

## Remote I/O R7 Series

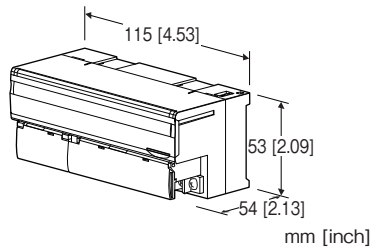
### FLEX NETWORK I/O MODULE

(Discrete input, 16 points)

#### Functions & Features

- 16 points discrete input module for FLEX NETWORK

FLEX NETWORK is registered trademark of Digital Electronics Corporation in Japan.



### MODEL:R7FN-DA16-R[1]

### ORDERING INFORMATION

- Code number: R7FN-DA16-R[1]  
Specify a code from below for [1].  
(e.g. R7FN-DA16-R/Q)
- Specify the specification for option code /Q  
(e.g. /C01/SET)

### I/O TYPE

**DA16:** Discrete input, 16 points

### POWER INPUT

#### DC Power

R: 24 V DC

(Operational voltage range 24 V  $\pm$ 10 %, ripple 10 %p-p max.)

### [1] OPTIONS

blank: none

/Q: Options other than the above (specify the specification)

### SPECIFICATIONS OF OPTION: Q (multiple selections)

**COATING (For the detail, refer to M-System's web site.)**

/C01: Silicone coating

/C02: Polyurethane coating

/C03: Rubber coating

#### EX-FACTORY SETTING

/SET: Preset according to the Ordering Information Sheet  
(No. ESU-7808-DA16)

### GENERAL SPECIFICATIONS

**Connection:** M3 separable screw terminal (torque 0.5 N·m)  
**Solderless terminal:** Refer to the drawing at the end of the section.

#### • Communication cable

**Recommended manufacture:** Japan Solderless Terminal MFG.Co.Ltd

**Applicable wire size:** 0.2 to 0.5 mm<sup>2</sup> (AWG 26 to 22)

#### • Others

**Recommended manufacture:** Japan solderless terminal MFG.Co.Ltd, Nichifu Co.,Ltd

**Applicable wire size:** 0.25 to 1.65 mm<sup>2</sup> (AWG 22 to 16)

**Screw terminal:** Nickel-plated steel

**Housing material:** Flame-resistant resin (gray)

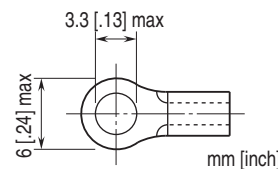
**Isolation:** Input to FLEX NETWORK to power to FG

**Status indicator LED:** PWR, RUN

(Refer to the instruction manual)

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

#### ■ Recommended solderless terminal



### FLEX NETWORK COMMUNICATION

**Communication configuration:** 1: N

**Connection method:** Multi-drop Connection

**Communication method:** Cyclic Time Division, half-duplex

**Communication I/F:** Differential, pulse transfer isolation

**Error Check:** Format, bit, CRC-12 verification

**Max. Number of Nodes:** 63 (1008 I/O points)

**Required node:** 1

**Network cable:** Pro-face's following cable

FN-CABLE2010-31-MS (10 m)

FN-CABLE2050-31-MS (50 m)

FN-CABLE2200-31-MS (200 m)

**Transmission distance:** 12 Mbps: 100 meters (328 ft) (\*)

6 Mbps: 200 meters (656 ft)

(\*) Factory default setting

**Station address:** Rotary switch

(Refer to the instruction manual)

**Terminating resistor:** Built-in

### INPUT SPECIFICATIONS

**Common:** Positive or negative common (NPN/PNP) per 16 points

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

**Rated input voltage:** 24 V DC  $\pm$ 10 %; ripple 5 %p-p max.

**ON voltage / current:**  $\geq$  15 V DC (input - COM) /  $\geq$  3.5 mA

OFF voltage / current: ≤ 5 V DC (input - COM) / ≤ 1 mA

Input current: ≤ 5.5 mA per point at 24 V DC

Input resistance: Approx. 4.4 kΩ

ON delay: ≤ 2.0 msec.

