

# D5072-087

## I.S. SIL2 Resistance Repeater

The Resistance Repeater D5072-087 accepts a resistance/RTD or transmitting potentiometer sensor, located in Hazardous Area, and repeats the resistance, with isolation, to Safe Area, suitable for applications requiring SIL 2 level in safety related systems for high risk industries.

### FEATURES

- SIL 2 / SC 3
- Input from Zone 0/Div. 1
- Installation in Zone 2/Div. 2
- 2/3/4 wire res./RTD or potentiometer input
- Burnout Fault detection
- Fully programmable operating parameters
- High Accuracy
- Three port isolation, Input/Output/Supply
- High Density, two channels per unit

### ORDERING INFORMATION

#### Ordering codes

D5072S-087: 1 channel

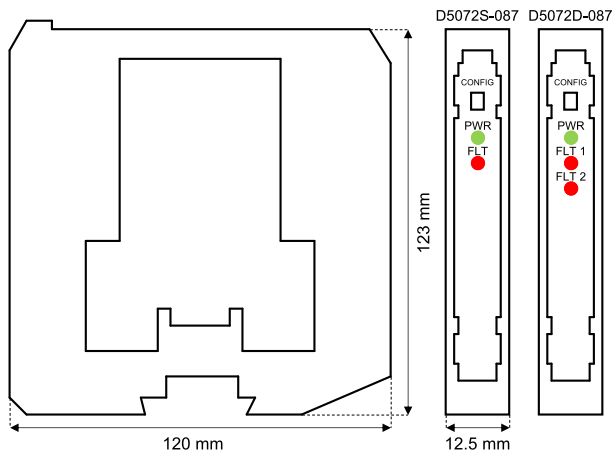
D5072D-087: 2 channels

#### Accessories

Bus Connector JDFT049 (mandatory for D5072D-087, optional for D5072S-087), Bus Mounting Kit OPT5096 (mandatory for D5072D-087, optional for D5072S-087).

Programmable USB serial line Kit PPC5092 + SWC5090.

### OVERALL DIMENSIONS



### TECHNICAL DATA

#### Supply

24 Vdc nom (18 to 30 Vdc), reverse polarity protected.

**Current consumption:** 35 mA (D5072S-087), 37 mA (D5072D-087),

@ 24 Vdc with 1 mA excitation current, typical.

**Power dissipation:** 0.85 W (D5072S-087), 0.9 W (D5072D-087),

@ 24 Vdc with 1 mA excitation current, typical.

#### Input

2-3-4 wire (4 wire only for D5072S-087) Resistance or 2 transmitting pot.

**Integration time:** from 50 ms to 500 ms.

**Input range:** 0 to 4 k $\Omega$ .

**Measuring RTD current:**  $\leq$  0.15 mA.

#### Output

2-3-4 wire (4 wire only for D5072S-087) resistance.

**Transfer characteristic:** linear, scaled or custom.

**Response time:** 10 to 90 % step:  $\leq$  10.0 ms (slow),  $\leq$  1.2 ms (fast).

**Output range:** 0 to 400  $\Omega$ .

**Excitation current:** 0.1 to 10 mA.

#### Fault

Burnout / Internal fault. Output reflects fault condition via highscale (450  $\Omega$ ) value forcing. Fault condition is also signaled via BUS and red LED on front panel.

#### Performance

**Ref. Conditions:** 24 V supply,  $23 \pm 1$   $^{\circ}$ C ambient temperature, slow

integration mode, 4 wires (for D5072S-087) or 3 wires (for D5072D-087) configuration for RTD, input/output range 10 to 400  $\Omega$ .

#### Input to out:

**Calibration & linearity accuracy:**  $\leq$  200 m $\Omega$  typical (Excitation Current  $\geq$  1 mA);  $\leq$  300 m $\Omega$  typical (0.5 mA  $\leq$  Excitation Current < 1 mA).

**Temp. influence:**  $\pm$  20 m $\Omega$ / $^{\circ}$ C, typical (Excitation Current  $\geq$  1 mA).

#### Isolation

I.S. In/Out 2.5 kV; I.S. In/Supply 2.5 kV; I.S. In/I.S. In 500 V;

Out/Supply 500 V; Out/Out 500 V.

#### Environmental conditions

**Operating temperature:** temperature limits  $-40$  to  $+70$   $^{\circ}$ C.

**Storage temperature:** temperature limits  $-45$  to  $+80$   $^{\circ}$ C.

#### Safety description

Associated apparatus and non-sparking electrical equipment.

D5072S-087:  $U_o = 7.2$  V,  $I_o = 23$  mA,  $P_o = 40$  mW,  $U_i = 12.8$  V,  $C_i = 0$  nF,  $L_i = 0$  nH at terminals 7-8-9-10.

