D6072-099

SIL2 Sink-Out Temperature Converter

The Sink-Out Temperature Converter D6072-099 accepts a low level dc signal from millivolt, thermocouple or 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: Automatic: provided by an internal temperature sensor; Fixed: to a user-customizable temperature value; External: making use of an external RTD; Remote: (only D6072D-099) connecting compensation RTD to one of the two channels. For D6072D-099 module: duplicator function provides two independent outputs from one single input. Output function can be configured as: average, subtractor, low/high or redundancy selector. Modules are provided with alarm function, which is available via solid state contact output.

FEATURES

- SIL 2 / SC 3
- Installation in Zone 2 (pending)
- Installation in 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
- Fastest integration time: 50 ms
- 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

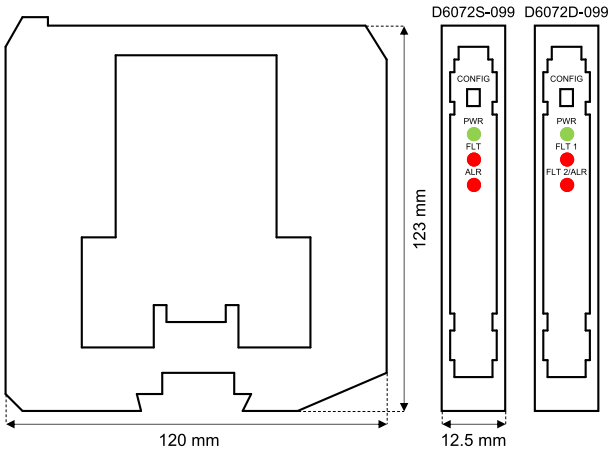
Ordering codes

D6072S-099: 1 channel
D6072D-099: 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-099), 35 mA (D6072S-099), @ 24 Vdc with 20 mA output, typical.
Power dissipation: 1.0 W (D6072D-099), 0.75 W (D6072S-099), @ 24 Vdc with 20 mA output, 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 (sink mode), current limited @ 24 mA. External voltage generator range is V min. 3.5V @ 0Ω load and V max. 30V.
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 RTD.
Input:
Calibration & linearity accuracy: refer to Instruction Manual.
Temp. influence: refer to Instruction Manual.
Ref. junction compensation accuracy: ≤ ± 1 °C.
Out:
Calibration accuracy: ≤ ± 10 µA.
Linearity accuracy: ≤ ± 10 µA.
Temp. influence: ≤ ±1 µA for a 1 °C change.

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-099), 130 g (D6072S-099).
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.

FUNCTION DIAGRAM

Additional installation diagrams may be found in Instruction Manual.