

## Remote I/O R7 Series

(No. ESU-7808-YS2)

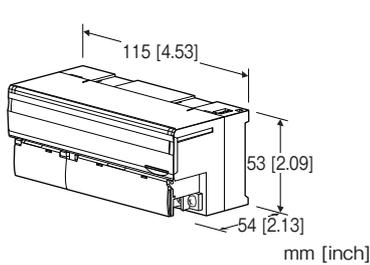
### FLEX NETWORK I/O MODULE

(2 points DC current output, isolated)

#### Functions & Features

- 2 points DC current output module for FLEX NETWORK
- Easy parameter setting of individual channels with the configurator software

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



### MODEL: R7FN-YS2-R[1]

### ORDERING INFORMATION

- Code number: R7FN-YS2-R[1]  
Specify a code from below for [1].  
(e.g. R7FN-YS2-R/Q)
- Specify the specification for option code /Q  
(e.g. /C01/SET)

### I/O TYPE

**YS2:** DC current output, 2 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 our web site.)  
**/C01:** Silicone coating  
**/C02:** Polyurethane coating  
**/C03:** Rubber coating  
 EX-FACTORY SETTING  
**/SET:** Preset according to the Ordering Information Sheet

### RELATED PRODUCTS

- PC configurator software (model: R7CON)  
The configurator software is 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.
- Screen editor software (model: GP-Pro EX)  
Screen editor software GP-Pro EX (Ver.2.70 or higher) is available.  
For versions between 2.60 and 2.70, the driver must be installed. The driver is downloadable at Digital Electronics Corporation's web site. <http://www.proface.co.jp/>

### 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:** Output 0 to output 1 to FLEX NETWORK to power to FG

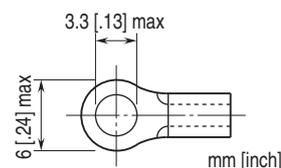
**Zero adjustments:** Configurable via R7CON  
**Span adjustments:** Configurable via R7CON

#### 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)

■ 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:** 2

**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

output clear (fix the output at -15 %) and output hold (last normally received data) with DIP switch.

At the startup, it outputs -15 % until the communication is established and normal data is received.

