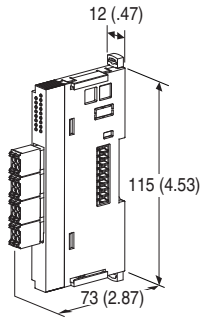
Remote I/O R8 Series

DC VOLTAGE/CURRENT INPUT MODULE

(built-in excitation, 4 points, non-isolated)

Functions & Features

• DC current input and DC voltage input compact size remote I/O module
• Switching between current input and voltage input with PC configurator (model: R8CFG)
• Accepts direct input from power output as sensor power and outputs from terminals
• Each channel is atachable/detachable independently with separable tension clamp terminal.



CE

MODEL: R8-FST4N[1]

ORDERING INFORMATION

• Code number: R8-FST4N[1]
Specify a code from below for [1].
(e.g. R8-FST4N/Q)
• Specify the specification for option code /Q
(e.g. /C01)

[1] OPTIONS

blank: none
/Q: With options (specify the specification)

SPECIFICATIONS OF OPTION: Q

COATING (For the detail, refer to M-System's web site.)
/C01: Silicone coating
/C02: Polyurethane coating

RELATED PRODUCTS

• PC configurator software (model: R8CFG)
The configurator software is downloadable at M-System's web site.
A dedicated cable is required to connect the module to the PC. Please refer to the users manual for the PC configurator for applicable cable types.

GENERAL SPECIFICATIONS

Connection
• **Input**: Tension clamp
• **Excitation supply, internal bus**:
Connected to internal bus connector
• **Internal power**: Via bus connector
Isolation: Input or exc. supply to internal bus or internal power
Input type: Configuration mode that selectable between current input and voltage input and available to configure scaling individually for each 4 points with configurator software (model: R8CFG) and fixed input mode that selectable between 0 - 10 V DC and 4 - 20 mA DC individually for each 4 points are available.
Module address: With rotary switch
Terminating resistor: Built-in (DIP Switch, default: disable)
Status indicator: Bi-color (red/green) LED; Refer to the instruction manual.
Input status indicators: Red LED; Refer to the instruction manual.

INPUT SPECIFICATIONS

■ **DC Voltage**:
• **Configuration mode**
Input range: -10 – +10 V DC
Input setting value: Available to set in the input range
Operational range: -5 - +105 % (% of input setting value)
Input resistance: ≥ 1 MΩ
• **Fixed input mode**
Input range: 0 – 10 V DC
Input setting value: Available to set in the input range
Operational range: -5 - +105 % (% of input setting value)
Input resistance: ≥ 1 MΩ
■ **DC Current**:
• **Configuration mode**
Input range: -20 – +20 mA DC
Input setting value: Available to set in the input range
Operational range: -5 - +105 % (% of input setting value)
Input resistance: 50 Ω (1/4 W)
• **Fixed input mode**
Input range: 4 – 20 mA DC
Input setting value: Available to set in the input range
Operational range: -5 - +105 % (% of input setting value)
Input resistance: 50 Ω (1/4 W)
Factory default (Input type and input setting value):
Voltage input, input range -10 - +10 V DC for all 4 points.

INSTALLATION

Max. current consumption: 100 mA
Operating temperature: -10 to +55°C (14 to 131°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Atmosphere: No corrosive gas or heavy dust
Mounting: DIN rail
Weight: 80 g (0.18 lb)

PERFORMANCE

Conversion accuracy (in percentage of input range)
Voltage input:±0.05 %
Current input:±0.1 %
Conversion accuracy is inversely proportional to input span.
Conversion rate: 8 msec.
Input circuit time constant: Approx. 1 msec.
Data range: 0 – 10000 of the input range
(Scaling of converted data is configurable with the configurator software)
Data allocation: 2
Module addresses in use: 2
Power output (input connector): Rated current 0.5 A DC per channel (rated current 3 A for internal fuse (slow blow fuse i^2t (A^2sec.) max. 5.04); Total: 1 A DC
Temp. coefficient: ±0.015 %/°C (±0.008 %/°F)
Insulation resistance: ≥ 100 MΩ with 500 V DC
Dielectric strength: 1500 V AC @ 1 minute
(input or exc. supply to internal bus or internal power to ground)

