

THERMOCOUPLE INPUT MODULE
(re-transmitted output)MODEL **R5-TS1A****BEFORE USE**

Thank you for choosing M-System. Before use, please check contents of the package you received as outlined below.

If you have any problems or questions with the product, please contact M-System's Sales Office or representatives.

■ PACKAGE INCLUDES:

Thermocouple input module (body + CJC sensor)(1)

■ MODEL NO.

Confirm Model No. marking on the product to be exactly what you ordered.

■ INSTRUCTION MANUAL

This manual describes necessary points of caution when you use this product, including installation, connection and basic maintenance procedures.

POINTS OF CAUTION**■ CONFORMITY WITH EU DIRECTIVES**

- The equipment must be mounted inside the instrument panel of a metal enclosure.
- Insert noise filters for the signal I/O connected to the unit. COSEL Model NAC-06-472 or equivalent is recommended.
- The actual installation environments such as panel configurations, connected devices, connected wires, may affect the protection level of this unit when it is integrated in a panel system. The user may have to review the CE requirements in regard to the whole system and employ additional protective measures to ensure the CE conformity.

■ HOT SWAPPABLE MODULES

- Replacing the module does not affect other modules on the same base. Thus, the module can be replaced while the power is ON. However, replacing multiple modules at once may greatly change live voltage levels. We highly recommend to replace them one by one.

■ GENERAL PRECAUTIONS

- DO NOT set the switches while the power is supplied. The switches are used only for maintenance without the power.

■ ENVIRONMENT

- Indoor use.
- When heavy dust or metal particles are present in the air, install the unit inside proper housing with sufficient ventilation.
- Do not install the unit where it is subjected to continuous vibration. Do not subject the unit to physical impact.
- Environmental temperature must be within -10 to +55°C (14 to 131°F) with relative humidity within 30 to 90% RH in order to ensure adequate life span and operation.

■ WIRING

- Do not install cables close to noise sources (relay drive cable, high frequency line, etc.).
- Do not bind these cables together with those in which noises are present. Do not install them in the same duct.

■ AND

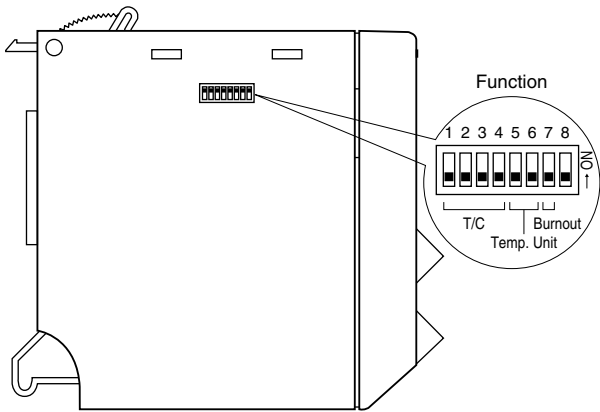
- The unit is designed to function as soon as power is supplied, however, a warm up for 10 minutes is required for satisfying complete performance described in the data sheet.

INSTALLATION

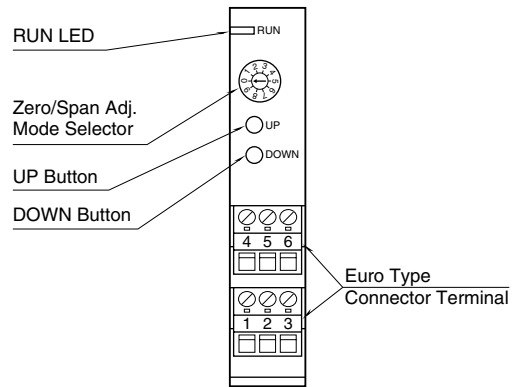
Use the Installation Base (model: R5-BS).

COMPONENT IDENTIFICATION

■ SIDE VIEW



■ FRONT VIEW



■ SIDE DIP SW

(*) Factory setting

Thermocouple type, temperature unit and burnout are selectable with the side DIP switches.

• Thermocouple: SW1, 2, 3, 4

SW				T/C TYPE
1	2	3	4	
OFF	OFF	OFF	OFF	(PR)
ON	OFF	OFF	OFF	K (CA) (*)
OFF	ON	OFF	OFF	E (CRC)
ON	ON	OFF	OFF	J (IC)
OFF	OFF	ON	OFF	T (CC)
ON	OFF	ON	OFF	B (RH)
OFF	ON	ON	OFF	R
ON	ON	ON	OFF	S
OFF	OFF	OFF	ON	C (WRe 5-26)
ON	OFF	OFF	ON	N
OFF	ON	OFF	ON	U
ON	ON	OFF	ON	L
OFF	OFF	ON	ON	P (Platinel II)

• Temperature Unit: SW5, 6

SW		TEMP. UNIT
5	6	
OFF	OFF	°C (*)
ON	OFF	°F
ON	ON	K

• Burnout: SW7

SW	BURNOUT
7	
OFF	Downscale
ON	Upscale (*)

Note: Be sure to set unused SW8 to OFF.

