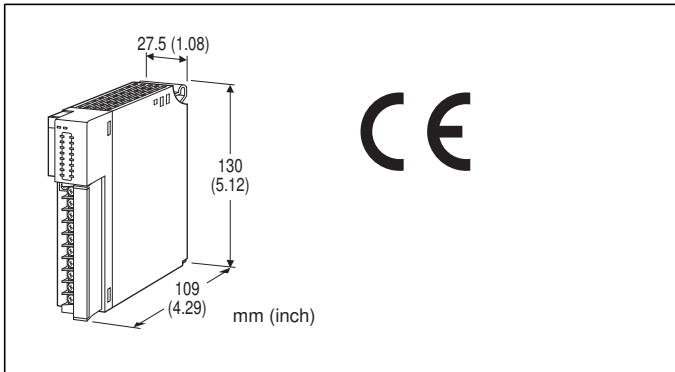


Remote I/O R3 Series

DISCRETE INPUT MODULE

(Di 16 points; with external excitation supply)



MODEL: R3-DA16A[1][2]

ORDERING INFORMATION

- Code number: R3-DA16A[1][2]
Specify a code from below for each of [1] and [2].
(e.g. R3-DA16AW/110/CE/Q)
- Specify the specification for option code /Q
(e.g. /C01)

NO. OF CHANNELS

16: 16

EXCITATION SUPPLY

A: External excitation

[1] COMMUNICATION MODE

S: Single

W: Dual

[2] OPTIONS (multiple selections)

External Excitation

blank: 24 V DC

/12: 12 V DC

/5: 5 V DC

/48: 48 V DC

/110: 110 V DC

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

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 to internal bus or internal power

Excitation monitor: Selectable with side DIP switch; ON/OFF setting available

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 excitation abnormality;

Green in normal operating conditions.

Input status indicator: Red LED; turns on with the input ON.

Read rate: 1 / 5 / 10 / 20 / 50 / 70 / 100 / 200 msec.
selectable with DIP SW

INPUT SPECIFICATIONS

Number of input: 16 points

Isolation: Optical isolator

Input resistance:

Approx. 4.4 k Ω (24 V DC)

Approx. 2.2 k Ω (12 V DC)

Approx. 800 Ω (5 V DC)

Approx. 22 k Ω (48 V DC)

Approx. 54 k Ω (110 V DC)

Common: Positive or negative common (NPN/PNP) per 16 points

Rated input voltage

24V exc.: 24 V DC +10/-15 % (ripple 5 %p-p max.)

12V exc.: 12 V DC $\pm$ 10 % (ripple 5 %p-p max.)

5V exc.: 5 V DC $\pm$ 10 % (ripple 5 %p-p max.)

48V exc.: 48 V DC $\pm$ 10 % (ripple 5 %p-p max.)

110V exc.: 110 V DC (90 - 121 V DC, ripple 5 %p-p max.)

Rated input current:

Approx. 5 mA (24 V DC, 12 V DC, 5V DC)

Approx. 2 mA (48 V DC, 110 V DC)

ON voltage/current:

$\geq$ 11 V, $\geq$ 2.5 mA (24 V DC)

$\geq$ 5.5 V, $\geq$ 2.5 mA (12 V DC)

$\geq$ 3V, $\geq$ 2.5 mA (5 V DC)

$\geq$ 35V, $\geq$ 1.5 mA (48 V DC)

$\geq 85\text{V}$, $\geq 1.5\text{ mA}$ (110 V DC)

OFF voltage/current:

$\leq 6\text{ V}$, $\leq 1.3\text{ mA}$ (24 V DC)

$\leq 3\text{ V}$, $\leq 1.3\text{ mA}$ (12 V DC)

$\leq 1\text{ V}$, $\leq 1.3\text{ mA}$ (5 V DC)

$\leq 20\text{ V}$, $\leq 1.0\text{ mA}$ (48 V DC)

$\leq 50\text{ V}$, $\leq 1.0\text{ mA}$ (110 V DC)

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: 200 g (0.44 lb)

PERFORMANCE

Data allocation: 1

Current consumption: 80 mA

Insulation resistance: $\geq 100\text{ M}\Omega$ with 500 V DC

Dielectric strength: 2000 V AC @ 1 minute

(input to internal bus or internal power)

2000 V AC @ 1 minute (power input to FG; isolated on the power supply module)

STANDARDS & APPROVALS

EU conformity:

EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

Low Voltage Directive

(External excitation 110 V DC only)

