

Remote I/O R7F4D Series

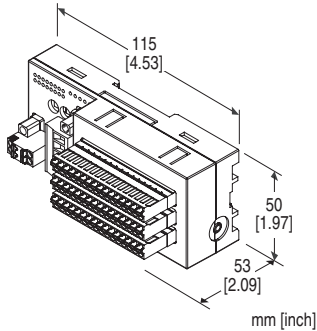
DeviceNet® I/O MODULE

(NPN discrete input, 16 points, tension clamp terminal block)

Functions & Features

- Converts discrete I/O data to the open network fieldbus (DeviceNet)

DeviceNet is registered trademark of ODVA.



MODEL: R7F4DD-DA16A-C[1]

ORDERING INFORMATION

- Code number: R7F4DD-DA16A-C[1]
- Specify a code from below for [1].
(e.g. R7F4DD-DA16A-C/Q)
- Specify the specification for option code /Q
(e.g. /C01)

I/O TYPE

DA16A: NPN discrete input, 16 points

TERMINAL BLOCK

C: Euro type connector terminal for communication and power supply
Tension clamp terminal block for input

[1] OPTIONS

blank: none

/Q: With options (specify the specification)

SPECIFICATIONS OF OPTION: Q

COATING (For the detail, refer to our web site.)

/C01: Silicone coating

/C02: Polyurethane coating

/C03: Rubber coating

RELATED PRODUCTS

- PC configurator software (model: R7CFG)
- EDS file

The EDS file and configurator software are downloadable at our web site.

A dedicated cable is required to connect the module to the PC. Please refer to the internet software download site or the users manual for the PC configurator for applicable cable types.

GENERAL SPECIFICATIONS

Connection

Communication, power supply:

Euro type connector terminal

Input: Tension clamp terminal block

Housing material: Flame-resistant resin (gray)

Isolation: Input or exc. supply to communication/power supply

Discrete input status indicator LED: Green LED turns on with input ON

Configurator connection: 2.5 dia. miniature jack

DeviceNet COMMUNICATION

Communication/power supply cable: Approved for DeviceNet

Baud rate setting: 125 kbps, 250 kbps, 500 kbps, auto-tracking (DIP switch, factory default: auto-tracking)
(Refer to the instruction manual.)

Node address setting: 0 - 63 (rotary switch, factory default: 00)

(Refer to the instruction manual.)

Status indicator LEDs: MS, NS

(Refer to the instruction manual for details.)

INPUT SPECIFICATIONS

Common: Positive common (NPN) per 16 points

Number of inputs: 16

Maximum inputs applicable at once: No limit (at 24 V DC)

Sensor excitation: 24 V DC $\pm 10\%$; ripple 5 %p-p max., ≤ 2 A (including discrete input load charge); rated current 8 A

ON voltage / current: ≥ 17 V DC (X0 through XF to +24V) / ≥ 2.3 mA

OFF voltage / current: ≤ 5 V DC (X0 through XF to +24V) / ≤ 0.75 mA

Input current: ≤ 3.5 mA per point at 24 V DC

Input resistance: Approx. 7.2 k Ω

ON delay: ≤ 0.5 msec.

OFF delay: ≤ 0.5 msec.

INSTALLATION

Supply voltage: 11 - 25 V DC (supplied from communication/power supply terminal block)

Current consumption:

Approx. 50 mA @ 24 V DC

Approx. 60 mA @ 11 V DC

Operating temperature: -10 to +55°C (14 to 131°F)

Storage temperature: -20 to +65°C (-4 to +149°F)

Operating humidity: 30 to 90 %RH (non-condensing)

Atmosphere: No corrosive gas or heavy dust

Mounting: Surface or DIN rail (35 mm rail)

Weight: 150 g (0.33 lb)

PERFORMANCE

Insulation resistance: $\geq 100 \text{ M}\Omega$ with 500 V DC

Dielectric strength: 1500 V AC @ 1 minute

(input or exc. supply to communication/power supply)

STANDARDS & APPROVALS

EU conformity:

