plus or Minus)

Common Specification • LED: STATUS(Hardware normal), ACT(Operating) • Hot-Swap: Possible

*2 : Channels from 1 to 32 can be push button inputs.

COMMUNICATION MODULES

WTR : Wider temperature range (-20 to +70°C), N/A: (0°C to 55°C)

Model	Description	WTR	Basic Specification	Specification	Remarks
NFLR111	RS-232-C communication module (2 ports, 300 bps to 115.2 kbps)	N/A	• Max current consumption: 500 mA (5 V DC) • Weight: 0.3 kg	• Port: RS-232-C (2 ports) • Speed: 0.3 to 115.2kbps	D-sub 9 pins (female x 2)
NFLR121	RS-422/RS-485 communication module (2 ports, 300 bps to 115.2 kbps)	✓	Max current consumption: 500 mA (5 V DC) • Weight: 0.3 kg	• Port: RS-422/485 (2 ports) • Speed: 0.3 to 115.2kbps	Clamp terminal with M4 screws (5 poles x 2)
NFLF111	FOUNDATION Fieldbus communication module	✓ (*3)	• Max current consumption: 500 mA (5 V DC) • Weight: 0.4 kg	• Port: 4 ports • 16 devices per port • Speed: 31.25kbps • Link Active Scheduler (LAS)	Clamp terminal
NFLP121	PROFIBUS-DP communication module	N/A	• Max current consumption: 700 mA (5 V DC) • Weight: 0.3 kg	• Port: 1 port • 123 devices per module (if repeaters used)	D-sub 9 pins (female)
NFLF121	CANopen communication module	N/A	• Max current consumption: 700 mA (5 V DC) • Weight: 0.3 kg	• Port: 1 port • CiA 301 compliant • 126 devices per module	D-sub 9 pins (male)

Common Specification • LED: STATUS(Hardware normal), ACT(Operating), RCV(Receiving), SND(Sending)

*3 : The module with suffix codes -S □ 4 or -S □ 5 are required for wide temperature range.

FCN MODULE SPECIFICATIONS

ANALOG I/O MODULES

WTR : Wider temperature range (-20°C to +70°C), N/A: (0°C to 55°C), PCT : Pressure Clamp Terminal available

