

# 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,  $\mu$ P controlled A/D converter
- Three port isolation, Input/Output/Supply
- High Density, two channels per unit

### ORDERING INFORMATION

#### Ordering codes

D5072S-096: 1 channel

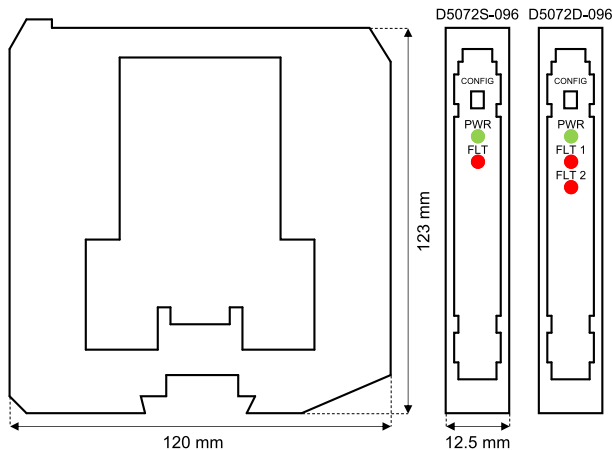
D5072D-096: 2 channels

#### 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 (D5072D-096), 30 mA (D5072S-096), @ 24 Vdc, typical.

**Power dissipation:** 0.85 W (D5072D-096), 0.6 W (D5072S-096), @ 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:**  $\leq 50 \mu$ A.

#### Output

Millivolt.

**Transfer characteristic:** linear.

**Response time:**  $\leq 20$  ms (10 to 90 % step).

**Output range:** -10 to +100 mV.

#### Fault

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

#### Performance

**Ref. Conditions:** 24 V supply,  $23 \pm 1$  °C ambient temperature, slow integration mode.

#### Input:

**Calibration & linearity accuracy:**  $\leq \pm 10 \mu$ V.

**Temp. influence:**  $\leq \pm 3 \mu$ V/°C, typical.

#### Output:

**Calibration & linearity accuracy:**  $\leq \pm 10 \mu$ V.

**Temp. influence:**  $\leq \pm 3 \mu$ V/°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 mm<sup>2</sup> (13 AWG).

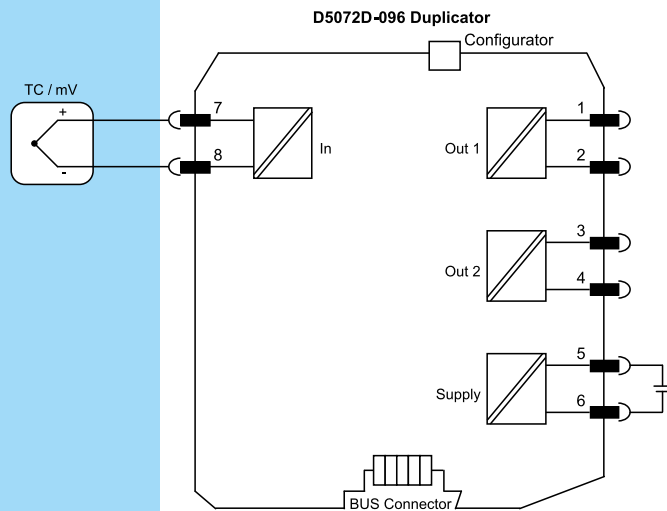
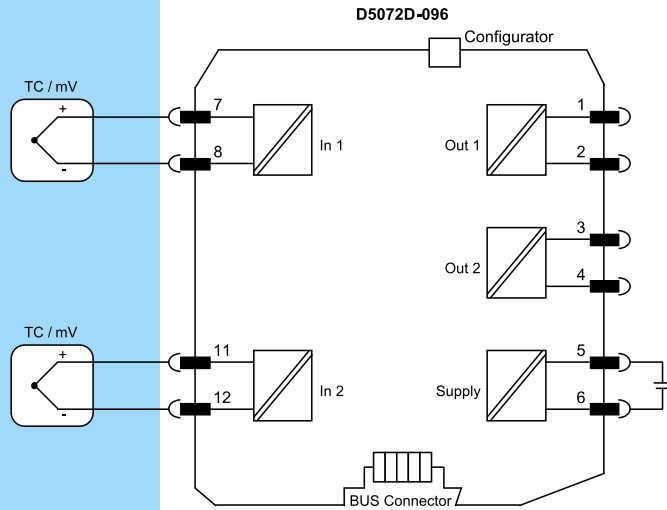
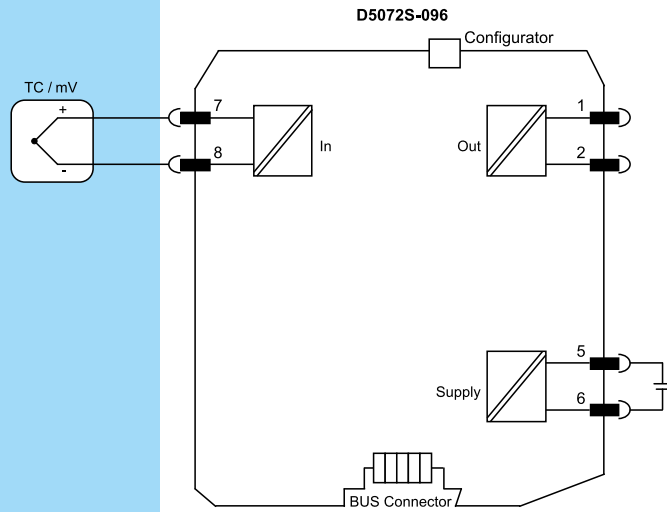
**Dimensions:** Width 12.5 mm, Depth 123 mm, Height 120 mm.

# 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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