

Remote I/O R30 Series

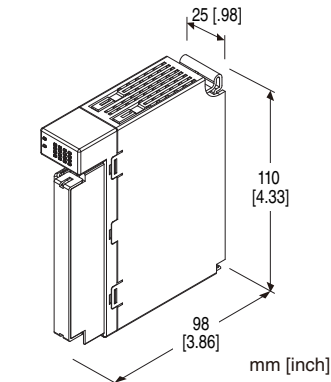
(No. ESU-9023)

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 our 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 our 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

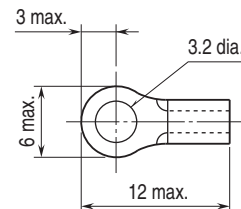
Input range: Selectable with PC configuration software (model: R30CFG)

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: ≥ 100 k Ω

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

■ Wide span voltage

Input resistance: ≥ 1 M Ω

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: 50 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: ± 0.1 %

Conversion rate: 200 μ sec. per 4 channels

Data range: 0 - 10000 of the input range

Data allocation: 4

Temp. coefficient: ± 0.015 %/°C (± 0.008 %/°F)

Input delay time: ≤ 1 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: ≥ 100 M Ω 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

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

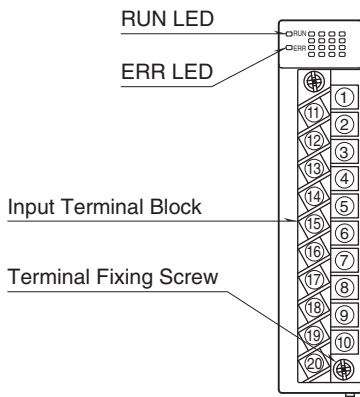
| PARAMETER | SETTING RANGE | DEFAULT SETTING |
|----------------------|--|-----------------|
| Unused setting | CH enabled CH disabled | CH enabled |
| Input range | -10 – +10 V DC -5 – +5 V DC -1 – +1 V DC 0 – 10 V DC 0 – 5 V DC 1 – 5 V DC 0 – 1 V DC -0.5 – +0.5 V DC -20 – +20 mA DC 4 – 20 mA DC 0 – 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

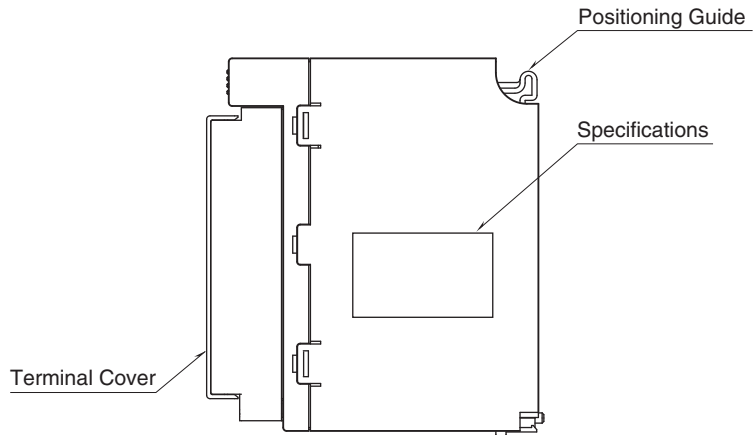
| PARAMETER | SETTING RANGE | DEFAULT SETTING |
|------------------|-------------------------------------|-----------------|
| Averaging number | 1, 2, 4, 8, 16, 32, 64, 128, 256 | 1 |
| Simulate input | Normal input Simulated data | Normal input |