Model	Description	HART	WTR	PCT	MIL	Basic Specification	Specification
NFAI135	Analog Input • 4 to 20 mA • 8 ch. • Isolated ch.	✓	✓	✓	✓ 40 pins	- Withstanding voltage: 500 V AC between input and system, 500 V AC between channels - Transmitter power supply: 20.2 to 29.3 V (Output current limit: 25 mA) - Two wire and four wire transmitter setting per channel with connected terminal - Max current consumption: 360 mA (5 V DC), 450 mA (24 V DC) - Weight: 0.3 kg	- Accuracy: ± 0.1 % of full scale - Data refresh cycle: 10 ms - Input step response time: 100 ms - Temperature drift: Max. ± 0.01 % /°C
NFAI141	Analog Input • 4 to 20 mA • 16 ch. • Non-Isolated	✓	✓	✓	✓ 40 pins	- Transmitter power supply: 22.8 to 26.4 V (Output current limit: 27 mA) - Two wire and four wire transmitter setting per channel with pins - Max current consumption: 310 mA (5 V DC), 450 mA (24 V DC) - Weight: 0.2 kg	- Accuracy: ± 0.1 % of full scale - Data refresh cycle: 10 ms - Input step response time: 100 ms - Temperature drift: Max. ± 0.01 % /°C
NFAI143	Analog Input • 4 to 20 mA • 16 ch. • Isolated	✓	✓	✓	✓ 40 pins	- Withstanding voltage: 1500 V AC between input and system - Transmitter power supply: 24.0 to 25.5 V (Output current limit: 25 mA) - Two wire and four wire transmitter setting per channel with pins - Max current consumption: 230 mA (5 V DC), 540 mA (24 V DC) - Weight: 0.3 kg	- Accuracy: ± 0.1 % of full scale - Data refresh cycle: 10 ms - Input step response time: 100 ms - Temperature drift: Max. ± 0.01 % /°C
NFAV141	Analog Input • 1 to 5 V • 16 ch. • Non-Isolated	N/A	N/A	✓	✓ 40 pins	- Input: Differential input (allowable common mode voltage ± 1 V or less) - Max current consumption: 350 mA (5 V DC) - Weight: 0.2 kg	- Accuracy: ± 0.1 % of full scale - Data refresh cycle: 10 ms - Input step response time: 100 ms - Temperature drift: Max. ± 0.01 % /°C
NFAV142	Analog Input • -10 to +10 V • 16 ch. • Non-Isolated	N/A	N/A	✓	✓ 40 pins	- Max current consumption: 350 mA (5 V DC) - Weight: 0.2 kg	- Accuracy: ± 0.1 % of full scale - Data refresh cycle: 10 ms - Input step response time: 100 ms - Temperature drift: Max. ± 0.01 % /°C
NFAV144	Analog Input • -10 to +10 V or 1 to 5 V • 16 ch. • Isolated	N/A	✓	✓	✓ 40 pins	- Input signal: 1 to 5 V or -10 to +10 V set for all channels - Withstanding voltage: 1500 V AC between input and system - Max current consumption: 500 mA (5 V DC) - Weight: 0.2 kg	- Accuracy: ± 0.1 % of full scale - Data refresh cycle: 10 ms - Input step response time: 100 ms - Temperature drift: Max. ± 0.01 % /°C
NFAT141	TC/mV Input • 16 ch. • Isolated	N/A	N/A	✓	✓ 40 pins (*1)	- Input signal: Thermocouple or mV set for each channel from CH1 to CH16 - Burn out detection: Possible (all channels together), Detection time: 60 s - Withstanding voltage: 1500 V AC between input and system - Max current consumption: 450 mA (5 V DC) - Weight: 0.2 kg	- TC input accuracy: ± 0.03 % of full scale (-20 to 80 mV) - mV input accuracy: ± 0.032 % of full scale (-100 to 150 mV) - Data refresh cycle: 1 s - TC input temperature drift: Max. ± 30 ppm/°C - mV input temperature drift: Max. ± 32 ppm/°C
NFAR181	RTD Input • 12 ch. • Isolated	N/A	✓ (*2)	✓	N/A	- Input signal: Set for each channel - Burn out detection: Possible (all channels together), Detection time: 60 s - Withstanding voltage: 1500 V AC between input and system - Max current consumption: 450 mA (5 V DC) - Weight: 0.2 kg	- Accuracy: ± 0.03 % of full scale (0 to 400 Ω) - Data refresh cycle: 1 s - Temperature drift: Max. ± 30 ppm/°C

*1 : Use a MIL connector cable only for mV input.

*2 : The module with suffix codes -S □ 4 or -S □ 5 are required for wide temperature range.

ANALOG I/O MODULES

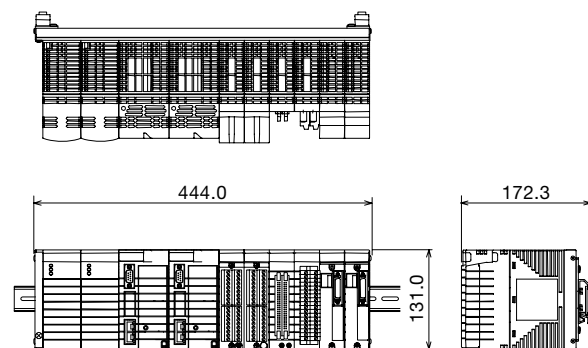
WTR : Wider temperature range (-20°C to +70°C), N/A: (0°C to 55°C), PCT : Pressure Clamp Terminal available

