

Remote I/O R7F4D Series

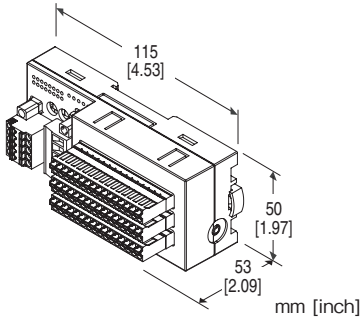
DeviceNet® I/O MODULE

(NPN discrete input, NPN discrete output, 8 points each, 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-DAC16C-C[1]

ORDERING INFORMATION

- Code number: R7F4DD-DAC16C-C[1]
- Specify a code from below for [1].
(e.g. R7F4DD-DAC16C-C/Q)
- Specify the specification for option code /Q
(e.g. /C01)

I/O TYPE

DAC16C: NPN discrete input & NPN discrete output, 8 points each

TERMINAL BLOCK

C: Euro type connector terminal for communication and power supply
Tension clamp terminal block for I/O

[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, exc. supply:

Euro type connector terminal

I/O: Tension clamp terminal block

Housing material: Flame-resistant resin (gray)

Isolation: Input or exc. supply 1 to output or exc. supply 2 to communication/power supply

Discrete I/O status indicator LED: Green LED turns on with I/O 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 8 points

Number of inputs: 8

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

Sensor excitation: 24 V DC $\pm 10\%$; ripple 5 %p-p max., ≤ 1 A (including discrete input load charge); rated current 8 A

ON voltage / current: ≥ 17 V DC (X0 through X7 to +24V) / ≥ 2.3 mA

OFF voltage / current: ≤ 5 V DC (X0 through X7 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.

OUTPUT SPECIFICATIONS

Common: Negative common (NPN) per 8 points

Number of output: 8 points

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

Rated load voltage: 24 V DC $\pm 10\%$; ripple 5 %p-p max.,
 ≤ 1 A (including discrete output load charge); rated current
8 A

Rated output current: 0.1 A per point, 0.8 A per common

Residual voltage: ≤ 1.2 V

Leakage current: ≤ 0.1 mA

ON delay: ≤ 0.2 msec.

OFF delay: ≤ 0.5 msec.

With shortcircuit protection

With overheat protection

(When driving an inductive load, connect a diode in parallel
with the load.)

INSTALLATION

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

Current consumption:

Approx. 50 mA @ 24 V DC

Approx. 70 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: 160 g (0.35 lb)

PERFORMANCE

Insulation resistance: ≥ 100 M Ω with 500 V DC

Dielectric strength: 1500 V AC @ 1 minute

(input or exc. supply 1 or output or exc. supply 2 to
communication/power supply)

500 V AC @ 1 minute

(input or exc. supply 1 to output or exc. supply 2)

STANDARDS & APPROVALS

EU conformity:

EMC Directive

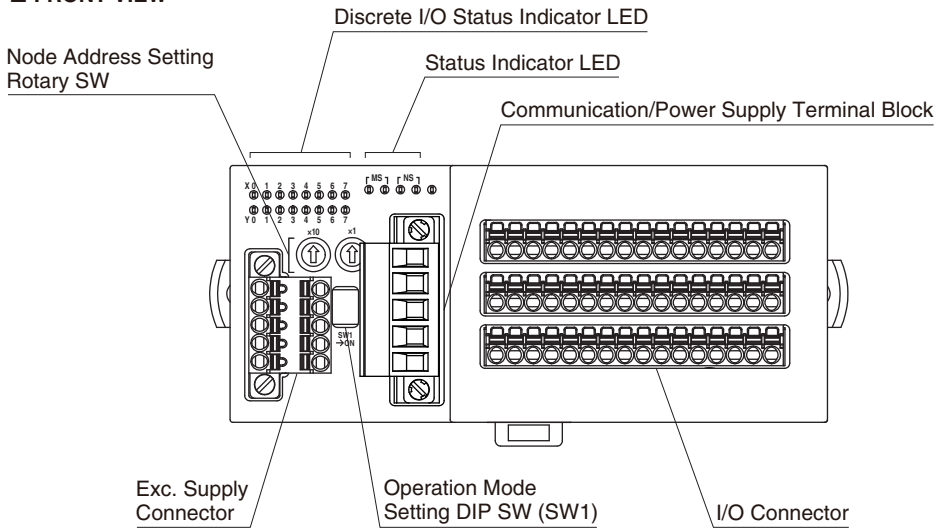
EMI EN 61000-6-4

EMS EN 61000-6-2

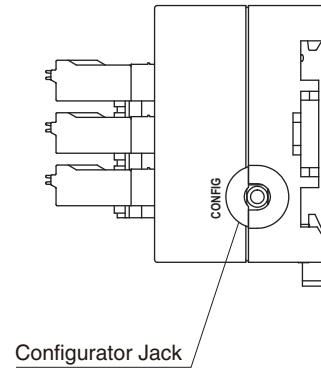
RoHS Directive

EXTERNAL VIEW

FRONT VIEW



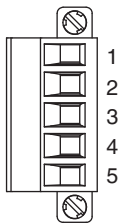
SIDE VIEW



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: MCV1,5/5-GF-3,5 (Phoenix contact)

Cable side connector: TFMC1,5/5-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)

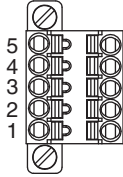
AI0,34-10TQ 0.34mm² (Phoenix contact)

AI0,5-10WH 0.5mm² (Phoenix contact)

AI0,75-10GY 0.75mm² (Phoenix contact)

AI1-10 1.0mm² (Phoenix contact)

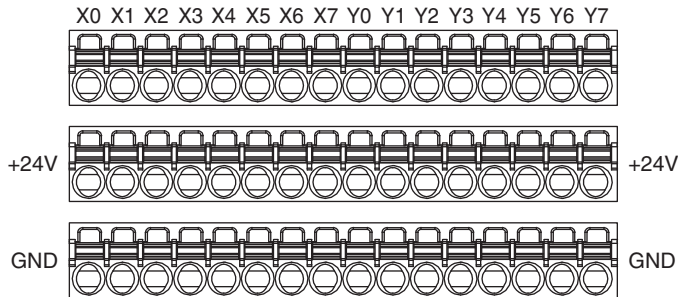
AI1,5-10 1.5mm² (Phoenix contact)



PIN NO.	ID	FUNCTION
1	SNSR.EXC1 +	Exc. supply 1 + (input)
2	SNSR.EXC1 -	Exc. supply 1 - (input)
3	NC	Unused
4	SNSR.EXC2 +	Exc. supply 2 + (output)
5	SNSR.EXC2 -	Exc. supply 2 - (output)

I/O 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)

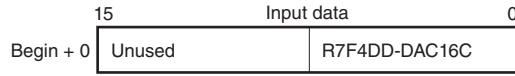
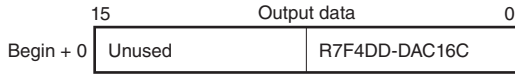


PIN NO.	ID	FUNCTION	PIN NO.	ID	FUNCTION
X0	1	X0	Y0	1	Y0
	2	+24V		2	+24V
	3	GND		3	GND
X1	1	X1	Y1	1	Y1
	2	+24V		2	+24V
	3	GND		3	GND
X2	1	X2	Y2	1	Y2
	2	+24V		2	+24V
	3	GND		3	GND
X3	1	X3	Y3	1	Y3
	2	+24V		2	+24V
	3	GND		3	GND
X4	1	X4	Y4	1	Y4
	2	+24V		2	+24V
	3	GND		3	GND
X5	1	X5	Y5	1	Y5
	2	+24V		2	+24V
	3	GND		3	GND
X6	1	X6	Y6	1	Y6
	2	+24V		2	+24V
	3	GND		3	GND
X7	1	X7	Y7	1	Y7
	2	+24V		2	+24V
	3	GND		3	GND