EMC Directive

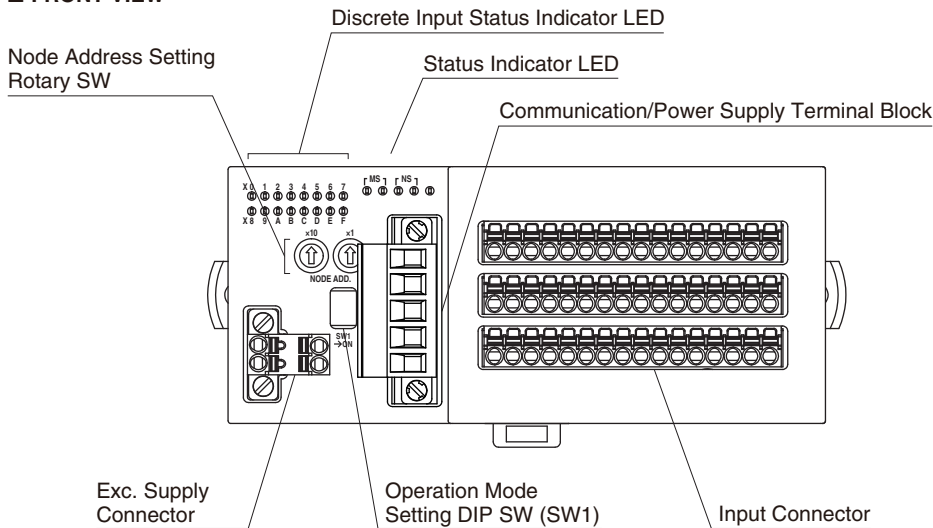
EMI EN 61000-6-4

EMS EN 61000-6-2

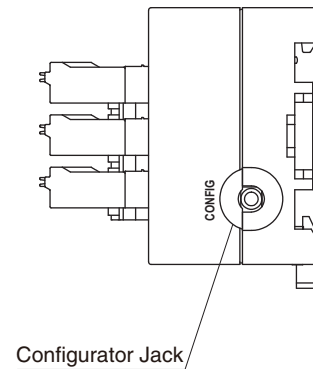
RoHS Directive

EXTERNAL VIEW

FRONT VIEW



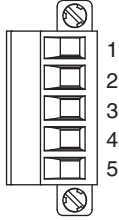
SIDE VIEW



TERMINAL ASSIGNMENTS

■COMMUNICATION/POWER SUPPLY TERMINAL ASSIGNMENT

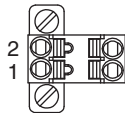
Unit side connector: MSTB2,5/5-GF-5,08AU (Phoenix contact)
 Cable side connector: MSTB2,5/5-STF-5,08AU (Phoenix contact)
 Applicable wire size: 0.2 - 2.5mm²
 Stripped length: 7mm



| PIN NO. | COLOR | ID | FUNCTION |
|---------|-------|-------|--------------------------------|
| 1 | Red | V+ | Communication/power supply (+) |
| 2 | White | CAN_H | Network data High |
| 3 | — | Drain | Shield |
| 4 | Blue | CAN_L | Network data Low |
| 5 | Black | V- | Communication/power supply (-) |

■EXC. SUPPLY TERMINAL ASSIGNMENT

Unit side connector: MCV1,5/2-GF-3,5 (Phoenix contact)
 Cable side connector: TFMC1,5/2-STF-3,5 (Phoenix contact)
 Applicable wire size: 0.2 - 1.5mm²
 Stripped length: 10mm
 Recommended solderless terminal:
 AI0,25-10YE 0.25mm² (Phoenix contact)
 AI0,34-10TQ 0.34mm² (Phoenix contact)
 AI0,5-10WH 0.5mm² (Phoenix contact)
 AI0,75-10GY 0.75mm² (Phoenix contact)
 AI1-10 1.0mm² (Phoenix contact)
 AI1,5-10 1.5mm² (Phoenix contact)



| PIN NO. | ID | FUNCTION |
|---------|-----------|---------------|
| 1 | SNSR.EXC+ | Exc. supply + |
| 2 | SNSR.EXC- | Exc. supply - |

INPUT TERMINAL ASSIGNMENT

Unit side connector: MCV1,5/16-G-3,5 (Phoenix contact)

Cable side connector: FMC1,5/16-ST-3,5 (Phoenix contact)

