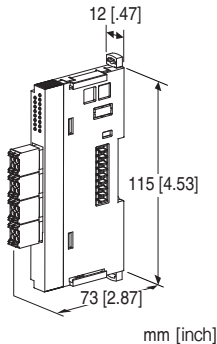


## Remote I/O R8 Series

### HIGH SPEED PULSE INPUT MODULE

#### Functions & Features

- Compact size remote I/O module for 1 point high speed pulse input
- Configurable with PC configurator (model: R8CFG)
- Separable tension clamp terminal



## MODEL: R8-PFT1[1]

### ORDERING INFORMATION

- Code number: R8-PFT1[1]  
Specify a code from below for [1].  
(e.g. R8-PFT1/Q)
- Specify the specification for option code /Q  
(e.g. /C01)

### NO. OF CHANNELS

1: 1 point

### [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 cable (model: COP-US)
  - PC configurator software (model: R8CFG)
- Downloadable at M-System's web site.

### GENERAL SPECIFICATIONS

#### Connection

- **Input:** Tension clamp
- **Excitation supply, internal bus:**  
Connected to internal bus connector
- **Internal power:** Via bus connector

**Isolation:** Input to exc. supply to internal bus or internal power

**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.

**Low-end cutout:** 0.1 %

### INPUT SPECIFICATIONS

#### ■ Sensor Excitation

**Voltage:** 12 V DC  $\pm 10\%$

**Current:** 15 mA

**Current limiting circuit:** Approx. 30 mA

#### ■ Input Range

0 - 100 kHz, 0 - 10 kHz, 0 - 1 kHz, 0 - 100 Hz, 0 - 10 Hz, 0 - 1 Hz, 0 - 100 mHz

**Pulse width time requirement:** 5  $\mu$ sec. min. for ON and OFF

#### ■ Detecting level

Detecting level: 15 - 100 % (of operational voltage range across the terminals)

Default setting: 50 % (configurable via the R8CFG)

Note 1. Input channel has three sets of input terminals

Input terminal 1: 11 - COM (12 or 14 or 16)

Input terminal 2: 11 - COM (12 or 14 or 16)

Input terminal 3: 11 - COM (12 or 14 or 16)

Note 2. Gain 1 or Gain 2 are selectable with the side DIP SW.

Note 3. Measured as 0 % below 15 % of the range.

#### ■ Open Collector (input terminal 3, gain 1)

**Sensor excitation:** 12 V DC

**Pull-up resistance:** 20 k $\Omega$  (shorted across 9 or 10 - 13)

**ON voltage:**  $\leq 1.5$  V ( $\leq 2$  k $\Omega$  recommended)

**OFF voltage:**  $\geq 2.5$  V ( $\geq 20$  k $\Omega$  recommended)

(Set detecting level 50 % when the saturation voltage is not greater than 0.8 V, set 70 % when the saturation voltage is between 0.8 to 1.5 V.)

#### ■ Voltage Pulse (input terminals 1 and 2)

**Waveform:** Square, sine or similar waveforms

**Input impedance:** 100 k $\Omega$  minimum at input terminal 1

20 k $\Omega$  minimum at input terminal 2

**Operational voltage across the terminals:**

0 - 50 V (input terminal 1, gain 1)

0 - 25 V (input terminal 1, gain 2)

0 - 12 V (input terminal 2, gain 1)

0 – 6 V (input terminal 2, gain 2)

**Threshold:** Pulse logic is detected by comparing input pulse voltage and the detecting level. Detecting 'Rise' or 'Sink' can be switched by using the R8CFG PC Configurator software; factory setting 'Rise')

