

## Remote I/O R30 Series

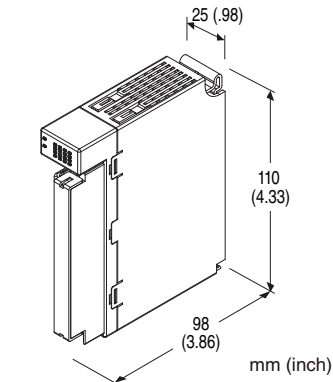
(No. ESU-9023)

### HIGH-SPEED DC VOLTAGE/CURRENT INPUT MODULE

(4 points, isolated)

#### Functions & Features

- 4 channels for high-speed DC voltage/current input remote I/O module
- Isolation between input channels
- Input range of each channel is individually adjustable with PC configurator



## MODEL: R30SVF4S[1]

### ORDERING INFORMATION

- Code number: R30SVF4S[1]
- Specify a code from below for [1].  
(e.g. R30SVF4S/Q)
- Specify the specification for option code /Q  
(e.g. /C01/SET)

### NO. OF CHANNELS

4: 4

### COMMUNICATION MODE

S: Single

### [1] OPTIONS

blank: none

/Q: With options (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

### CAUTION

#### ■ UNUSED INPUT CHANNELS

Set unused channels to "CH disabled" with PC Configurator software: R30CFG. When input range is 1 to 5 V DC or 4 to 20 mA DC, input values of the unused channels left open are to be lower than -15 %, which set a data error at the PLC or other host devices.

### RELATED PRODUCTS

- PC configurator software (model: R30CFG)  
Downloadable at M-System's web site.  
For connecting to PC, use commercially available Mini-B type USB cable. (provided by user)

### GENERAL SPECIFICATIONS

#### Connection

**Internal bus:** Via the Installation Base (model: R30BS)

**Input:** M3 separable screw terminal (torque 0.5 N·m)

**Internal power supply:** Via the Installation Base (model: R30BS)

**Solderless terminal:** Refer to the drawing at the end of the section.

**Recommended manufacturer:** Japan Solderless Terminal MFG. Co., Ltd., Nichifu Co., Ltd.

(Solderless terminals with insulation sleeve do not fit.)

**Applicable wire size:** 0.25 to 0.75 mm<sup>2</sup>

**Screw terminal:** Nickel-plated steel

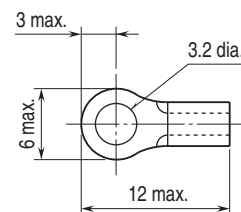
**Isolation:** Input 1 to input 2 to input 3 to input 4 to internal bus or internal power

**Input range:** Selectable with PC configuration software (model: R30CFG)

**Averaging number:** Selectable with PC configuration software (model: R30CFG)

**Status indicator LED:** RUN, ERR  
(refer to the instruction manual)

■ **Recommended solderless terminal size - M3 (unit: mm)**



## INPUT SPECIFICATIONS

Module type: Analog input, 4 points

### ■ DC Current

Input resistor: 50  $\Omega$

Input range: -20 to +20 mA DC, 0 to 20 mA DC,  
4 to 20 mA DC

### ■ Narrow span voltage

Input resistance:  $\geq 100 \text{ k}\Omega$

Input range: -1 to +1 V DC, 0 to 1 V DC, -0.5 to +0.5 V DC

### ■ Wide span voltage

Input resistance:  $\geq 1 \text{ M}\Omega$

Input range: -10 to +10 V DC (\*), -5 to +5 V DC,  
0 to 10 V DC, 0 to 5 V DC, 1 to 5 V DC

(\*) Factory setting

## INSTALLATION

Current consumption: 45 mA

Operating temperature: -10 to +55°C (14 to 131°F)

Storage temperature: -20 to +65°C (-4 to +149°F)

Operating humidity: 10 to 90 %RH (non-condensing)

Atmosphere: No corrosive gas or heavy dust

Mounting: Installation Base (model: R30BS)

Weight: 170 g (0.37 lb)

## PERFORMANCE

Conversion accuracy:  $\pm 0.1 \%$

Conversion rate: 200  $\mu\text{sec.}$  per 4 channels

Data range: 0 - 10000 of the input range

Data allocation: 4

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

Input delay time:  $\leq 1 \text{ ms}$  (0 - 90 %)

Response time (time required until a network card transmits  
input signal (0 - 90 %): Input circuit delay time + conversion  
time + internal bus period (approx. 1 msec.)

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

Dielectric strength: 1500 V AC @ 1 minute (input 1 to input  
2 to input 3 to input 4 to internal bus or internal power)

1500 V AC @ 1 minute (power input to FE; isolated on the  
power supply module)

## STANDARDS & APPROVALS

EU conformity:

EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

RoHS Directive

EN 50581

**CONFIGURATOR SOFTWARE SETTING**

With configurator software, settings shown below are available.  
Refer to the software manual of R30CFG for detailed operation.

