

## Super-mini Signal Conditioners Mini-M Series

### CURRENT LOOP SUPPLY

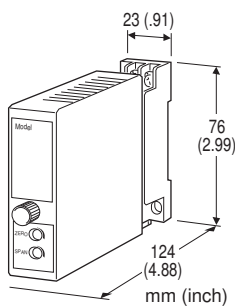
(applicable to HART signal)

#### Functions & Features

- Powers a 4 - 20 mA DC current loop
- Isolates and relays HART signals
- Shortcircuit protection
- Opencircuit detection
- Applicable to smart transmitters

#### Typical Applications

- 2-wire HART transmitters



### MODEL: M2DYH2-24A-[1][2]

#### ORDERING INFORMATION

- Code number: M2DYH2-24A-[1][2]
- Specify a code from below for each [1] and [2].  
(e.g. M2DYH2-24A-M2/B/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 approx. 250  $\Omega$ )

### OUTPUT

#### Current

A: 4 - 20 mA DC (Load resistance 600  $\Omega$  max.)  
225 - 600  $\Omega$  for HART communication

### [1] POWER INPUT

#### AC Power

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

#### DC Power

R: 24 V DC

(Operational voltage range 24 V  $\pm$ 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.)

### [2] OPTIONS (multiple selections)

#### Opencircuit detection

blank: none

/B: Opencircuit detector

#### Standards & Approvals (must be specified)

/N: Without CE

/CE: 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

##### TERMINAL SCREW MATERIAL

/S01: Stainless steel

#### 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 +110 %

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

Span adjustment: 95 to 105 % (front)

Opencircuit detection: Input current 0 mA when the output loop is open.

Photo MOS Relay ON Resistance; 3  $\Omega$  max.

#### SUPPLY OUTPUT

(across the terminals 1 - 5)

Output voltage: 24 - 28 V DC with no load

18 V DC min. at 20 mA

Current rating:  $\leq$  22 mA DC

- Shortcircuit Protection

Current limited: 30 mA max.

Protected time duration: No limit



## INPUT SPECIFICATIONS

■ **DC Current:** Input resistor incorporated  
Input current:  $\geq 0$  mA

## HART COMMUNICATION

**Transmission gain:** Approx. -3 dB (within 1 k - 3 kHz)  
measured with 250  $\Omega$  at output  
**Loop impedance:** 250  $\Omega \pm 10$  %  
**Communication directions:** Bidirectional

## INSTALLATION

### Power Consumption

• **AC:**  
Approx. 4 VA at 100 V  
Approx. 6 VA at 200 V  
Approx. 7 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 lbs)

## PERFORMANCE in percentage of span

**Accuracy:**  $\pm 0.1$  %

**Temp. coefficient:**  $\pm 0.015$  %/°C ( $\pm 0.008$  %/°F)

**Response time:**  $\leq 0.5$  sec. (0 - 90 %)

### Line voltage effect

**Supply output:**  $\pm 3$  % over voltage range

**Output signal:**  $\pm 0.1$  % over voltage range

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

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

## STANDARDS & APPROVALS

### CE conformity:

EMC Directive (2004/108/EC)

EMI EN 61000-6-4: 2007

EMS EN 61000-6-2: 2005

Low Voltage Directive (2006/95/EC)

