

STRAIN GAUGE INPUT MODULE
(2 points, isolated)MODEL **R3-LC2****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:

Strain gauge input module.....(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**■ 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 on the module 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

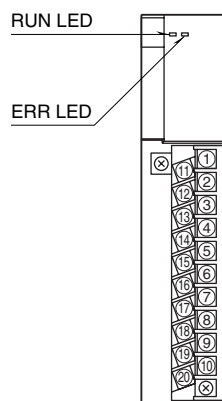
- The unit is designed to function as soon as power is supplied, however, a warm up for 10 minutes is required for satisfying complete performance described in the data sheet.

INSTALLATION

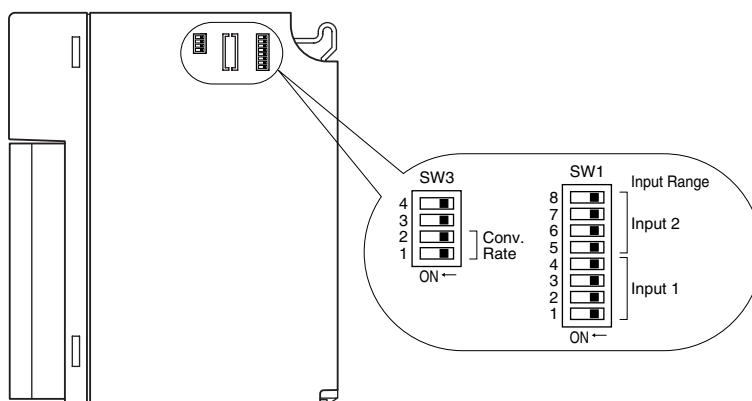
Use the Installation Base (model: R3-BSx).

COMPONENT IDENTIFICATION

FRONT VIEW



SIDE VIEW



STATUS INDICATOR LED

- RUN indicator:** Bi-color (red/green) LED;
 Red when the bus A operates normally;
 Green when the bus B operates normally;
 Amber when both buses operate normally.
- ERR indicator:** Bi-color (red/green) LED;
 Red with input abnormality;
 Green in normal operating conditions.

SIDE DIP SW

(*) Factory setting

• Input Range: SW1

INPUT 1				INPUT 2				STRAIN GAUGE
1	2	3	4	5	6	7	8	
OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	0.0 – 1.0mV/V (*)
ON	OFF	OFF	OFF	ON	OFF	OFF	OFF	0.0 – 3.0mV/V

• Conversion Rate: SW3-1, 3-2

SW	CONVERSION RATE			
	160 ms (*)	80 ms	40 ms	20 ms
SW3-1	OFF	ON	OFF	ON
SW3-2	OFF	OFF	ON	ON

Note: Be sure to set unused SW3-3 and 3-4 to OFF.

PC CONFIGURATOR

With configurator software, settings shown below are available.
 Refer to the software manual of R3CON for detailed operation.

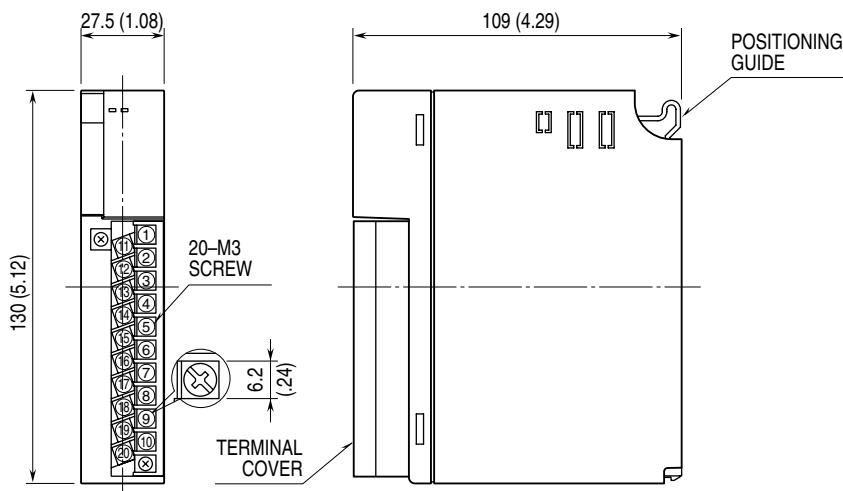
CHANNEL INDIVIDUAL SETTING

PARAMETER	AVAILABLE RANGE	DEFAULT SETTING
Zero Scale	-32000 to +32000	0
Full Scale	-32000 to +32000	10000
Zero Adjust	-320.00 to +320.00	0.00
Full Adjust	-32000 to +32000	1.0000
Tare ratio	0.00 to 100.00	0.00
Load ratio	10.00 to 100.00	100.00
Th. Adjust	0.00 to 100.00	5.00
Unused	0: Enable 1: Disable	0: Enable

