The Multifunction Temperature Converter D5072 accepts a low level dc signal from millivolt, thermocouple or 2-3-4 wire resistance/RTD or transmitting potentiometer sensor, located in Hazardous Area, and converts, with isolation, the signal to drive a Safe Area load, suitable for applications requiring SIL 2 level in safety related systems for high risk industries. Output signal can be direct or reverse. Modbus RTU RS-485 output is available on Bus connector. Cold junction compensation can be programmed as Internal: provided by an internal temperature sensor. I.S. SIL2 Multifunction Temperature Converter D5072 accepts a low level dc signal from millivolt, thermocouple or 2-3-4 wire resistance/RTD or transmitting potentiometer sensor, located in Hazardous Area, and converts, with isolation, the signal to drive a Safe Area load, suitable for applications requiring SIL 2 level in safety related systems for high risk industries. Output signal can be direct or reverse. Modbus RTU RS-485 output is available on Bus connector. Cold junction compensation can be programmed as Internal: provided by an internal temperature sensor. D5072D module: duplicator function provides two independent outputs from one single input. Output function can be configured as: Adder, subtractor, low/high selector. Modules are provided with alarm function, which is available via photoMOS output.

**FEATURES**
- SIL 2
- Input from Zone 0/Div. 1
- Installation in Zone 2/Div. 2
- mV, TC, 2/3/4 wire res./RTD or potentiometer input
- Duplication/inversion/scaling/custom output
- Selectable CJC: internal PT1000, external RTD or fixed
- Fastest integration time: 50 ms
- Burnout/internal/circuit sensor fault monitor
- Alarm output with user-settable trip points
- Modbus RTU RS-485 for monitor & configuration
- Fully programmable operating parameters
- High Accuracy, µP controlled A/D converter
- 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: 50 mA (D5072D), 35 mA (D5072S), @ 24 Vdc with 20 mA out, typical.
- Power dissipation: 1.0 W (D5072D), 0.75 W (D5072S), @ 24 Vdc with 20 mA out, typical.

**Input**
- Millivolt, thermocouple, 2-3-4 wire RTD or 3 wire transmitting potentiometer. Refer to Instruction Manual for more details.
- Input range: -500 to +500 mV for TC/mV, 0-4 kΩ for RTD/resistance.
- Thermocouple reference junction compensation: programmable: internal Pt1000, fixed, external, or remote.

**Output**
- Fully customizable 0/4 to 20 mA, on max. 300 Ω load source mode, current limited @ 24 mA. Refer to Instruction Manual for more details.
- Transfer characteristic: linear, direct or reverse on all input sensors.

**Modbus interface**
- Modbus RTU RS-485 up to 115.2 kbps for monitor/configuration/control.

**Performance**
- Ref. Conditions: 24 V supply, 250 Ω load, 23 ± 1 °C ambient temperature, slow integration mode, 3/4 wires configuration for RTD.
- Input Ref. junction compensation accuracy: ≤ ± 1 °C.
- Out Calibration accuracy: ≤ ± 10 µA.
- Out Linearity error: ≤ ± 10 µA.
- Out Temp. influence: ≤ ± 2 µA/°C.

**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: Uo = 7.2 V, Io = 23 mA, Po = 40 mW, Ui = 12.8 V, Ci = 0 nF, Li = 0 nH at terminals 7-8-9-10.
- D5072D: Uo = 7.2 V, Io = 16 mA, Po = 27 mW, Ui = 12.8 V, Ci = 0 nF, Li = 0 nH at terminals 7-8-9-10.
- Un = 250 Vrms or Vdc, -40 °C ≤ Ta ≤ 70 °C.

**Mounting**
- DIN-Rail 35 mm, with or without Power Bus or on custom Term. Board.
- Weight: about 135 g (D5072D), 130 g (D5072S).

**ORDERING INFORMATION**
- D5072S: 1 channel
- D5072D: 2 channels

**Accessories**
- Bus Connector JDFT049, Bus Mounting Kit OPT5096.
- Programmable USB serial line Kit PPC5092 + SWC5090.