

Remote I/O R7F4D Series

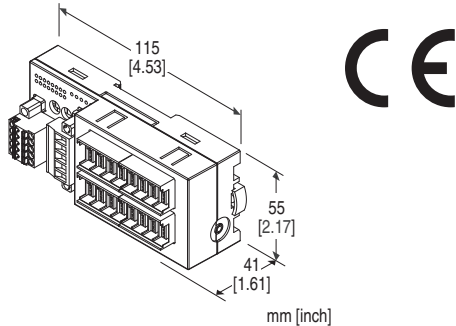
DeviceNet® I/O MODULE

(NPN discrete input, NPN discrete output, 8 points each, e-CON connector)

Functions & Features

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

DeviceNet is registered trademark of ODVA.



MODEL: R7F4DD-DAC16C-H[1]

ORDERING INFORMATION

- Code number: R7F4DD-DAC16C-H[1]
Specify a code from below for [1].
(e.g. R7F4DD-DAC16C-H/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

H: Euro type connector terminal for
communication/power supply
e-CON connector 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 cable (model: MCN-CON or COP-US)
- PC configurator software (model: R7CFG)
- EDS file

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

GENERAL SPECIFICATIONS

Connection

Communication/power supply:

Euro type connector terminal

Exc. supply: Tension clamp terminal block

I/O: e-CON connector

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 input: 8 points

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:

≤ 50 mA @ 24 V DC

≤ 70 mA @ 11 V DC

Operating temperature: -10 to $+55^{\circ}\text{C}$ (14 to 131°F)

Storage temperature: -20 to $+65^{\circ}\text{C}$ (-4 to $+149^{\circ}\text{F}$)

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

Atmosphere: No corrosive gas or heavy dust

Mounting: Surface or DIN rail (35 mm rail)

Weight: 130 g (0.29 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

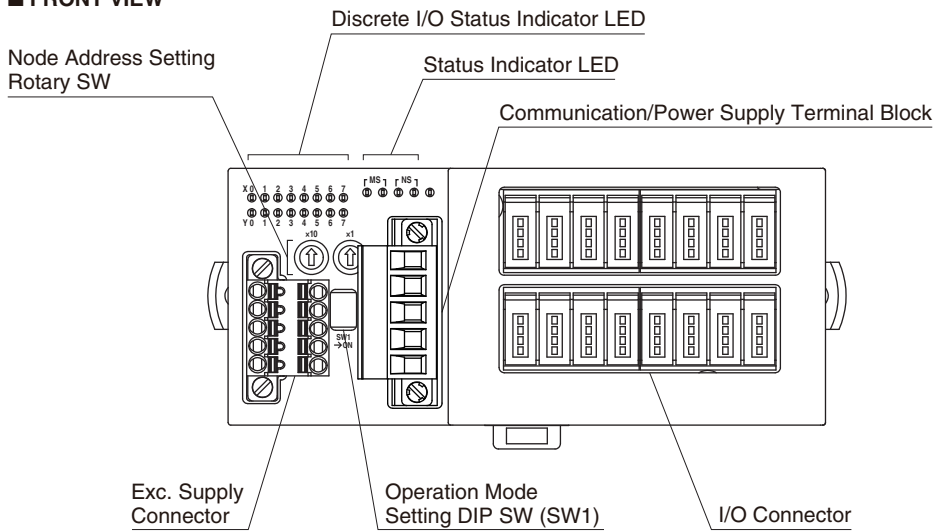
EMI EN 61000-6-4

EMS EN 61000-6-2

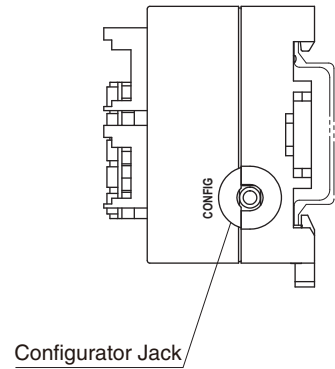
RoHS Directive

EXTERNAL VIEW

■ FRONT VIEW



■ SIDE VIEW



TERMINAL ASSIGNMENTS

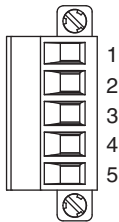
■ COMMUNICATION/POWER SUPPLY TERMINAL ASSIGNMENT

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)

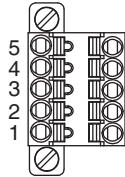
AI0,34-10TQ 0.34mm² (Phoenix contact)

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)

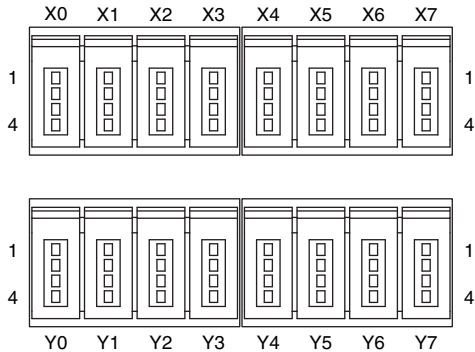
I/O TERMINAL ASSIGNMENT

Unit side connector: 37216-62M3-004PL (3M company)

Cable side connector: 37104-()-000FL (3M company)

(The cable connector is not included in the package.