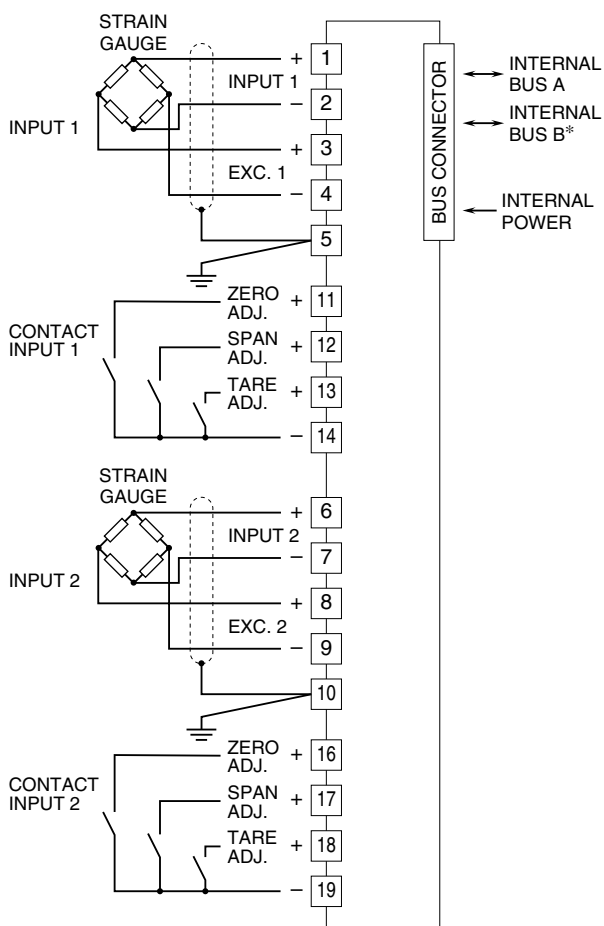
TERMINAL CONNECTIONS

Connect the unit as in the diagram below.

EXTERNAL DIMENSIONS unit: mm (inch)



CONNECTION DIAGRAM



*For dual redundant communication.

WIRING INSTRUCTIONS

SCREW TERMINAL

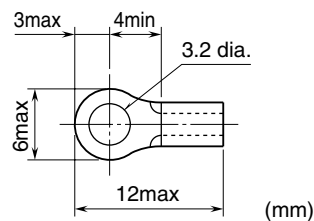
Torque: 0.5 N·m

SOLDERLESS TERMINAL

Refer to the drawing below for recommended ring tongue terminal size. Spade tongue type is also applicable. Solderless terminals with insulation sleeve do not fit.

Applicable wire size: 0.3 – 0.75 mm²

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



ADJUSTMENT PROCEDURE

Zero, span and tare are adjustable in the following two ways:

■ USING ACTUAL FULL LOAD - 1

Actual full load is used to adjust.

• 0% Input Voltage (Zero) Adjustment

- 1) Apply 0% load to the sensor.
- 2) Close across the Zero Adj. terminals.
- 3) Confirm that the ERR LED is solid green, and open the contact terminals.

• 100% Input Voltage (Span) Adjustment

- 1) Apply 100% load to the sensor.
- 2) Close across the Span Adj. terminals.
- 3) Confirm that the ERR LED is solid green, and open the contact terminals.

• Tare Adjustment

- 1) Apply tare load to the sensor.
- 2) Close across the Tare Adj. terminals.
- 3) Confirm that the ERR LED is solid green, and open the contact terminals.

■ USING ACTUAL PARTIAL LOAD - 2

Actual load is used to adjust, but only a partial load is needed by compensating the load ratio.

The load ratio is preset by using the PC Configurator Software (model: R3CON).

For example, when you need to adjust 100% input voltage (span) with 20% load, set the load ratio to 2000.

• 0% Input Voltage (Zero) Adjustment

- 1) Apply 0% load to the sensor.
- 2) Close across the Zero Adj. terminals.
- 3) Confirm that the ERR LED is solid green, and open the contact terminals.

• 100% Input Voltage (Span) Adjustment

- 1) Apply a known partial load (e.g. 20%) to the sensor.
- 2) Close across the Span Adj. terminals.
- 3) Confirm that the ERR LED is solid green, and open the contact terminals.

• Tare Adjustment

- 1) Apply tare load to the sensor.
- 2) Close across the Tare Adj. terminals.
- 3) Confirm that the ERR LED is solid green, and open the contact terminals.

CAUTION!

- 1) The ERR LED may turn to red during adjustment but this is normal.
- 2) DO NOT close more than one adjustment contact at once. Adjustment cannot be performed if two or more sets of contacts are closed.
- 3) Open all the adjustment contacts after the adjustment is complete.