Remote I/O R7F4D Series

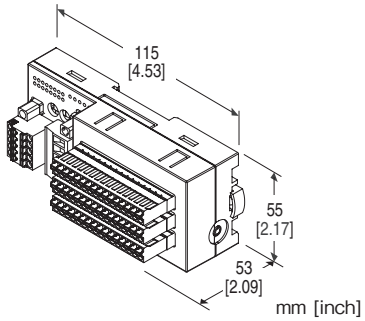
DeviceNet® I/O MODULE

(PNP discrete input, PNP 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-DAC16D-C[1]

ORDERING INFORMATION

• Code number: R7F4DD-DAC16D-C[1]

Specify a code from below for [1].
(e.g. R7F4DD-DAC16D-C/Q)

• Specify the specification for option code /Q
(e.g. /C01)

I/O TYPE

DAC16D: PNP discrete input &
PNP 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 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: 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: Negative common (PNP) per 8 points
Number of input: 8 points
Maximum inputs applicable at once: No limit (at 24 V DC)
Sensor excitation: 24 V DC ±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 GND) / ≥ 2.3 mA
OFF voltage / current: ≤ 5 V DC (X0 through X7 to GND) / ≤ 0.75 mA
Input current: ≤ 3.5 mA per point at 24 V DC
Input resistance: Approx. 7.2 kΩ
ON delay: ≤ 0.5 msec.
OFF delay: ≤ 0.5 msec.

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OUTPUT SPECIFICATIONS

Common: Positive common (PNP) 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 ±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°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 MΩ 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

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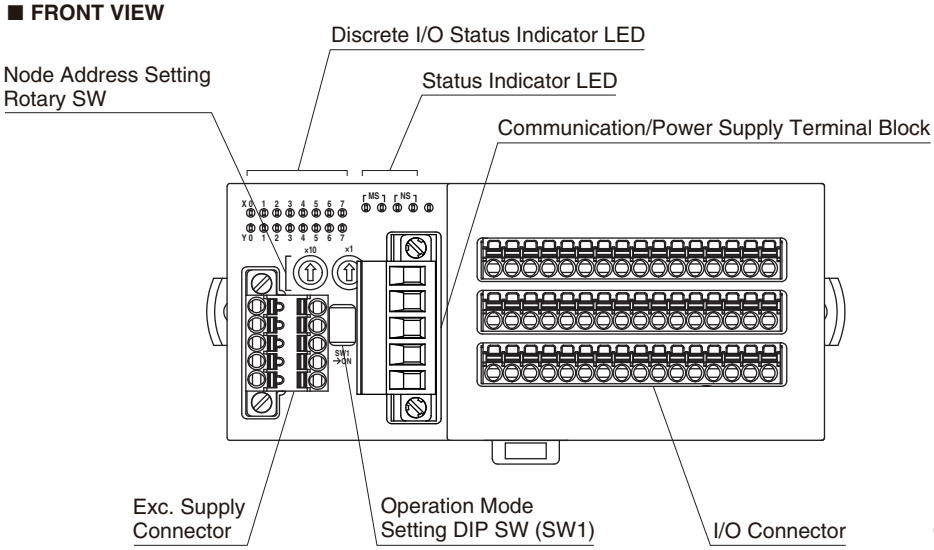
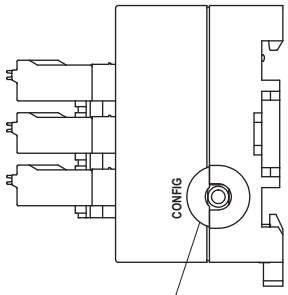
EXTERNAL VIEW

■ **FRONT VIEW**



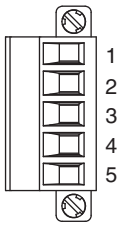
■ **SIDE VIEW**



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 - 2.5mm^2
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 (-)

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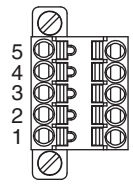
■EXC. SUPPLY TERMINAL ASSIGNMENT

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 - 1.5mm^2
Stripped length: 10mm
Recommended solderless terminal:
AI0,25-10YE 0.25mm^2 (Phoenix contact)
AI0,34-10TQ 0.34mm^2 (Phoenix contact)
AI0,5-10WH 0.5mm^2 (Phoenix contact)
AI0,75-10GY 0.75mm^2 (Phoenix contact)
AI1-10 1.0mm^2 (Phoenix contact)
AI1,5-10 1.5mm^2 (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)

