D6072

SIL2 Multifunction Temperature Converter

The Multifunction Temperature Converter D6072 accepts a low level dc signal from millivolt, thermocouple or 2-3-4 wire resistance/RTD or transmitting potentiometer sensor and converts, with isolation, the signal to drive a 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 PT1000 sensor; Fixed: to a user-customizable temperature value; External remote: ext. RTD placed away, on a support terminal board; External local: ext. RTD placed close to the module terminal block; Other: connecting compensation RTD to one of the two ch. For D6072D 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 / SC 3
- Installation in Zone 2/Div. 2
- mV, TC, 2/3/4wire res./RTD or potentiometer input
- Duplication/inversion/scaling/custom output
- Selectable CJC: internal PT1000, external RTD or fixed
- Burnout/internal/cjc/in 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

ORDERING INFORMATION

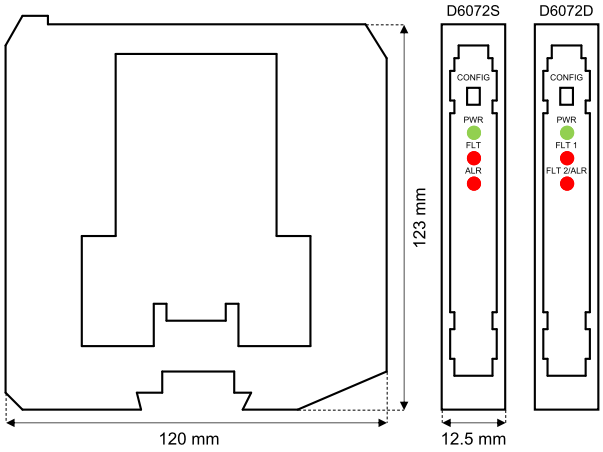
Ordering codes

D6072S: 1 channel
D6072D: 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: 50 mA (D6072D), 42 mA (D6072S), @ 24 Vdc with 20 mA out, typical.
Power dissipation: 1.0 W (D6072D), 0.9 W (D6072S), @ 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.
Integration time: from 50 ms to 500 ms.
Input range: ±500 mV (TC/mV), 0-4 kΩ (RTD/res), up to 10 kΩ (pot).
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.
Transfer characteristic: linear, direct or reverse on all input sensors.
Response time: ≤ 20 ms (10 to 90 % step).

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:
Calibration & linearity accuracy: refer to Instruction Manual.
Temp. influence: refer to Instruction Manual.
Ref. junction compensation accuracy: ≤ ±3 °C (internal CJC), ≤ ±1.5 °C (external local CJC), according to RTD (external remote CJC). Refer to Instruction Manual.
Out:
Calibration accuracy: ≤ ± 10 µA.
Linearity error: ≤ ± 10 µA.
Temp. influence: ≤ ± 2 µA/°C.

Isolation

In/Out 2.5 kV; In/Supply 2.5 kV; In/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.

Mounting

DIN-Rail 35 mm, with or without Power Bus or on custom Term. Board.
Weight: about 135 g (D6072D), 130 g (D6072S).
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.

FSM SIL 3

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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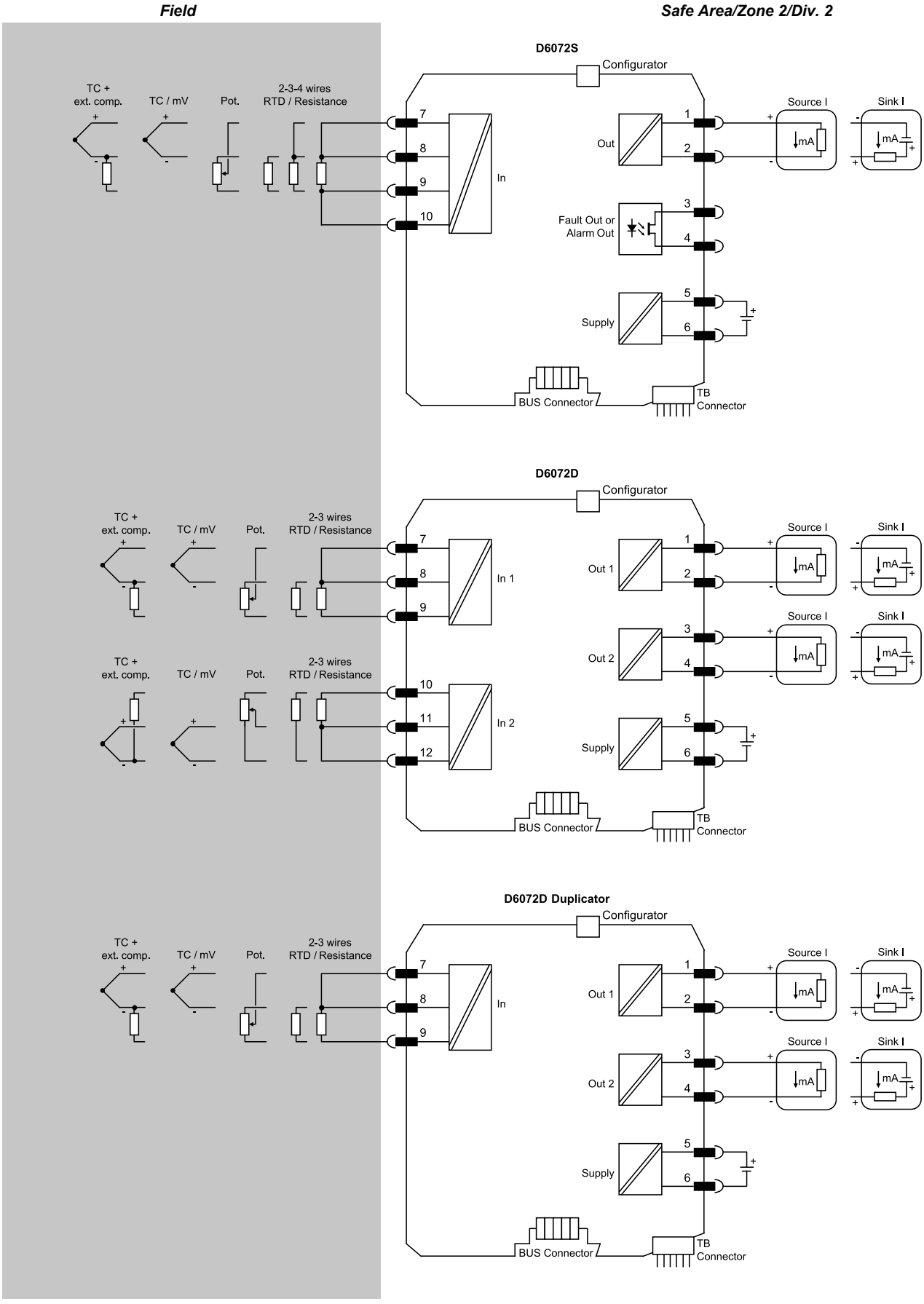
FUNCTION DIAGRAM

Additional installation diagrams may be found in Instruction Manual.



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