

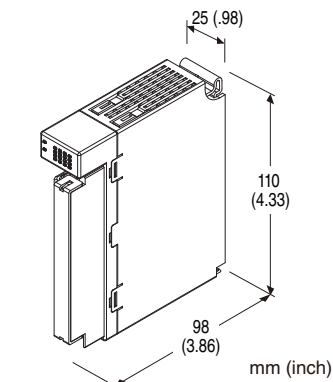
Remote I/O R30 Series

RTD INPUT MODULE

(4 points, isolated)

Functions & Features

- 4 channels for RTD input remote I/O module
- Isolation between input channels
- Input range of each channel is individually adjustable with PC configurator



MODEL: R30RS4S[1]

ORDERING INFORMATION

- Code number: R30RS4S[1]
- Specify a code from below for [1].
(e.g. R30RS4S/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
(No. ESU-9003)

CAUTION

■ UNUSED INPUT CHANNELS

Set unused channels to "CH disabled" with PC Configurator software (model: R30CFG). Otherwise, unused channels left open are to be burnout status, setting 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)

Conversion rate: Selectable with PC configuration software (model: R30CFG)

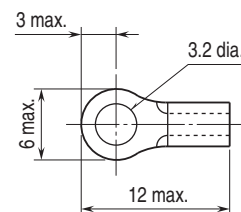
Burnout: Selectable among upscale, downscale or no burnout with PC configurator software (model: R30CFG)

Linearization: Standard

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
RTD: Pt 100 (JIS '97, IEC), Pt 100 (JIS '89), JPt 100 (JIS '89), Pt 50Ω (JIS '81), Ni 100, Cu 10, Cu 50
Sensing current: Max. 1 mA
Allowable leadwire resistance: Max. 100 Ω per wire

Temperature range

RTD	°C	
	USABLE RANGE	CONFORMANCE RANGE
Pt 100 (JIS'97, IEC)	-240 – +900	-200 – +850
Pt 100 (JIS'89)	-240 – +900	-200 – +660
JPt 100 (JIS'89)	-236 – +560	-200 – +510
Pt 50Ω (JIS'81)	-236 – +700	-200 – +649
Ni 100	-100 – +252	-80 – +250
Cu 10@25°C	-212 – +312	-50 – +250
Cu 50	-100 – +200	-50 – +150
RTD	°F	
	USABLE RANGE	CONFORMANCE RANGE
Pt 100 (JIS'97, IEC)	-400 – +1652	-328 – +1562
Pt 100 (JIS'89)	-400 – +1652	-328 – +1220
JPt 100 (JIS'89)	-393 – +1040	-328 – +950
Pt 50Ω (JIS'81)	-393 – +1292	-328 – +1200
Ni 100	-148 – +486	-112 – +482
Cu 10@25°C	-350 – +594	-58 – +482
Cu 50	-148 – +392	-58 – +302

Burnout value: Upper 32767, Lower -32768

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

INSTALLATION

Current consumption: 50 mA max.
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: 160 g (0.35 lb)

PERFORMANCE

Conversion accuracy: ±1°C (±1.8°F) except ±3°C (±5.4°F)
 for Cu 10 @ 25°C
Conversion rate: 250 msec. or 500 msec. selectable
Converted data range
 °C, K: Engineering unit value × 10 (integer) (Default setting)
 °F: Engineering unit value (integer)
 * Scaling of converted data is configurable with the configurator software (model: R30CFG). Refer to the software manual for details.
Data allocation: 4
Temp. coefficient: ±0.015 %/°C (±0.008 %/°F)
Input delay time: 50 msec.
Response time: Conversion rate × 2 + 50 msec. (0 - 90 %)
Burnout response time: ≤ 1 sec.
Insulation resistance: ≥ 100 MΩ with 500 V DC

