

## Remote I/O R7 Series

(No. ESU-7808-DAC16)

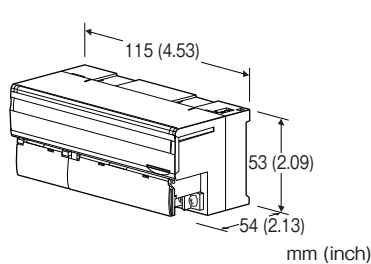
### FLEX NETWORK I/O MODULE

(PNP discrete input & NPN transistor output, 8 points each)

#### Functions & Features

- 8 points PNP discrete input and 8 points NPN transistor output module for FLEX NETWORK

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



### MODEL:R7FN-DAC16A-R[1]

#### ORDERING INFORMATION

- Code number: R7FN-DAC16A-R[1]  
Specify a code from below for [1].  
(e.g. R7FN-DAC16A-R/Q)
- Specify the specification for option code /Q  
(e.g. /C01/SET)

#### I/O TYPE

**DAC16A:** PNP discrete input & NPN transistor output, 8 points each

#### 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

#### 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:** I/O to FLEX NETWORK to power to FG

##### Output at the loss of communication:

Output hold (\*), Output clear

Selectable with the front DIP SW

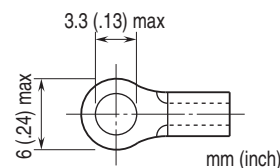
(\*) factory default setting

**Status indicator LED:** PWR, RUN

(Refer to the instruction manual)

**Discrete I/O status indicator LED:** LED turns on with I/O 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:** Negative common (PNP) per 8 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 (X0 through X7 to COM) /  $\geq 3.5$  mA  
**OFF voltage / current:**  $\leq 5$  V DC (X0 through X7 to COM) /  $\leq 1$  mA  
**Input current:**  $\leq 5.5$  mA per point at 24 V DC  
**Input resistance:** Approx. 4.4 k $\Omega$   
**ON delay:**  $\leq 2.0$  msec.  
**OFF delay:**  $\leq 2.0$  msec.

## OUTPUT SPECIFICATIONS

**Common:** Negative common (NPN) per 8 points  
**Maximum outputs applicable at once:** No limit (at 24 V DC)  
**Rated load voltage:** 24 V DC  $\pm 10\%$   
**Rated output current:** 0.25 A per point, 2.0 A per common  
**Residual voltage:**  $\leq 1.2$  V  
**Leakage current:**  $\leq 0.1$  mA  
**ON delay:**  $\leq 0.5$  msec.  
**OFF delay:**  $\leq 1.5$  msec.  
(When driving an inductive load, connect a diode in parallel with the load.)

## 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)

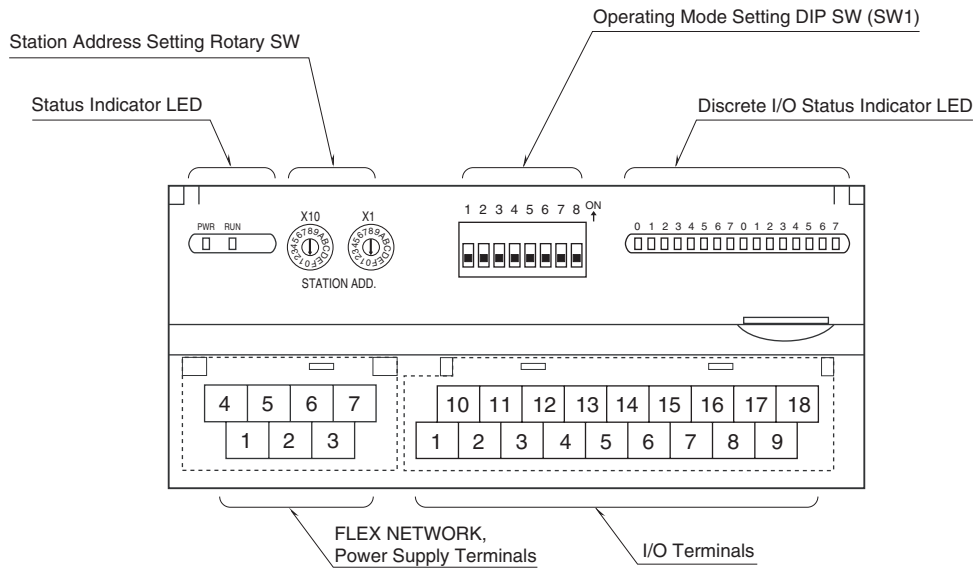
## PERFORMANCE

**Insulation resistance:**  $\geq 100$  M $\Omega$  with 500 V DC  
**Dielectric strength:** 1500 V AC @ 1 minute (I/O to FLEX NETWORK to power to FG)