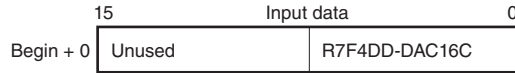
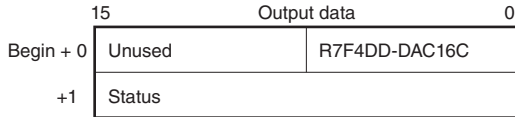
DATA ALLOCATION

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

■ Without status

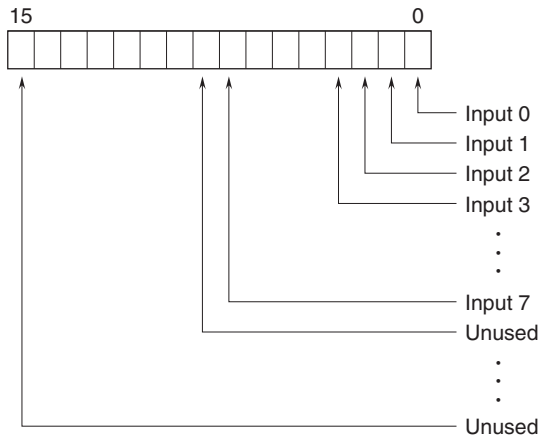


■ With status

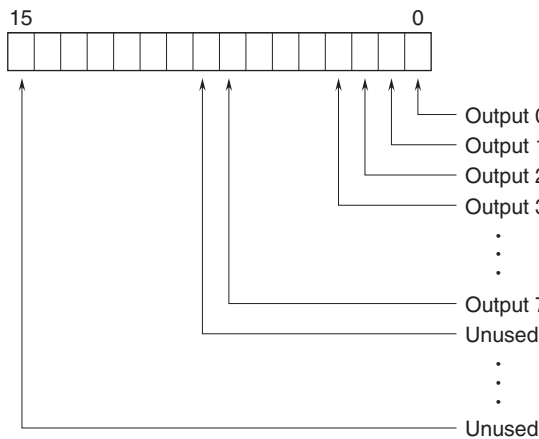


I/O DATA DESCRIPTIONS

■ DISCRETE I/O



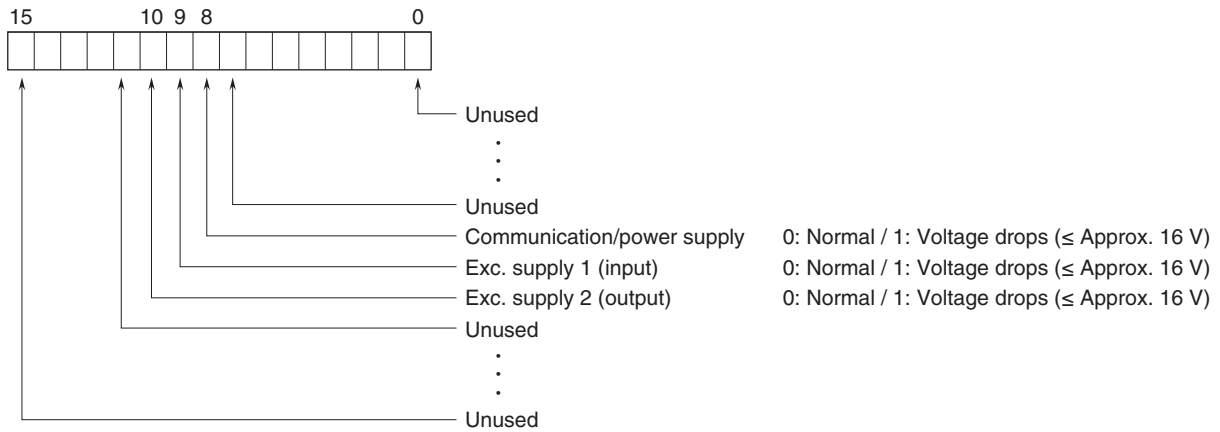
0: OFF / 1: ON
 0: OFF / 1: ON
 0: OFF / 1: ON
 0: OFF / 1: ON
 :
 :
 0: OFF/1: ON