## INSTALLATION

**Max. current consumption:** 200 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):**  $\pm 0.1$  %

**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:** 1

**Temp. coefficient:**  $\pm 0.015$  %/°C ( $\pm 0.008$  %/°F)

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

**Dielectric strength:**

1500 V AC @ 1 minute (input to exc. supply to internal bus or internal power to ground)

## STANDARDS & APPROVALS

**EU conformity:**

EMC Directive

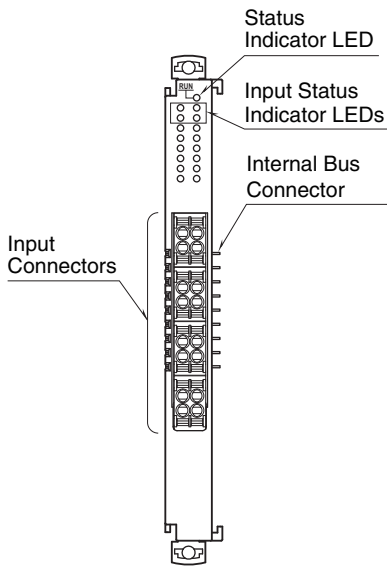
EMI EN 61000-6-4

EMS EN 61000-6-2

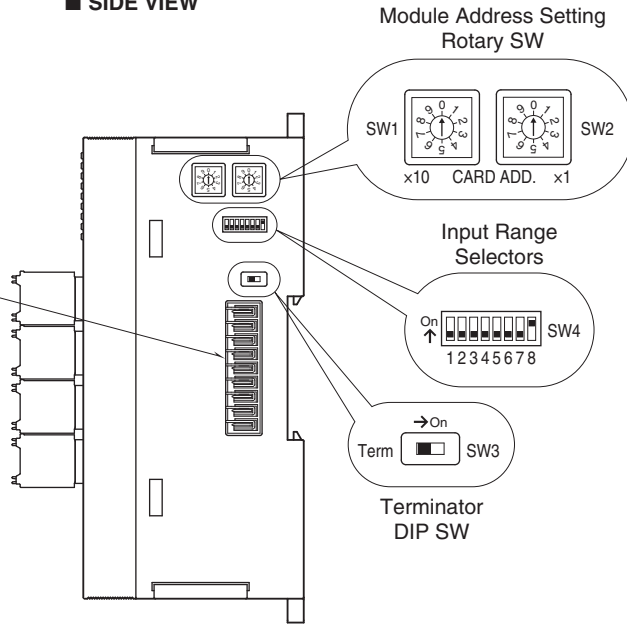
RoHS Directive

## EXTERNAL VIEW

### FRONT VIEW



### SIDE 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<sup>2</sup>

**Stripped length:** 10 mm

### Recommended solderless terminal

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

1	NC	2	NC
3	NC	4	NC
5	NC	6	NC
7	NC	8	NC
9	12V	10	12V
11	PI1	12	COM
13	PI2	14	COM
15	PI3	16	COM

PIN NO.	ID	FUNCTION
1	NC	Unused
2	NC	Unused
3	NC	Unused
4	NC	Unused
5	NC	Unused
6	NC	Unused
7	NC	Unused
8	NC	Unused
9	12V	Exc. supply (+)
10	12V	Exc. supply (+)
11	PI1	Input 1
12	COM	Common
13	PI2	Input 2
14	COM	Common
15	PI3	Input 3
16	COM	Common

## OPERATING MODE SETTING

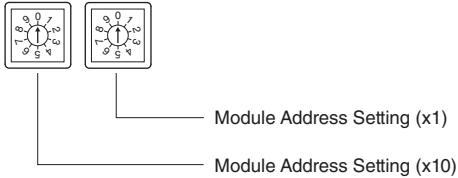
(\*) factory default setting

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 31.

(Factory setting: 0)



### ● Terminator DIP SW (SW3)

Terminator	SW3
Disable (*)	OFF
Enable	ON

### ● Range Setting (SW4-1, 2, 3)

Input range	SW4-1	SW4-2	SW4-3
0 - 100 kHz(*)	OFF	OFF	OFF
0 - 10 kHz	ON	OFF	OFF
0 - 1 kHz	OFF	ON	OFF
0 - 100 Hz	ON	ON	OFF
0 - 10 Hz	OFF	OFF	ON
0 - 1 Hz	ON	OFF	ON
0 - 100 mHz	OFF	ON	ON

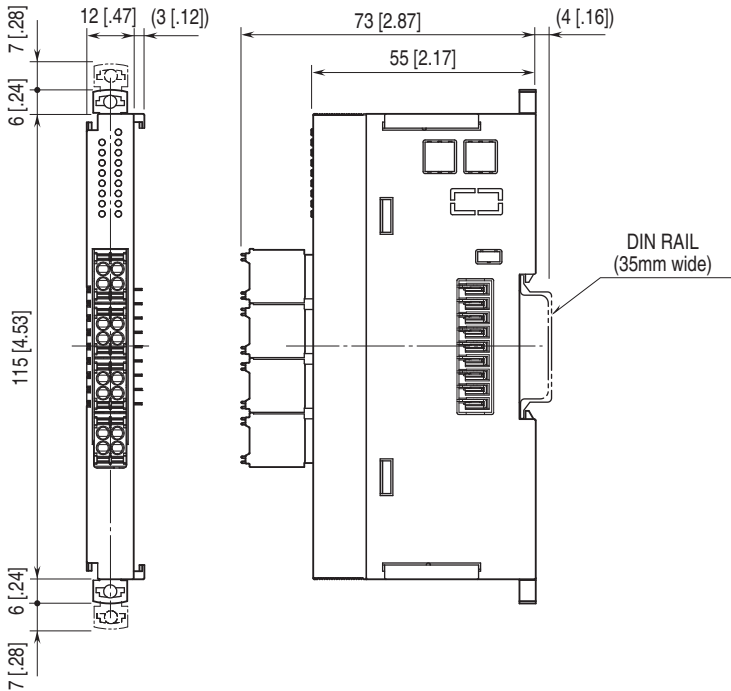
### ● Gain Setting (SW4-4)

