MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

YOKOGAWA

NFDV161-P01 S2

64-CHANNEL DIGITAL INPUT MODULE

Used with the applicable STARDOM FCN configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Yokogawa Bulletin 34P02A00-81E, p. 12 (family specifications)

FCN MODULE SPECIFICATIONS

CPU MODULES

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

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 (5 V 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 (5 V 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 ℃ to +70 ℃), N/A: (0 ℃ to 55 ℃)

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: 1.9 kg
	Base module (DIN rail-mounted)	-S1 ☐	✓	• Max current consumption: 0.4 A (5 V) (Self-consumption) • Weight: 1.0 kg
NFBU050	Short base module (DIN rail-mounted)	-S1 ☐	✓	• Max current consumption: 0.025 A (5 V) (Self-consumption) • Weight: 0.6 kg
N2BU051	Short base module (For E2 bus, DIN rail-mounted)	-S1 ☐	✓	• Max current consumption: 0.035 A (5 V) (Self-consumption) • Weight: 0.6 kg
N2BU030	Compact base module (DIN rail-mounted)	-S1 ☐	✓	• Max current consumption: 0.025 A (5 V) (Self-consumption) • Weight: 0.5 kg

POWER SUPPLY MODULES

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

Model	Name	WTR	Specification
NFPW441	Power supply module (100-120 V AC input)	N/A	• Duplex configuration: Possible • Hot-Swap: Possible • 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) • Checking terminals: +5 V, +24 V • Weight: 0.6 kg
NFPW442	Power supply module (220-240 V AC input)	N/A	
NFPW444	Power supply module (24 V DC input)	✓	

E2 BUS INTERFACE MODULE

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

Model	Name	WTR	Specification
N2EB100	E2 bus interface module	✓	• Duplex configuration: Possible • Hot-Swap: Possible • Method: Serial communication (100 Mbps) • Distance: Max.100 m between two units • Extension units: Max.8 units • LED: RDY (Hardware Normal), ACT (In transmission), LNK (Connection Normal) • Max current consumption: 500 mA (5 V DC) • Weight: 0.2 kg

SB BUS REPEAT MODULES

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

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: 500 mA (5 V DC) • Weight: 0.2 kg

DIGITAL I/O MODULES

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

Model	Description	WTR	PCT	MIL	Basic Specification	Specification	Common
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)
NFDV161	Digital Input • 64 ch. • 24 V 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 (24 V DC) • Weight: 0.2 kg	• Output response time: 3 ms or less (for status output)	per 16 ch. (Minus)
NFDV561	Digital Output • 64 ch. • 24 V 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 (24 V 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: 550 mA (5 V DC), 25 mA (24 V DC) • Weight: 0.2 kg	• Pulse output accuracy: Min.2 ms, 2 ms increments (error: Max. ±1 ms)	for all ch. (Minus)
NFDR541 (*3)	Relay Output • 16 ch. • 24 to 125 V DC (*4) 100 to 240 V AC, 50/60 Hz • Isolated	✓	✓	N/A	•Rated applied voltage: 24 to 125 V DC (*4), 100 to 240 V AC, 50/60 Hz •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.
*3 : Suffix code -T
*4 : In using an inductive load, the voltage range is 24 to 110 V DC.

COMMUNICATION MODULES

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

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 115.2 kbps	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 115.2 kbps	Clamp terminal with M4 screws (5 poles x 2)
NFLF111	FOUNDATION Fieldbus communication module	✓ (*4)	• Max current consumption: 500 mA (5 V DC) • Weight: 0.4 kg	• Port: 4 ports • 16 devices per port • Speed: 31.25 kbps • 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)
NFLC121	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)
*4 : The module with suffix codes –S☐4 or –S☐5 are required for wide temperature range.