OFF delay: ≤ 2.0 msec.

**INSTALLATION**

**Current consumption**

•DC: Approx. 50 mA

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: DIN rail (35 mm rail)

Weight: 200 g (0.44 lb)

**PERFORMANCE**

Insulation resistance: ≥ 100 MΩ with 500 V DC

Dielectric strength: 1500 V AC @ 1 minute (input to FLEX NETWORK to power to FG)

**STANDARDS & APPROVALS**

**EU conformity:**

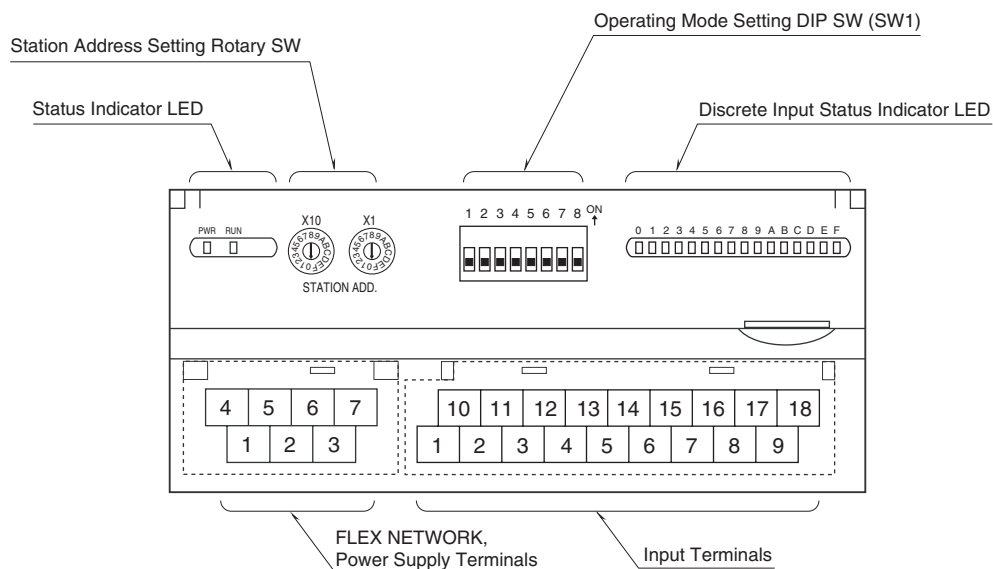
EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

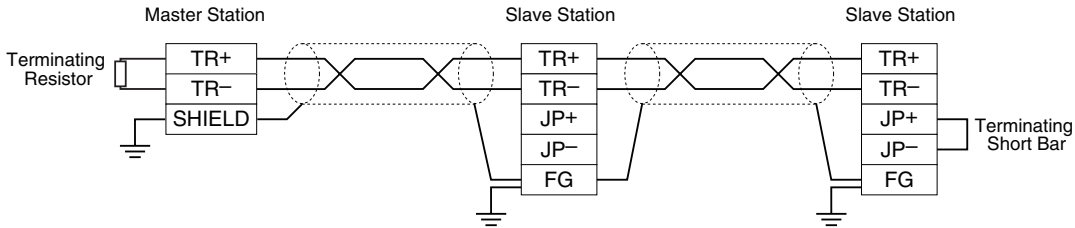
RoHS Directive

**EXTERNAL VIEW**



## CONNECTION DIAGRAMS

### ■ MASTER CONNECTION



Note: Be sure to use the terminator(s) located at both ends of the modules.