Model	Description	HART	WTR	PCT	MIL	Basic Specification	Specification
NFAP135	Pulse Input • 0 to 10kHz • 8 ch. • Isolated ch.	N/A	✓ (*3)	✓	✓ 40 pins	- Withstanding voltage: 500 V AC between input and system, 500 V AC between channels - Transmitter power supply: 24 V (30 mA) / 12 V (40 mA) Selectable - Max current consumption: 300 mA (5 V DC), 400 mA (24 V DC) - Weight: 0.3 kg	- Minimum input pulse width: 40 μ s - Data refresh cycle: 2 ms - Input type: Dry contact pulse (Open collector contact) Dry contact pulse (Relay contact) Voltage pulse Current pulse (Two-wired transmitter) Voltage pulse (Three-wired transmitt)
NFAF135	Frequency Input • 0.1Hz to 10kHz • 8 ch. • Isolated ch.	N/A	N/A	✓	✓ 40 pins	- Withstanding voltage: 500 V AC between input and system, 500 V AC between channels - Transmitter power supply: 24 V (30mA) / 12 V (40mA) Selectable - Max current consumption: 300 mA(5 V DC), 400 mA(24 V DC) - Weight: 0.3 kg	- Minimum input pulse width: 40 μ s - Data refresh cycle: 10 ms - Input type: Dry contact pulse (Open collector contact) Dry contact pulse (Relay contact) Voltage pulse
NFAI835	Analog I/O • 4 ch. input (4 to 20 mA) • 4 ch. output (4 to 20 mA) • Isolated ch.	✓	✓	✓	✓ 40 pins	- Withstanding voltage: 500 V AC between input/output and system, 500 V AC between channels - Output fallback: Set for each channel - Transmitter power supply: 20.2 to 29.3 V (Output current limit: 25 mA) - Two wire and four wire transmitter setting per channel with connected terminal - Max current consumption: 360 mA (5 V DC), 450 mA (24 V DC) - Weight: 0.3 kg	- Input accuracy: ± 0.1 % of full scale - Output accuracy: ± 0.3 % of full scale - Data refresh cycle: 10 ms - Input step response time: 100 ms, Output step response time: 100 ms - Temperature drift: Max. ± 0.01 % /°C
NFAI841	Analog I/O • 8 ch. input (4 to 20 mA) • 8 ch. output (4 to 20 mA) • Non-Isolated	✓	✓	✓	✓ 40 pins	- Output fallback: Set for each channel - Transmitter power supply: 22.8 to 26.4 V (Output current limit: 27 mA) - Two wire and four wire transmitter setting per channel with pins - Max current consumption: 310 mA(5 V DC), 500 mA(24 V DC) - Weight: 0.3 kg	- Input accuracy: ± 0.1 % of full scale - Output accuracy: ± 0.3 % of full scale - Data refresh cycle: 10 ms - Input step response time: 100 ms, Output step response time: 40 ms - Temperature drift: Max. ± 0.01 % /°C
NFAB841	Analog I/O • 8 ch. input (1 to 5 V) • 8 ch. output (4 to 20 mA) • Non-Isolated	N/A	N/A	✓	✓ 40 pins	- Input: Differential input (allowable common mode voltage is ± 1 V or less) - Output fallback: Set for each channel - Max current consumption: 310 mA(5 V DC), 250 mA(24 V DC) - Weight: 0.3 kg	- Input accuracy: ± 0.1 % of full scale - Output accuracy: ± 0.3 % of full scale - Data refresh cycle: 10 ms - Input step response time: 100 ms, Output step response time: 40 ms - Temperature drift: Max. ± 0.01 % /°C
NFAV542	Analog Output • -10 to +10 V • 16 channels • Non-Isolated	N/A	N/A	✓	✓ 40 pins	- Output fallback: Set for each channel - Max current consumption: 450 mA(5 V DC) - Weight: 0.2 kg	- Output accuracy: ± 0.3 % of full scale - Data refresh cycle: 10 ms - Output step response time: 40 ms - Temperature drift: Max. ± 0.01 % /°C
NFAI543	Analog Output • 4 to 20 mA • 16 ch. • Isolated	✓	✓	✓	✓ 40 pins	- Withstanding voltage: 1500 V AC between output and system - Output fallback: Set for each channel - Max current consumption: 230 mA(5 V DC), 540 mA(24 V DC) - Weight: 0.4 kg	- Output accuracy: ± 0.3 % of full scale - Data refresh cycle: 10 ms - Output step response time: 100 ms - Temperature drift: Max. ± 0.01 % /°C
NFAV544	Analog Output • -10 to +10 V • 16 ch. • Isolated	N/A	N/A	✓	✓ 40 pins	- Withstanding voltage: 1500 V AC between output and system - Output fallback: Set for each channel - Max current consumption: 860mA (5 V DC) - Weight: 0.2 kg	- Output accuracy: ± 0.3 % of full scale - Data refresh cycle: 10 ms - Output step response time: 40 ms - Temperature drift: Max. ± 0.01 % /°C

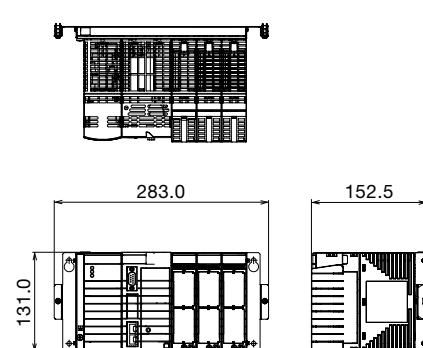
Common Specification • LED: STATUS(Hardware normal), ACT(Operating) • Hot-Swap: Possible

*3 : The module with suffix codes -S □ 4 or -S □ 5 are required for wide temperature range.