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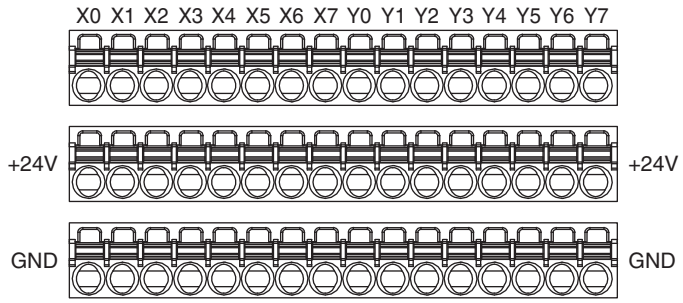
■I/O TERMINAL ASSIGNMENT

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	Input 0	Y0	1	Y0	Output 0
	2	+24V	24V DC		2	+24V	24V DC
	3	GND	0V		3	GND	0V
X1	1	X1	Input 1	Y1	1	Y1	Output 1
	2	+24V	24V DC		2	+24V	24V DC
	3	GND	0V		3	GND	0V
X2	1	X2	Input 2	Y2	1	Y2	Output 2
	2	+24V	24V DC		2	+24V	24V DC
	3	GND	0V		3	GND	0V
X3	1	X3	Input 3	Y3	1	Y3	Output 3
	2	+24V	24V DC		2	+24V	24V DC
	3	GND	0V		3	GND	0V
X4	1	X4	Input 4	Y4	1	Y4	Output 4
	2	+24V	24V DC		2	+24V	24V DC
	3	GND	0V		3	GND	0V
X5	1	X5	Input 5	Y5	1	Y5	Output 5
	2	+24V	24V DC		2	+24V	24V DC
	3	GND	0V		3	GND	0V
X6	1	X6	Input 6	Y6	1	Y6	Output 6
	2	+24V	24V DC		2	+24V	24V DC
	3	GND	0V		3	GND	0V
X7	1	X7	Input 7	Y7	1	Y7	Output 7
	2	+24V	24V DC		2	+24V	24V DC
	3	GND	0V		3	GND	0V

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DATA ALLOCATION

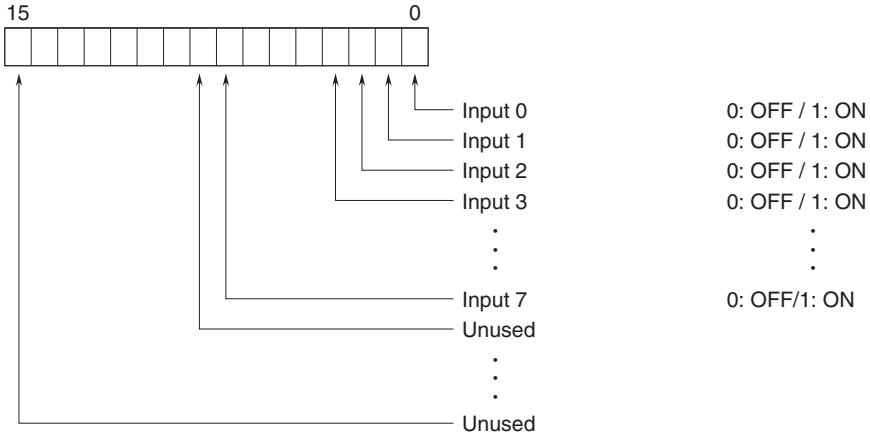
'Begin' address is determined by the R7F4DD's node address and the master setting.

