

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

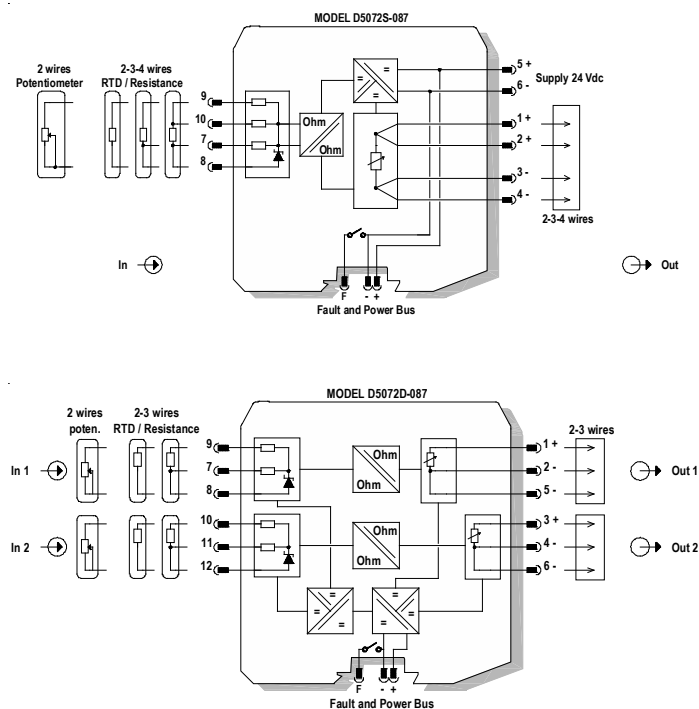
- SIL 2
- Input from Zone 0/Div. 1
- Installation in Zone 2/Div. 2
- 2/3/4 wire res./RTD or potentiometer input
- Burnout Fault detection
- Fully programmable operating parameters
- High Accuracy
- Three port isolation, Input/Output/Supply
- High Density, two channels per unit

FUNCTION DIAGRAM

Additional installation diagrams may be found in Instruction Manual.

Hazardous Area

Safe Area/Zone 2/Div. 2



TECHNICAL DATA

Supply

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

Current consumption: 26 mA (D5072S-087), 37 mA (D5072D-087), @ 24 Vdc with 1 mA excitation current, typical.

Power dissipation: 0.65 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.

Integration time: from 50 ms to 500 ms.

Input range: 0 to 4 k Ω .

Measuring RTD current: ≤ 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: ≤ 10.0 ms (slow), ≤ 1.2 ms (fast).

Output range: 0 to 400 Ω .

Excitation current: 0.1 to 10 mA.

Fault

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

Performance

Ref. Conditions: 24 V supply, 23 ± 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 Ω .

Calibration & linearity accuracy: < 200 m Ω typical (Excitation Current ≥ 1 mA); < 300 m Ω typical (0.5 mA \leq Excitation Current < 1 mA).

Temp. influence: ± 20 m Ω / $^{\circ}$ C, typical (Excitation Current ≥ 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, $I_o/I_{sc} = 23$ 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.

ORDERING INFORMATION

D5072S-087: 1 channel

D5072D-087: 2 channels

Accessories

Bus Connector JDFT049, Bus Mounting Kit OPT5096.

Programmable USB serial line Kit PPC5092 + SWC5090.