## OUTPUT SPECIFICATIONS

**Output range:** 4 to 20 mA DC

**Load resistance:**  $\leq 600 \Omega$

**Operational range:** -15 to +115 % of output range

## INSTALLATION

**Current consumption**

•DC: Approx. 140 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

**Conversion accuracy:**  $\pm 0.1 \%$

**Data range:** 0 - 10000 of the output range

**Temp. coefficient:**  $\pm 0.015 \%/^{\circ}\text{C}$  ( $\pm 0.008 \%/^{\circ}\text{F}$ )

**Output delay time:**  $\leq 250$  msec. (0 - 90 %)

**Insulation resistance:**  $\geq 100 \text{ M}\Omega$  with 500 V DC

**Dielectric strength:** 1500 V AC @ 1 minute (output 0 to output 1 to FLEX NETWORK to power to FG)

## STANDARDS & APPROVALS

**EU conformity:**

EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

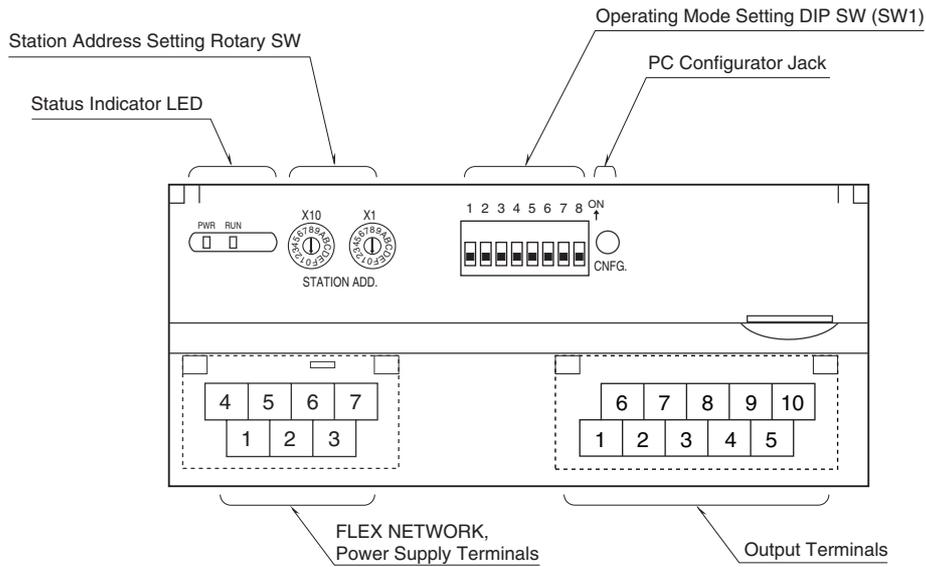
RoHS Directive

## FUNCTIONS

**Output hold function:**

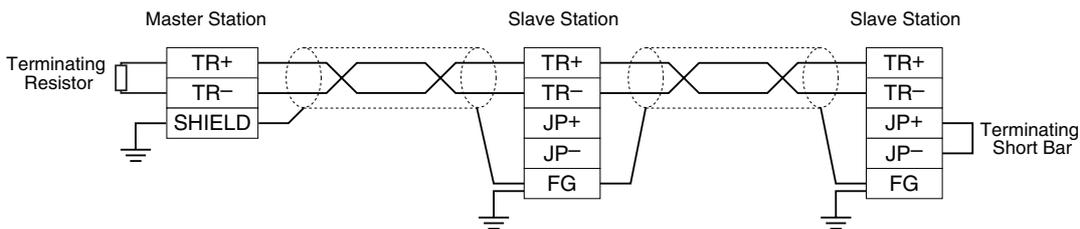
Output at the loss of communication is selectable from

## EXTERNAL VIEW



## CONNECTION DIAGRAMS

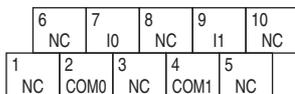
### ■ MASTER CONNECTION



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

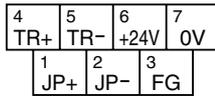
## TERMINAL ASSIGNMENTS

### ■ OUTPUT TERMINAL ASSIGNMENT



NO.	ID	FUNCTION	NO.	ID	FUNCTION
1	NC	No connection	6	NC	No connection
2	COM0	Common 0	7	I0	Current 0
3	NC	No connection	8	NC	No connection
4	COM1	Common 1	9	I1	Current 1
5	NC	No connection	10	NC	No connection

## ■ 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)

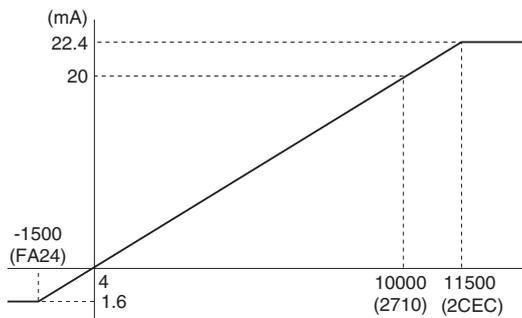
## DATA CONVERSION

### ■ OUTPUT RANGE AND DATA CONVERSION (FACTORY DEFAULT SETTING)

Digital output data is converted into analog representations of 0 – 100% proportional to each scaled range.  
 Overrange output is possible from -15 to +115% of the nominal range.  
 When the signal exceeds the limit, the data is fixed at -15% or +115%.

#### • Output Range 4 – 20 mA DC

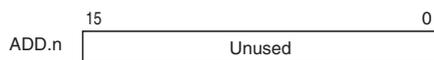
Digital Value, Decimal	Digital Value, HEX	Output Value, Engineering Unit	Output value, %
-1500	FA24	≤ 1.6 mA	-15%
0	0	4 mA	0%
10000	2710	20 mA	100%
11500	2CEC	≥ 22.4 mA	115%



