

Super-mini Signal Conditioners Mini-M Series

CURRENT LOOP SUPPLY

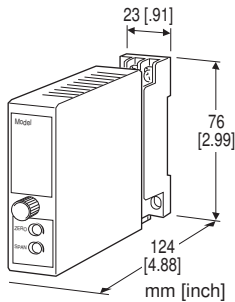
(applicable to HART signal)

Functions & Features

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

Typical Applications

- 2-wire HART transmitters



MODEL: M2DYH-24A-1[1]2[2]

ORDERING INFORMATION

- Code number: M2DYH-24A-1[1]2[2]
- Specify a code from below for each of [1] and [2].
(e.g. M2DYH-24A-M2/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

Current

A: 4 - 20 mA DC (Load resistance 600 Ω max.)

[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.)

P: 110 V DC

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

[2] OPTIONS

blank: none

/Q: With options (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

/C04: Polyolefin 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)

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

HART COMMUNICATION

Frequency band: 500 Hz - 10 kHz (within -10 dB)

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

Output load (loop impedance) 250 Ω ±10% is required for
HART communication.

Communication directions: Bidirectional

INSTALLATION

Power Consumption

•AC:

Approx. 3.5 VA at 100 V

Approx. 5.5 VA at 200 V

Approx. 6.5 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: $\pm 0.1\%$

Temp. coefficient: $\pm 0.015\%/^{\circ}\text{C}$ ($\pm 0.008\%/^{\circ}\text{F}$)

Response time: ≤ 0.5 sec. (0 - 90 %)

Line voltage effect

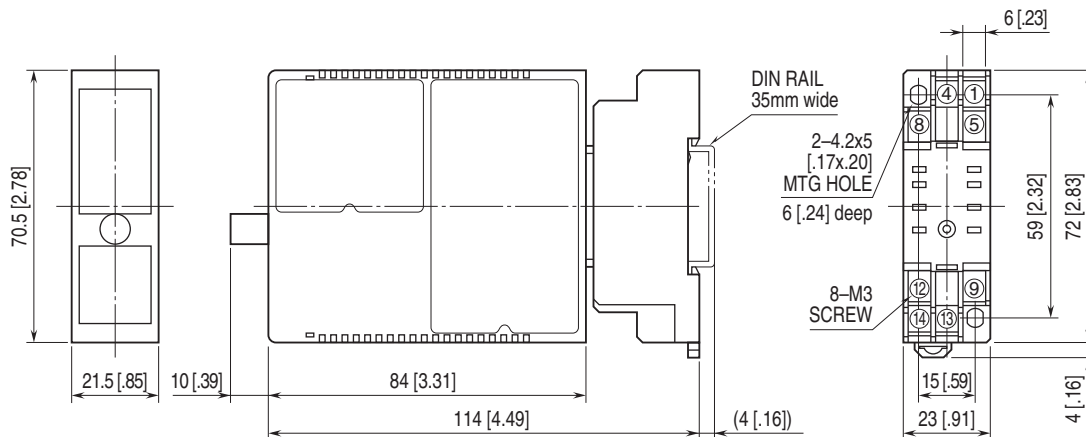
Supply output: $\pm 3\%$ over voltage range

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

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

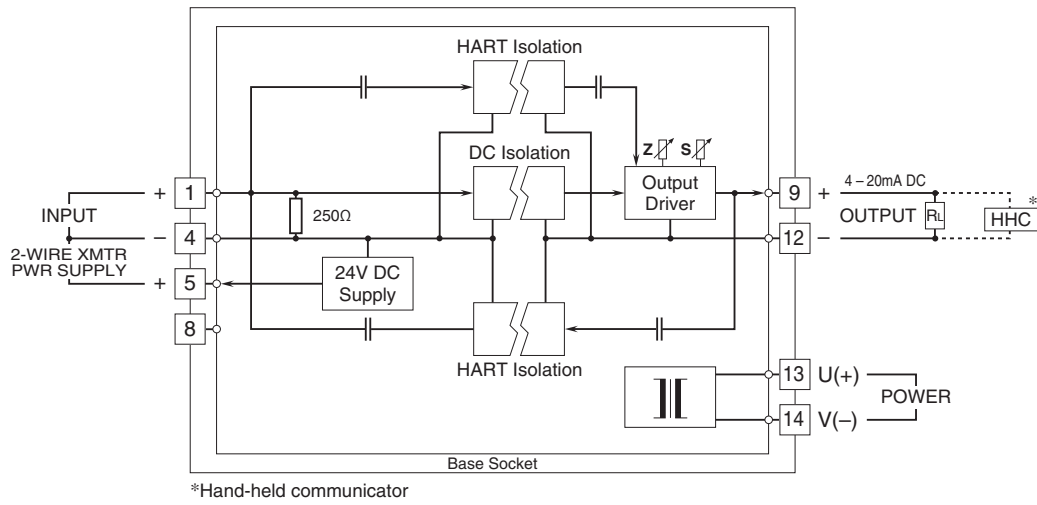
Dielectric strength: 2000 V AC @1 minute (input to output to power to ground)

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]

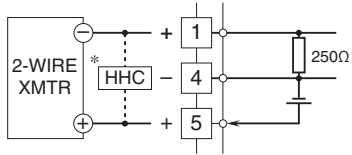


• When mounting, no extra space is needed between units.

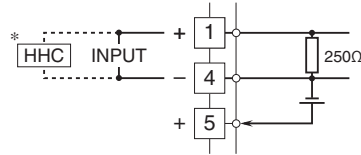
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



■ When Used as DC Supply



■ When Used as Isolator



Specifications are subject to change without notice.