

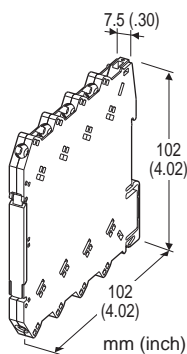
## Screw Terminal Ultra-Slim Signal Conditioners M6N Series

### RTD ALARM

(PC programmable)

#### Functions & Features

- 7.5-mm wide ultra-slim design
- Low profile allows the M6N module mounted in a 120-mm deep panel
- Provides a relay contact output at preset DC input levels
- PC programmable
- Linearization and upscale and downscale burnout protection
- High-density mounting
- Power and status indicator LEDs



### MODEL: M6NXAR-[1]-R

#### ORDERING INFORMATION

- Code number: M6NXAR-[1]-R  
Specify a code from below for [1].  
(e.g. M6NXAR-4-R)
- Temperature range (e.g. 0 - 100°C)

#### [1] INPUT RTD

- 1:** JPt 100 (JIS'89)  
(Usable range: -200 to +500°C, -328 to +932°F)
- 3:** Pt 100 (JIS'89)  
(Usable range: -200 to +650°C, -328 to +1202°F)
- 4:** Pt 100 (JIS'97, IEC)  
(Usable range: -200 to +850°C, -328 to +1562°F)
- 5:** Pt 50 Ω (JIS'81)  
(Usable range: -200 to +649 °C, -328 to +1200°F)
- 7:** Pt 1000  
(Usable range: -200 to +850°C, -328 to +1562°F)
- 9:** Cu 10 @25°C  
(Usable range: -50 to +250°C, -58 to +482°F)
- 0:** Specify (Please provide a resistance table.)  
(Configurator software is used to change the input type and

range. Input code 7: Pt 1000 cannot be switched to/from other input types while its temperature range can be changed.)

#### OUTPUT

Relay; SPDT or transfer contact

#### POWER INPUT

##### DC Power

R: 24 V DC

(Operational voltage range 24 V ±10 %, ripple 10 %p-p max.)

#### RELATED PRODUCTS

- PC configurator software (model: M6CFG)  
Downloadable at M-System's web site.  
A dedicated cable is required to connect the module to the PC. Please refer to the internet software download site or the users manual for the PC configurator for applicable cable types.

#### GENERAL SPECIFICATIONS

##### Connection

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

**Power input:** Via the Installation Base (model: M6NBS)  
or M3 screw terminal (torque 0.5 N·m)

**Recommended solderless terminal:** Max. 5.8 mm (0.23") wide; Ones with insulation sleeve do not fit.  
Applicable wire size 0.2 - 2.5 mm<sup>2</sup>

**Housing material:** Flame-resistant resin (black)

**Isolation:** Input to output to power

**Burnout:** Upscale standard; downscale or no burnout optional by programming

In case of upscale standard, the alarm operates as if the input signal has exceeded over the range.

**Linearization:** Standard

**Power LED:** Green light turns on when the power is supplied.

**Status indicator LED:** Orange LED; Flashing patterns indicate different operating status of the transmitter.

**Alarm monitor LED:** Red LED turns on when the alarm is tripped.

**Programming:** Downloaded from PC

Input type and range

Input fine adjustments

User's RTD table (max. 300 points)

Burnout (Upscale, downscale or no burnout)

Alarm setpoint (input %)

Trip action (High or Low)

Relay coil (energized or de-energized)

Power ON delay time (0 to 999 sec.)

Alarm ON delay time (0 to 999 sec.)