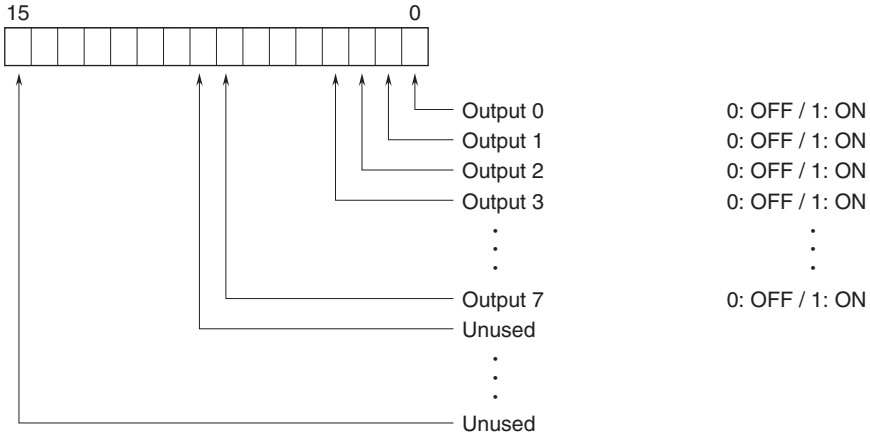
■ Without status

■ With status

I/O DATA DESCRIPTIONS

■ **DISCRETE I/O**





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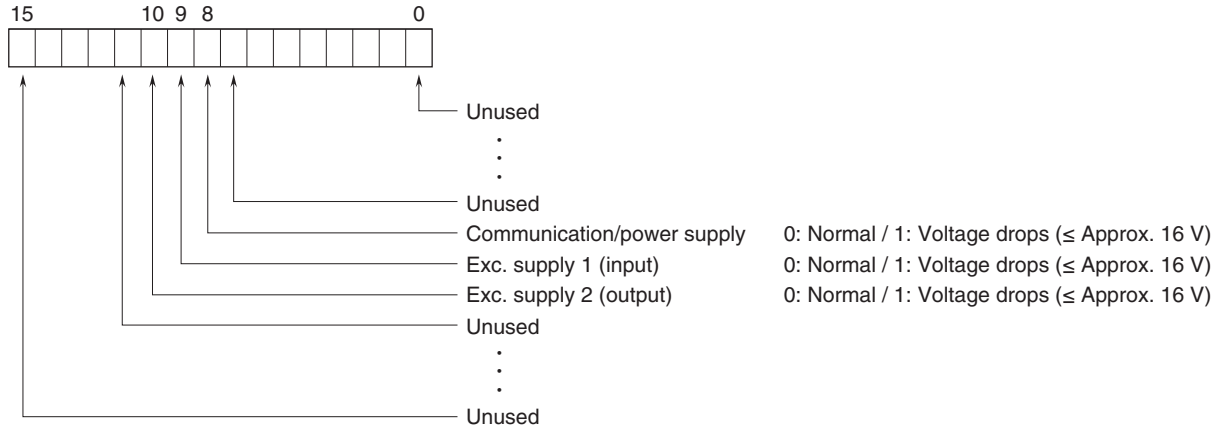
■ **STATUS**



TRANSMISSION DATA DESCRIPTIONS

■ **I/O DATA**

(Unit: word)

MODEL	OUTPUT DATA*1 (R7F4DD to master)	INPUT DATA*2 (master to R7F4DD)
R7F4DD-DAC16D	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".

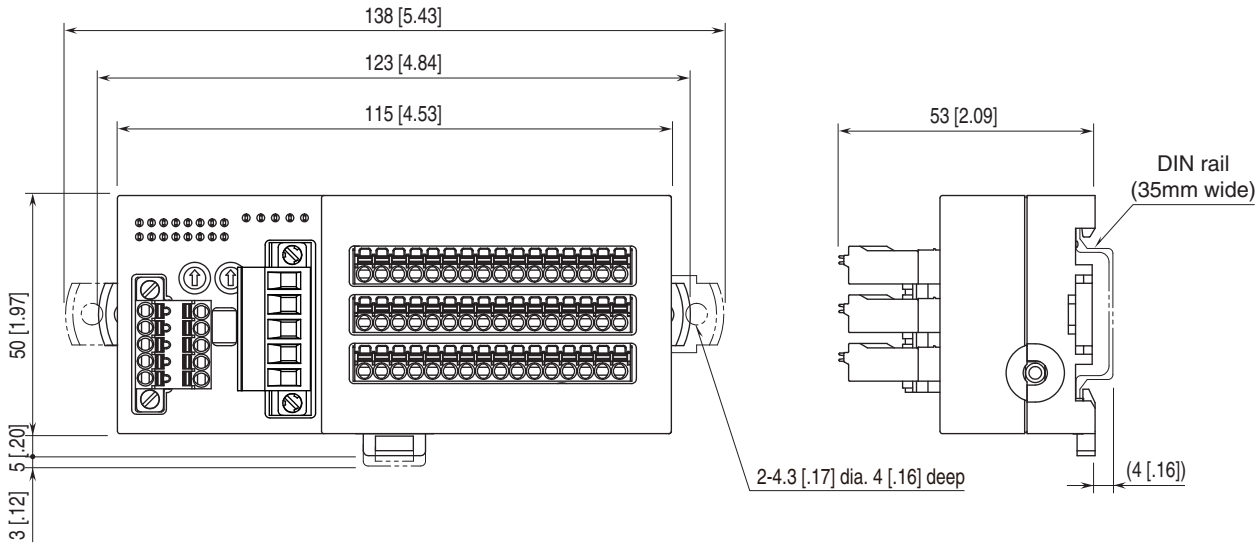
(Unit: word)

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]



