MODEL: M2DYH2

Super-mini Signal Conditioners Mini-M Series
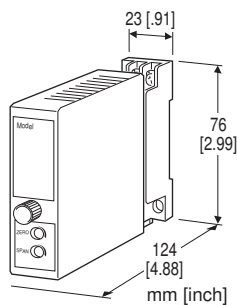
CURRENT LOOP SUPPLY

(applicable to HART signal, opencircuit detection selectable)

Functions & Features
• Powers a 4 – 20 mA DC current loop
• Isolates and relays HART signals
• Shortcircuit protection
• Opencircuit detection selectable
• Applicable to smart transmitters

Typical Applications
• 2-wire HART transmitters

23 [.91]
76 [2.99]
124 [4.88]
mm [inch]

MODEL: M2DYH2–24A–[1][2]

ORDERING INFORMATION

• Code number: M2DYH2-24A-[1][2]
 Specify a code from below for each of [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.)

[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
/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)
Opencircuit detection: Input current 0 mA when the output loop is open.
Photo MOSFET 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 – 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. 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 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
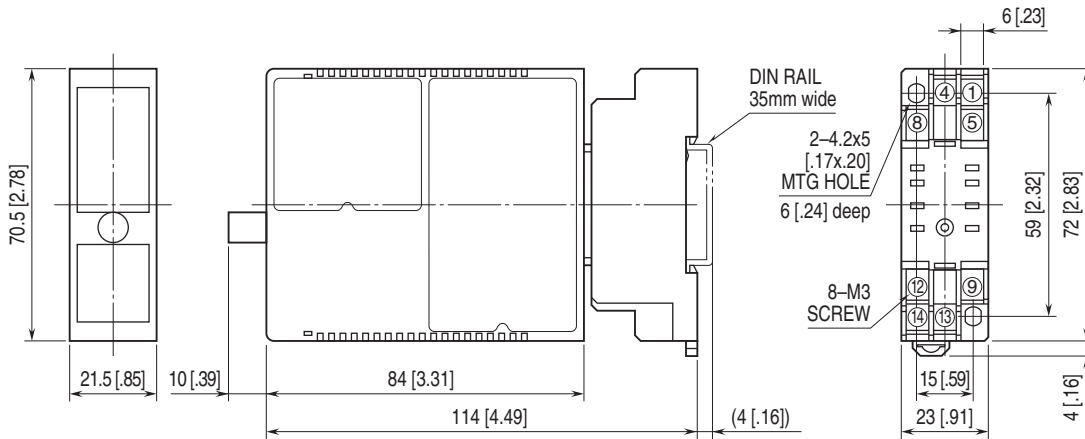Low Voltage Directive
  EN 61010-1
  Installation Category II
  Pollution Degree 2
  Input or output to power: Reinforced insulation (300 V)
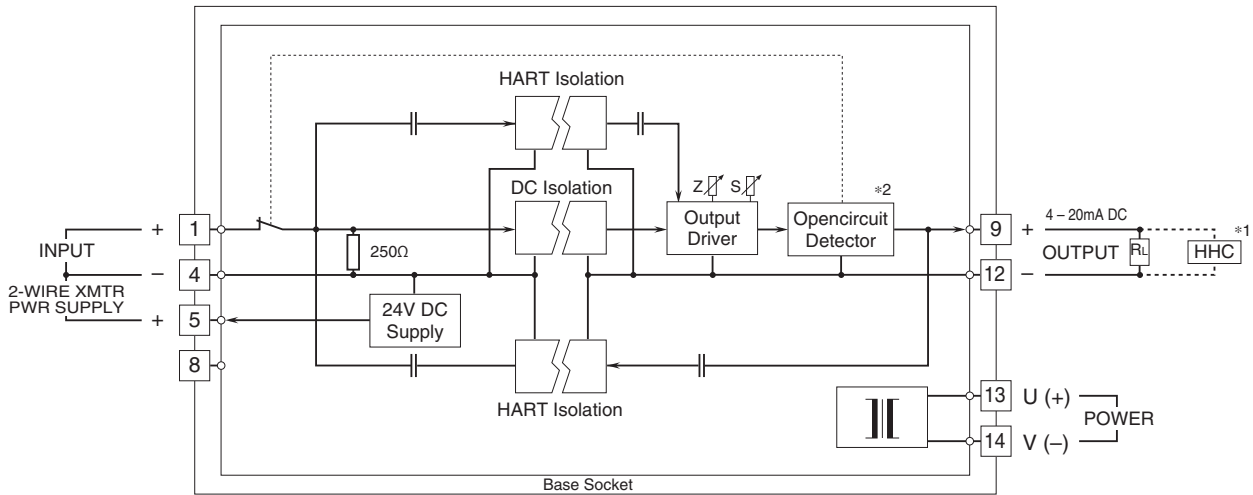 Input to output: Basic insulation (300 V)
RoHS Directive

MODEL: M2DYH2

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS   unit: mm [inch]

DIN RAIL 35mm wide

2–4.2x5 [.17x.20] MTG HOLE 6 [.24] deep

8–M3 SCREW

70.5 [2.78]

21.5 [.85]   10 [.39]   84 [3.31]

114 [4.49]   (4 [.16])

6 [.23]

59 [2.32]   72 [2.83]

15 [.59]   4 [.16]

23 [.91]

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

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

HART Isolation

DC Isolation

Z   S

Output Driver

Opencircuit Detector   *2

INPUT

2-WIRE XMTR PWR SUPPLY

250Ω

24V DC Supply

HART Isolation

Base Socket

4 – 20mA DC

OUTPUT   R$_L$ HHC   *1

13 U (+)   POWER
14 V (−)

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

■ When Used as DC Supply

2-WIRE XMTR   *1 HHC   250Ω
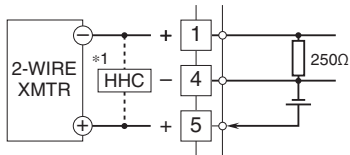
■ When Used as Isolator

*1 HHC   INPUT   250Ω
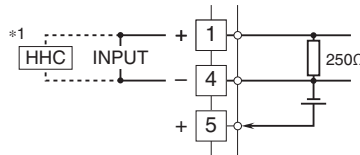
⚠ Specifications are subject to change without notice.