

## Super-mini Signal Conditioners Mini-M Series

**CURRENT LOOP SUPPLY**

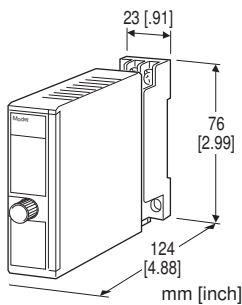
(non-isolated)

**Functions & Features**

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

**Typical Applications**

- Various 2-wire transmitters

**MODEL: M2D-24-[1][2]****ORDERING INFORMATION**

- Code number: M2D-24-[1][2]

Specify a code from below for each of [1] and [2].

- (e.g. M2D-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**

M: 85 - 264 V AC (Operational voltage range 85 - 264 V, 47 - 66 Hz)

(Select '/N' for 'Standards &amp; Approvals' code.)

**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 &amp; Approvals' code.)

P: 110 V DC

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

(Select '/N' for 'Standards &amp; Approvals' code.)

**[2] OPTIONS (multiple selections)****Standards & Approvals (must be specified)**

/N: Without CE, UKCA or UL

/CE: CE marking

/UK: CE, UKCA marking

/UL: UL approval, CE marking

**Other Options**

blank: none

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

**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 (UL not available)

/C04: Polyolefin coating (UL not available)

**TERMINAL SCREW MATERIAL**

/S01: Stainless steel (UL not available)

**GENERAL SPECIFICATIONS****Construction:** Plug-in**Connection:** M3 screw terminals (torque 0.8 N·m)**Screw terminal:** Chromated steel (standard) or stainless steel**Housing material:** Flame-resistant resin (black)**Isolation:** Input or output to power**SUPPLY OUTPUT****Output voltage:** 24 - 28 V DC with no load**Current rating:** ≤ 22 mA DC

- **Shortcircuit Protection**

**Current limited:** 35 mA max.**Protected time duration:** No limit

## INPUT SPECIFICATIONS

- **DC Current:** Input resistor incorporated

## INSTALLATION

### Power Consumption

#### •AC:

Approx. 3 VA at 100 V

Approx. 4 VA at 200 V

Approx. 5 VA at 264 V

#### •DC: 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 lb)

## 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

### EU conformity:

EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

RoHS Directive

### UK conformity (UKCA):

The UK legislations and designated standards are equivalent to the applicable EU directives.

(Refer to M-System's website for more information about the legislations and designated standards.)

### Approval:

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

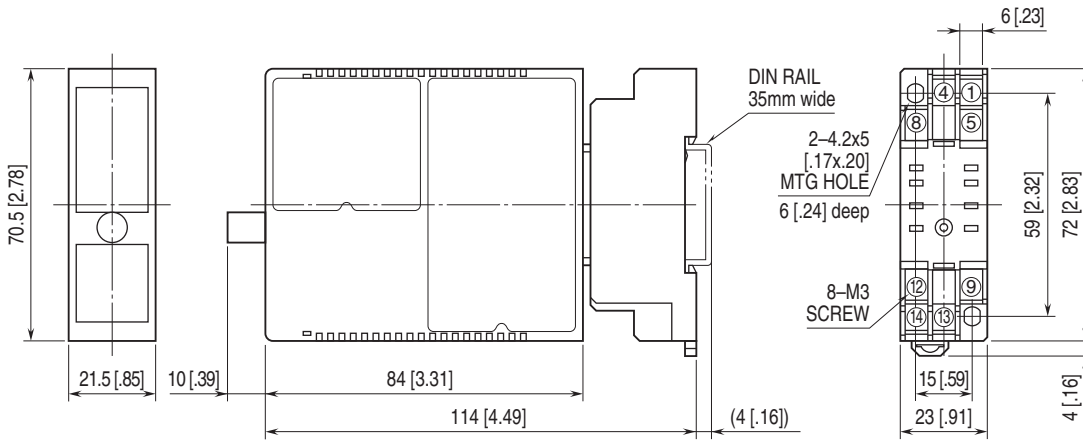
Groups A, B, C, and D

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

UL/C-UL general safety requirements

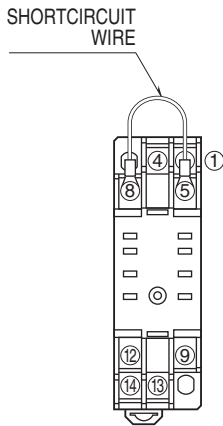
(UL 61010-1, CAN/CSA-C22.2 No.61010-1)

## EXTERNAL DIMENSIONS unit: mm [inch]

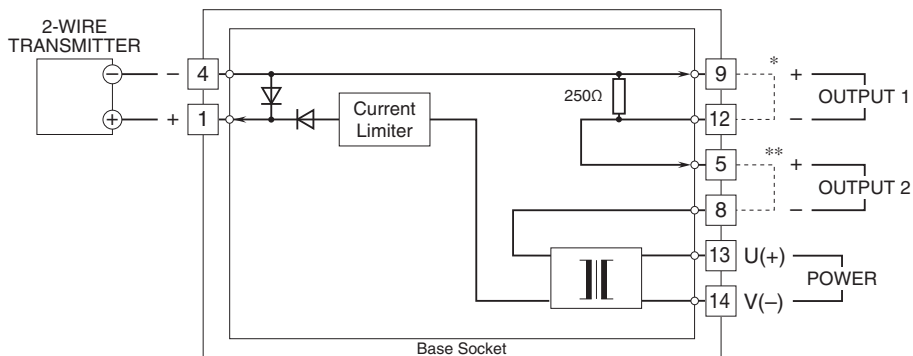


• When mounting, no extra space is needed between units.

## TERMINAL ASSIGNMENTS



## 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.