Applicable wire size: 0.2 - 1.5mm²

Stripped length: 10mm

Recommended Solderless Terminal:

AI0,25-10YE 0.25mm² (Phoenix contact)

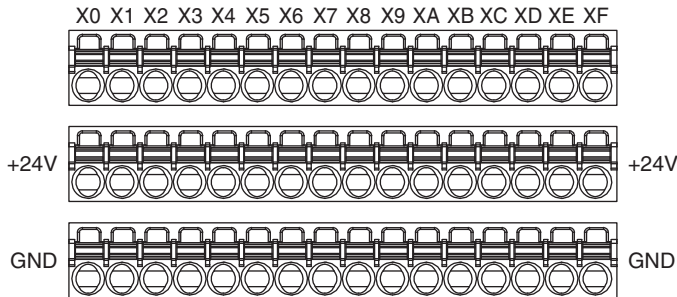
AI0,34-10TQ 0.34mm² (Phoenix contact)

AI0,5-10WH 0.5mm² (Phoenix contact)

AI0,75-10GY 0.75mm² (Phoenix contact)

AI1-10 1.0mm² (Phoenix contact)

AI1,5-10 1.5mm² (Phoenix contact)

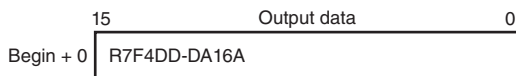


| PIN NO. | ID | FUNCTION | PIN NO. | ID | FUNCTION |
|---------|----|----------|---------|----|----------|
| X0 | 1 | X0 | X8 | 1 | X8 |
| | 2 | +24V | | 2 | +24V |
| | 3 | GND | | 3 | GND |
| X1 | 1 | X1 | X9 | 1 | X9 |
| | 2 | +24V | | 2 | +24V |
| | 3 | GND | | 3 | GND |
| X2 | 1 | X2 | XA | 1 | XA |
| | 2 | +24V | | 2 | +24V |
| | 3 | GND | | 3 | GND |
| X3 | 1 | X3 | XB | 1 | XB |
| | 2 | +24V | | 2 | +24V |
| | 3 | GND | | 3 | GND |
| X4 | 1 | X4 | XC | 1 | XC |
| | 2 | +24V | | 2 | +24V |
| | 3 | GND | | 3 | GND |
| X5 | 1 | X5 | XD | 1 | XD |
| | 2 | +24V | | 2 | +24V |
| | 3 | GND | | 3 | GND |
| X6 | 1 | X6 | XE | 1 | XE |
| | 2 | +24V | | 2 | +24V |
| | 3 | GND | | 3 | GND |
| X7 | 1 | X7 | XF | 1 | XF |
| | 2 | +24V | | 2 | +24V |
| | 3 | GND | | 3 | GND |

DATA ALLOCATION

'Begin' address is determined by the R7F4DD's node address and the master setting.