Hysteresis (deadband) (input %)

Alarm test, and others

Configurator connection: 2.5 dia. miniature jack;

RS-232C level

Factory default setting

Alarm setpoint: 80%

Trip action: High

Relay coil at alarm: Energized

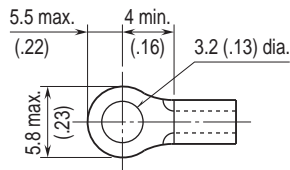
Power ON delay time: 5 seconds

Alarm ON delay time: 0 seconds

Hysteresis (deadband): 1.0%

Burnout: Upscale

### Recommended solderless terminal



## INPUT SPECIFICATIONS

INPUT: 2- or 3-wire RTD

Maximum leadwire resistance: 10 Ω per wire

Sensing current: ≤ 1.5 mA (≤ 0.15 mA for Pt 1000)

Minimum span: 20°C or 36°F

If not specified, the input range is 100°C.

## OUTPUT SPECIFICATIONS

### • RELAY OUTPUT

Relay rating:

250 V AC @2 A (cos φ = 1)

30 V DC @2 A (resistive load)

Maximum switching voltage: 250 V AC or 125 V DC

Maximum switching power: 500 VA or 60 W

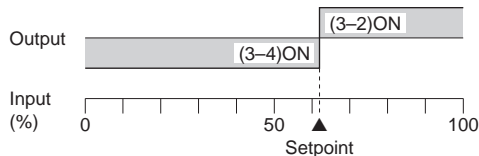
Minimum load: 5 V DC @100 mA

Mechanical life: 5 × 10<sup>6</sup> cycles (rate 180/min.)

**Alarm Trip Operation** Terminal No. in parentheses

#### • Setting Example

Hi alarm (coil energized at alarm) or  
Lo alarm (coil de-energized at alarm)



Trip operation in power failure: Terminals 3 – 4 turn ON.

## INSTALLATION

Power consumption: Approx. 0.5 W

Operating temperature: -20 to +55°C (-4 to +131°F)

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

Mounting: Installation Base (model: M6NBS) or DIN rail

Weight: 65 g (2.3 oz)

## PERFORMANCE in percentage of span

Setpoint accuracy (trip point accuracy)

Pt and JPt: Whichever greater ±0.1 % of input range or ±0.15°C

Cu10: ±1°C

Temp. coefficient: ±0.01 %/°C (±0.006 %/°F) of max. span

Response time: ≤ 1 sec. (0 - 100 % at 90 % setpoint)

Burnout response time: ≤ 1 sec.

Line voltage effect: ±0.1 % over voltage range

Insulation resistance: ≥ 100 MΩ with 500 V DC

Dielectric strength: 2000 V AC @1 minute (input to output to power to ground)

## CALCULATION EXAMPLES OF SETPOINT ACCURACY

[Example] Input type Pt 100, Input range 0 - 100°C

Setpoint accuracy <sup>\*1</sup> (0.15°C <sup>\*2</sup>) / Span (100°C) × 100 %

\*1. Calculate the accuracy in °C

\*2. 100 °C × 0.1 % = 0.1 °C ≤ 0.15 °C. 0.15 °C is used as input accuracy value.

## STANDARDS & APPROVALS

CE conformity:

EMC Directive (2004/108/EC)

EN 61000-6-4 (EMI)

EN 61000-6-2 (EMS)

Low Voltage Directive (2006/95/EC)

EN 61010-1

Overvoltage Category II

Pollution Degree 2

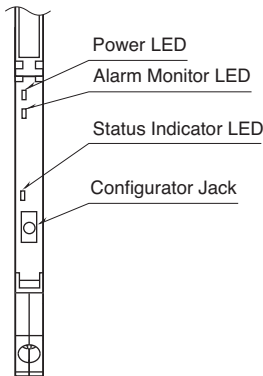
Max. operating voltage 250 V (relay output circuit)

