

## Super-mini Signal Conditioners Mini-M Series

### CURRENT LOOP SUPPLY

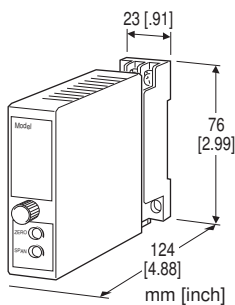
(isolated, isolator usable)

#### Functions & Features

- Powers a 4 - 20 mA DC current loop
- Short circuit protection
- Applicable to smart transmitters

#### Typical Applications

- Various 2-wire transmitters
- Isolation application (4 - 20 mA input)



### MODEL: M2DYS-24[1]-[2][3]

#### ORDERING INFORMATION

- Code number: M2DYS-24[1]-[2][3]  
Specify a code from below for each of [1] through [3].  
(e.g. M2DYS-24A-M2/CE/Q)
- Special output range (For codes Z & 0)
- Specify the specification for option code /Q  
(e.g. /C01/S01/V01)

#### SUPPLY OUTPUT

24: 24 V DC

#### INPUT

Current  
4 - 20 mA DC

#### [1] OUTPUT

- Current
- A: 4 - 20 mA DC (Load resistance 750 Ω max.)
  - B: 2 - 10 mA DC (Load resistance 1500 Ω max.)
  - C: 1 - 5 mA DC (Load resistance 3000 Ω max.)
  - D: 0 - 20 mA DC (Load resistance 750 Ω max.)
  - E: 0 - 16 mA DC (Load resistance 900 Ω max.)
  - F: 0 - 10 mA DC (Load resistance 1500 Ω max.)

- G: 0 - 1 mA DC (Load resistance 15 kΩ max.)
  - Z: Specify current (See OUTPUT SPECIFICATIONS)
- 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 1000 Ω min.)
  - 4: 0 - 10 V DC (Load resistance 10 kΩ min.)
  - 5: 0 - 5 V DC (Load resistance 5000 Ω min.)
  - 6: 1 - 5 V DC (Load resistance 5000 Ω min.)
  - 4W: -10 - +10 V DC (Load resistance 10 kΩ min.)
  - 5W: -5 - +5 V DC (Load resistance 5000 Ω min.)
  - 0: Specify voltage (See OUTPUT SPECIFICATIONS)

#### [2] POWER INPUT

AC Power

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

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

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)

#### [3] 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)

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

COATING (For the detail, refer to our web site.)

/C01: Silicone coating

/C02: Polyurethane coating

/C03: Rubber coating (UL not available)

/C04: Polyolefin coating (UL not available)

ADJUSTMENT

/V01: Multi-turn fine adjustment (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 to output to power  
**Overrange output:** Approx. -10 to +120 % at 1 - 5 V  
**Zero adjustment:** -5 to +5 % (front)  
**Span adjustment:** 95 to 105 % (front)

## SUPPLY OUTPUT

(across the terminals 1 - 8)  
**Output voltage:** 24 - 28 V DC with no load  
 18 V DC min. at 20 mA  
**Current rating:** ≤ 22 mA DC  
 • **Shortcircuit Protection**  
**Current limited:** 30 mA max.  
**Protected time duration:** No limit

## INPUT SPECIFICATIONS

■ **DC Current:** Input resistors incorporated  
 Approx. 300 Ω (50 Ω as receiving resistor, 250 Ω across the monitor terminals)

## OUTPUT SPECIFICATIONS

■ **DC Current:** 0 - 20 mA DC  
**Minimum span:** 1 mA  
**Offset:** Max. 1.5 times span  
**Load resistance:** Output drive 15 V max.  
 ■ **DC Voltage:** -10 - +12 V DC  
**Minimum span:** 5 mV  
**Offset:** Max. 1.5 times span  
**Load resistance:** Output drive 1 mA max.; at ≥ 0.5 V