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

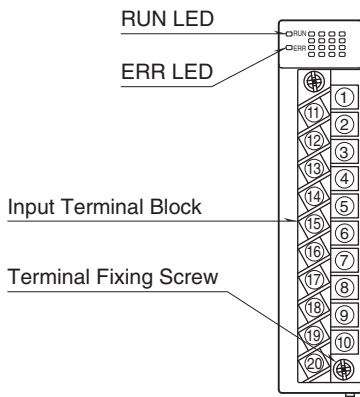
PARAMETER	SETTING RANGE	DEFAULT SETTING
Unused setting	CH enabled CH disabled	CH enabled
Input type	Pt 100 (JIS '97, IEC) Pt 100 (JIS '89) JPt 100 (JIS '89) Pt 50 Ω (JIS '81) Ni 100 Cu 10 @ 25°C Cu 50	Pt100 (JIS '97, IEC)
Burnout	Upscale Downscale None	Upscale
Unit	degC degF K	degC
Fine zero adjustment	-320.00 – +320.00 (%)	0.00 (%)
Fine gain adjustment	-3.2000 – +3.2000	1.0000
Zero base	-3 200.0 – +3 200.0 (degC, K) -32 000 – +32 000 (degF)	0.0
Full base	-3 200.0 – +3 200.0 (degC, K) -32 000 – +32 000 (degF)	0.0
Scaled range Zero	-32 000 – +32 000	0
Scaled range Span	-32 000 – +32 000	10 000

■ CHANNEL BATCH SETTING

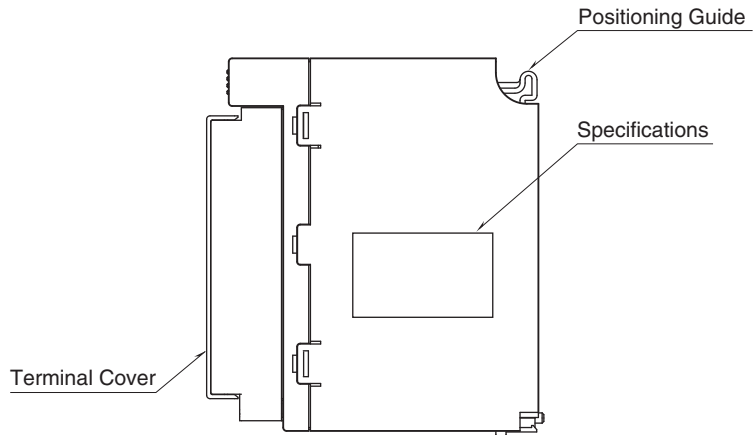
PARAMETER	SETTING RANGE	DEFAULT SETTING
Conversion rate	250 ms 500 ms	500 ms
Simulate input	Normal input Simulated data	Normal input

