

## Super-mini Terminal Block Signal Conditioners M5-UNIT

### CURRENT LOOP SUPPLY

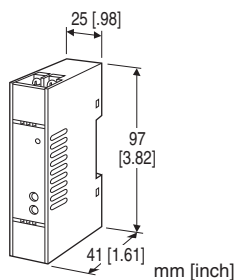
(applicable to HART signal, opencircuit detection selectable)

#### Functions & Features

- Powers a 4 - 20 mA DC current loop
- Isolates and relays HART signals
- Shortcircuit protection
- Opencircuit detection selectable
- High-density mounting
- Power LED

#### Typical Applications

- 2-wire HART transmitters



### MODEL: M5DYH2-A-R[1]

#### ORDERING INFORMATION

- Code number: M5DYH2-A-R[1]  
Specify a code from below for [1].  
(e.g. M5DYH2-A-R/B/Q)
- Specify the specification for option code /Q  
(e.g. /C01/V01/S01)

#### INPUT

Current  
4 - 20 mA DC (Input resistance approx. 250 Ω)

#### OUTPUT

Current  
A: 4 - 20 mA DC

#### POWER INPUT

DC Power  
R: 24 V DC  
(Operational voltage range 24 V ±10 %, ripple 10 %p-p max.)

#### [1] OPTIONS (multiple selections)

Opencircuit detection  
blank: none

/B: Opencircuit detector

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

ADJUSTMENT

/V01: Multi-turn fine adjustment

TERMINAL SCREW MATERIAL

/S01: Stainless steel

#### GENERAL SPECIFICATIONS

Construction: Terminal block

Connection: M3.5 screw terminals (torque 0.8 N·m)

Screw terminal: Nickel-plated steel (standard) or stainless steel

Housing material: Flame-resistant resin (black)

Isolation: Input to output to power

Zero adjustment: -2 to +2 % (front)

Span adjustment: 98 to 102 % (front)

Power indicator LED: Green LED turns on when the power is supplied.

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 3 - 4)

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: 45 mA max.

Protected time duration: No limit

#### INPUT SPECIFICATIONS

■ DC Current: Input resistor incorporated

Input current: ≥ 0 mA

#### OUTPUT SPECIFICATIONS

The output goes below 0 % when the input is open.

■ LOAD RESISTANCE: 200 - 300 Ω max. (250±10% required for HART communication)

## HART COMMUNICATION

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

## INSTALLATION

**Power consumption**  
 •DC: Approx. 2 W  
**Operating temperature:** -20 to +65°C (-4 to +149°F)  
**Operating humidity:** 30 to 90 %RH (non-condensing)  
**Mounting:** DIN rail  
**Weight:** 80 g (2.8 oz)

## PERFORMANCE in percentage of span

**Accuracy:**  $\pm$ 0.1 %  
**Temp. coefficient:**  $\pm$ 0.02 %/°C ( $\pm$ 0.01 %/°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

### EU conformity:

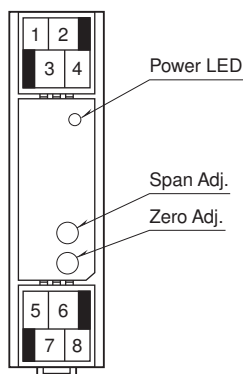
EMC Directive  
 EMI EN 61000-6-4  
 EMS EN 61000-6-2

RoHS Directive

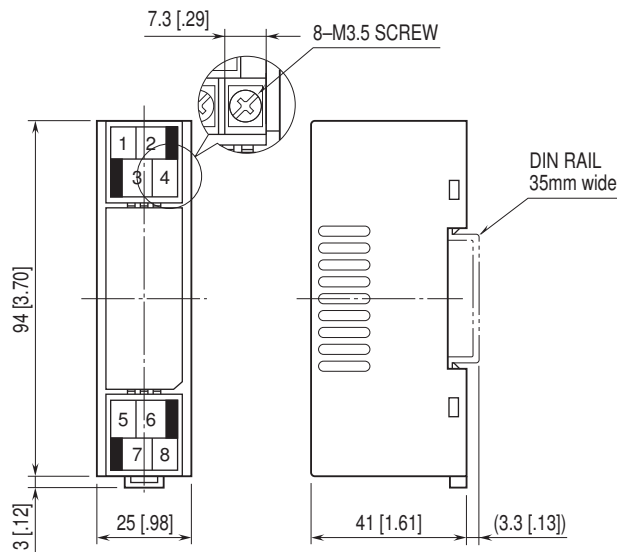
### UK conformity (UKCA):

The UK legislations and designated standards are equivalent to the applicable EU directives.  
 (Refer to our website for more information about the legislations and designated standards.)

## FRONT VIEW

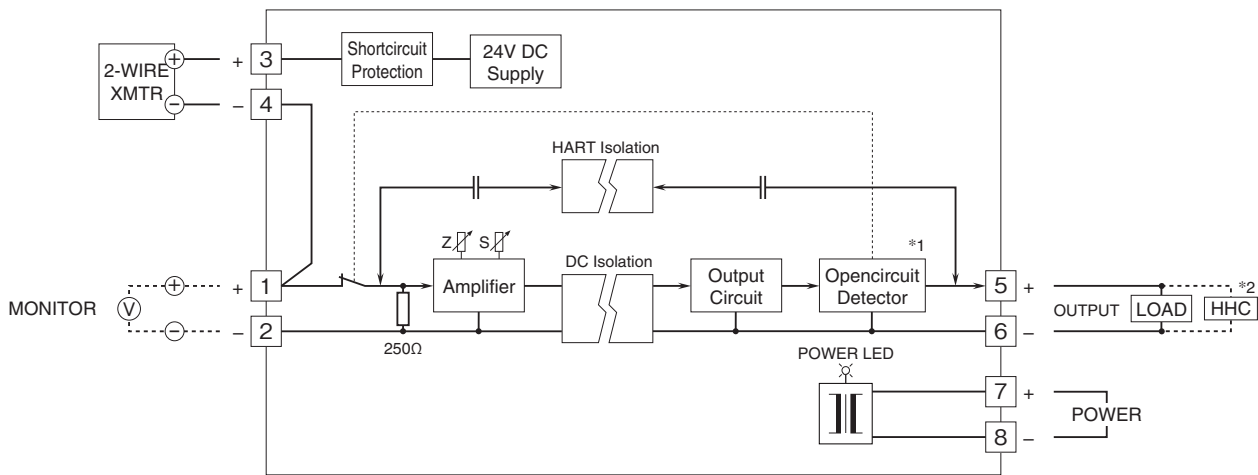


## EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



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

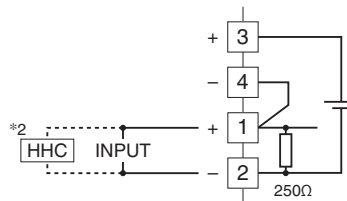
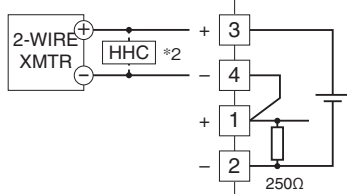
## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



\*1. Included with option /B  
\*2. Hand-held communicator

■ When used as DC Supply

■ When used as Isolator



Specifications are subject to change without notice.