

## High-density Signal Conditioners 10-RACK

Note: Consult M-System for 2-wire RTD

### RTD TRANSMITTER

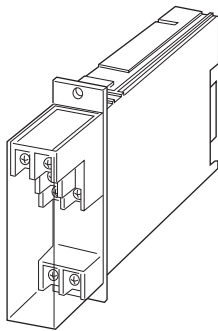
(fast response)

#### Functions & Features

- Accepting direct input from an RTD and providing two standard process signals
- Linearization
- Burnout protection
- Optional second channel output available at the front terminals and at the Standard Rack connector

#### Typical Applications

- Converting into standard signals
- Power plant



## MODEL: 10RK-[1][2][3]-R[4]

### ORDERING INFORMATION

- Code number: 10RK-[1][2][3]-R[4]
- Specify a code from below for each [1] through [4]. (e.g. 10RK-4A6-R/BL/Q)
- Temperature range (e.g. 0 – 500°C)
- Specify the specification for option code /Q (e.g. /C01)

### [1] INPUT RTD (2- or 3-wire)

- 1:** JPt 100 (JIS'89)  
(Usable range: -200 to +500°C, -328 to +932°F; min.span: 30°C, 54°F)
- 3:** Pt 100 (JIS'89)  
(Usable range: -200 to +650°C, -328 to +1202°F; min.span: 30°C, 54°F)
- 4:** Pt 100 (JIS'97, IEC)  
(Usable range: -200 to +650°C, -328 to +1202°F; min.span: 30°C, 54°F)
- 5:** Pt 50 Ω (JIS'81)  
(Usable range: -200 to +500°C, -328 to +932°F; min.span: 60°C, 108°F)
- 6:** Ni 508.4 Ω  
(Usable range: -50 to +200°C, -58 to +392°F; min.span: 20°C, 36°F)
- 0:** Specify

### [2] OUTPUT 1

#### Current

- A:** 4 – 20 mA DC (Load resistance 600 Ω max.)  
**B:** 2 – 10 mA DC (Load resistance 1200 Ω max.)  
**C:** 1 – 5 mA DC (Load resistance 2400 Ω max.)  
**D:** 0 – 20 mA DC (Load resistance 600 Ω max.)  
**E:** 0 – 16 mA DC (Load resistance 750 Ω max.)  
**F:** 0 – 10 mA DC (Load resistance 1200 Ω max.)  
**G:** 0 – 1 mA DC (Load resistance 12 kΩ max.)

#### Voltage

- 1:** 0 – 10 mV DC (Load resistance 10 kΩ min.)  
**2:** 0 – 100 mV DC (Load resistance 100 kΩ min.)  
**3:** 0 – 1 V DC (Load resistance 100 Ω min.)  
**4:** 0 – 10 V DC (Load resistance 1000 Ω min.)  
**5:** 0 – 5 V DC (Load resistance 500 Ω min.)  
**6:** 1 – 5 V DC (Load resistance 500 Ω min.)

### [3] OUTPUT 2

**0:** None

#### Voltage

- 6:** 1 – 5 V DC (Load resistance 5000 Ω min.)

### POWER INPUT

#### DC Power

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

### [4] OPTIONS (multiple selections)

#### Burnout

**blank:** Upscale burnout  
**/BL:** Downscale burnout

#### 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

**Construction:** Rack-mounted; terminal access via screw terminals at the front and via card-edge connector at the rear; terminal cover provided

#### Connection

**Input:** M3.5 screw terminals (torque 0.8 N·m)  
**Output:** Card-edge connector and M3.5 screw terminals



(torque 0.8 N·m)