EN 61010-1: 2001

Installation Category II

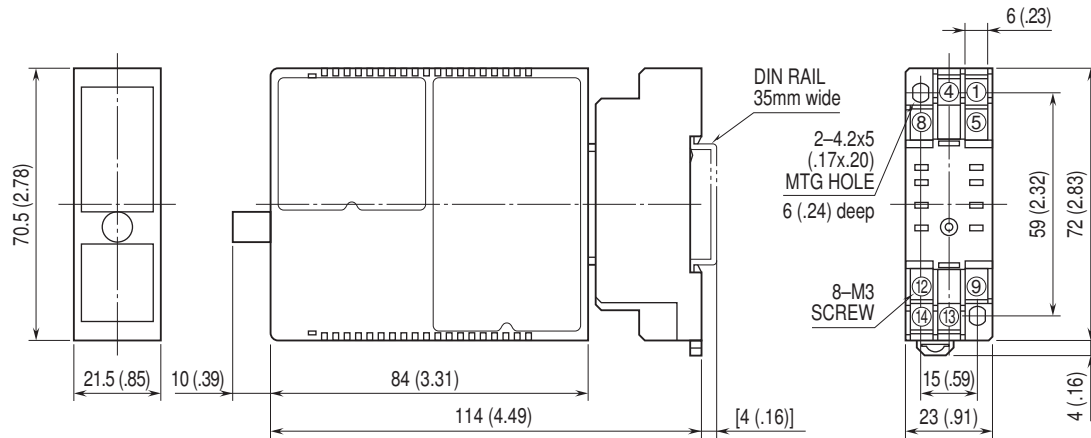
Pollution Degree 2

Input or output to power: Reinforced insulation (300 V)

Input to output: Basic insulation (300 V)

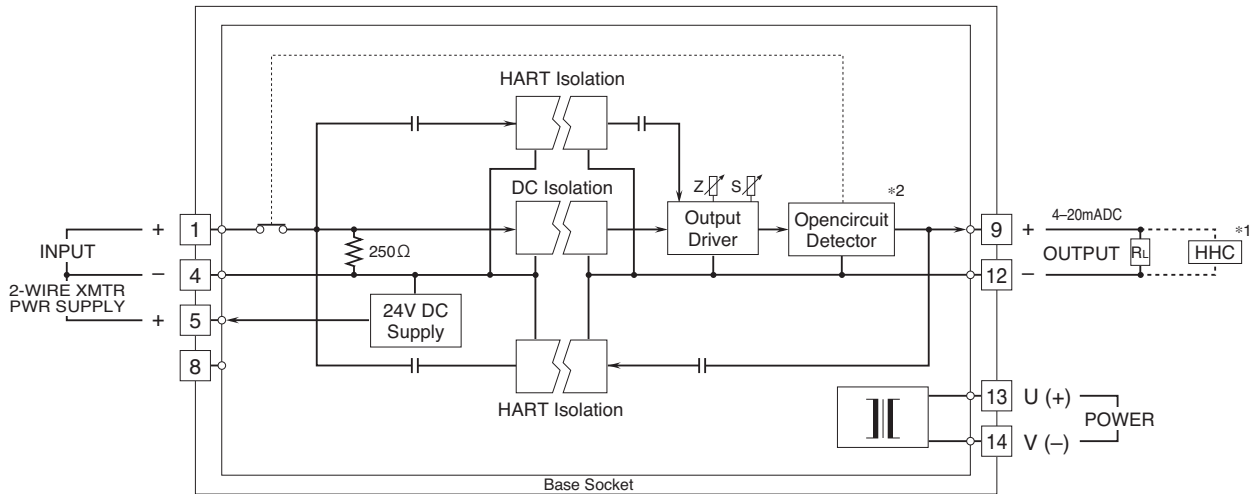


## DIMENSIONS unit: mm (inch)



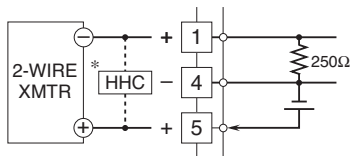
• When mounting, no extra space is needed between units.

## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

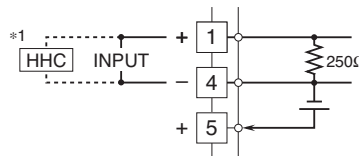


\*1. Hand-held communicator  
\*2. Only for opencircuit detector (code /B)

### ■ When Used as DC Supply



### ■ When Used as Isolator



Specifications are subject to change without notice.