CALCULATION EXAMPLES OF CONVERSION ACCURACY

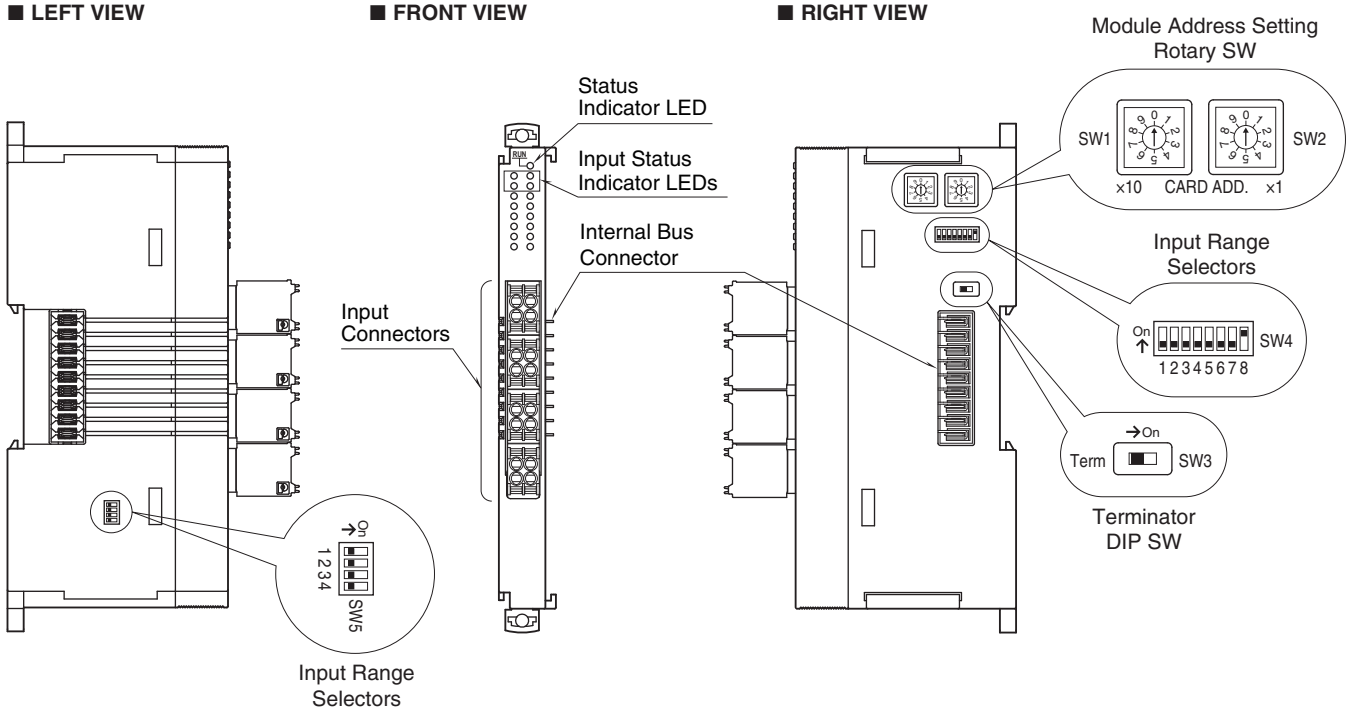
■ **Voltage input:**
For input setting value 1 - 5 V DC
Conversion accuracy = Input range span (20 V) ÷ input setting value span (4 V) × 0.05 (%) = 0.25 (%)
■ **Current input:**
For input setting value 4 - 20 mA DC
Conversion accuracy = Input range span (40 mA) ÷ input setting value span (16 mA) × 0.1 (%) = 0.25 (%)
(Span is common for configuration mode and fixed input mode)

STANDARDS & APPROVALS

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

EXTERNAL VIEW

■ LEFT VIEW ■ FRONT VIEW ■ RIGHT VIEW



WIRING

• TENSION CLAMP

Unit side connector: M-System's product

Cable side connector: DFMC1,5/2-ST-3,5 (Phoenix Contact)
(included in the package)

