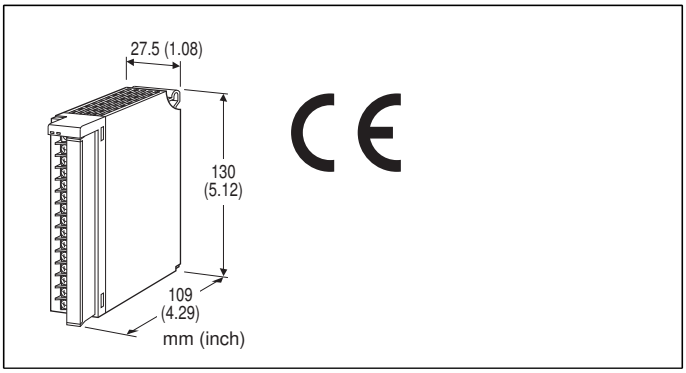
## Remote I/O R3 Series

## DC CURRENT INPUT ALARM MODULE

(8 points, isolated)




## MODEL: R3-AS8[1][2]

## ORDERING INFORMATION

• Code number: R3-AS8[1][2]

Specify a code from below for each of [1] and [2].
(e.g. R3-AS8W/CE/Q)

• Specify the specification for option code /Q
(e.g. /C01)

## NO. OF CHANNELS

**8**: 8

## [1] COMMUNICATION MODE

**S**: Single

**W**: Dual

## [2] OPTIONS (multiple selections)

**Standards & Approvals**

**blank**: Without CE

**/CE**: CE marking

**Other Options**

**blank**: none

**/Q**: Option other than the above (specify the specification)

## SPECIFICATIONS OF OPTION: Q

**COATING (For the detail, refer to M-System's web site.)**

**/C01**: Silicone coating

**/C02**: Polyurethane coating

**/C03**: Rubber coating

## CAUTION

■UNUSED INPUT CHANNELS

Set the unused channels to -20 – +20 mA or 0 – 20 mA range. Otherwise, set them as "Unused" with PC Configurator software: R3CON. Unused channels left open with 4 – 20 mA setting are equal to the input lower than -15 %, which sets a data abnormality at the PLC or the host device.

Open circuit with the input range set to ±20 mA means 50 % of the full-scale. An alarm setpoint must be set to a value that does not trip an unwanted alarm.

## GENERAL SPECIFICATIONS

Connection

**Internal bus**: Via the Installation Base (model: R3-BSx)

**Input**: M3 separable screw terminal (torque 0.5 N·m)

**Internal power**: Via the Installation Base (model: R3-BSx)

**Screw terminal**: Nickel-plated steel

**Isolation**: Input 1 to input 2 to input 3 to input 4 to input 5 to input 6 to input 7 to input 8 to internal bus or internal power

**Input range**: Selectable with the side DIP SW (per 4 channels)

**Conversion rate**: Selectable with the side DIP SW

**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 circuit abnormality (AD converter response failure);
Green in normal operating conditions.

## INPUT SPECIFICATIONS

■ **DC Current:** -20 – +20 mA, 0 – 20 mA, 4 – 20 mA DC

**Input resistance**: 66.5 Ω resistor incorporated

## INSTALLATION

**Operating temperature**: -10 to +55°C (14 to 131°F)

**Operating humidity**: 30 to 90 %RH (non-condensing)

**Atmosphere**: No corrosive gas or heavy dust

**Mounting**: Installation Base (model: R3-BSx)

**Weight**: 250 g (0.55 lb)

## PERFORMANCE

**Conversion accuracy**: Refer to the table at the end of this section.
**Conversion rate**: 160 / 80 / 40 / 20 msec. selectable
**Data range**: 0 – 10000 of the input range
**Data allocation**: 4
**Current consumption**: 100 mA
**Temp. coefficient**: ±0.03 %/°C (±0.02 %/°F)
**Insulation resistance**: ≥ 100 MΩ with 500 V DC
**Dielectric strength**: 1000 V AC @ 1 minute (input 1 to input 2 to input 3 to input 4 to input 5 to input 6 to input 7 to input 8 to internal bus or internal power)
2000 V AC @ 1 minute (power input to FG; isolated on the power supply module)

| RANGE \ RATE | 160 msec. | 80 msec. | 40 msec. | 20 msec. |
|---|---|---|---|---|
| -20 – +20 mA | ±0.05% | ±0.1% | ±0.2% | ±0.4% |
| 0 – 20 mA | ±0.1% | ±0.2% | ±0.4% | ±0.8% |
| 4 – 20 mA | ±0.1% | ±0.2% | ±0.4% | ±0.8% |

