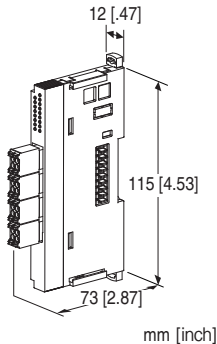


Remote I/O R8 Series

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: MCN-CON or COP-US)
 - PC configurator software (model: R8CFG)
- Downloadable at our web site.

GENERAL SPECIFICATIONS

Connection

- **Input:** Separable tension clamp terminal
- **Excitation supply, internal bus:**
Connected to internal bus connector

- **Internal power:** Supplied from internal 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 μ 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 Ω (shorted across 9 or 10 - 13)

ON voltage: ≤ 1.5 V (≤ 2 k Ω recommended)

OFF voltage: ≥ 2.5 V (≥ 20 k Ω 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 Ω minimum at input terminal 1
20 k Ω 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: $\pm 0.015\%/^{\circ}\text{C}$ ($\pm 0.008\%/^{\circ}\text{F}$)
Insulation resistance: $\geq 100\text{ M}\Omega$ with 500 V DC
Dielectric strength:
 1500 V AC @ 1 minute (input to exc. supply to internal bus or internal power to ground)

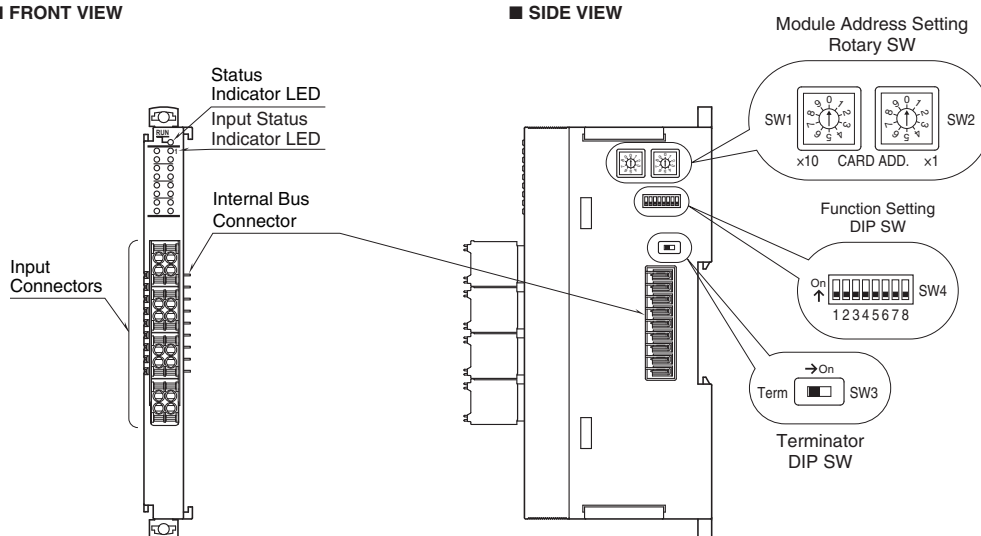
STANDARDS & APPROVALS

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

EXTERNAL VIEW

■ FRONT VIEW

■ SIDE VIEW



WIRING**■ SEPARABLE TENSION CLAMP TERMINAL**

Unit side connector: In-house made

Cable side connector: DPMC1,5/2-ST-3,5 (Phoenix Contact)
(included in the package)

Applicable wire size: 0.2 - 1.5 mm²

Stripped length: 10 mm

Recommended solderless terminal

- AI0,25-10YE 0.25 mm² (Phoenix Contact)
- AI0,34-10TQ 0.34 mm² (Phoenix Contact)
- AI0,5-10WH 0.5 mm² (Phoenix Contact)
- AI0,75-10GY 0.75 mm² (Phoenix Contact)
- A1-10 1.0 mm² (Phoenix Contact)
- A1,5-10 1.5 mm² (Phoenix Contact)

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

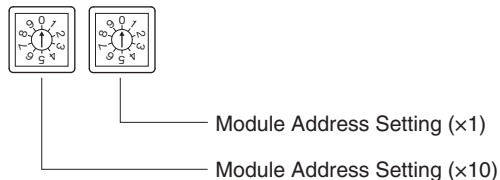
OPERATING MODE SETTING

(*) Factory default setting

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

■ MODULE ADDRESS (SW1, 2)

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)

**■ INPUT RANGE (SW4)**

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 (SW4)

GAIN	SW4-4
1 (*)	OFF
2	ON

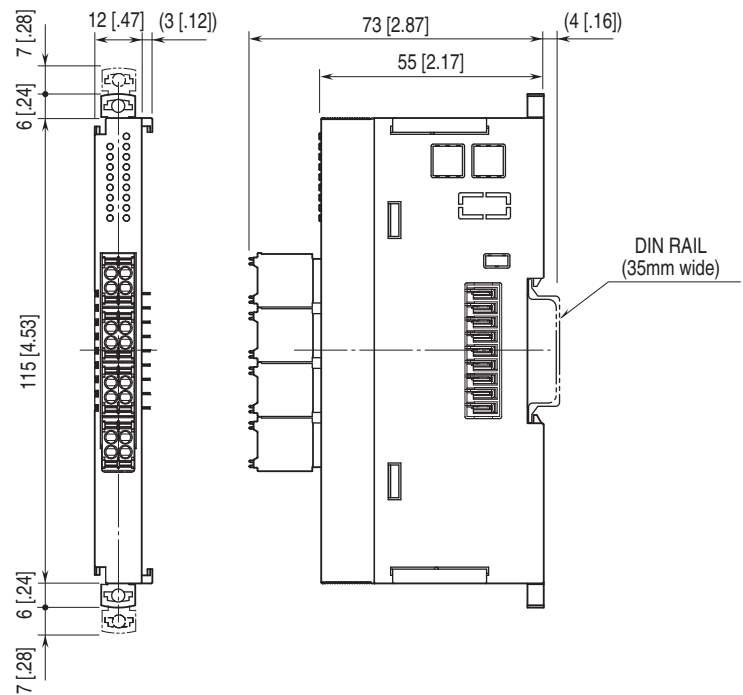
■ CONFIGURATION MODE (SW4)

