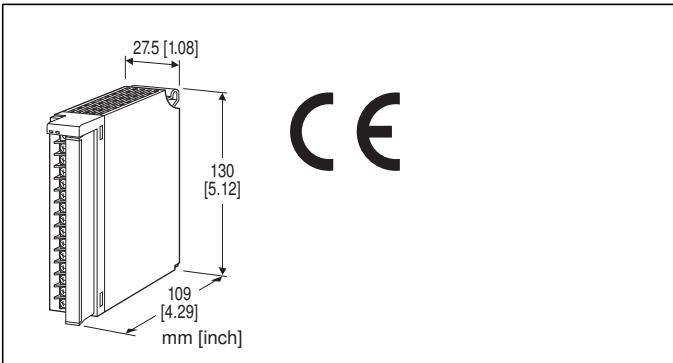


Remote I/O R3 Series

DC VOLTAGE INPUT ALARM MODULE

(8 points, isolated)



MODEL: R3-AV8[1][2]

ORDERING INFORMATION

- Code number: R3-AV8[1][2]
- Specify a code from below for each of [1] and [2].
(e.g. R3-AV8W/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 the ranges other than 1 - 5 V. Otherwise, set them as "Unused" with PC Configurator software: R3CON. Unused channels left open with 1 - 5 V 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 ± 10 V 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

■ **Narrow Span:** -1 - +1 V, 0 - 1 V DC

Input resistance: 100 k Ω min.

■ **Wide Span:** -10 - +10 V, -5 - +5 V,

0 - 10 V, 0 - 5 V, 1 - 5 V DC

Input resistance: 1 M Ω min.

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: $\pm 0.015\% / ^\circ\text{C}$ ($\pm 0.008\% / ^\circ\text{F}$)
($\pm 0.03\% / ^\circ\text{C}$ [$\pm 0.02\% / ^\circ\text{F}$] with 0 - 5 V or 1 - 5 V range)

Insulation resistance: $\geq 100\text{ M}\Omega$ 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)

Conversion accuracy

RANGE \ RATE	160 msec.	80 msec.	40 msec.	20 msec.
All ranges	$\pm 0.1\%$	$\pm 0.2\%$	$\pm 0.4\%$	$\pm 0.8\%$

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.

STANDARDS & APPROVALS

EU conformity:

EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

RoHS Directive

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.

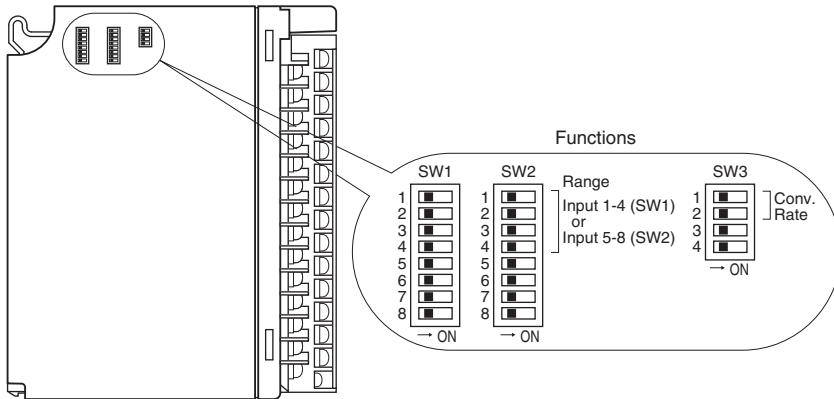
This setting is common to all 8 points.

■POWER ON DELAY TIME

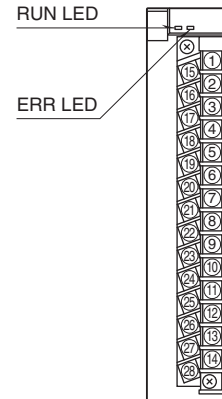
(0.0 to 99.0 seconds; factory set to 5.0)

