

Remote I/O R30 Series

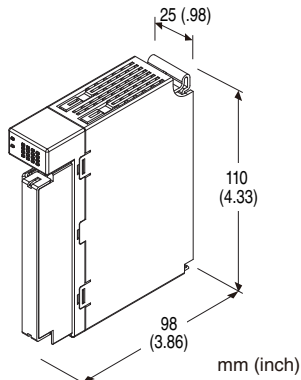
(No. ESU-9023)

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: 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 mm²

Screw terminal: Nickel-plated steel

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

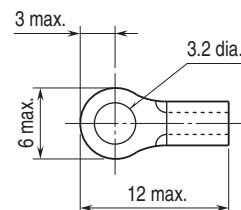
Input range: Selectable with PC configuration software (model: R30CFG)

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 Ω

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: $\leq 1 \text{ msec.}$ (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

The following parameters can be set with using PC Configurator Software (model: R30CFG)
Refer to the users manual for the R30CFG for detailed operation of the software program.

■ CHANNEL INDIVIDUAL SETTING

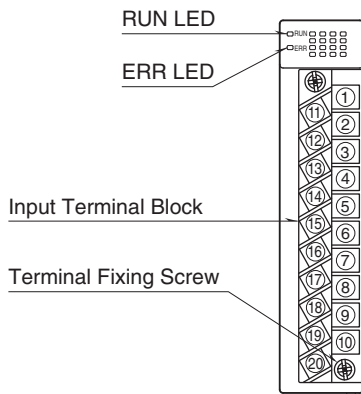
PARAMETER	SETTING RANGE	DEFAULT SETTING
Unused setting	CH enabled CH disabled	CH enabled
Input range	-10 – +10 V DC -5 – +5 V DC -1 – +1 V DC 0 – 10 V DC 0 – 5 V DC 1 – 5 V DC 0 – 1 V DC -0.5 – +0.5 V DC -20 – +20 mA DC 4 – 20 mA DC 0 – 20 mA DC	-10 – +10 V DC
Fine zero adjustment	-320.00 – +320.00 (%)	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

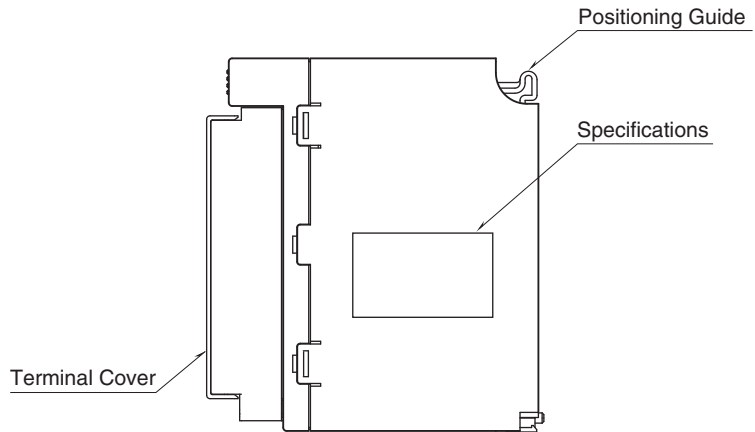
PARAMETER	SETTING RANGE	DEFAULT SETTING
Averaging number	1, 2, 4, 8, 16, 32, 64, 128, 256	1
Simulate input	Normal input Simulated data	Normal input