Specify wire size instead of (); refer to the specifications of the product.)

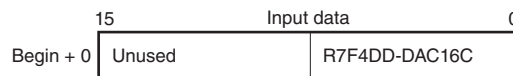
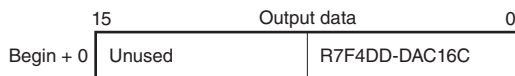


PIN NO.		ID	FUNCTION	PIN NO.		ID	FUNCTION
X0	1	+24V	24V DC	Y0	1	+24V	24V DC
	2	NC	Unused		2	NC	Unused
	3	GND	0V		3	NC	Unused
	4	X0	Input 0		4	Y0	Output 0
X1	1	+24V	24V DC	Y1	1	+24V	24V DC
	2	NC	Unused		2	NC	Unused
	3	GND	0V		3	NC	Unused
	4	X1	Input 1		4	Y1	Output 1
X2	1	+24V	24V DC	Y2	1	+24V	24V DC
	2	NC	Unused		2	NC	Unused
	3	GND	0V		3	NC	Unused
	4	X2	Input 2		4	Y2	Output 2
X3	1	+24V	24V DC	Y3	1	+24V	24V DC
	2	NC	Unused		2	NC	Unused
	3	GND	0V		3	NC	Unused
	4	X3	Input 3		4	Y3	Output 3
X4	1	+24V	24V DC	Y4	1	+24V	24V DC
	2	NC	Unused		2	NC	Unused
	3	GND	0V		3	NC	Unused
	4	X4	Input 4		4	Y4	Output 4
X5	1	+24V	24V DC	Y5	1	+24V	24V DC
	2	NC	Unused		2	NC	Unused
	3	GND	0V		3	NC	Unused
	4	X5	Input 5		4	Y5	Output 5
X6	1	+24V	24V DC	Y6	1	+24V	24V DC
	2	NC	Unused		2	NC	Unused
	3	GND	0V		3	NC	Unused
	4	X6	Input 6		4	Y6	Output 6
X7	1	+24V	24V DC	Y7	1	+24V	24V DC
	2	NC	Unused		2	NC	Unused
	3	GND	0V		3	NC	Unused
	4	X7	Input 7		4	Y7	Output 7

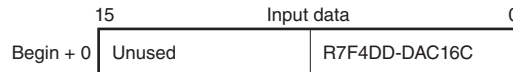
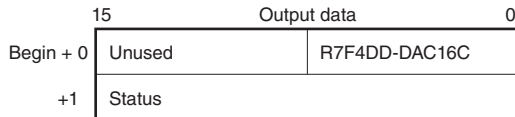
DATA ALLOCATION