## STANDARDS & APPROVALS

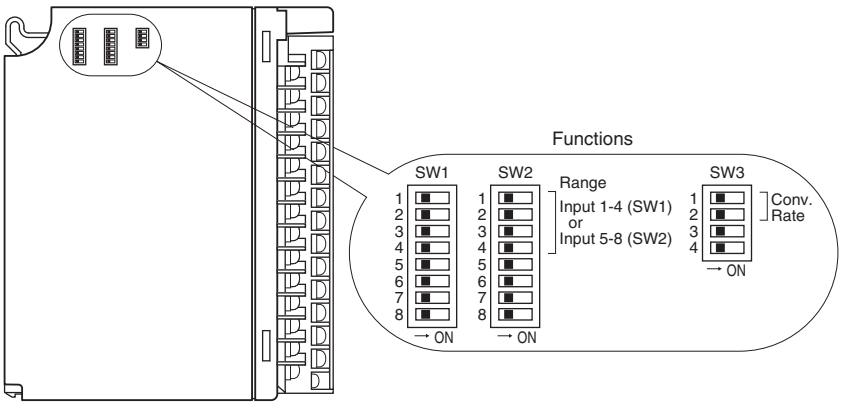
**EU conformity**:
EMC Directive
EMI EN 61000-6-4
EMS EN 61000-6-2
RoHS Directive
EN 50581

## ALARM SETTING

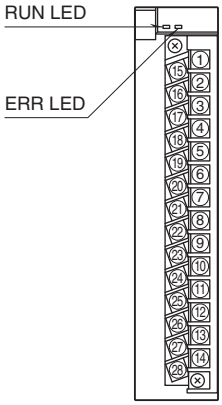
The following parameters are programmable using the PC Configurator Software (model: R3CON).
**■ALARM TRIP POINT** (-15.00 to +115.00 %;
factory set to A1: 80.00, A2: 60.00, A3: 40.00, A4: 20.00)
Four alarm setpoints are selectable per each input.
**■ALARM TYPE**
(High or Low; factory set to A1: High, A2: High, A3: Low, A4: Low)
High or Low alarm is selectable for each alarm trip point.
**High alarm**: An alarm is set when the input signal goes above the setpoint.
**Low alarm**: An alarm is set when the input signal goes below the setpoint.
**■DEADBAND (HYSTERESIS)**
(0.00 to 100.00 %; factory set to 5.00)
Deadband (deviation between the points where the alarm is set and reset) is selectable for each alarm trip point.
**■ALARM ON DELAY TIME**
(0.0 to 99.0 seconds; factory set to 1.0)
The alarm output is set when the preset time elapses after the input has entered in the alarm range.
This setting is common to all 8 points.
**■POWER ON DELAY TIME**
(0.0 to 99.0 seconds; factory set to 5.0)
The alarm output start functioning in the preset time after the power has been turned on.
This setting is common to all 8 points.
**■ALARM HOLD TIME**
(0.0 to 99.0 seconds; factory set to 1.0)
The alarm output is held for the preset time even if it is reset in shorter time.
This setting is common to all 8 points.