EN 61010-1, EN 61010-2-201

Installation Category I (contact input)

Pollution Degree 2

Input to internal bus or internal power: Reinforced insulation (150 V)

RoHS Directive

EN 50581

FUNCTIONS

•Excitation Monitor ON

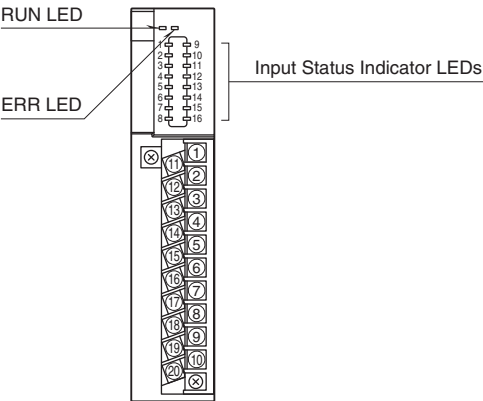
The input is held at the last status when the loss of excitation is detected. The excitation must be connected across the terminal 9 (19) and 10 (20).

•Excitation Monitor OFF

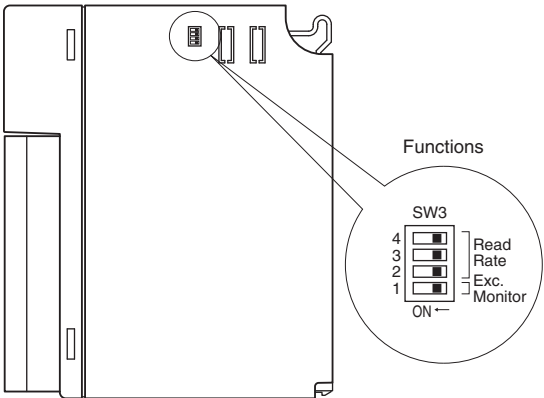
All input signals are turned off when the loss of excitation is detected.