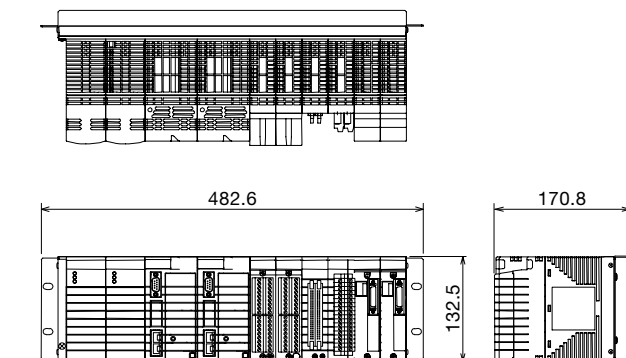
FCN (Long type, DIN rail-mounted)



FCN (Short type, DIN rail-mounted)

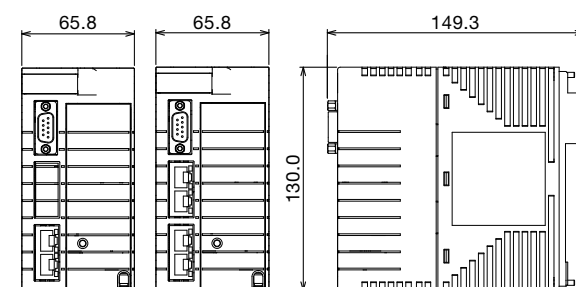


FCN (Long type, 19 inch rack-mounted)



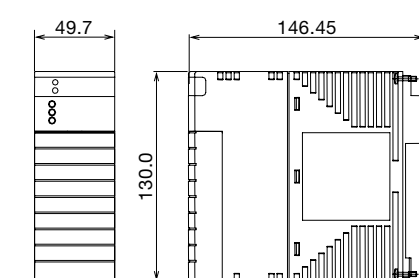
CPU module

FCN model: NFCP501/NFCP502



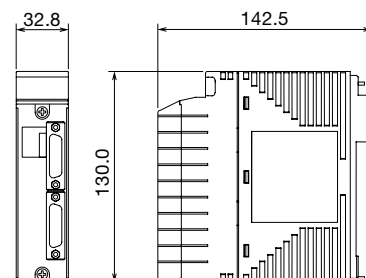
Power supply module

Model: NFPW441/NFPW442/NFPW444

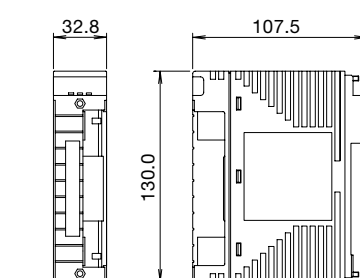


SB bus repeat module

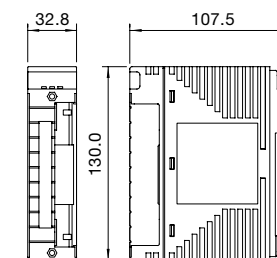
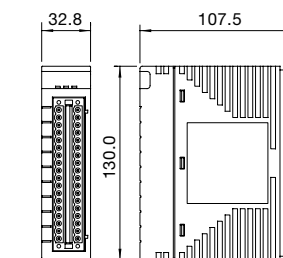
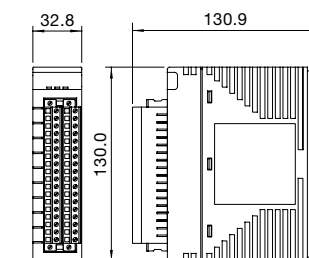
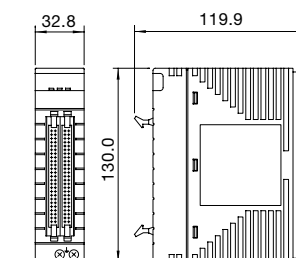
Model: NFSB100