**■ CHANNEL INDIVIDUAL SETTING**

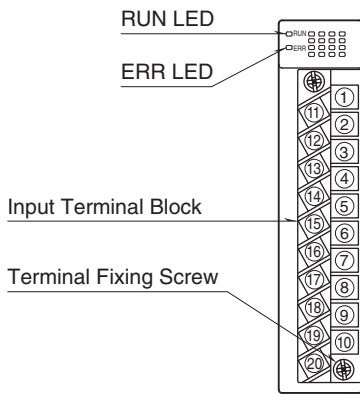
ITEM	USABLE RANGE	DEFAULT SETTING
Unused setting	CH enabled CH disabled	CH enabled
Input range	-10 – +10 V DC -5 – +5 V DC -1 – +1 V DC 0 – 10 V DC 0 – 5 V DC 1 – 5 V DC 0 – 1 V DC -0.5 – +0.5 V DC -20 – +20 mA DC 4 – 20 mA DC 0 – 20 mA DC	-10 – +10 V DC
Fine zero adjustment	-320.00 – +320.00 (%)	0.00 (%)
Fine gain adjustment	-3.2000 – +3.2000	1.0000
Scaled range Zero	-32 000 – +32 000	0
Scaled range Span	-32 000 – +32 000	10 000

**■ CHANNEL BATCH SETTING**

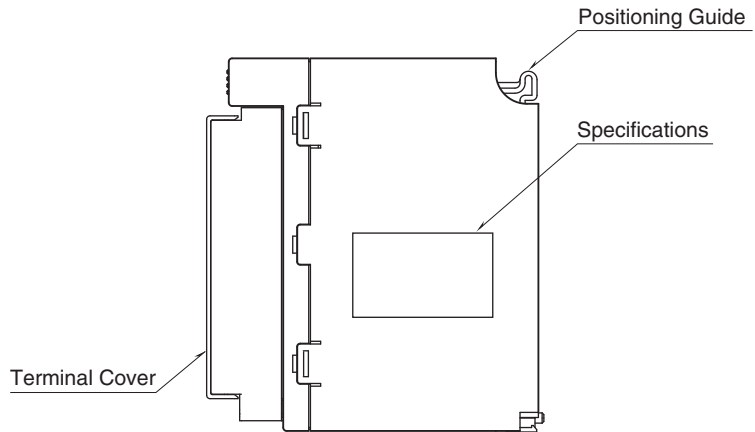
ITEM	USABLE RANGE	DEFAULT SETTING
Averaging number	1, 2, 4, 8, 16, 32, 64, 128, 256	1
Simulate input	Normal input Simulated data	Normal input