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

■ Without status

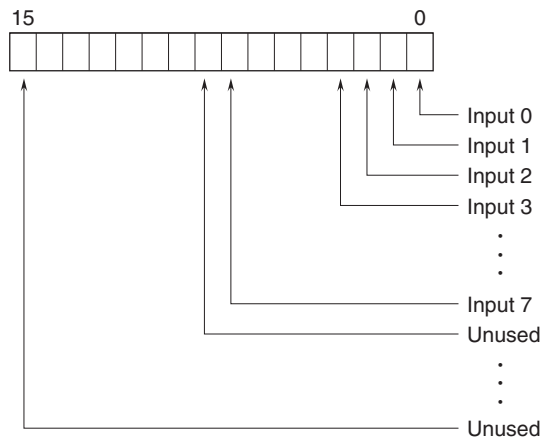


■ With status

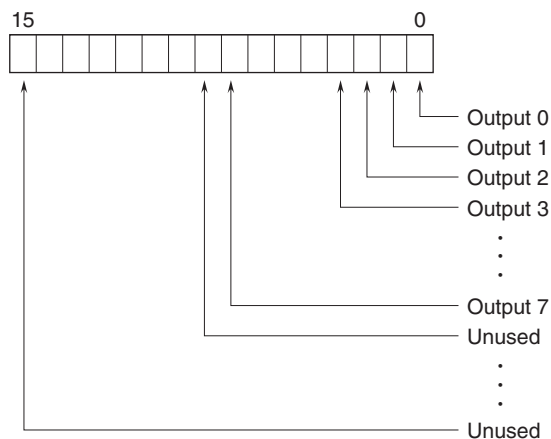


I/O DATA DESCRIPTIONS

■ DISCRETE I/O

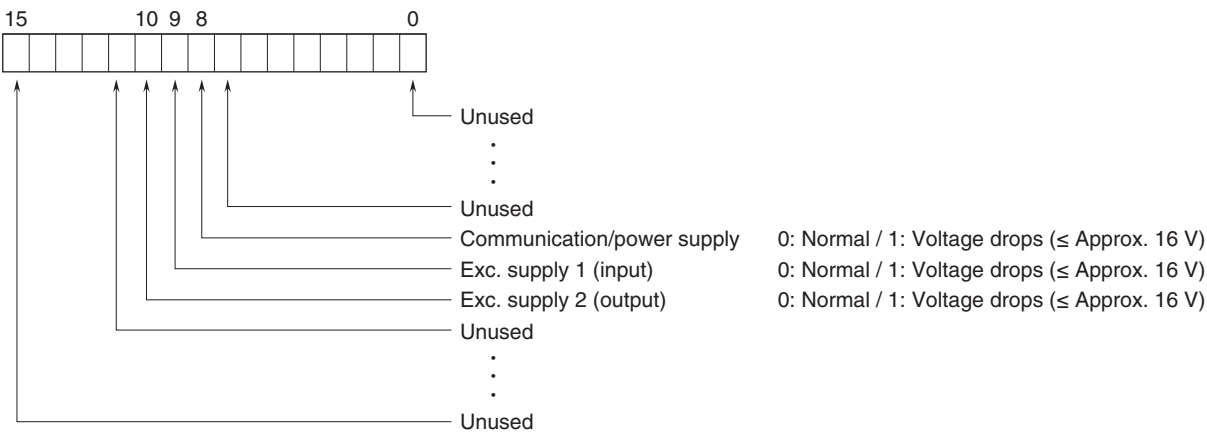


0: OFF / 1: ON
 0: OFF / 1: ON
 0: OFF / 1: ON
 0: OFF / 1: ON
 ⋮
 0: OFF/1: ON



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

■ STATUS



TRANSMISSION DATA DESCRIPTIONS

■ I/O DATA

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

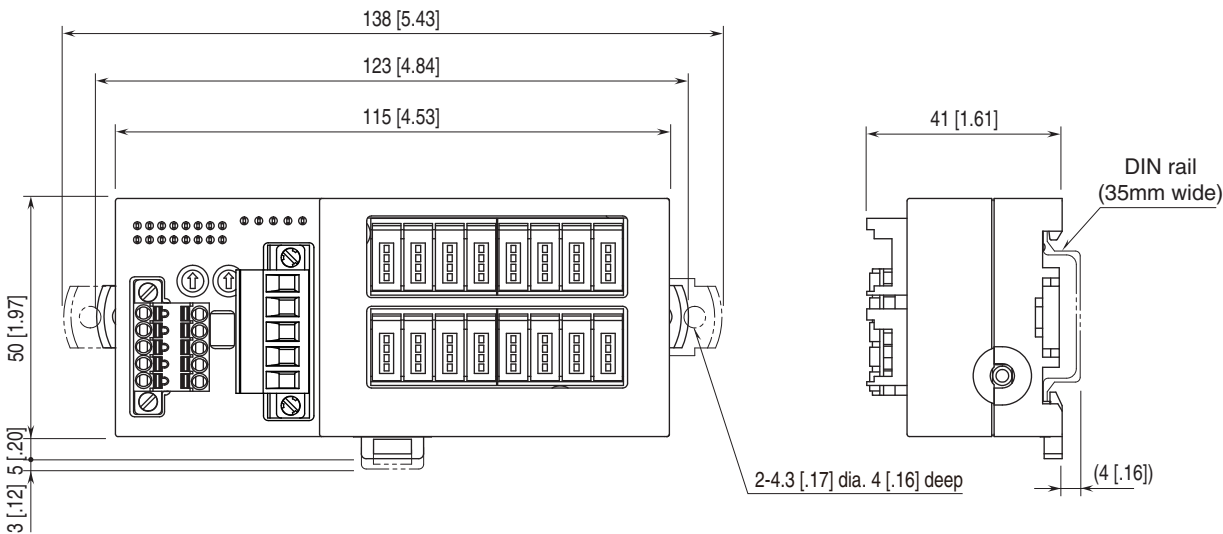
■ STATUS

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”

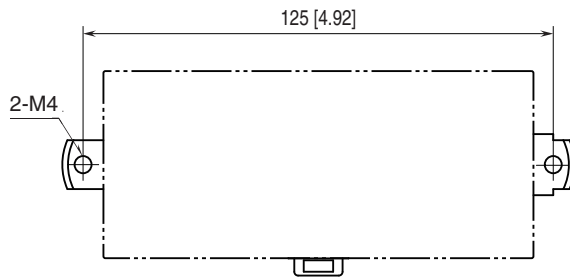
STATUS	(Unit: word)	
	OUTPUT DATA* ¹ (R7F4DD to master)	INPUT DATA* ² (master to R7F4DD)
With	1	0
Without	0	0

*1. Output Data means those sent to the master.
*2. Input Data means those received from the master.