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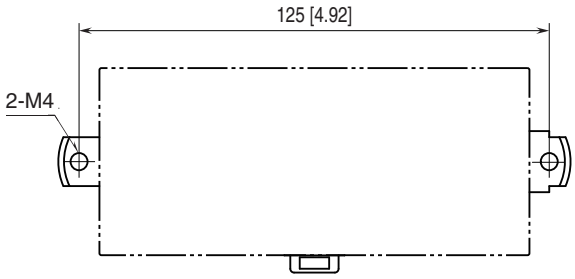
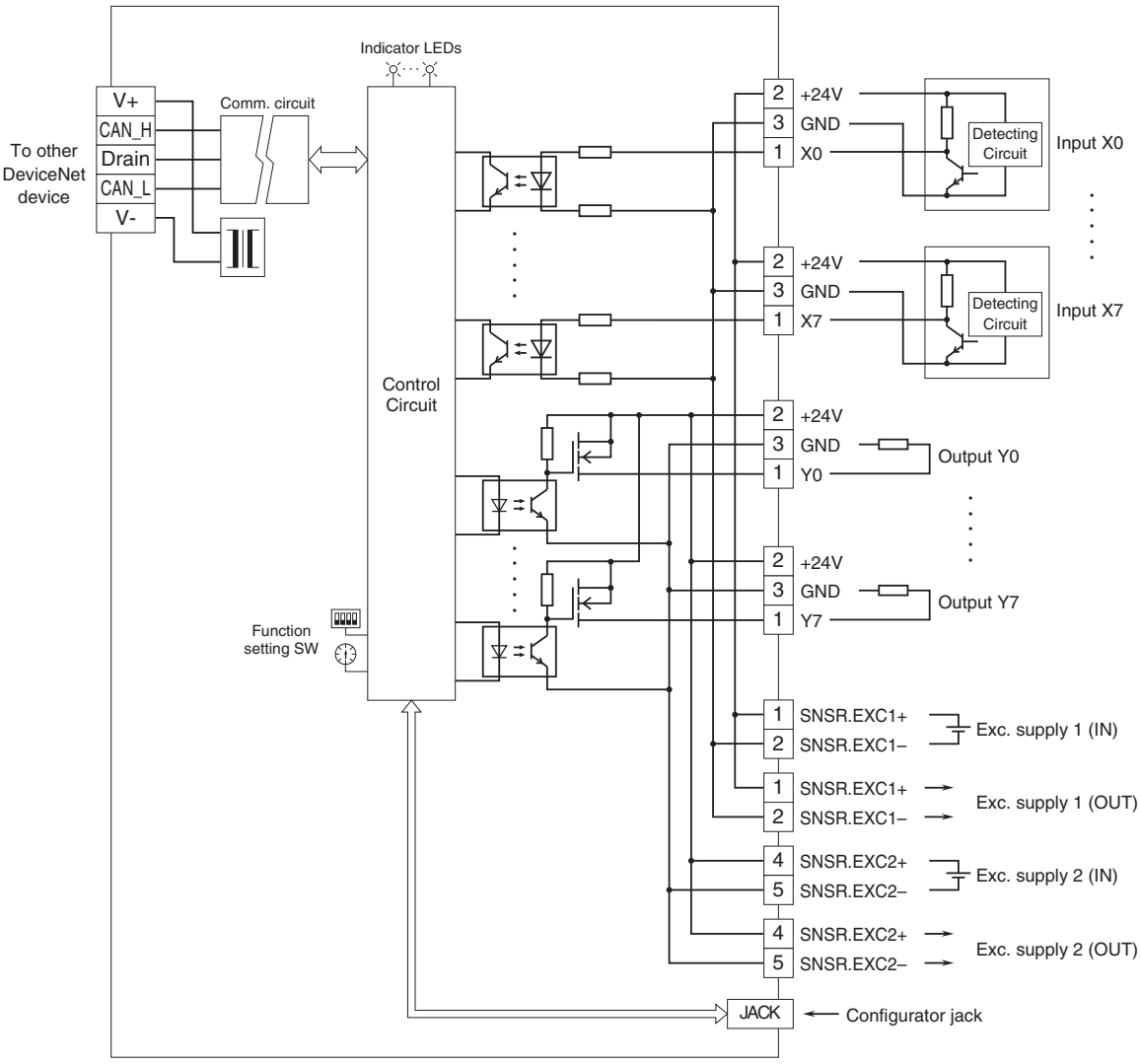
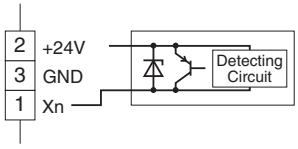
MOUNTING REQUIREMENTS unit: mm [inch]



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



■ **2–Wire Sensor**



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⚠ Specifications are subject to change without notice.

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