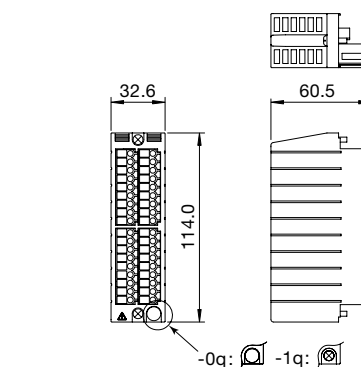
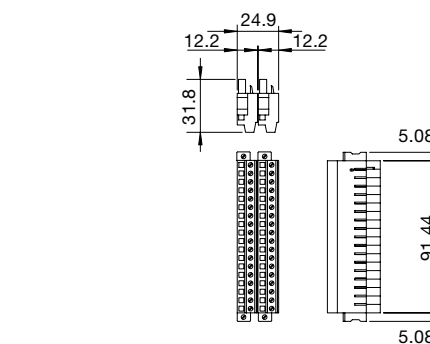
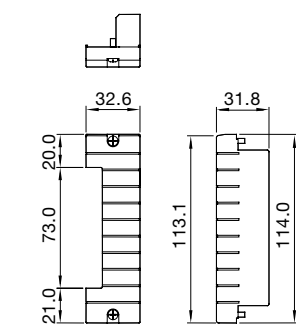
Analog I/O module

Model: NFAI135/NFAI141/NFAI143/NFAV141/NFAV142/
NFAV144/NFAT141/NFAR181/NFAP135/NFAF135/
NFAI835/NFAI841/NFAB841/NFAV542/NFAI543/
NFAV544

Digital I/O module

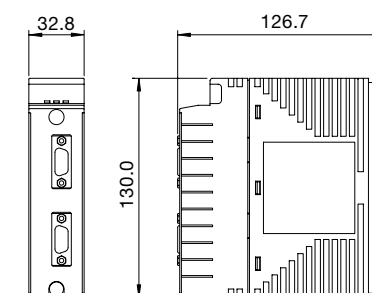
Model:
NFDV151/NFDV551/NFDV532Model:
NFDV141/NFDV142/NFDR541Model:
NFDV157/NFDV557Model:
NFDV161/NFDV561

Terminal block

Pressure clamp terminal block for analog module
Pressure clamp terminal block for digital module
(NFDV151, NFDV532, NFDV551)Pressure clamp terminal block for NFDV141,
NFDV142, NFDV157, NFDV557, NFDR541MIL cable connector cover for analog
and digital module