■ ZERO/SPAN ADJ. MODE SELECTOR ROTARY SW

SW	MODE *1	FUNCTION	RUN LED *1
0 (*)	Monitor	Output % proportional to the Input %	Red/Green ON *2
1	Output 0% adjustment	Increments by 1	Red Blinking
2		Increments by 5	
3		Increments by 10	
4	Output 100% adjustment	Increments by 1	Green Blinking
5		Increments by 5	
6		Increments by 10	
7	Simulated output	Simulates output 0%	Orange Blinking
8		Simulates output 50%	
9		Simulates output 100%	

(*) Factory setting

*1. When switching Monitor mode to another, set the rotary switch to a desired SW position and then press UP/DOWN button, so that the mode is switched. Along with mode switching, RUN LED turns to blinking as shown in the table. Setting the rotary switch to 0, the mode is automatically switched to Monitor mode in a few seconds.

*2. Red when the bus A operates normally;
Green when the bus B operates normally;
Amber when both buses operate normally.

• Zero/Span Adjustment Modes

Monitor Mode

Re-transmits the input signal as output in proportion.

Output 0% Adjustment Mode

Adjusts the 0% output signal using the front UP/DOWN buttons, in monitoring the output value with a multimeter. SW1 through SW3 switch the internal increments by 1, 5 and 10.

Output 100% Adjustment Mode

Adjusts the 100% output signal using the front UP/DOWN buttons, in monitoring the output value with a multimeter. SW4 through SW6 switch the internal increments by 1, 5 and 10.

Simulated Output Mode

Outputs the simulated signals of 0%, 50% and 100%.

• How to Operate

- 1) Start up in Monitor Mode (SW position = 0) and wait for 2 or 3 seconds.
- 2) Switch to another mode and go through the adjustments.
- 3) Reset the switch to the position '0' so that the new setting is stored in the internal memory.

PC CONFIGURATOR

With configurator software, settings shown below are available. Refer to the software manual of R5CON for detailed operation.

■ CHANNEL INDIVIDUAL SETTING

PARAMETER	AVAILABLE RANGE	DEFAULT SETTING
Zero Scale	-32000 to +32000	0
Full Scale	-32000 to +32000	10000
Bias [Zero Adj.]	-320.00 to +320.00	0.00
Gain [Span Adj.]	-32000 to +32000	1.0000
Zero Base	Depends on sensor type	0.00
Full Base	Depends on sensor type	0.00

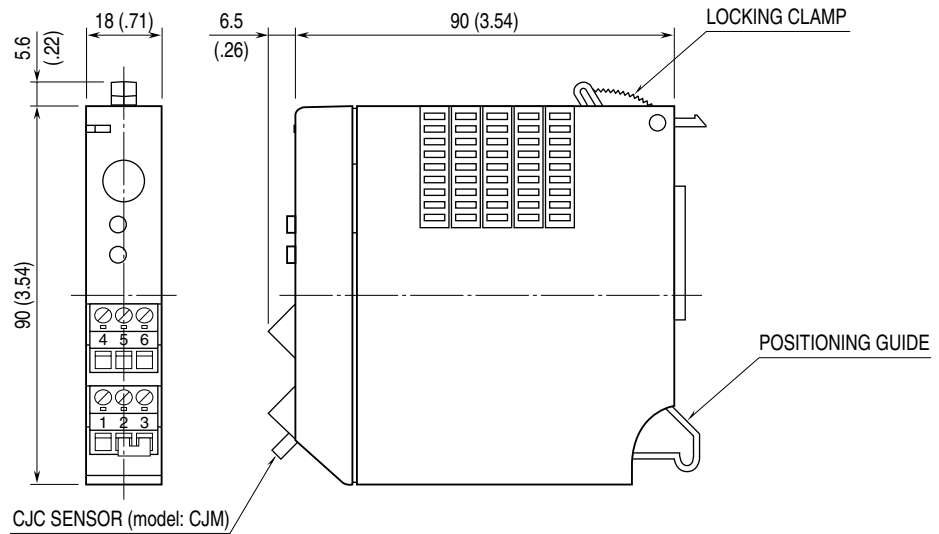
■ CHANNEL BATCH SETTING

PARAMETER	AVAILABLE RANGE	DEFAULT SETTING
Limit	No check mark: Limits to the scaling values equivalent to -15 % to +115 %. Check-marked: Limits within Zero Scale to Full Scale.	No check mark

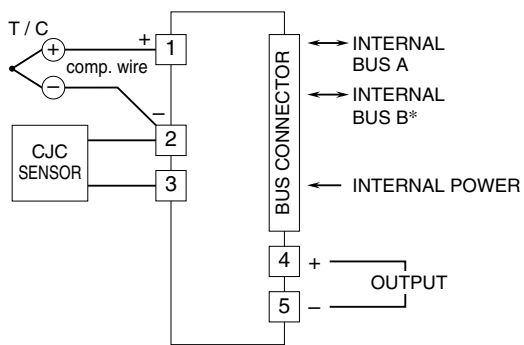
TERMINAL CONNECTIONS

Connect the unit as in the diagrams below.

EXTERNAL DIMENSIONS unit: mm (inch)



CONNECTION DIAGRAM



*For dual redundant communication.

WIRING INSTRUCTIONS

EURO TYPE CONNECTOR TERMINAL

Applicable Wire size: 0.2 – 2.5 mm²

Stripped length: 7 mm