Gain	SW4-4
1 (*)	OFF
2	ON

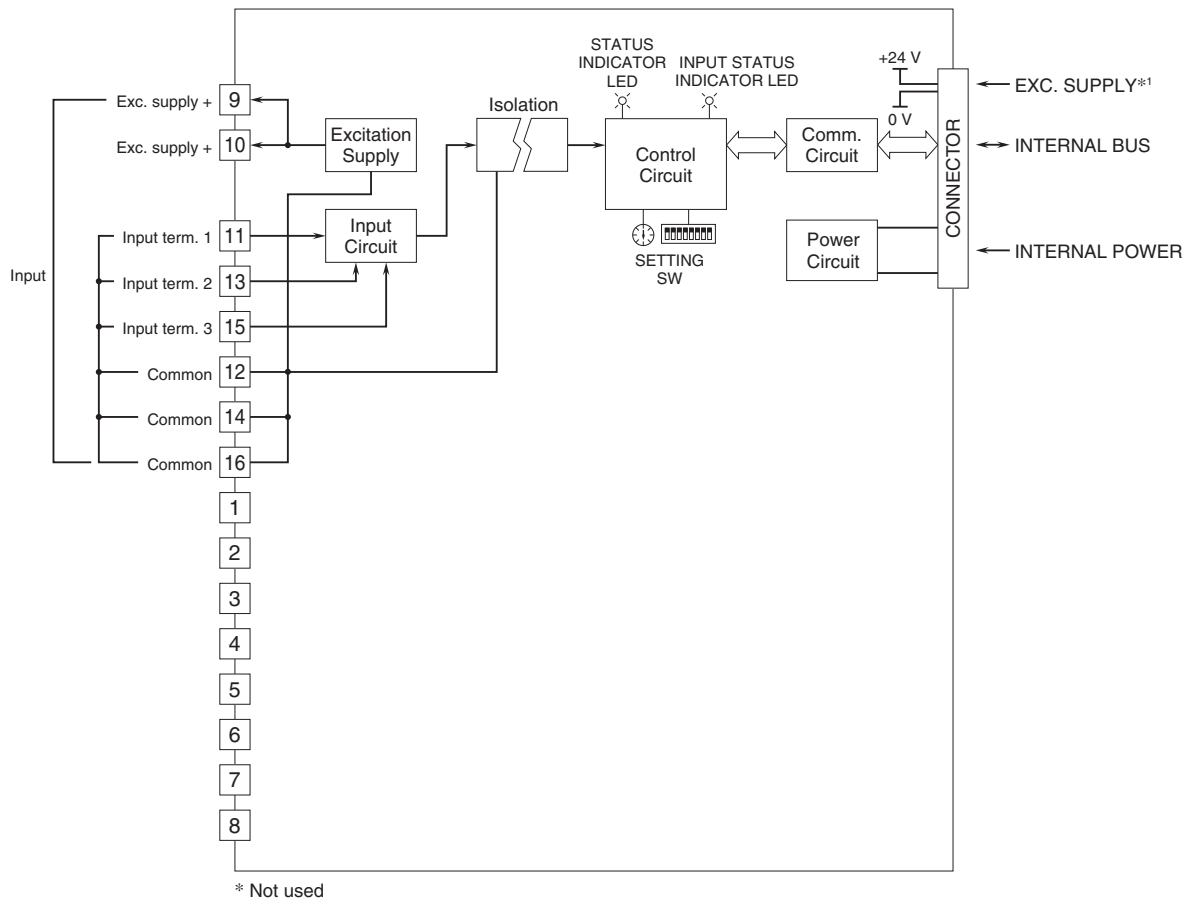
### ● Configuration Mode Setting (SW4-8)

Configuration mode	SW4-8
DIP SW (*)	OFF
PC	ON

**EXTERNAL DIMENSIONS unit: mm [inch]**



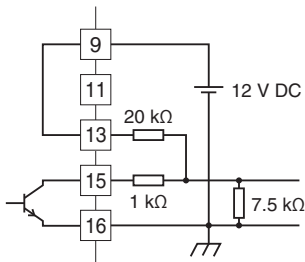
## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



\* Not used

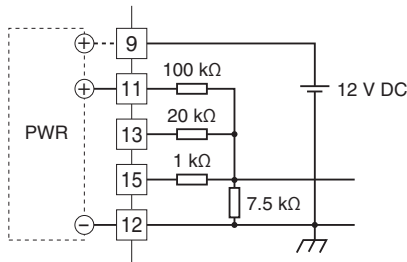
### Input Connection Examples

#### ■ Open Collector

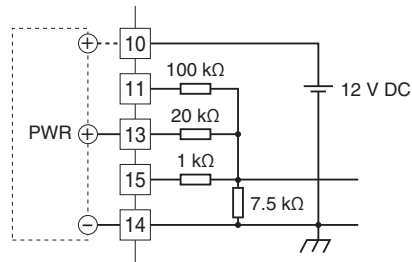


#### ■ Voltage Pulse

- Operational voltage across the terminals: 0 – 50 V, 0 – 25 V



- Operational voltage across the terminals: 0 – 12 V, 0 – 6 V



Specifications are subject to change without notice.