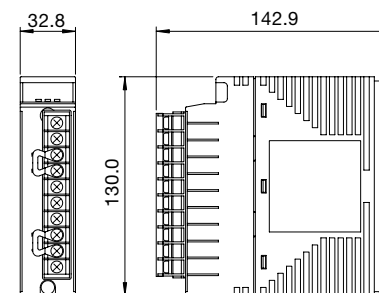
RS-232-C communication module

Model: NFLR111



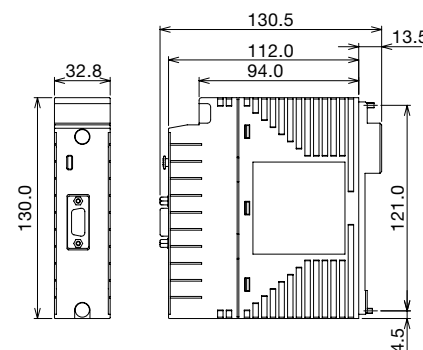
RS-422/RS-485 communication module

Model: NFLR121



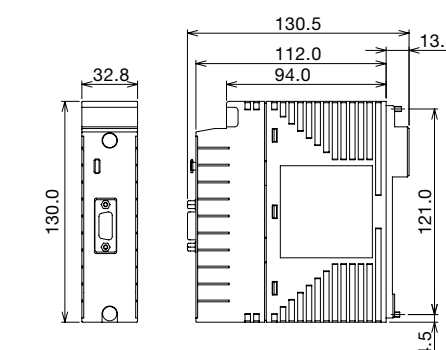
PROFIBUS-DP communication module

Model: NFLP121



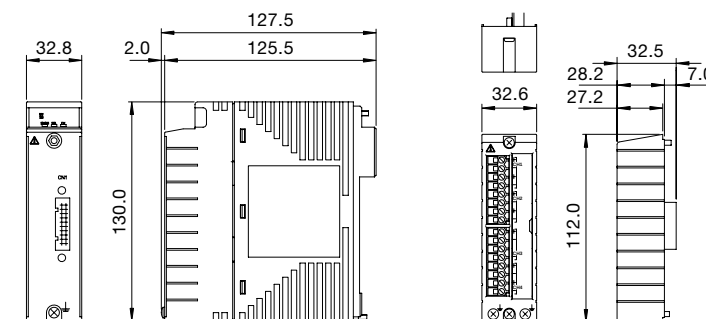
CANopen communication module

Model: NFLC121



FOUNDATION Fieldbus communication module

Model: NFLF111



» Software Selection

Name	Model	Suffix Codes/Options Codes
Software media		
FCN/FCJ software media	NT203AJ	PC11E
FCN/FCJ APPF software media (*1)	NT205AJ	PC11E

FCN/FCJ engineering tool license (FCN/FCJ software media: NT203AJ)

Logic Designer license	Run on PC	NT751FJ	LW11A
FCN/FCJ simulator license (USB module)	Run on PC	NT752AJ	LW11A

FCN/FCJ OPC server license (FCN/FCJ software media: NT203AJ)

FCN/FCJ OPC server for Windows	Run on PC	NT781AJ	LW11A
Duplexed network function license for FCN/FCJ OPC Server	Run on PC	NT783AJ	LW11A

» Hardware Selection (Non Explosion Model)

For the list of Explosion Protection Model, please refer to the General Specification.

Name		Model	Suffix Codes/Options Codes						
FCN common modules			Standard		with ISA standard G3 option				
			Standard func.	Extended func.	Standard func.	Extended func.			
CPU module with 2 Ethernet port (*2)	Std temp.	NFCP501 -	S05	W05	S06	W06			
	Exd temp.		S15	W15	S16	W16			
CPU module with 4 Ethernet port (*2)	Std temp.	NFCP502 -	S05	W05	S06	W06			
	Exd temp.		S15	W15	S16	W16			
Power supply module	100 to 120VAC	NFPW441 -	50		51				
Power supply module	220 to 240VAC	NFPW442 -	50		51				
Power supply module	24VDC	NFPW444 -	50		51				
		Installation	19inch rack		DIN rail	19inch rack	DIN rail		
Base module (long)		NFBU200 -	S05		S15		S06	S16	
Base module (short)		NFBU050 -	N/A		S15		N/A		S16
		Attachment	T-joint	T-joint with built-in terminator		T-joint	T-joint with built-in terminator		
SB bus repeat module for FCN		NFSB100 -	S50/SBT01	S50/SBT02		S51/SBT01	S51/SBT02		
		Cable Length	0.3m	1m	2m	4m	8m		
SB bus cable		NFCB301 -	C030	C100	C200	C400	C800		

Communication modules		Pressure clamp terminal block with surge absorber (SA)	Standard		with ISA standard G3 option	
			non SA	SA	non SA	SA
FOUNDATION Fieldbus communication module (4-ports)	Std temp.	NFLF111 -	S50	S50/F9S00	S51	S51/F9S00
	Exd temp.		S54	S54/F9S00	S55	S55/F9S00
RS-232-C communication module (2-ports, 300bps to 115.2kbps)		NFLR111 -	S50	N/A	S51	N/A
RS-422/RS-485 communication module (2-ports, 300bps to 115.2kbps)		NFLR121 -	S50	N/A	S51	N/A
PROFIBUS-DP communication module		NFLP121 -	S00	N/A	S01	N/A
CANopen communication module		NFLC121 -	S00	N/A	S01	N/A

MIL connector cables

	Cable Length	0.5m	1.0m	1.5m	2.0m	2.5m	3.0m (*5)
MIL connector cable for analog, NFCP050 built-in I/O (40 pole plug types) (*3)	KMS40 -	005	010	015	020	025	030
MIL connector cable (50 pole plug types) (*4)	KMS50 -	005	010	015	020	025	030
NFDV151,NFDV161,NFDV532, NFDV551, NFDV561							

MIL connector terminal blocks

		Standard
MIL connector terminal block for analog I/O modules except for NFAR181 and NFCP050 built-in I/O (40 pole plug types, M3.5) (*3)	TAS40 -	0N
MIL connector terminal block for digital I/O modules (50 pole plug types, M3.5) (*4)	TAS50 -	0N

Cover

Dummy cover for I/O module slots	NFDCV01
Dummy cover for power supply module slots	NFDCV02
MIL cable connector cover	NFCCC01