CONFIGURATION MODE	SW4-8
DIP switch setting (*)	OFF
PC Configurator and communication	ON

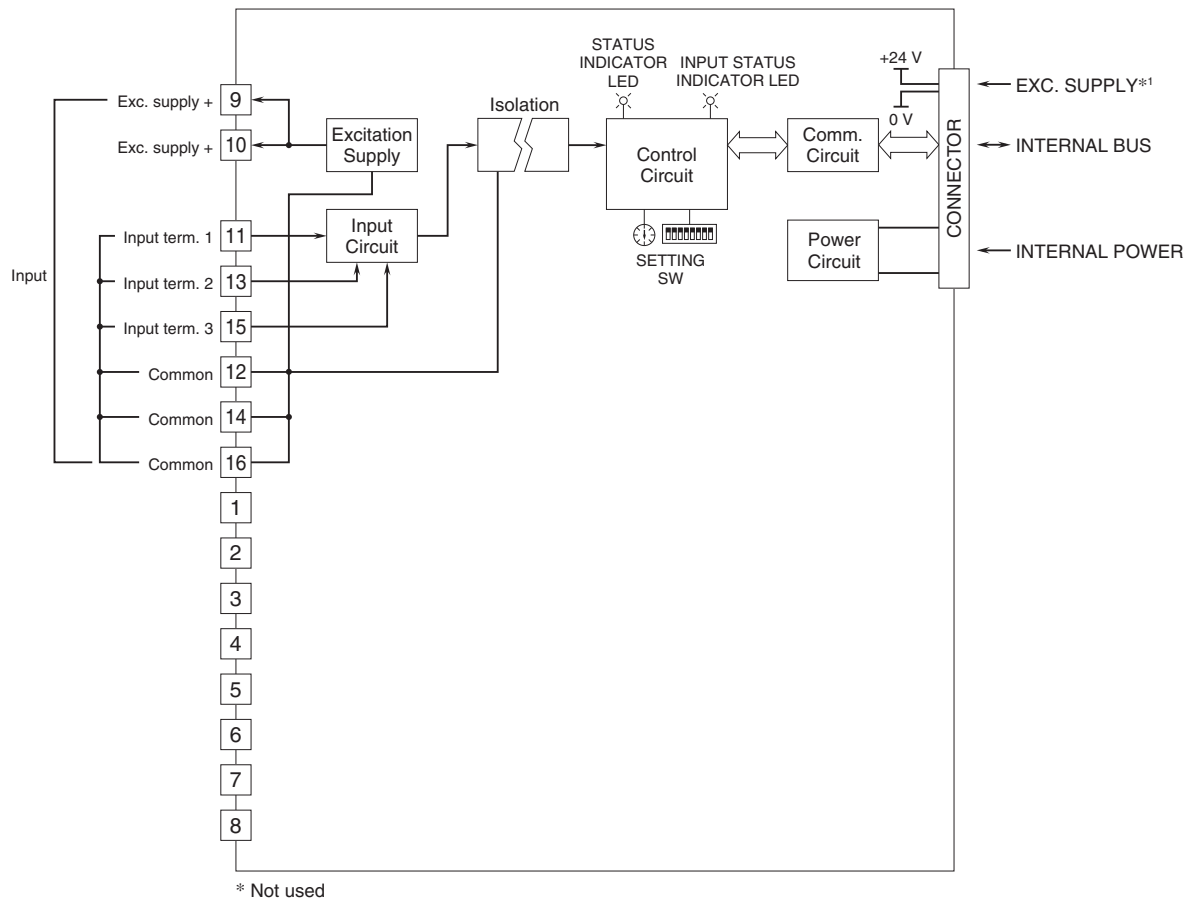
■ TERMINATOR (SW3)

TERMINATOR	SW3
Without (*)	OFF
With	ON

EXTERNAL DIMENSIONS unit: mm [inch]

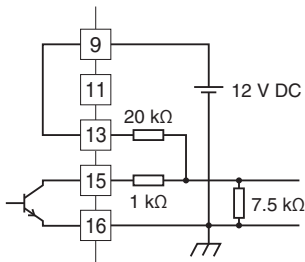


SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



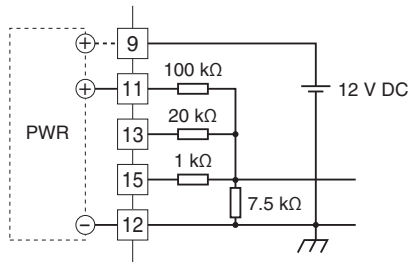
Input Connection Examples

■ Open Collector

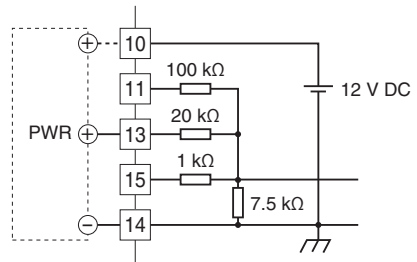


■ Voltage Pulse

- 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.