

Super-mini Signal Conditioners Mini-M Series

CURRENT LOOP SUPPLY

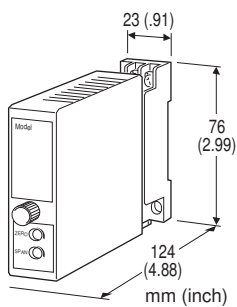
(applicable to HART signal)

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 Ω)

OUTPUT

Current

A: 4 - 20 mA DC (Load resistance 600 Ω max.)
225 - 600 Ω 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 ±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 Ω 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: ≤ 22 mA DC

- Shortcircuit Protection

Current limited: 30 mA max.

Protected time duration: No limit

INPUT SPECIFICATIONS

- **DC Current:** Input resistor incorporated
Input current: ≥ 0 mA

HART COMMUNICATION

- Transmission gain:** Approx. -3 dB (within 1 k - 3 kHz)
measured with 250 Ω 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

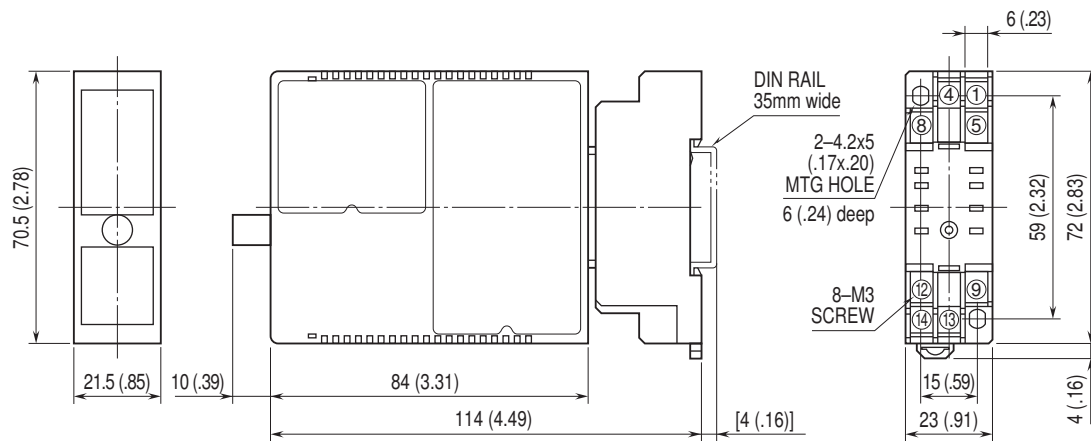
- Accuracy:** ± 0.1 %
- Temp. coefficient:** ± 0.015 %/°C (± 0.008 %/°F)
- Response time:** ≤ 0.5 sec. (0 - 90 %)
- Line voltage effect**
 - Supply output:** ± 3 % over voltage range
 - Output signal:** ± 0.1 % over voltage range
- Insulation resistance:** ≥ 100 M Ω with 500 V DC
- Dielectric strength:** 2000 V AC @1 minute (input to output to power to ground)

STANDARDS & APPROVALS

CE conformity:

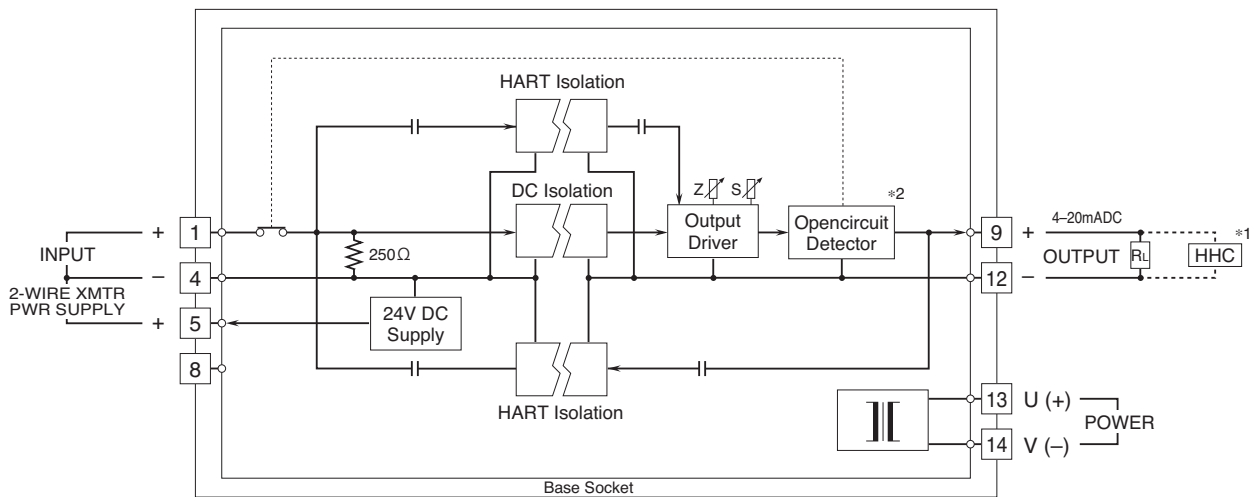
- EMC Directive (2004/108/EC)
 - EMI EN 61000-6-4: 2007
 - EMS EN 61000-6-2: 2005
- Low Voltage Directive (2006/95/EC)
 - EN 61010-1: 2001
 - Installation Category II
 - Pollution Degree 2
 - Input or output to power: Reinforced insulation (300 V)
 - Input to output: Basic insulation (300 V)

DIMENSIONS unit: mm (inch)



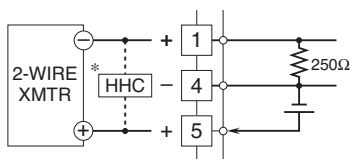
• When mounting, no extra space is needed between units.

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

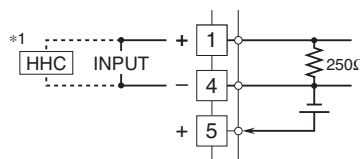


*1. Hand-held communicator
*2. Only for opencircuit detector (code /B)

■ When Used as DC Supply



■ When Used as Isolator



Specifications are subject to change without notice.