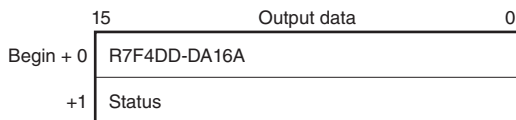
Without status



Input data

None

With status

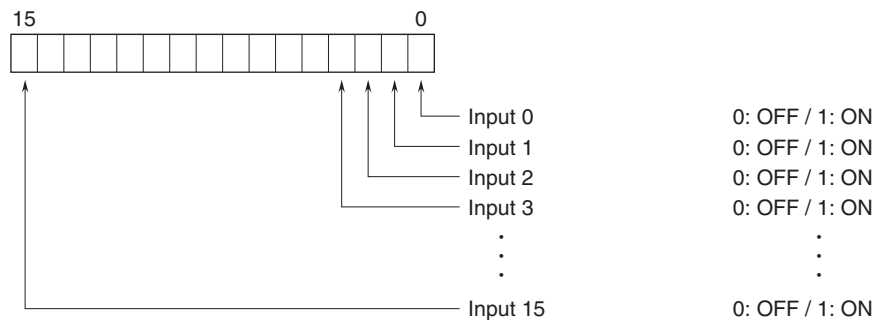


Input data

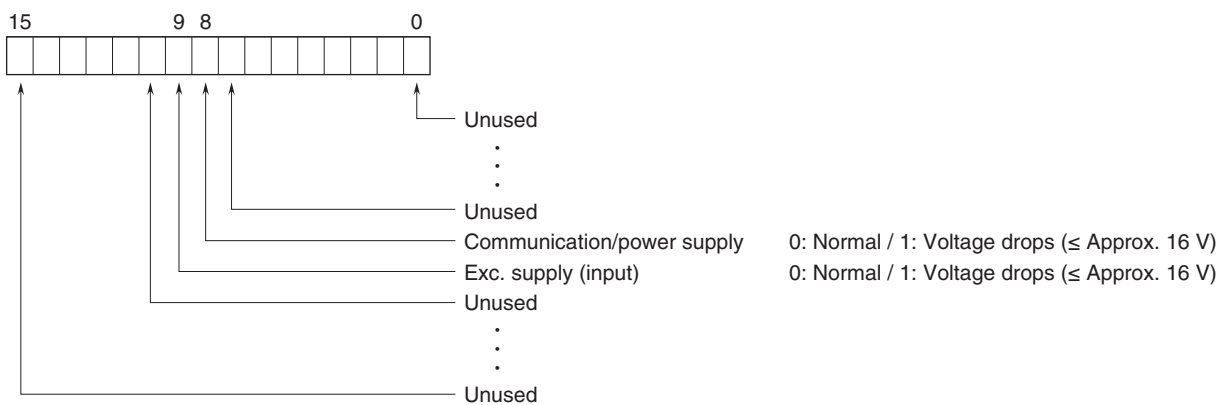
None

I/O DATA DESCRIPTIONS

DISCRETE INPUT



STATUS



TRANSMISSION DATA DESCRIPTIONS

■ I/O DATA

(Unit: word)

| MODEL | OUTPUT DATA* ¹ (R7F4DD to master) | INPUT DATA* ² (master to R7F4DD) |
|--------------|---|--|
| R7F4DD-DA16A | 1 | 0 |

■ STATUS

Status signal can be included in the transmission data when the SW1-3 is ON.

For details, refer to "STATUS in I/O DATA DESCRIPTIONS:"

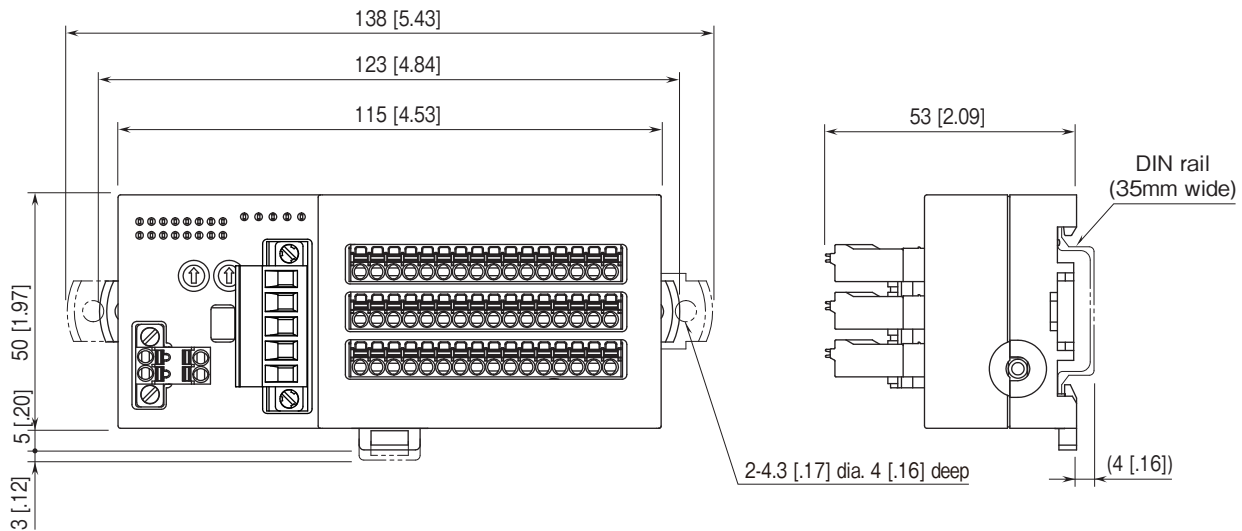
(Unit: word)

| STATUS | OUTPUT DATA* ¹ (R7F4DD to master) | INPUT DATA* ² (master to R7F4DD) |
|---------|---|--|
| With | 1 | 0 |
| Without | 0 | 0 |

