

## Super-mini Signal Conditioners Mini-M Series

### CURRENT LOOP SUPPLY

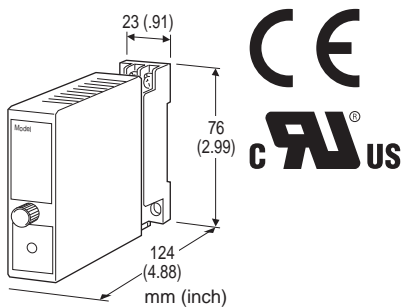
(non-isolated)

#### Functions & Features

- Powers a 4 - 20mA DC current loop
- Electrically isolating output signal from power input
- Shortcircuit protection
- Applicable to smart transmitters
- CE marking
- UL approval

#### Typical Applications

- Various 2-wire transmitters



### MODEL: M2D2-24-[1][2]

#### ORDERING INFORMATION

- Code number: M2D2-24-[1][2]
- Specify a code from below for [1] and [2].  
(e.g. M2D2-24-R/CE/Q)
- Specify the specification for option code /Q  
(e.g. /C01/S01)

#### SUPPLY OUTPUT

24: 24 V DC

#### INPUT

##### Current

4 - 20 mA DC (Input resistance 250 Ω)

#### OUTPUT 1

##### Voltage

1 - 5 V DC (Load resistance 250 kΩ min.)

#### OUTPUT 2

##### Current

4 - 20 mA DC

### [1] POWER INPUT

#### AC Power

**M2:** 100 - 240 V AC (Operational voltage range 85 - 264 V, 47 - 66 Hz)

(90 - 264 V for UL)

#### DC Power

**R:** 24 V DC

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

**R2:** 11 - 27 V DC

(Operational voltage range 11 - 27 V, ripple 10 %p-p max.)

(Select 'N' for 'Standards & Approvals' code.)

**P:** 110 V DC

(Operational voltage range 85 - 150 V, ripple 10 %p-p max.)

(110 V ±10 % for UL)

### [2] OPTIONS (multiple selections)

#### STANDARDS & APPROVALS (must be specified)

/N: Without CE or UL

/CE: CE marking

/UL: UL approval (CE marking)

#### OTHER OPTIONS

blank: none

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

(UL not available)

#### SPECIFICATIONS OF OPTION: Q (multiple selections)

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

/C01: Silicone coating

/C02: Polyurethane coating

/C03: Rubber coating

##### TERMINAL SCREW MATERIAL

/S01: Stainless steel

#### GENERAL SPECIFICATIONS

**Construction:** Plug-in

**Connection:** M3 screw terminals (torque 0.8 N·m)

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

**Isolation:** Input or output to power

**Indicator LED:** Red light turns on during operation.

#### SUPPLY OUTPUT

**Output voltage:** 24V DC with no load

**Current rating:** 30mA

• **Shortcircuit Protection**

**Current limited:** Approx. 30mA

**Protected time duration:** No limit

#### INPUT SPECIFICATIONS

• **DC Current:** Input resistor incorporated

## INSTALLATION

### Power Consumption

#### •AC Power input:

Approx. 3 VA at 100 V

Approx. 4 VA at 200 V

Approx. 5 VA at 264 V

#### •DC Power input: Approx. 3 W

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

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

**Mounting:** Surface or DIN rail

**Weight:** 150 g (0.33 lbs)

## PERFORMANCE in percentage of span

**Accuracy:**  $\pm 0.1\%$  (accuracy of the receiving resistor)

**Temp. coefficient:**  $\pm 0.003\%/^{\circ}\text{C}$  ( $\pm 0.002\%/^{\circ}\text{F}$ ) (temp. coefficient of the receiving resistor)

**Line voltage effect to supply output:**  $\pm 3\%$  over voltage range

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

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

## 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

Installation Category II

Pollution Degree 2

Max. operating voltage 300 V

Input or output to power: Reinforced insulation

### Approval:

UL/C-UL nonincendive Class I, Division 2,

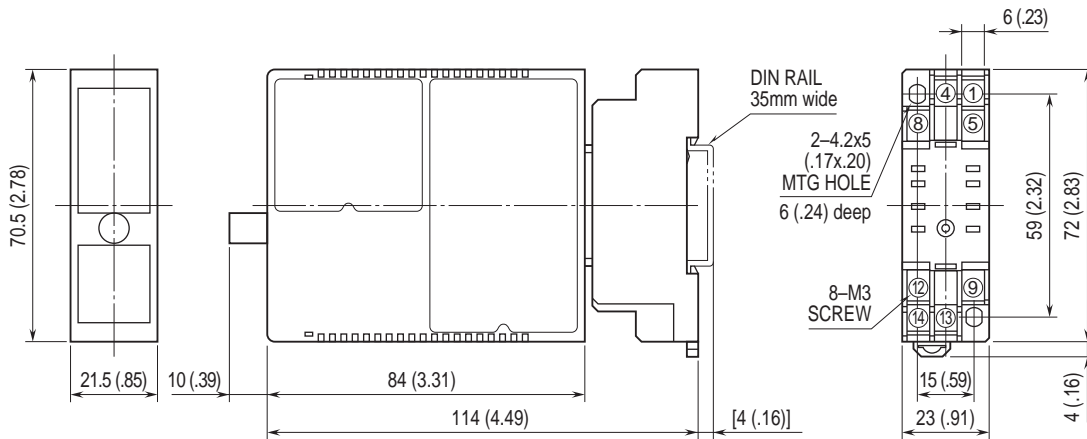
Groups A, B, C, and D hazardous locations

(ANSI/ISA-12.12.01, CAN/CSA-C22.2 No.213)

UL/C-UL general safety requirements

(UL 61010B-1, CAN/CSA-C22.2 No.1010-1)

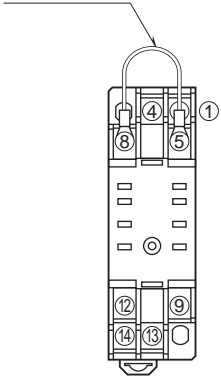
## DIMENSIONS unit: mm (inch)



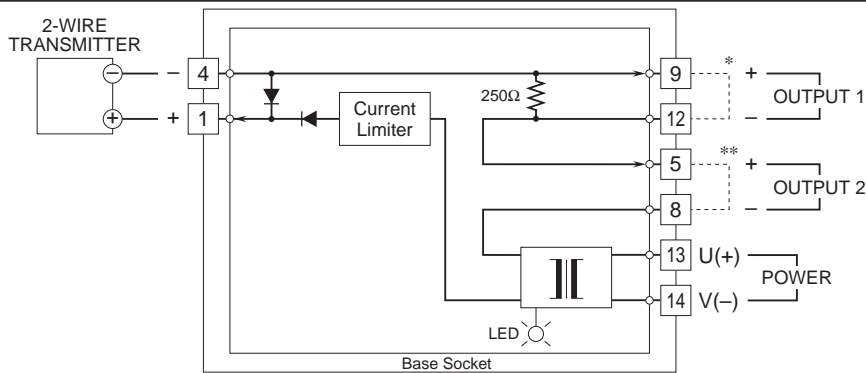
• When mounting, no extra space is needed between units.

## TERMINAL ASSIGNMENTS

SHORTCIRCUIT  
WIRE



## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



- \* Short across these terminals for large voltage allowance at Output 2.  
Be sure to match specifications of smart transmitter.  
Do not connect a capacitive load to Output 1.
- \*\*Short across these terminals when not using output 2.



Specifications are subject to change without notice.