**Power input:** Supplied from card-edge connector

**Screw terminal:** Nickel-plated steel

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

**Isolation:** Input to output 1 to output 2 to power

**Overrange output:** Approx. -10 to +120 % at 1 - 5 V

**Zero adjustment:** -5 to +5 % (front)

**Span adjustment:** 95 to 105 % (front)

**Linearization:** Standard

## INPUT SPECIFICATIONS

**Maximum leadwire resistance:** 20 Ω per wire (3-wire)

**Sensing current:** 2 mA

## INSTALLATION

**Current consumption:** Approx. 35 mA with voltage output 1

Approx. 55 mA with current output 1

**Operating temperature:** -5 to +55°C (23 to 131°F)

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

**Mounting:** Standard Rack 10BXx

**Weight:** 200 g (0.44 lb)

## PERFORMANCE in percentage of span

**Accuracy:** ±0.2 %

**Temp. coefficient:** ±0.015 %/°C (±0.008 %/°F)

**Response time:** Approx. 25 msec. (0 - 90 %)

**Burnout response:** ≤ 10 sec.

**Line voltage effect:** ±0.1 % over voltage range

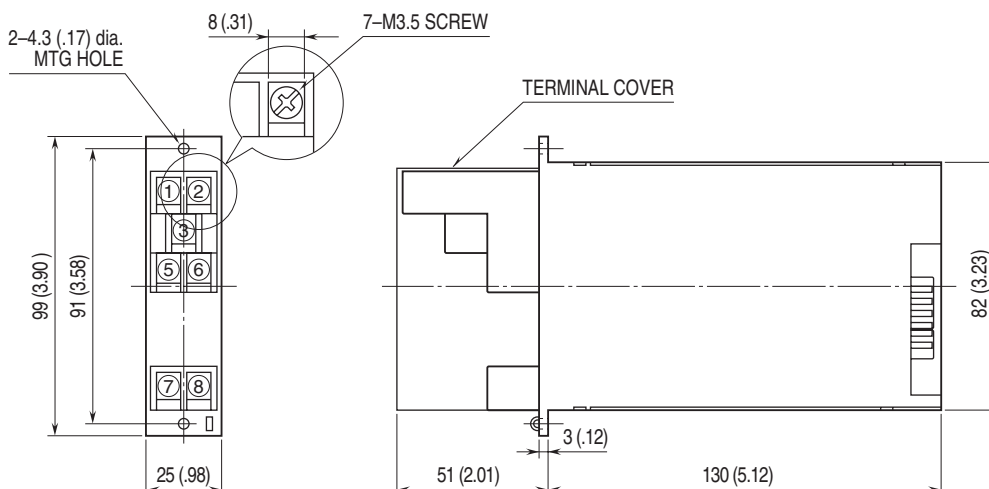
**Insulation resistance:** ≥ 100 MΩ with 500 V DC

**Dielectric strength:** 500 V AC @ 1 minute

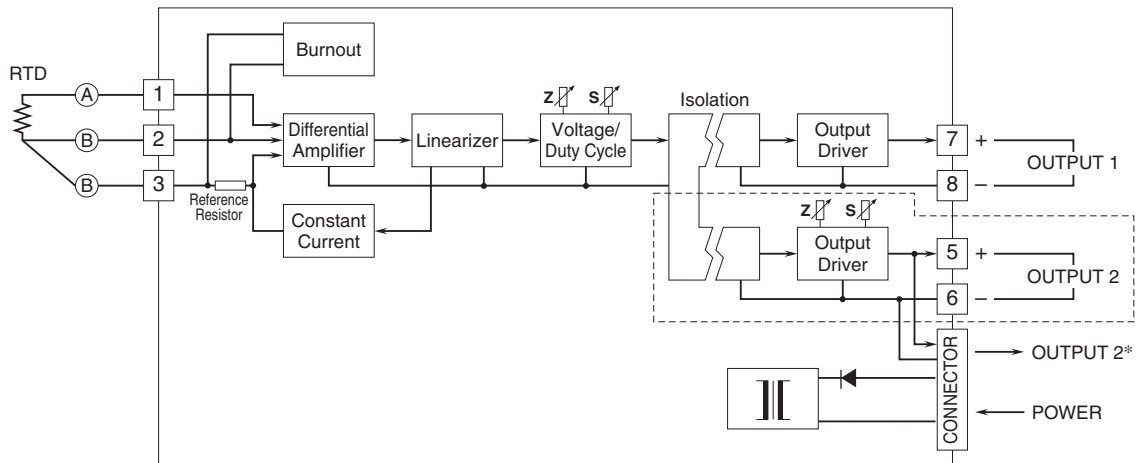
(input to output 1 to output 2 to power)

1500 V AC @ 1 minute (input or output or power to ground)

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



**SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM**



\*1 output type has the output 1 connected to the card-edge connector in parallel.  
 Remark 1) The section enclosed by broken line is only for 2nd output channel.



Specifications are subject to change without notice.