Input or power to output: Reinforced insulation

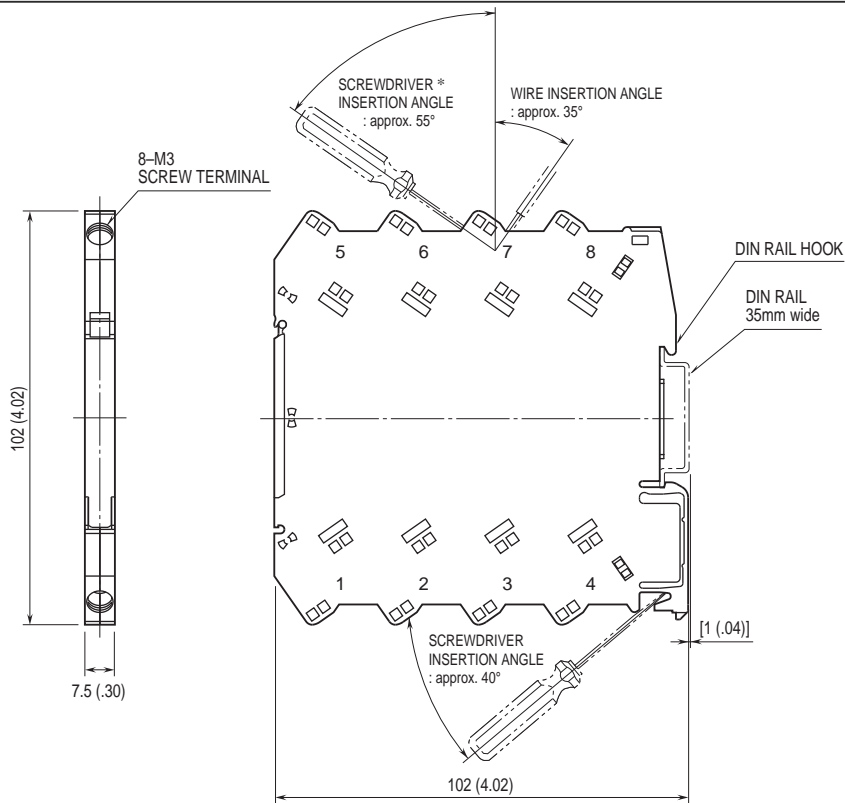
Input to power: Basic insulation

## EXTERNAL VIEW

(With the cover open)



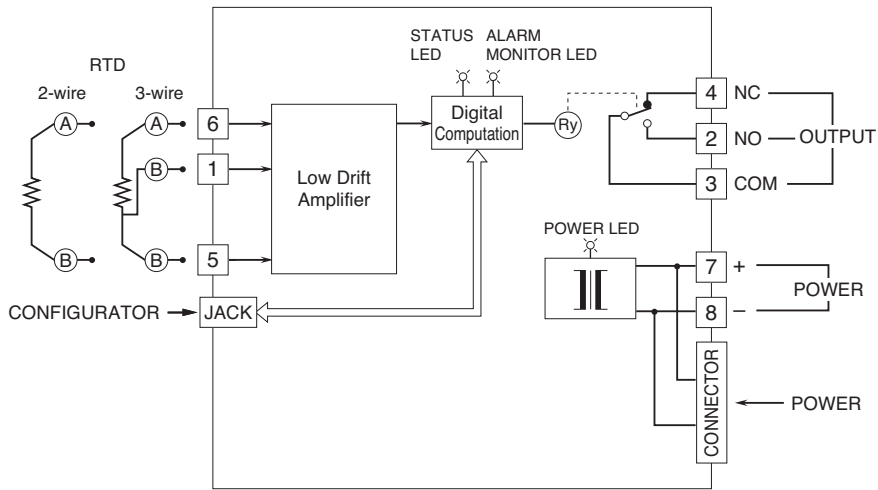
## DIMENSIONS unit: mm (inch)



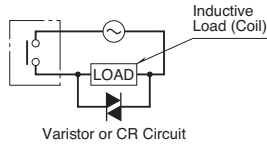
\*Screwdriver stem diameter: 6 mm (.24") or less

• When mounting, no extra space is needed between units.

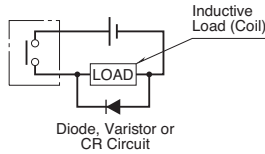
## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



■ **Relay Protection**  
• **AC Powered**



• **DC Powered**



Specifications are subject to change without notice.