## TERMINAL ASSIGNMENTS

### ■ INPUT TERMINAL ASSIGNMENT

10	11	12	13	14	15	16	17	18
COM	X1	X3	X5	X7	X9	XB	XD	XF
1	2	3	4	5	6	7	8	9
COM	X0	X2	X4	X6	X8	XA	XC	XE

NO.	ID	FUNCTION	NO.	ID	FUNCTION
1	COM	Common	10	COM	Common
2	X0	Input 0	11	X1	Input 1
3	X2	Input 2	12	X3	Input 3
4	X4	Input 4	13	X5	Input 5
5	X6	Input 6	14	X7	Input 7
6	X8	Input 8	15	X9	Input 9
7	XA	Input 10	16	XB	Input 11
8	XC	Input 12	17	XD	Input 13
9	XE	Input 14	18	XF	Input 15

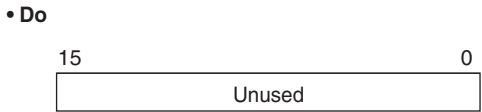
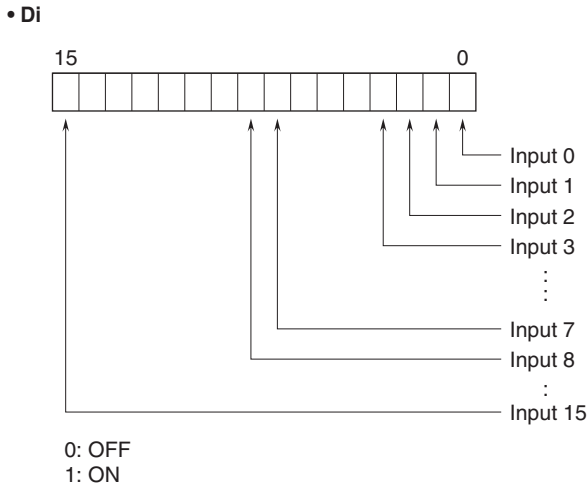
### ■ NETWORK, POWER SUPPLY TERMINAL ASSIGNMENT

4	5	6	7
TR+	TR-	+24V	0V
1	2	3	
JP+	JP-	FG	

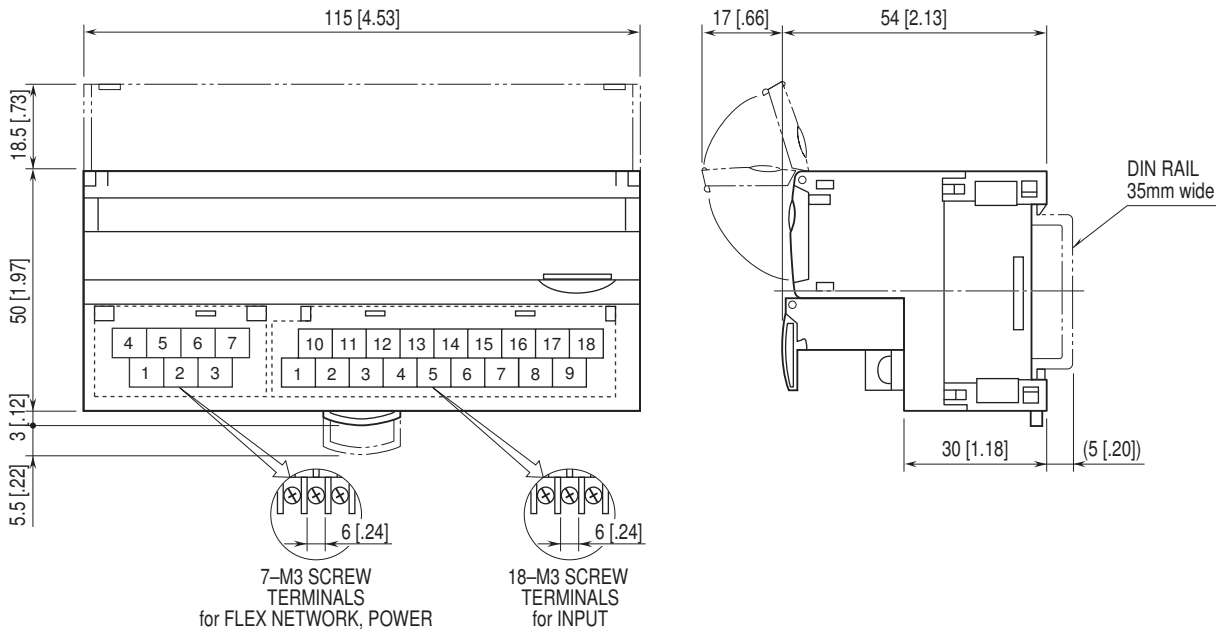
NO.	ID	FUNCTION, NOTES
1	JP+	Terminating resistor
2	JP-	Terminating resistor
3	FG	FG
4	TR+	Network
5	TR-	Network
6	+24V	Power input (24V DC)
7	0V	Power input (0V)