Applicable wire size: 0.2 - 1.5 mm^2

Stripped length: 10 mm

Recommended solderless terminal

- AI0,25-10YE 0.25 mm^2 (Phoenix Contact)
- AI0,34-10TQ 0.34 mm^2 (Phoenix Contact)
- AI0,5-10WH 0.5 mm^2 (Phoenix Contact)
- AI0,75-10GY 0.75 mm^2 (Phoenix Contact)
- A1-10 1.0 mm^2 (Phoenix Contact)
- A1,5-10 1.5 mm^2 (Phoenix Contact)

1 Ai 1	2 AG
3 24V	4 0V

5 Ai 2	6 AG
7 24V	8 0V

9 Ai 3	10 AG
11 24V	12 0V

13 Ai 4	14 AG
15 24V	16 0V

PIN No.	ID	FUNCTION
1	Ai 1	Input 1 (+)
2	AG	Input 1 (–)
3	24V	Excitation supply (+)
4	0V	Excitation supply (–)
5	Ai 2	Input 2 (+)
6	AG	Input 2 (–)
7	24V	Excitation supply (+)
8	0V	Excitation supply (–)
9	Ai 3	Input 3 (+)
10	AG	Input 3 (–)
11	24V	Excitation supply (+)
12	0V	Excitation supply (–)
13	Ai 4	Input 4 (+)
14	AG	Input 4 (–)
15	24V	Excitation supply (+)
16	0V	Excitation supply (–)

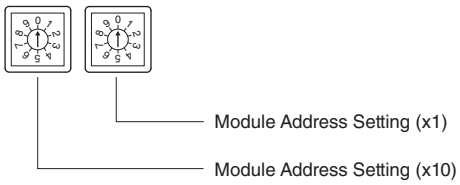
OPERATING MODE SETTING

(*) factory default setting

Note: Be sure to set unused SW4-5 through 4-7 to OFF.

■ Module Address

The left switch determines the tenth place digit, while the right one does the ones place digit of the module address. Address is selected between 0 to 30.
(Factory setting: 0)