0: OFF / 1: ON
 0: OFF / 1: ON
 0: OFF / 1: ON
 0: OFF / 1: ON
 :
 :
 0: OFF / 1: ON

MODEL: R7F4DD-DAC16C-C

■ STATUS



TRANSMISSION DATA DESCRIPTIONS

■ I/O DATA

(Unit: word)

MODEL	OUTPUT DATA* ¹ (R7F4DD to master)	INPUT DATA* ² (master to R7F4DD)
R7F4DD-DAC16C	1	1

■ 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"

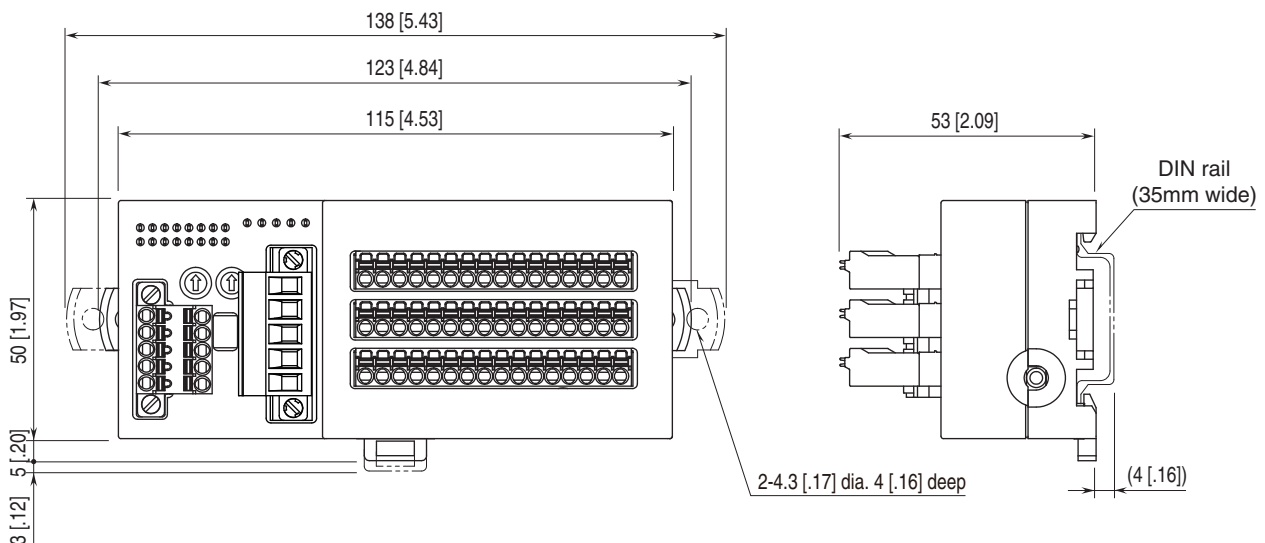
(Unit: word)

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

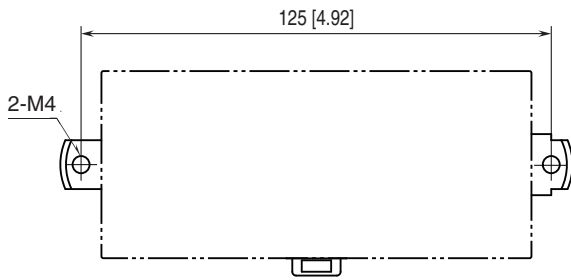
*1. Output Data means those sent to the master.