**I/O DATA DESCRIPTIONS**

■ DISCRETE INPUT



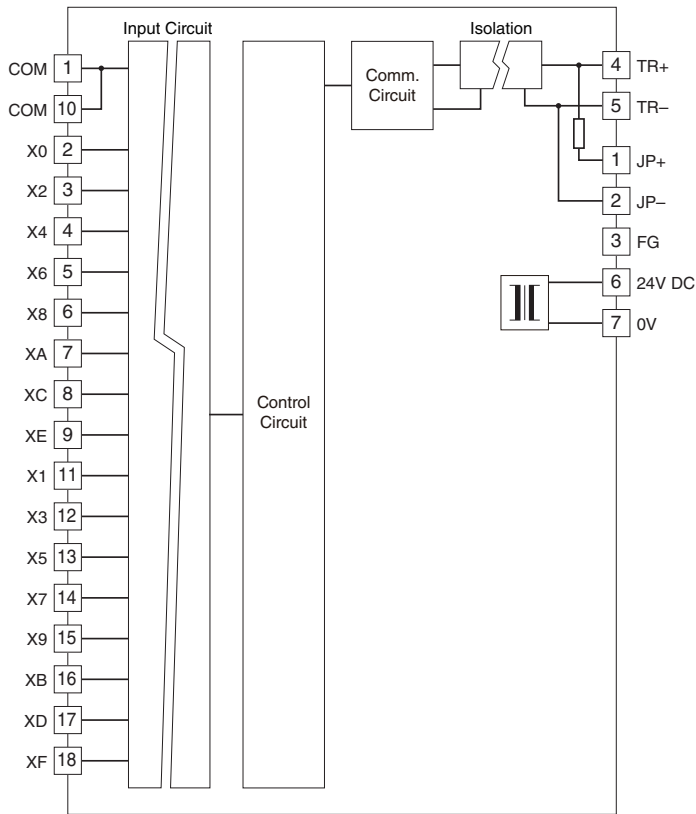
**EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]**



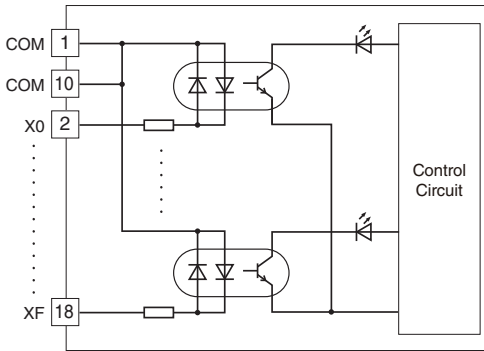
## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

Note: In order to improve EMC performance, bond the FG terminal to ground.

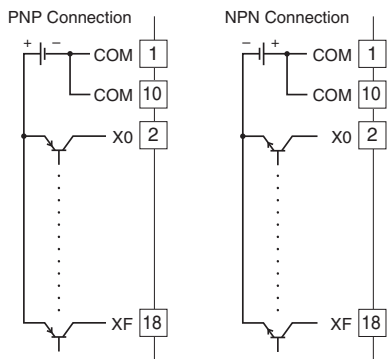
Caution: FG terminal is NOT a protective conductor terminal.



### Input Circuit



### Input Connection Example





Specifications are subject to change without notice.