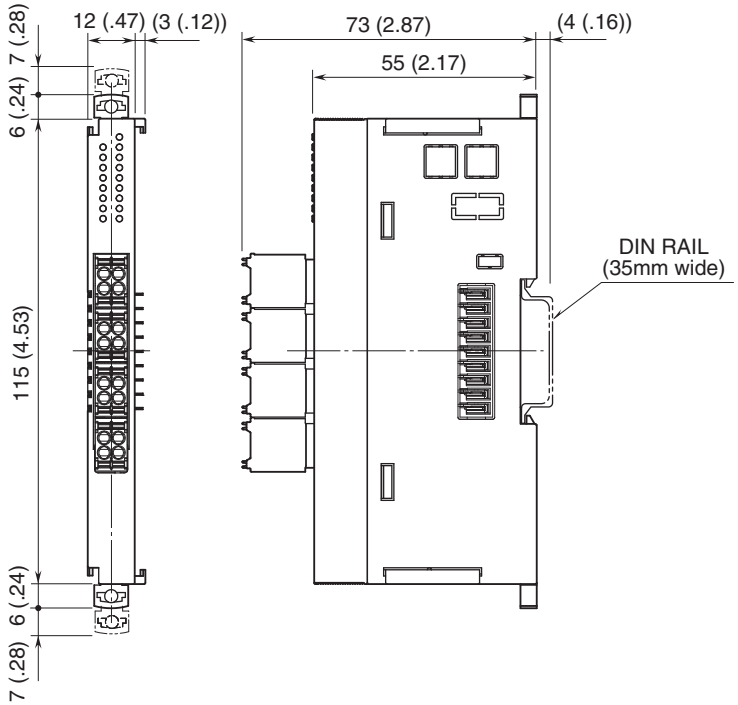
■ Terminator DIP SW

TERMINATOR SW	SW3
Without (*)	OFF
With	ON

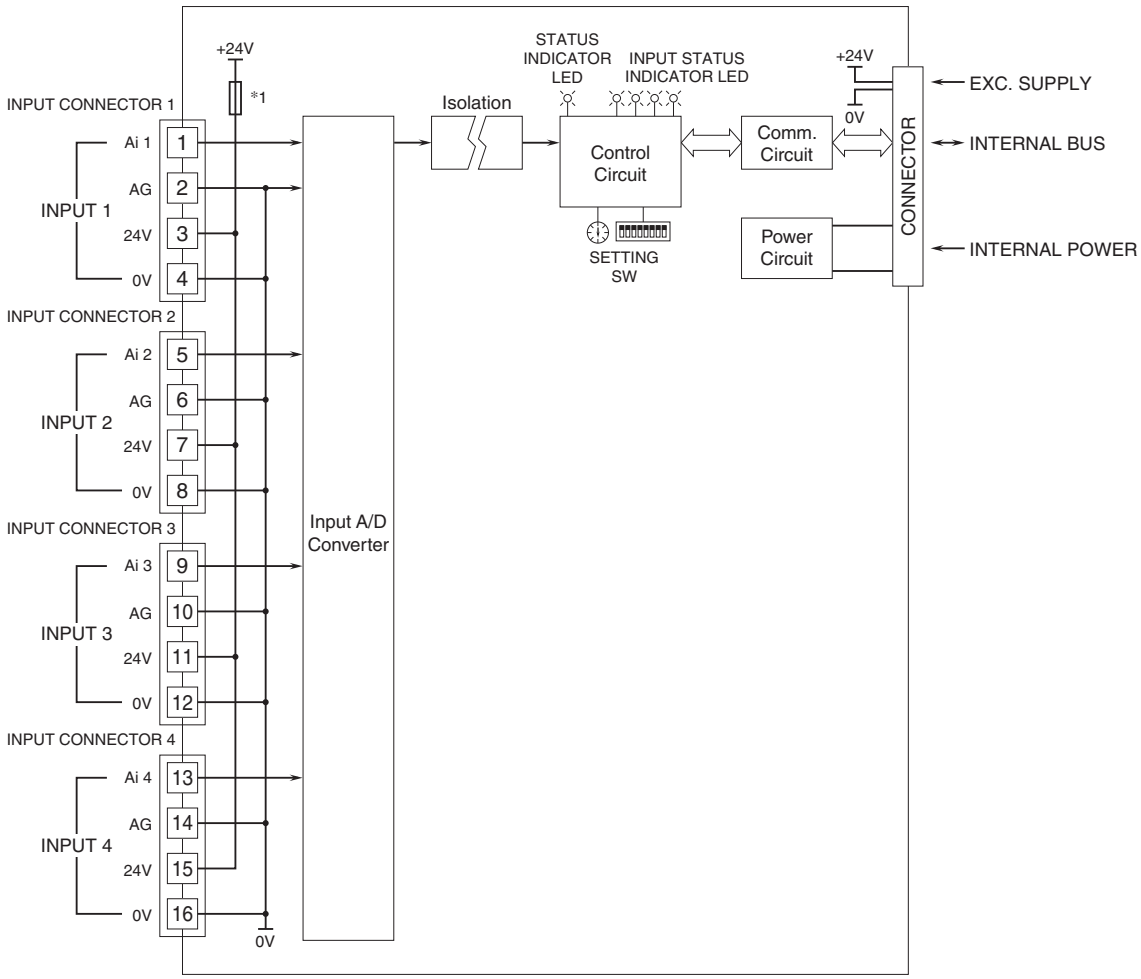
■ Input Setting

INPUT SETTING		INPUT 1		INPUT 2		INPUT 3		INPUT 4		MODE
		SW4-1	SW5-1	SW4-2	SW5-2	SW4-3	SW5-3	SW4-4	SW5-4	SW4-8
Configuration mode	Voltage input (*)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON
	Current input	OFF	ON	OFF	ON	OFF	ON	OFF	ON	ON
Fixed input mode	Voltage input 0 – 10V DC	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
	Current input 4 – 20mA DC	ON	ON	ON	ON	ON	ON	ON	ON	OFF

EXTERNAL DIMENSIONS unit: mm (inch)



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



*1. Fuse is not replaceable.

⚠ Specifications are subject to change without notice.