## I/O DATA DESCRIPTIONS

### ■ ANALOG OUTPUT

#### • Di

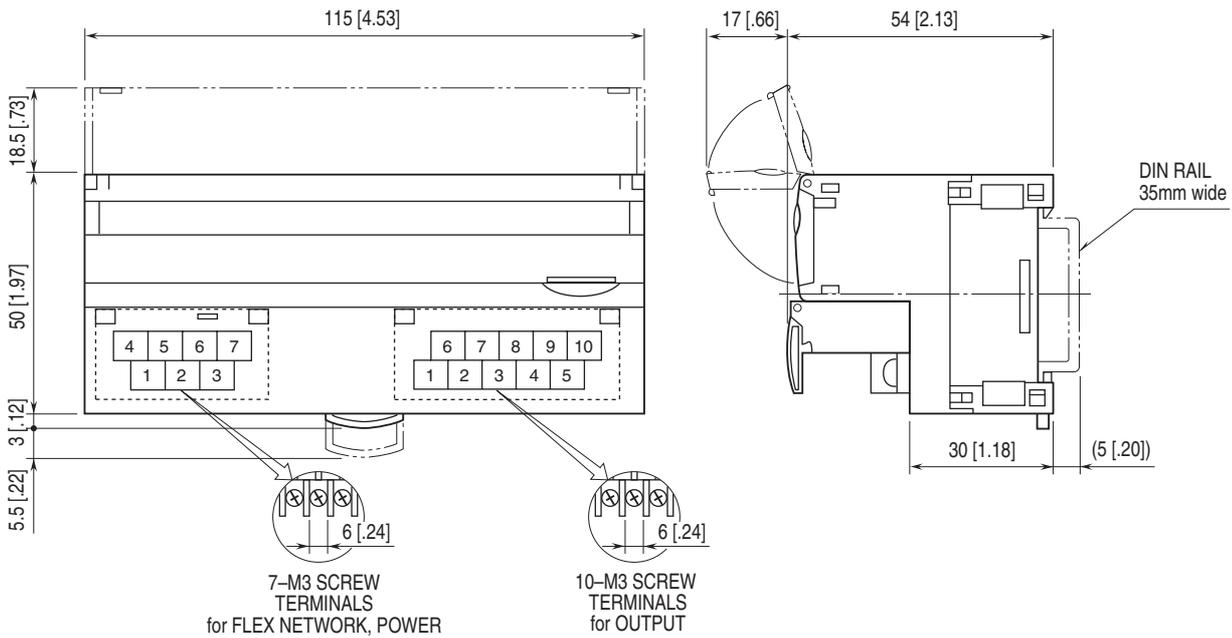


#### • Do



The data is 16-bit binary.  
 Negative value is represented in 2's complements.

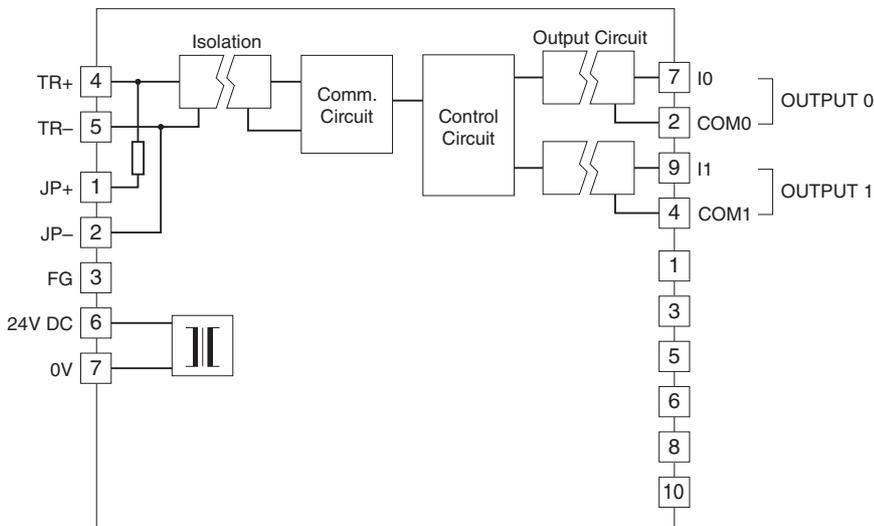
## EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



## 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.



Specifications are subject to change without notice.