## EXTERNAL VIEW

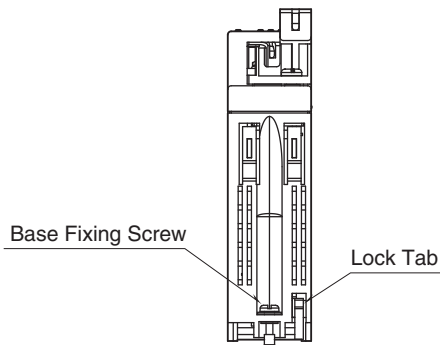
### FRONT VIEW



### SIDE VIEW



### BOTTOM VIEW

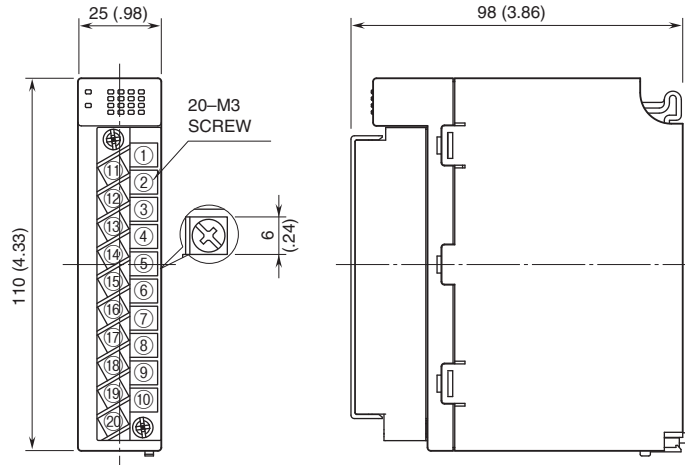


## TERMINAL ASSIGNMENTS

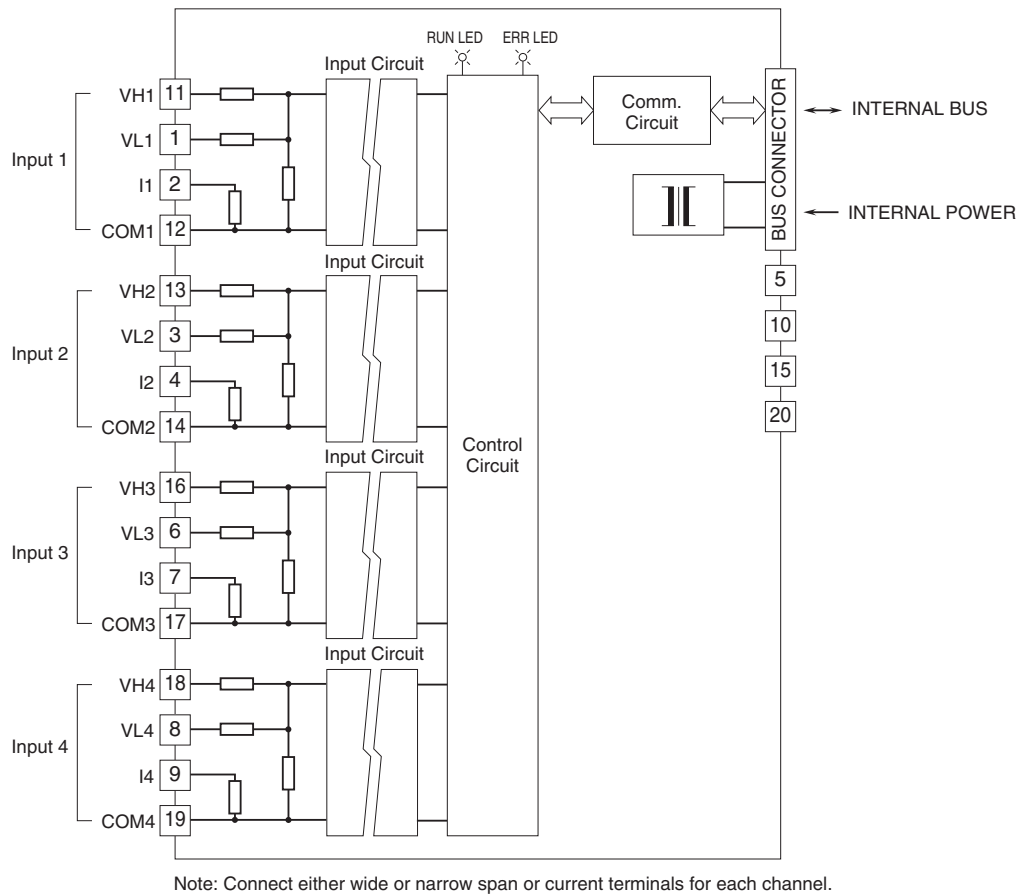
11	1
VH1	VL1
12	2
COM1	I1
13	3
VH2	VL2
14	4
COM2	I2
15	5
NC	NC
16	6
VH3	VL3
17	7
COM3	I3
18	8
VH4	VL4
19	9
COM4	I4
20	10
NC	NC

NO.	ID	FUNCTION	NO.	ID	FUNCTION
1	VL1	Narrow span volt. 1	11	VH1	Wide span volt. 1
2	I1	Current 1	12	COM1	Common 1
3	VL2	Narrow span volt. 2	13	VH2	Wide span volt. 2
4	I2	Current 2	14	COM2	Common 2
5	NC	No connection	15	NC	No connection
6	VL3	Narrow span volt. 3	16	VH3	Wide span volt. 3
7	I3	Current 3	17	COM3	Common 3
8	VL4	Narrow span volt. 4	18	VH4	Wide span volt. 4
9	I4	Current 4	19	COM4	Common 4
10	NC	No connection	20	NC	No connection

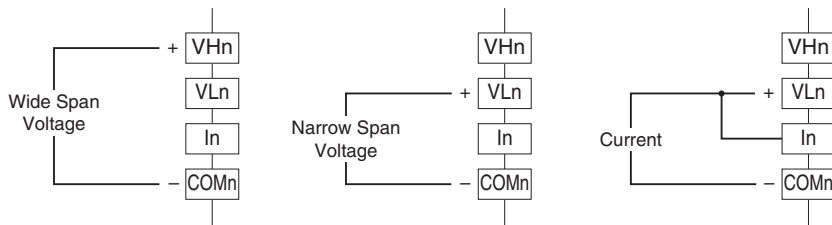
**EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)**



## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



### Input Connection Examples



Note: Be sure to close across VLn and In terminals for a current input.



Specifications are subject to change without notice.