

High-density Signal Conditioners 10-RACK

CURRENT LOOP SUPPLY

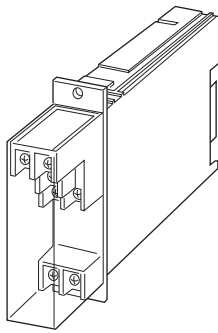
(applicable to HART signal, opencircuit detection selectable)

Functions & Features

- Powers a 4 - 20 mA DC current loop
- Isolates and relays HART signals
- Shortcircuit protection
- Opencircuit detection selectable

Typical Applications

- 2-wire HART transmitters



MODEL: 10DYH2-AA[1]-R[2]

ORDERING INFORMATION

- Code number: 10DYH2-AA[1]-R[2]
- Specify a code from below for each of [1] and [2].
(e.g. 10DYH2-AA6-R/B/Q)
- Specify the specification for option code /Q
(e.g. /C01)

INPUT

Current

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

OUTPUT 1

Current

A: 4 - 20 mA DC (Load resistance 600 Ω max.)
250 Ω ±10 % for HART communication

[1] OUTPUT 2

0: None

Current

A: 4 - 20 mA DC (Load resistance 500 Ω max.)

Voltage

6: 1 - 5 V DC (Load resistance 5000 Ω min.)

POWER INPUT

DC Power

R: 24 V DC

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

[2] OPTIONS (multiple selections)

Opencircuit detection

blank: none

/B: Opencircuit detector (Output 1)

Other Options

blank: none

/Q: Option other than the above (specify the specification)

SPECIFICATIONS OF OPTION: Q

COATING (For the detail, refer to our web site.)

/C01: Silicone coating

/C02: Polyurethane coating

/C03: Rubber coating

GENERAL SPECIFICATIONS

Construction: Rack-mounted; terminal access via screw terminals at the front and via card-edge connector at the rear; terminal cover provided

Connection

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

Output: Card-edge connector and M3.5 screw terminals (torque 0.8 N·m)

Power input: Supplied from card-edge connector

Screw terminal: Nickel-plated steel

Housing material: Flame-resistant resin (black)

Isolation: Input to output 1 to output 2 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 1 loop is open.

Photo MOS Relay ON Resistance; 3 Ω max.

SUPPLY OUTPUT

(across the terminals 1 - 2)

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

OUTPUT SPECIFICATIONS

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

HART COMMUNICATION

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

Loop impedance: 250 Ω ±10 %

Communication directions: Bidirectional

(HART communication not available for Output 2)

INSTALLATION

Current consumption: Approx. 140 mA

Operating temperature: -5 to +55°C (23 to 131°F)

Operating humidity: 30 to 90 %RH (non-condensing)

Mounting: Standard Rack 10BXx

Weight: 200 g (0.44 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

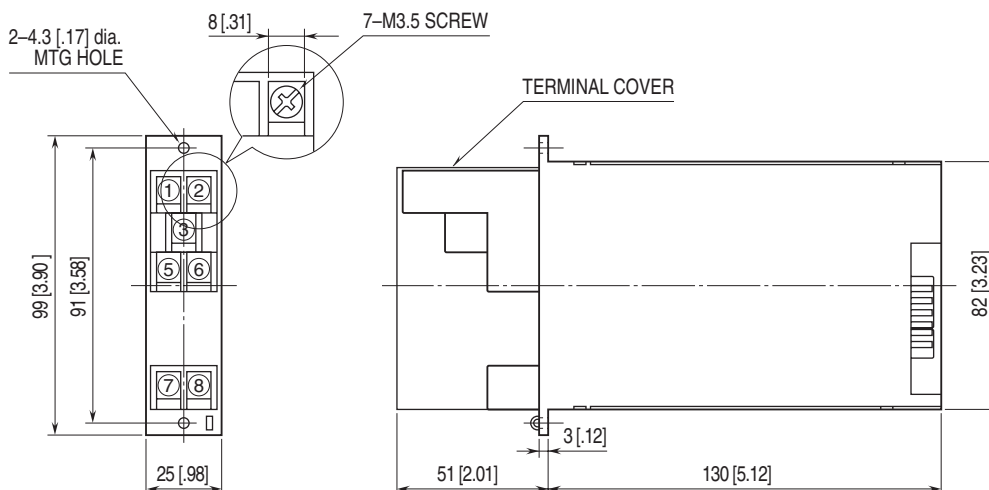
Insulation resistance: ≥ 100 MΩ with 500 V DC