EXTERNAL VIEW

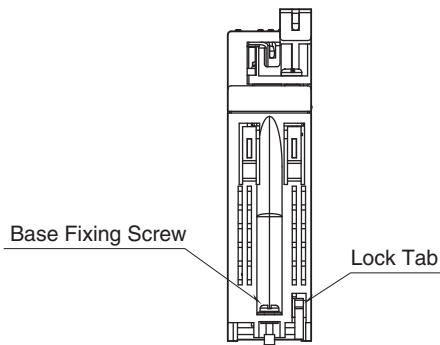
FRONT VIEW



SIDE VIEW



BOTTOM VIEW

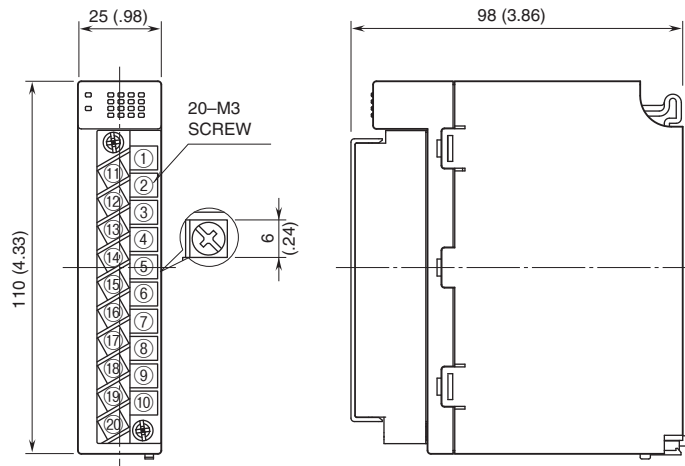


TERMINAL ASSIGNMENTS

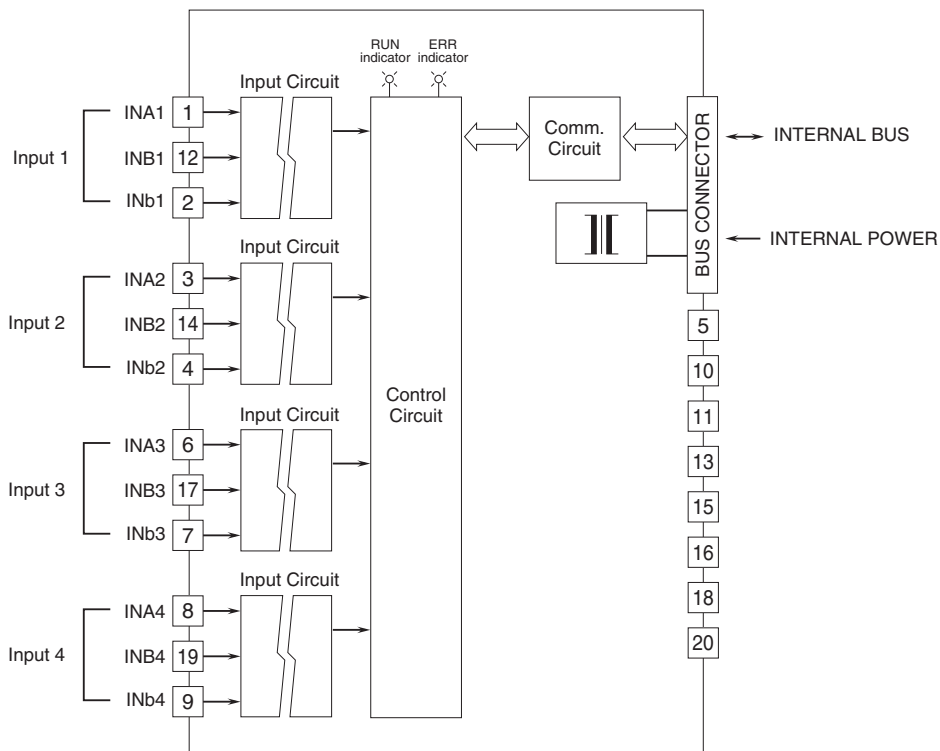
	1	INA1	
11	NC	2	INb1
12	INB1	3	INA2
13	NC	4	INb2
14	INB2	5	NC
15	NC	6	INA3
16	NC	7	INb3
17	INB3	8	INA4
18	NC	9	INb4
19	INB4	10	NC
20	NC		

NO.	ID	FUNCTION	NO.	ID	FUNCTION
1	INA1	RTD 1-A	11	NC	No connection
2	INb1	RTD 1-b	12	INB1	RTD 1-B
3	INA2	RTD 2-A	13	NC	No connection
4	INb2	RTD 2-b	14	INB2	RTD 2-B
5	NC	No connection	15	NC	No connection
6	INA3	RTD 3-A	16	NC	No connection
7	INb3	RTD 3-b	17	INB3	RTD 3-B
8	INA4	RTD 4-A	18	NC	No connection
9	INb4	RTD 4-b	19	INB4	RTD 4-B
10	NC	No connection	20	NC	No connection

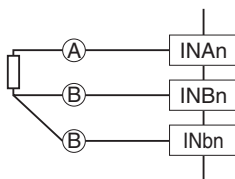
EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



■ Input Connection Examples





Specifications are subject to change without notice.