EXTERNAL VIEW

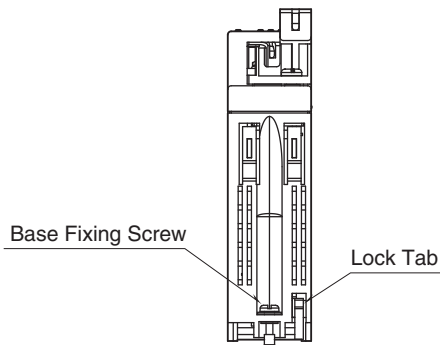
FRONT VIEW



SIDE VIEW



BOTTOM VIEW

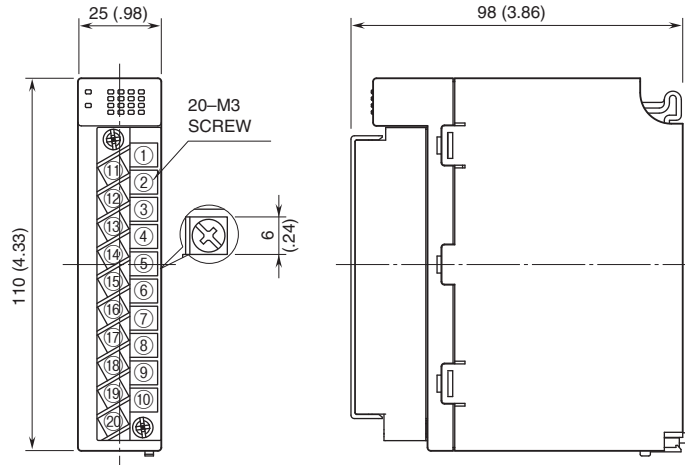


TERMINAL ASSIGNMENTS

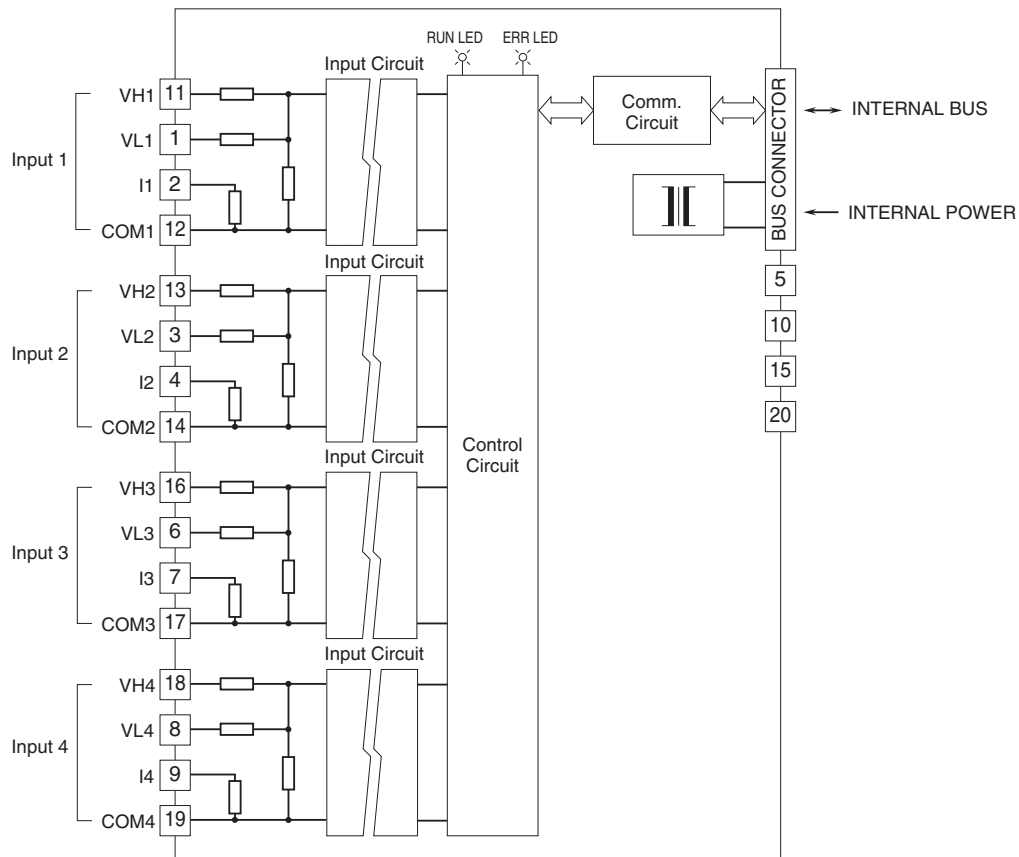
11	VL1
VH1	2
12	I1
COM1	3
13	VL2
VH2	4
14	I2
COM2	5
15	NC
NC	6
16	VL3
VH3	7
17	I3
COM3	8
18	VL4
VH4	9
19	I4
COM4	10
20	NC
NC	

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)

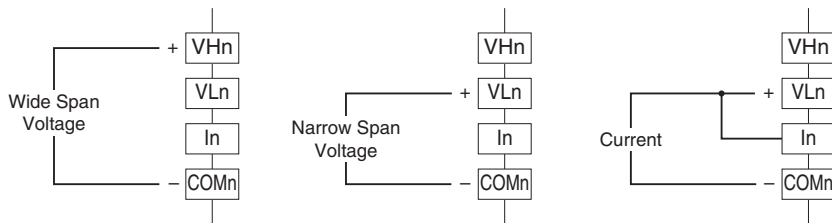


SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Note: Connect either wide or narrow span or current terminals for each channel.

Input Connection Examples



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



Specifications are subject to change without notice.