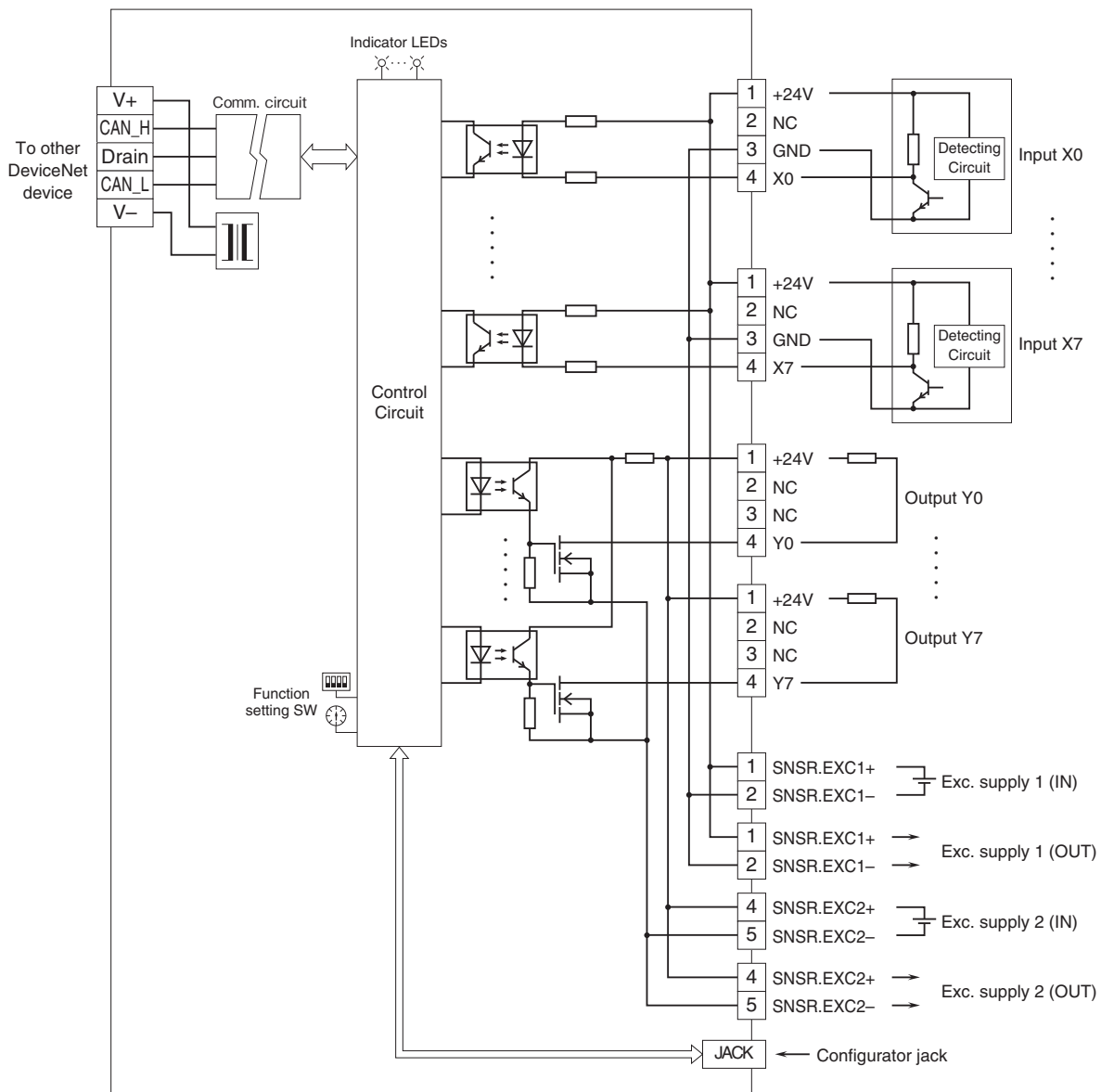
EXTERNAL DIMENSIONS unit: mm [inch]



MOUNTING REQUIREMENTS unit: mm [inch]



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM





Specifications are subject to change without notice.