## EXTERNAL VIEW

■ SIDE VIEW

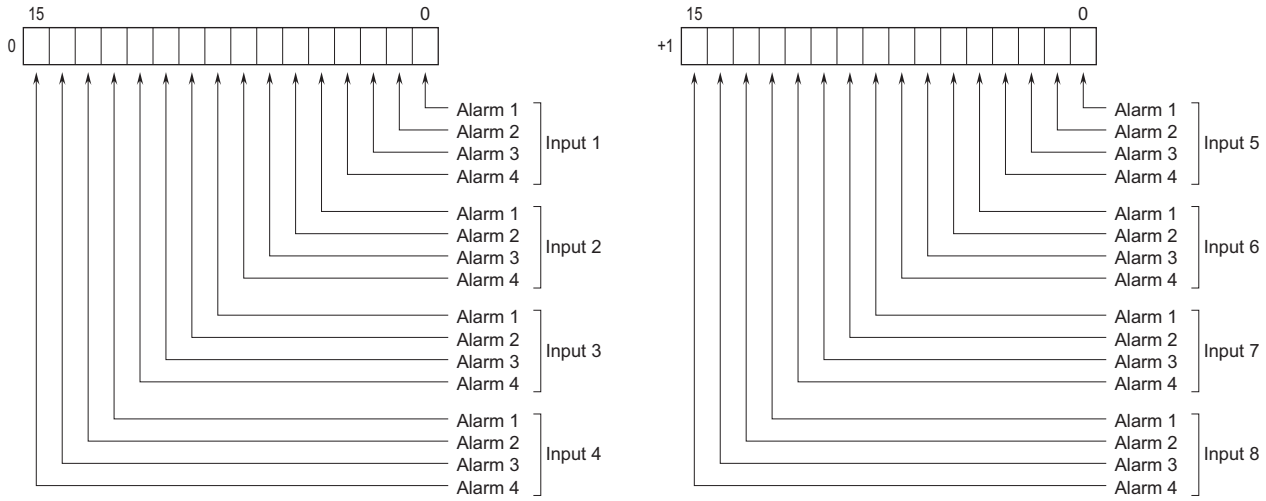



■ FRONT VIEW

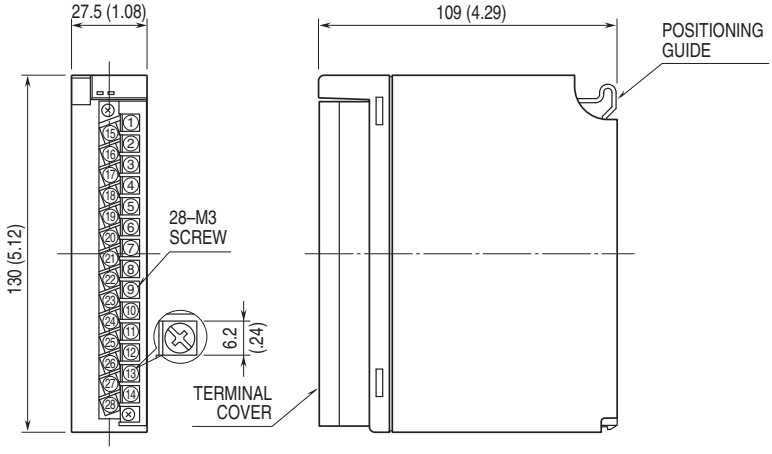



## OUTPUT DATA DESCRIPTIONS

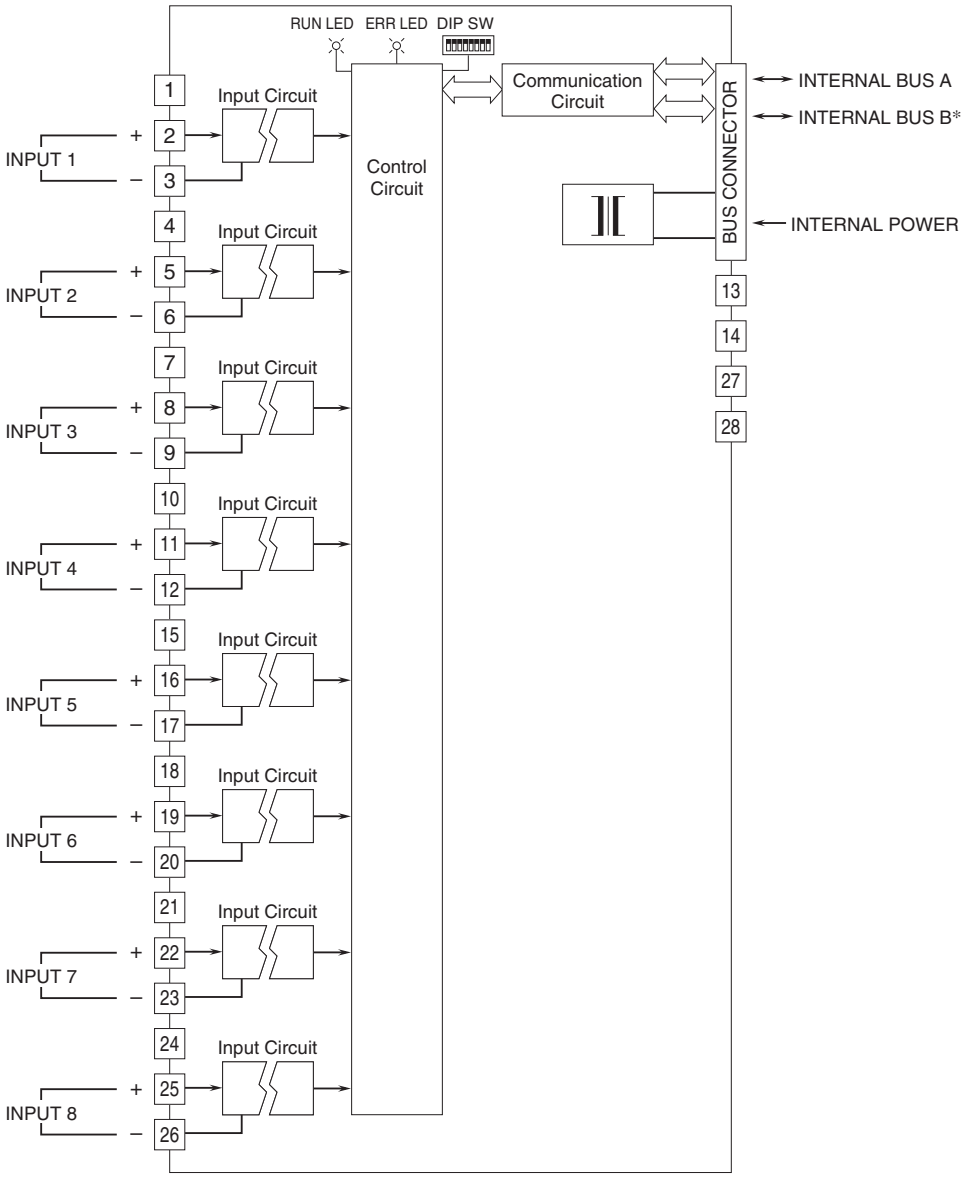
Four alarm setpoints are selectable per each input. Two (2) word (16 bits × 2) data is transmitterd to the PLC or the host device via the R3 network module.




## EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM




*For dual redundant communication.

⚠ Specifications are subject to change without notice.