EXTERNAL VIEW

■ SIDE VIEW

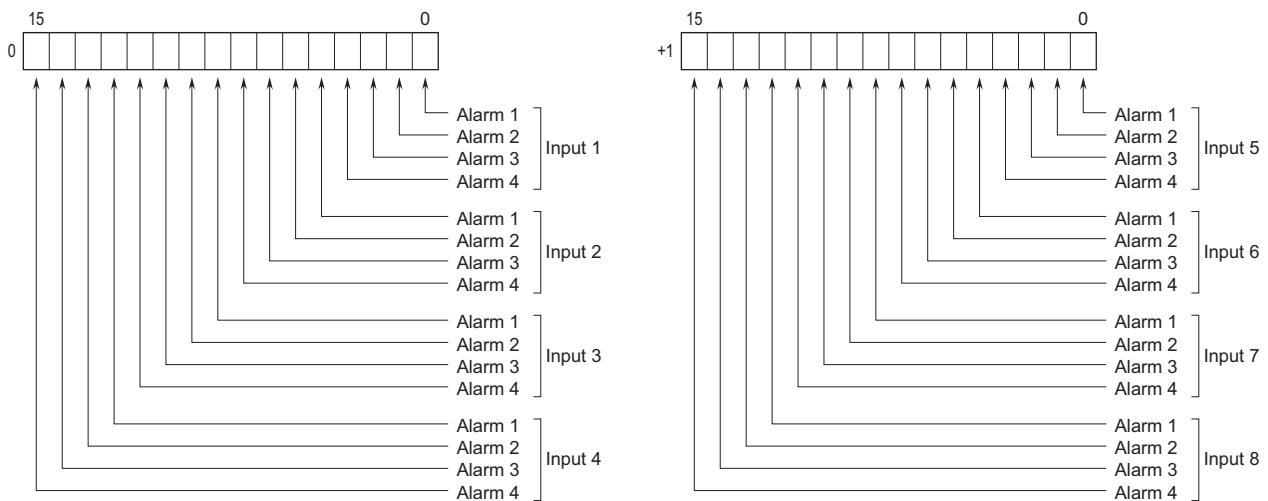


■ FRONT VIEW

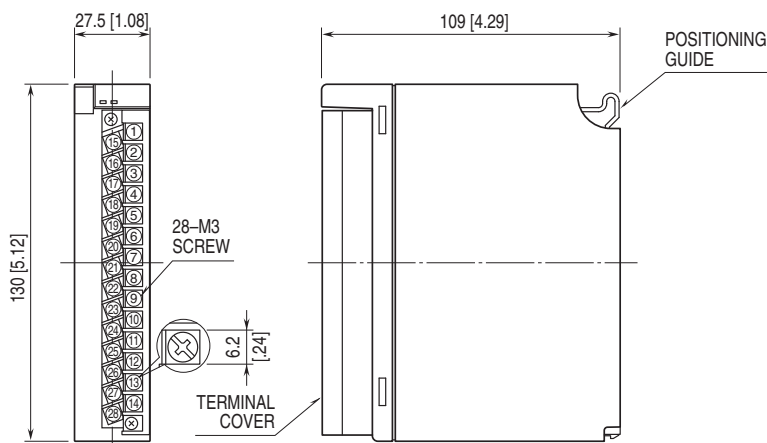


OUTPUT DATA DESCRIPTIONS

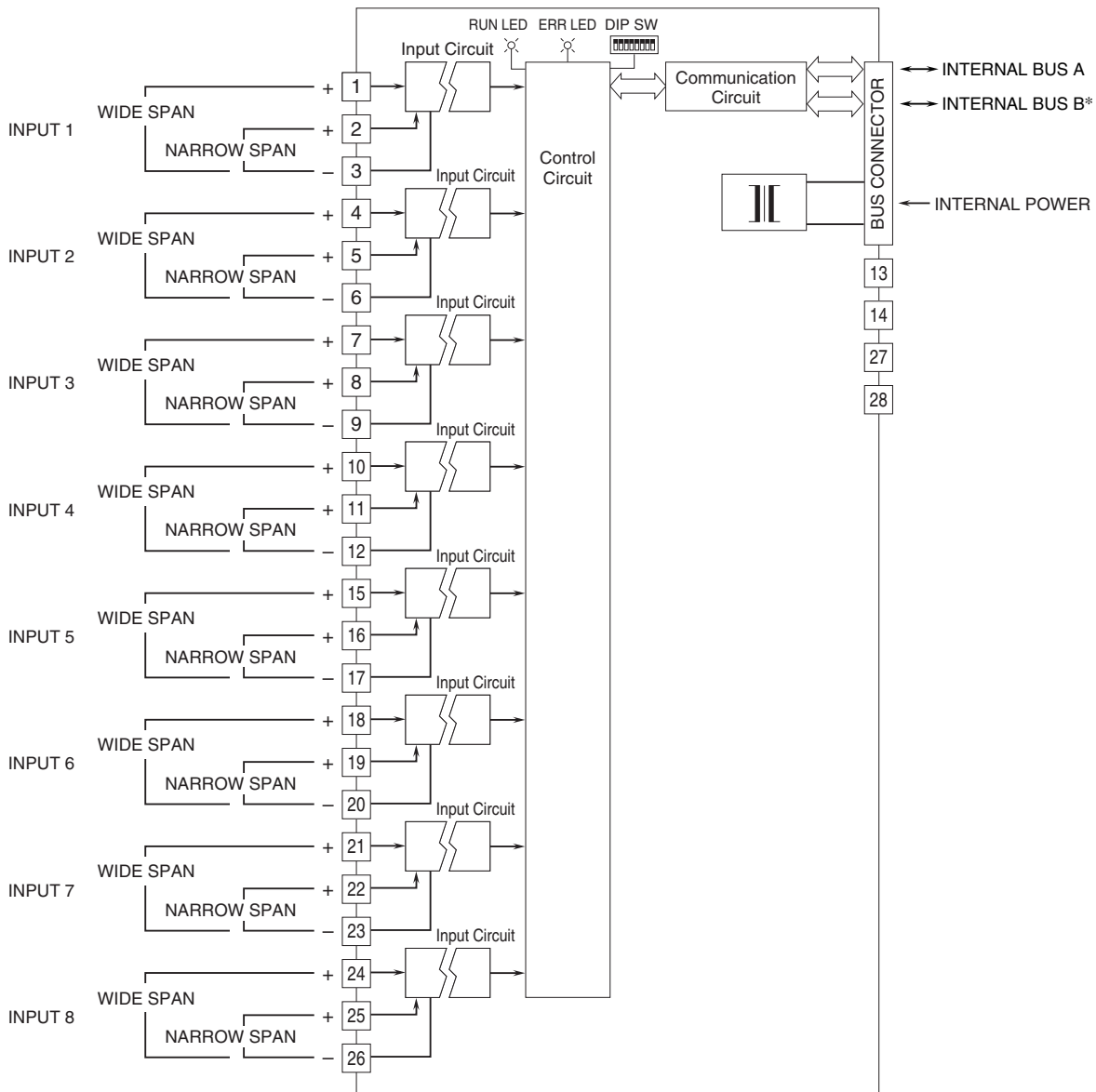
Four alarm setpoints are selectable per each input. Two (2) word (16 bits × 2) data is transmitted to the PLC or the host device via the R3 network module.



EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



* For dual redundant communication.
 Note: Connect either wide or narrow span terminals for each channel.



Specifications are subject to change without notice.