EXTERNAL VIEW

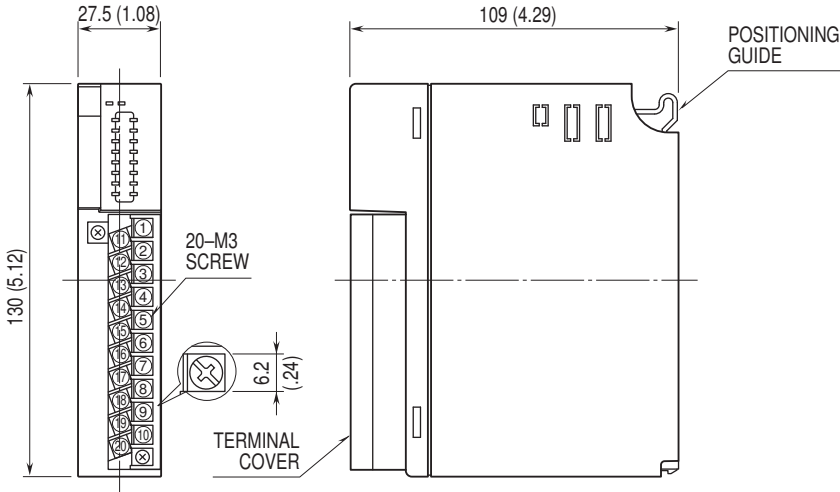
FRONT VIEW



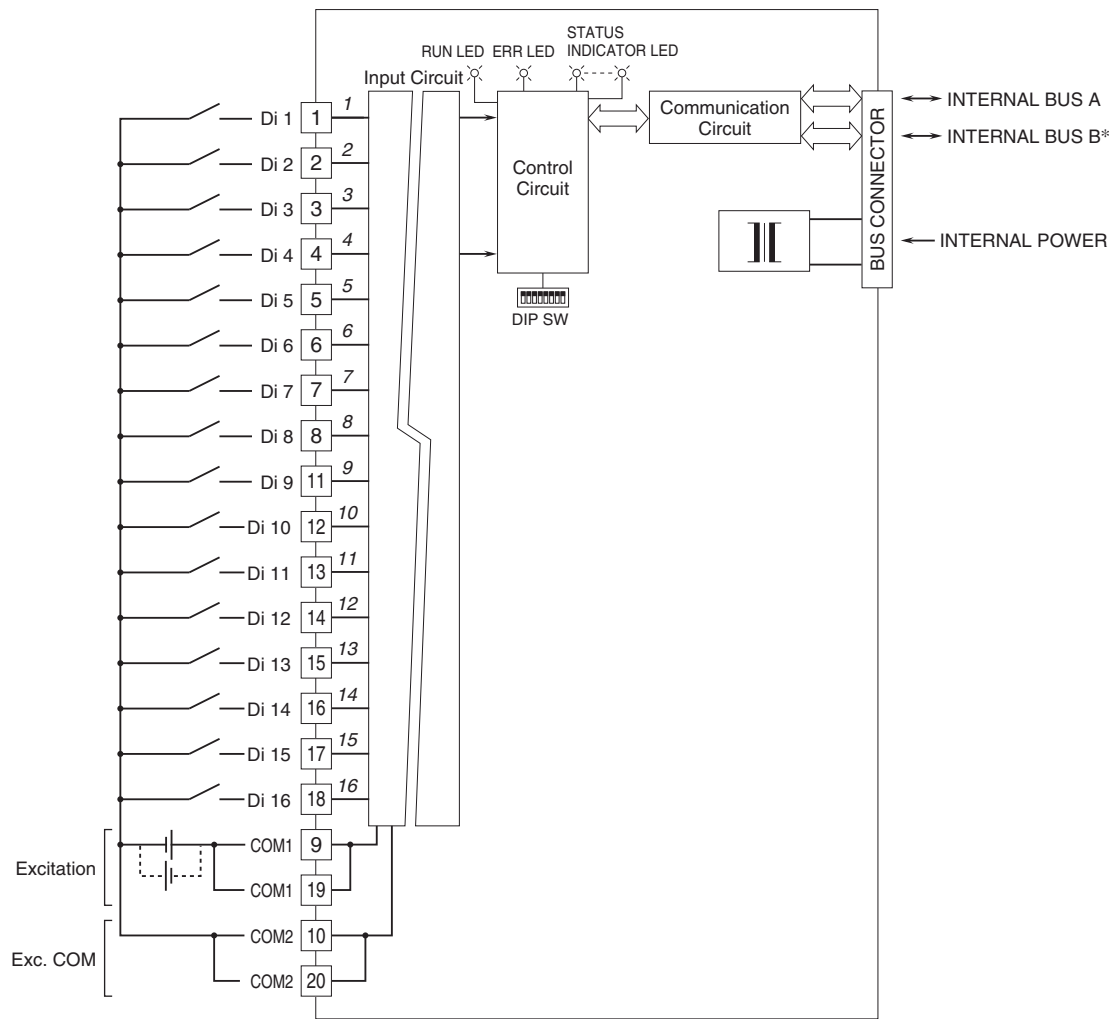
SIDE VIEW



EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)

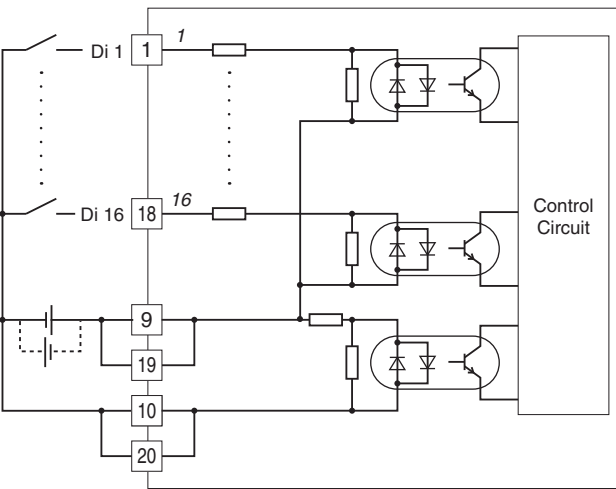


SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

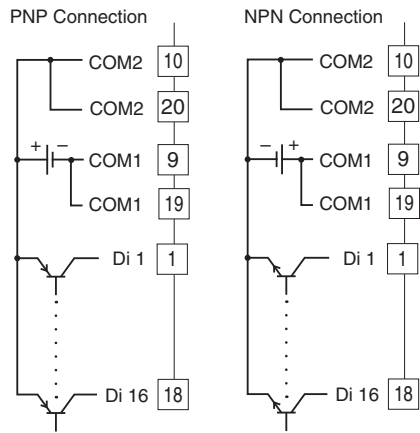


Numbers in italic indicate LED No.s assigned to the front panel LEDs.
*For dual redundant communication.

Input Circuit



Input Connection Examples





Specifications are subject to change without notice.