## 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)

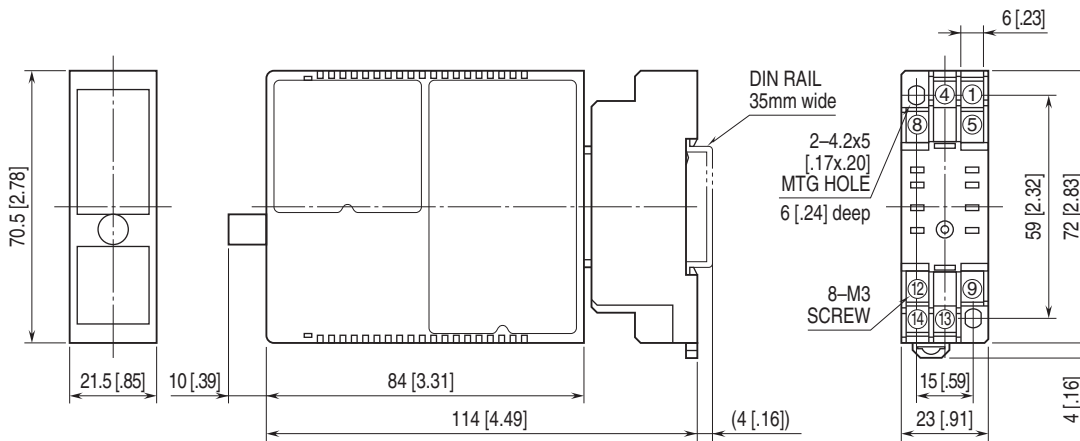
## PERFORMANCE in percentage of span

**Accuracy:** ±0.1 %  
**Temp. coefficient:** ±0.015 %/°C (±0.008 %/°F)  
**Response time:** ≤ 0.5 sec. (0 - 90 %)  
**Line voltage effect**  
**Supply output:** ±3 % over voltage range  
**Output signal:** ±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)

## STANDARDS & APPROVALS

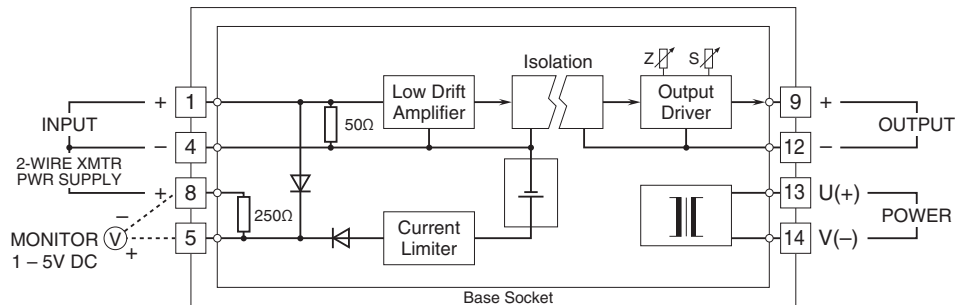
**EU conformity:**  
 EMC Directive  
 EMI EN 61000-6-4  
 EMS EN 61000-6-2  
 Low Voltage Directive  
 EN 61010-1  
 Installation Category II  
 Pollution Degree 2  
 Input or output to power: Reinforced insulation (300 V)  
 Input to output: Basic insulation (300 V)  
 RoHS Directive  
**Approval:**  
 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 & TERMINAL ASSIGNMENTS unit: mm [inch]

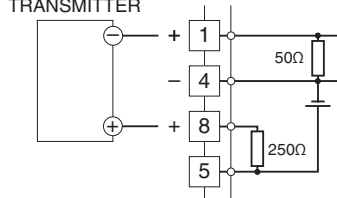


• When mounting, no extra space is needed between units.

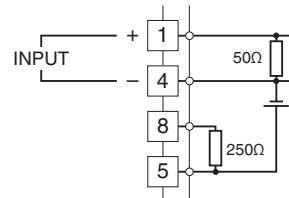
## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



■ When Used as DC Supply  
2-WIRE  
TRANSMITTER



■ When Used as Isolator



Specifications are subject to change without notice.