## STANDARDS & APPROVALS

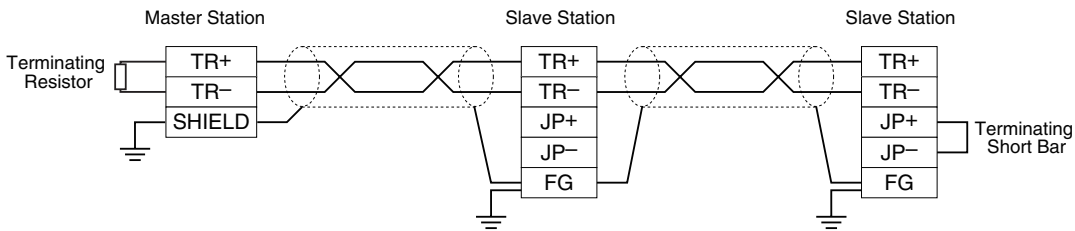
**EU conformity:**  
EMC Directive  
EMI EN 61000-6-4  
EMS EN 61000-6-2  
RoHS Directive  
EN 50581

## EXTERNAL VIEW



## CONNECTION DIAGRAMS

### ■ MASTER CONNECTION



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

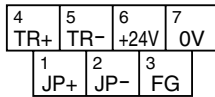
## TERMINAL ASSIGNMENTS

### ■ I/O TERMINAL ASSIGNMENT

10	11	12	13	14	15	16	17	18
+24V	X1	X3	X5	X7	Y1	Y3	Y5	Y7
1	2	3	4	5	6	7	8	9
COM	X0	X2	X4	X6	Y0	Y2	Y4	Y6

NO.	ID	FUNCTION	NO.	ID	FUNCTION
1	COM	Common	10	+24V	24V DC
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	Y0	Output 0	15	Y1	Output 1
7	Y2	Output 2	16	Y3	Output 3
8	Y4	Output 4	17	Y5	Output 5
9	Y6	Output 6	18	Y7	Output 7

## ■ NETWORK, POWER SUPPLY TERMINAL ASSIGNMENT

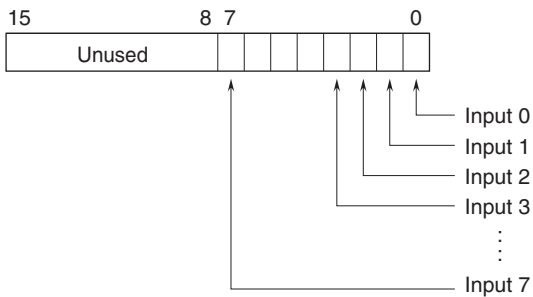


NO.	ID	FUNCTION, NOTES
1	JP+	Terminating resistor
2	JP-	Terminating resistor
3	FG	FG
4	TR+	Network
5	TR-	Network
6	+24V	Power input (24V DC)
7	0V	Power input (0V)