EXTERNAL VIEW

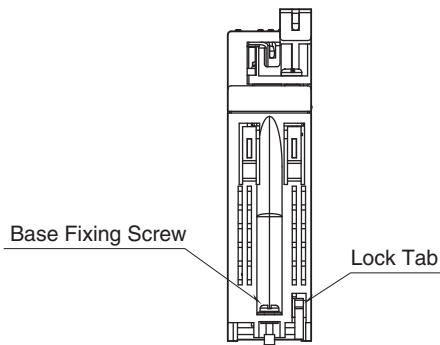
FRONT VIEW



SIDE VIEW



BOTTOM VIEW

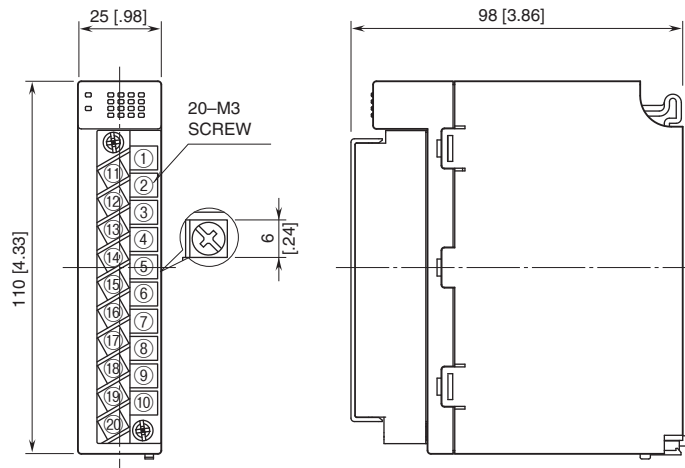


TERMINAL ASSIGNMENTS

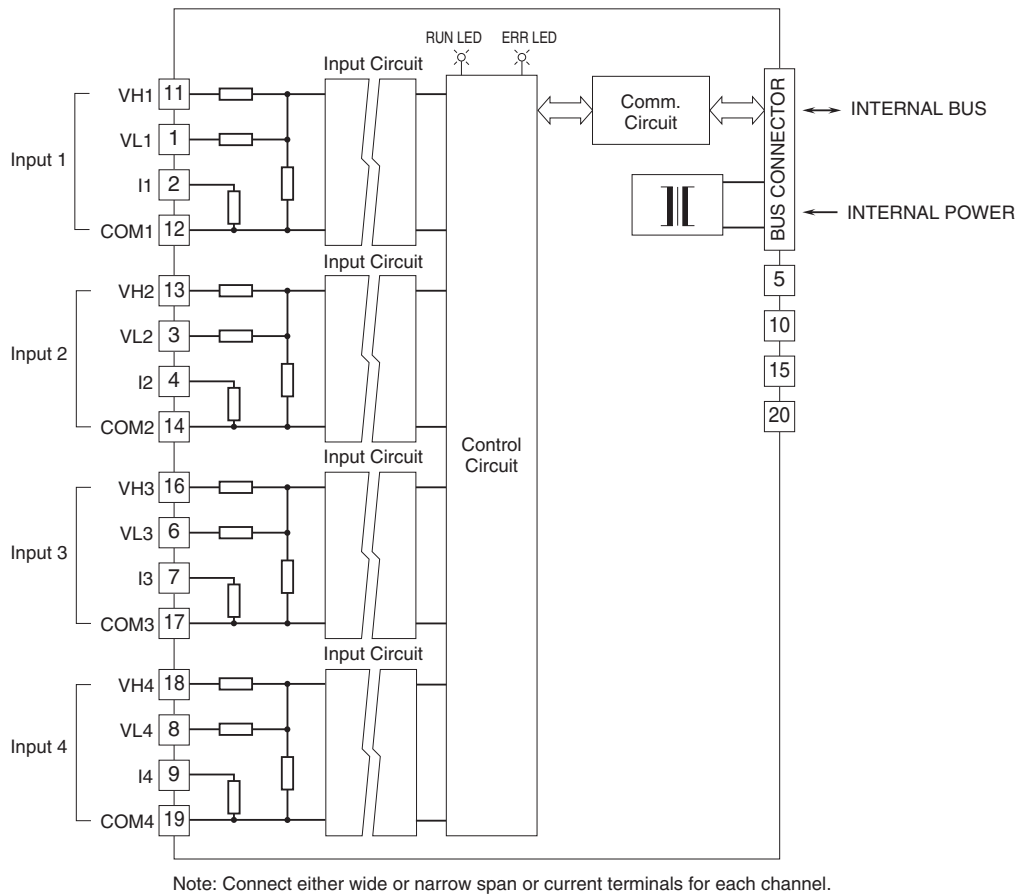
| | |
|------|-----|
| 11 | VL1 |
| VH1 | 2 |
| 12 | I1 |
| COM1 | 3 |
| 13 | VL2 |
| VH2 | 4 |
| 14 | I2 |
| COM2 | 5 |
| 15 | NC |
| NC | 6 |
| 16 | VL3 |
| VH3 | 7 |
| 17 | I3 |
| COM3 | 8 |
| 18 | VL4 |
| VH4 | 9 |
| 19 | I4 |
| COM4 | 10 |
| 20 | NC |
| NC | |

| 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 |

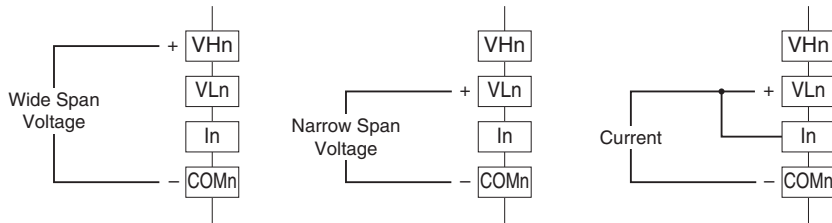
EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Input Connection Examples



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



Specifications are subject to change without notice.