Dielectric strength: 500 V AC @ 1 minute

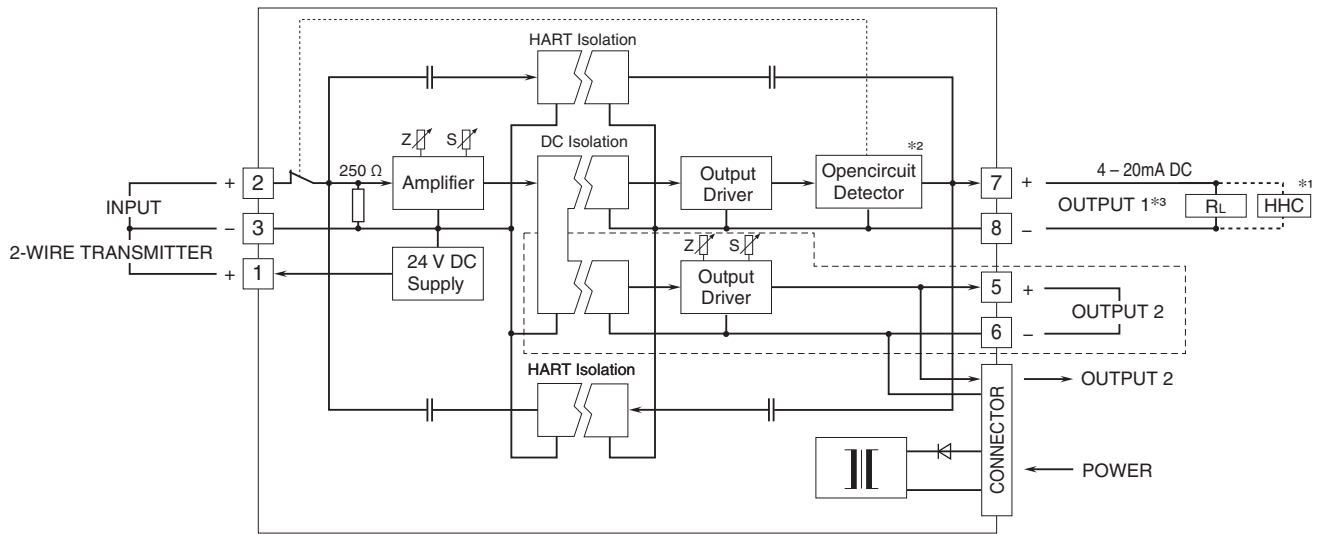
(input to output 1 to output 2 to power)

1500 V AC @ 1 minute (input or output or power to ground)

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



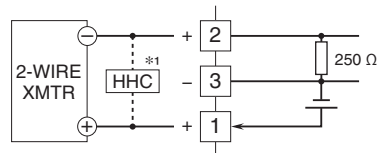
*1. Hand-held communicator

*2. Only for opencircuit detector (code /B)

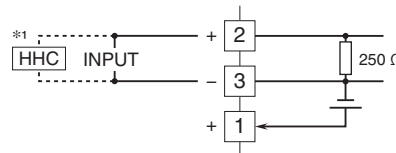
*3. For 1 output channel type, OUTPUT 1 is also connected to the card-edge connector inside (use the RL to either the terminals or the card-edge connector).

Note: The section enclosed by broken line is equipped when 2 output channel type is selected.

■ When Used as DC Supply



■ When Used as Isolator



Specifications are subject to change without notice.