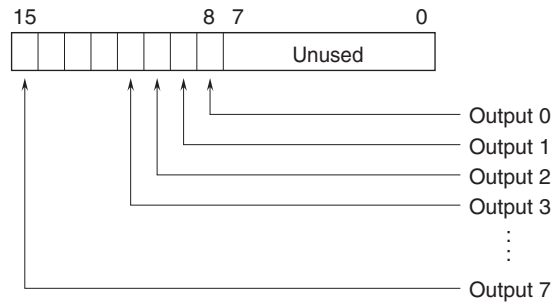
## I/O DATA DESCRIPTIONS

### ■ DISCRETE I/O

• Di

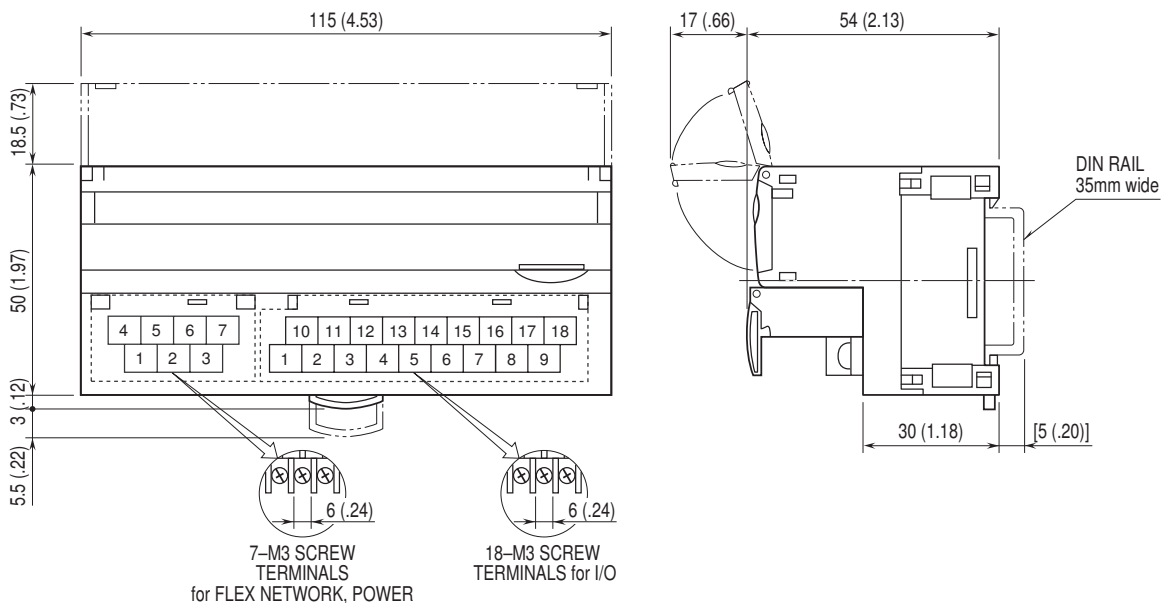


• Do



0: OFF  
1: ON

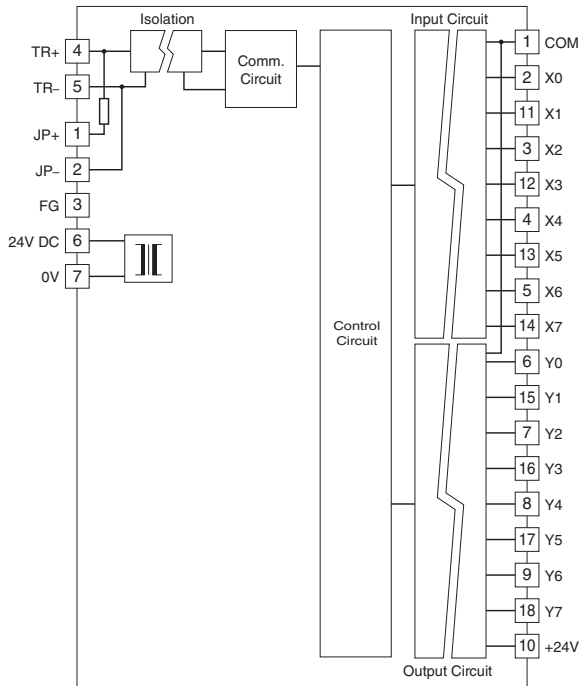
## EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



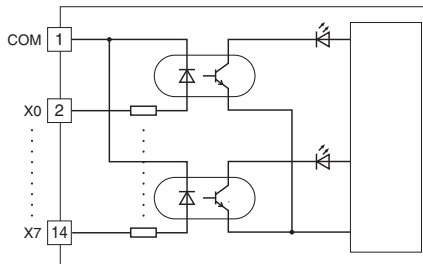
## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

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

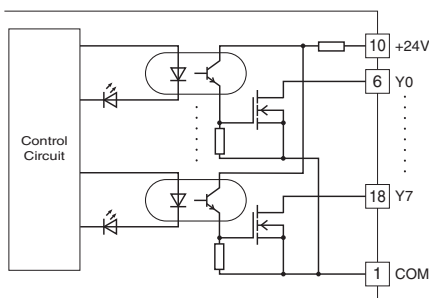
Caution: FG terminal is NOT a protective conductor terminal.



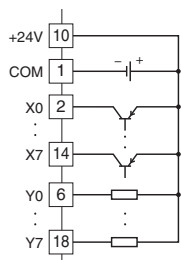
### Input Circuit



### Output Circuit



### I/O Connection Example





Specifications are subject to change without notice.