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

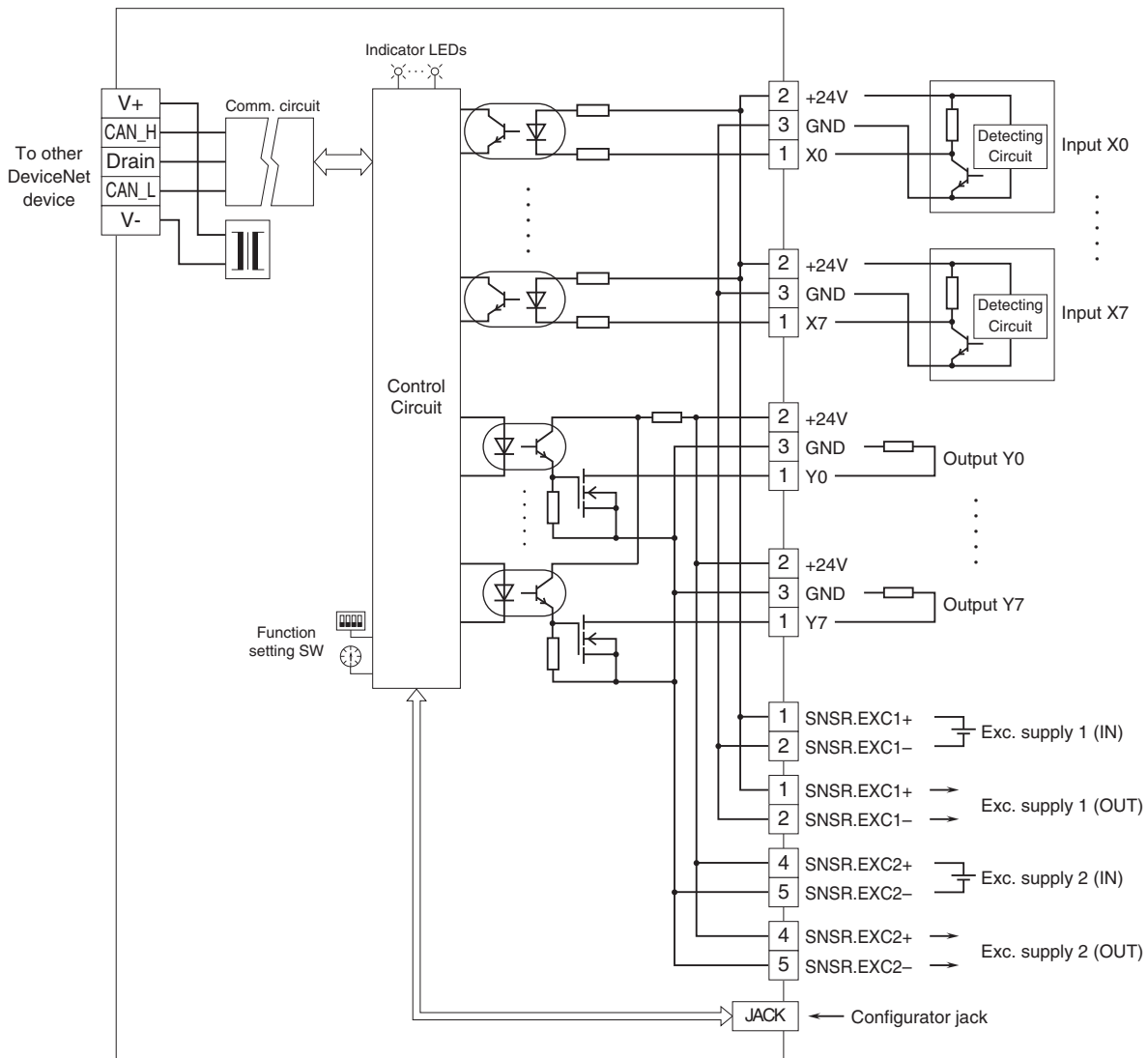
EXTERNAL DIMENSIONS unit: mm [inch]



MOUNTING REQUIREMENTS unit: mm [inch]



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.