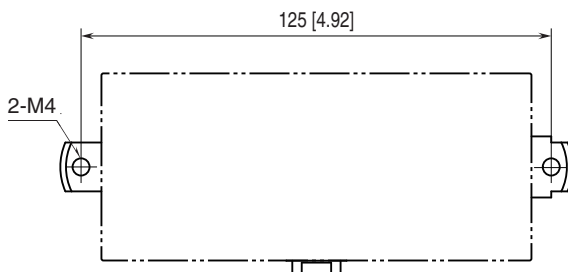
*1. Output Data means those sent to the master.

*2. Input Data means those received from the master.

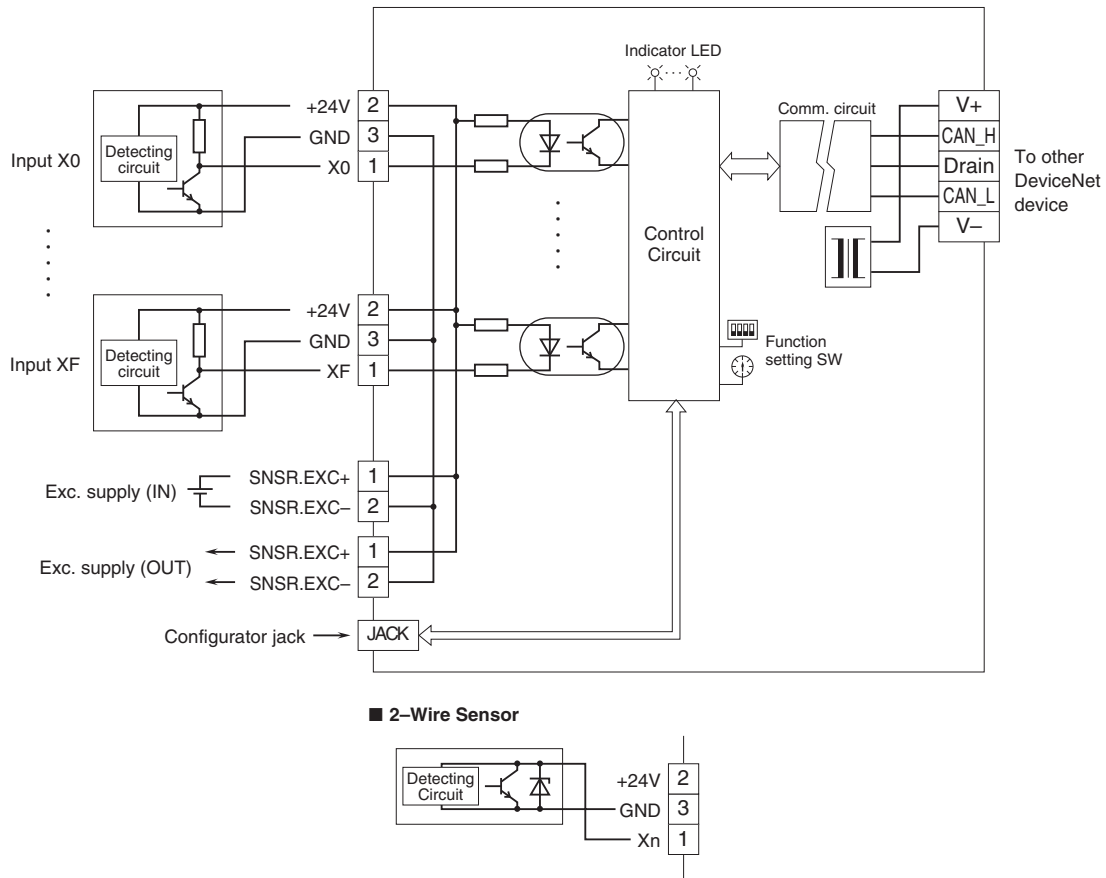
EXTERNAL DIMENSIONS unit: mm [inch]



MOUNTING REQUIREMENTS unit: mm [inch]



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.