SB bus T-joint

SB bus T-joint	NFSBT01
SB bus T-joint with built-in terminator	NFSBT02

Test switch and lamp

Test switch for FCN digital input module NFDV151, NFDV161 (*6)	S9105FA
Test lamp for FCN digital output module NFDV532, NFDV551, NFDV561 (*7)	S9106FA
Cable for test switch / test lamp	A1417WL

Name		Model	Suffix Codes/Options Codes					
Input output modules (*8)		Terminal Block		Standard		with ISA standard G3 option		
						Pressure Clamp Terminal		MIL with cover
		Surge Absorber (SA)		non SA	SA	non SA	SA	
Analog Input module (4 to 20mA, 8-channels, Isolated channels)		NFAI135 -	S50/13S00	S50/13S10	S50/CCC01	S51/13S00	S51/13S10	S51/CCC01
Analog Input module (4 to 20mA, 16-channels, Non-Isolated)		NFAI141 -	S50/A4S00	S50/A4S10	S50/CCC01	S51/A4S00	S51/A4S10	S51/CCC01
Analog Input module (4 to 20mA, 16-channels, Isolated)		NFAI143 -	S50/A4S00	S50/A4S10	S50/CCC01	S51/A4S00	S51/A4S10	S51/CCC01
Analog Input module (1 to 5V, 16-channels, Non-Isolated)		NFAV141 -	S50/A4S00	S50/A4S10	S50/CCC01	S51/A4S00	S51/A4S10	S51/CCC01
Analog Input module (-10 to +10V, 16-channels, Non-Isolated)		NFAV142 -	S50/A4S00	S50/A4S10	S50/CCC01	S51/A4S00	S51/A4S10	S51/CCC01
Analog Input module (-10 to +10V, 16-channels, Isolated)		NFAV144 -	S50/A4S00	S50/A4S10	S50/CCC01	S51/A4S00	S51/A4S10	S51/CCC01
TC/mV Input module (16-channels, Isolated)		NFAT141 -	S50/T4S00	S50/T4S10	S50/CCC01	S51/T4S00	S51/T4S10	S51/CCC01
RTD Input module (12-channels, Isolated)	Std temp.	NFAR181 -	S50/R8S00	S50/R8S10	N/A	S51/R8S00	S51/R8S10	N/A
	Exd temp.		S54/R8S00	S54/R8S10	N/A	S55/R8S00	S55/R8S10	N/A
Pulse Input module (Pulse Count, 0 ~ 10kHz, 8-channels, Isolated channels)	Std temp.	NFAP135 -	S50/13S00	S50/13S10	S50/CCC01	S51/13S00	S51/13S10	S51/CCC01
	Exd temp.		S54/13S00	S54/13S10	S54/CCC01	S55/13S00	S55/13S10	S55/CCC01
Frequency Input module (Pulse Count, 0.1Hz to 10kHz, 8-channels, Isolated channels)		NFAF135 -	S50/13S00	S50/13S10	S50/CCC01	S51/13S00	S51/13S10	S51/CCC01
Analog I/O module (4 to 20mA input/output, 4-channels input/output, Isolated channels)		NFAI835 -	S50/13S00	S50/13S10	S50/CCC01	S51/13S00	S51/13S10	S51/CCC01
Analog I/O module (4 to 20mA input/output, 8-channels input/output, Non-Isolated)		NFAI841 -	S50/A4S00	S50/A4S10	S50/CCC01	S51/A4S00	S51/A4S10	S51/CCC01
Analog I/O module (1 to 5V input, 4 to 20mA output, 8-channels input/output, Non-Isolated)		NFAB841 -	S50/A4S00	S50/A4S10	S50/CCC01	S51/A4S00	S51/A4S10	S51/CCC01
Analog Output module (-10 to +10V, 16-channels, Non-Isolated)		NFAV542 -	S50/A4S00	S50/A4S10	S50/CCC01	S51/A4S00	S51/A4S10	S51/CCC01
Analog Output module (4 to 20mA, 16-channels, Isolated)		NFAI543 -	S50/A4S00	S50/A4S10	S50/CCC01	S51/A4S00	S51/A4S10	S51/CCC01
Analog Output module (-10 to +10V, 16-channels, Isolated)		NFAV544 -	S50/A4S00	S50/A4S10	S50/CCC01	S51/A4S00	S51/A4S10	S51/CCC01
Digital Input module (16-channels, 100V to 120VAC, Isolated)		NFDV141 -	P50/C4S50	N/A	N/A	P51/C4S50	N/A	N/A
Digital Input module (16-channels, 200V to 240VAC, Isolated)		NFDV142 -	P00/C4S60	N/A	N/A	P01/C4S60	N/A	N/A
Digital Input module (32-channels, 24VDC, Isolated)		NFDV151 -	P60/B5S00	P60/B5S10	P60/CCC01	P61/B5S00	P61/B5S10	P61/CCC01
Digital Input module (32-channels, 24VDC, Isolated, Pressure Clamp Terminal only)		NFDV157 -	S50	N/A	N/A	S51	N/A	N/A
Digital Input module (64-channels, 24VDC, Isolated)		NFDV161 -	N/A	N/A	P50	N/A	N/A	P51
Digital Output module (32-channels, 24VDC, Isolated)		NFDV551 -	P60/D5S00	P60/D5S10	P60/CCC01	P61/D5S00	P61/D5S10	P61/CCC01
Digital Output module (32-channels, 24VDC, Isolated, Pressure Clamp Terminal only)		NFDV557 -	S50	N/A	N/A	S51	N/A	N/A
Digital Output module (64-channels, 24VDC, Isolated)		NFDV561 -	N/A	N/A	P50	N/A	N/A	P51
Pulse Width Output module (4-channels, Up Pulse/Down Pulse, 24VDC, Isolated)		NFDV532 -	P10/D5S00	P10/D5S10	P10/CCC01	P11/D5S00	P11/D5S10	P11/CCC01
Relay Output module (16-channels, 24 to 110VDC/100 to 240VAC, Isolated)		NFDR541 -	P50/C4S70	N/A	N/A	P51/C4S70	N/A	N/A

