

D5072-096

I.S. SIL2 Thermocouple/mV Repeater

The Thermocouple/mV Repeater D5072-096 accepts a low level dc signal from millivolt or thermocouple sensor, located in Hazardous Area, and repeats, with isolation, the signal to Safe Area, suitable for applications requiring SIL 2 level in safety related systems for high risk industries. For D5072D-096 module: duplicator function provides two independent outputs from one single input.

FEATURES

- SIL 2 / SC 3
- Input from Zone 0/Div. 1
- Installation in Zone 2/Div. 2
- mV or thermocouple input
- Output duplication
- Fully programmable operating parameters
- High Accuracy, μP controlled A/D converter
- Three port isolation, Input/Output/Supply
- High Density, two channels per unit

ORDERING INFORMATION

Ordering codes

D5072S-096: 1 channel

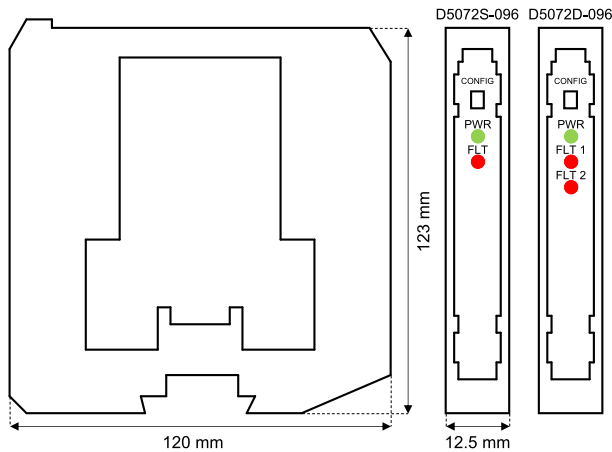
D5072D-096: 2 channels

Accessories

Bus Connector JDFT049, Bus Mounting Kit OPT5096.

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 @ 24 Vdc, typical.

Power dissipation: 0.85 W @ 24 Vdc, typical.

Input

Millivolt or any type of thermocouple within Input Range.

Integration time: 75 ms (fast), 375 ms (slow), user selectable.

Input range: -10 to +100 mV.

Thermocouple burnout current: $\leq 50 \mu\text{A}$.

Output

Millivolt.

Transfer characteristic: linear.

Response time: ≤ 20 ms (10 to 90 % step).

Output range: -10 to +100 mV.

Fault

Output reflects burnout/internal fault condition via highscale (+110 mV) value forcing. Fault condition is also signaled via BUS and red LED on front panel.

Performance

Ref. Conditions: 24 V supply, 23 ± 1 °C ambient temperature, slow integration mode.

Input:

Calibration & linearity accuracy: $\leq \pm 10 \mu\text{V}$.

Temp. influence: $\leq \pm 3 \mu\text{V}/^\circ\text{C}$, typical.

Output:

Calibration & linearity accuracy: $\leq \pm 10 \mu\text{V}$.

Temp. influence: $\leq \pm 3 \mu\text{V}/^\circ\text{C}$, typical.

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 $+70$ °C.

Storage temperature: temperature limits -45 to $+80$ °C.

Safety description

Associated apparatus and non-sparking electrical equipment.

D5072S-096: $U_o = 7.2$ 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.

D5072D-096: $U_o = 7.2$ 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, 11-12.

$U_m = 250$ Vrms or Vdc, -40 °C $\leq T_a \leq 70$ °C.

Mounting

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

Weight: about 135 g (D5072D-096), 130 g (D5072S-096).

Connection: by polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm² (13 AWG).

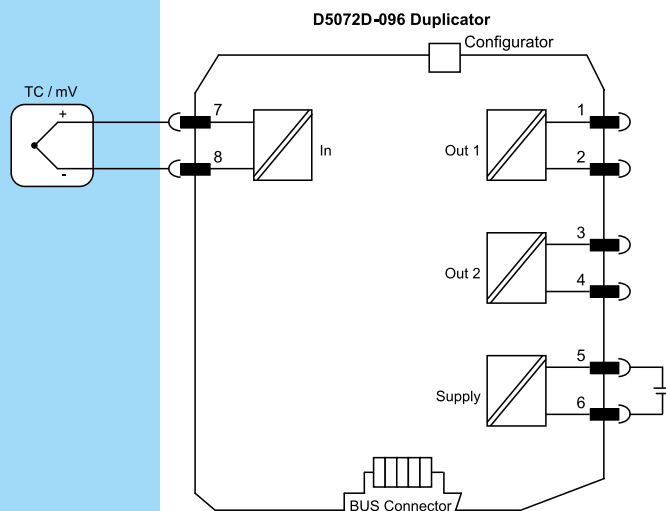
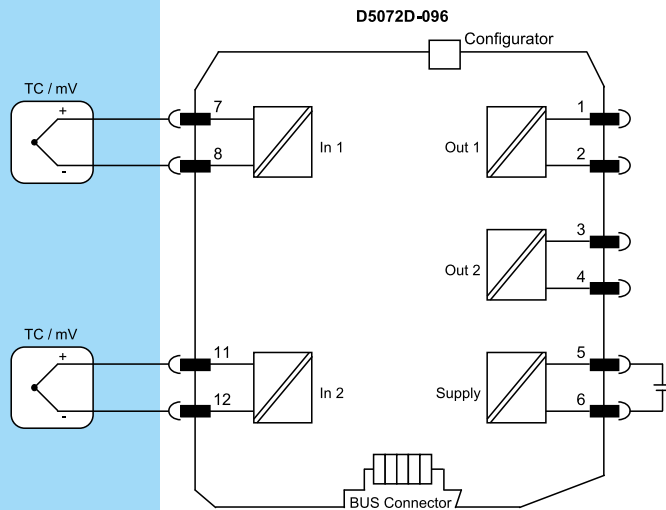
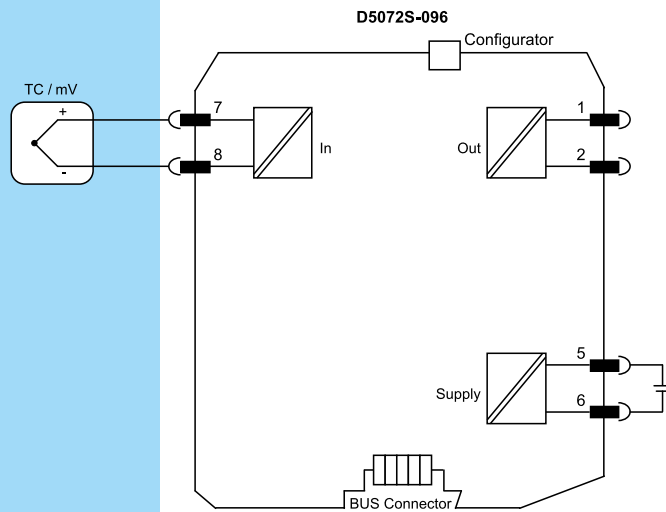
Dimensions: Width 12.5 mm, Depth 123 mm, Height 120 mm.

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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