D5072D-087:  $U_o = 7.2$  V,  $I_o = 16$  mA,  $P_o = 27$  mW,  $U_i = 12.8$  V,  $C_i = 0$  nF,  $L_i = 0$  nH at terminals 7-8-9, 10-11-12.

$U_m = 250$  Vrms or Vdc,  $-40$   $^{\circ}$ C  $\leq T_a \leq 70$   $^{\circ}$ C.

#### Mounting

DIN-Rail 35 mm, with or without Power Bus.

**Weight:** about 135 g (D5072D-087), 130 g (D5072S-087).

**Connection:** by polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm $^2$  (13 AWG).

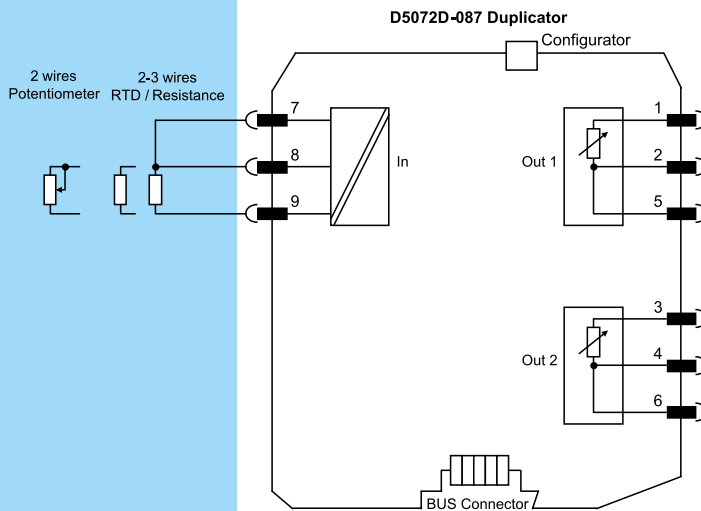
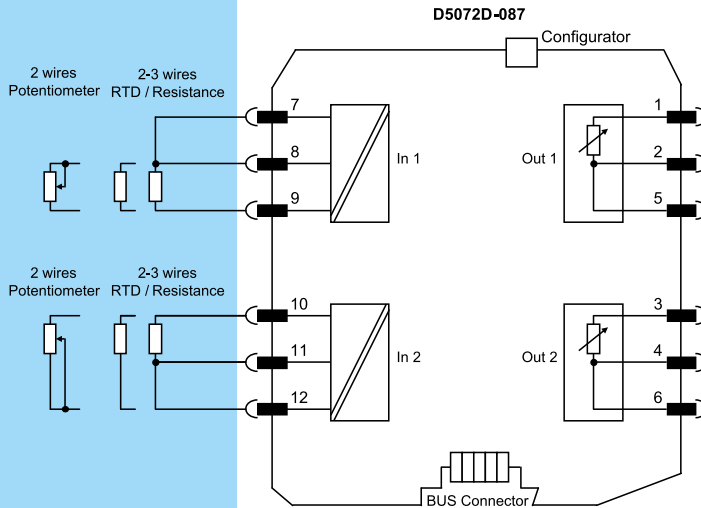
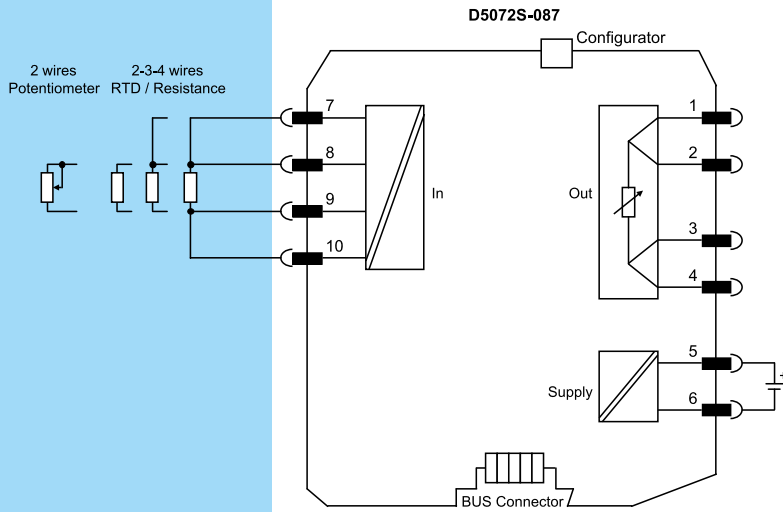
**Dimensions:** Width 12.5 mm, Depth 123 mm, Height 120 mm.

# FUNCTION DIAGRAM

Additional installation diagrams may be found in Instruction Manual.

## Hazardous Area

## Safe Area/Zone 2/Div. 2



Functional Safety Management Certification: GM International is certified to conform to IEC61508:2010 part 1 clauses 5-6 for safety related systems up to and included SIL3. In addition, GM International products have been granted I.S. certificates from the most credited Notified Bodies in the world.

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