Pressure clamp terminal blocks

	Surge Absorber (SA)	non SA	SA
Pressure clamp terminal block for analog (16-channels): NFAI141,NFAV141,NFAV142,NFAI143,NFAI841,NFAB841,NFAV542, NFAI543	NFTA4S -	00	10
Pressure clamp terminal block for thermocouple/mV (16-channels) NFAT141	NFTT4S -	00	10
Pressure clamp terminal block for RTD (12-channels) NFAR181	NFTR8S -	00	10
Pressure clamp terminal block for digital input (32-channels) NFDV151	NFTB5S -	00	10
Pressure clamp terminal block for digital output (32-channels) NFDV532, NFDV551	NFTD5S -	00	10
Pressure clamp terminal block for analog isolated channels (8-channels): NFAI135,NFAP135,NFAI835	NFTI3S -	00	10
Pressure clamp terminal block for digital (16-channels) NFDV141	NFTC4S -	50	N/A
Pressure clamp terminal block for digital (16-channels) NFDV142	NFTC4S -	60	N/A
Pressure clamp terminal block for relay output (16-channels) NFDR541	NFTC4S -	70	N/A
Pressure clamp terminal block for digital (32-channels) NFDV157,NFDV557	NFTC5S -	00	N/A
Pressure clamp terminal block for FOUNDATION Fieldbus NFLF111	NFTF9S -	00	N/A

*1: Please refer to the detailed applicable portfolios in FCN/FCJ APPF software media on "Engineering: Application Portfolio" page.

*2: Two suffix codes specifying the applicable portfolios are prepared for NFCP501 and NFCP502. Please refer to the detailed applicable portfolios for each suffix (-S: with Standard functions, -W: with Extended functions) on "Engineering: Application Portfolio" page.

*3 : mV input is only applicable for NFAT141.

*4 : Two terminal blocks can be connected with NFDV161 or NFDV561 (64-channels type).

*5 : Cable length to 25.0m is available. Extension unit is 1m.

*6 : As for NFDV161, cable (A1417WL) is required and two sets of switches are required when all channels (1 to 32ch and 33 to 64ch) are used at the same time. As for NFDV151, it can be directly mounted or connected with cable (A1417WL).

*7 : As for NFDV561, cable (A1417WL) is required and two sets of switches are required when all channels (1 to 32ch and 33 to 64ch) are used at the same time. As for NFDV551, it can be directly mounted or connected with cable (A1417WL).

*8 : Suffix Code for the following HART module is changed from "S □ □ " to "H □ □ ": NFAI135, NFAI835, NFAI141, NFAI143, NFAI543, NFAI841