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-485 output is available on Bus connector. Cold junction compensation can be programmed as Internal: provided by an internal temperature sensor; Fixed: to a user-customizable temperature value; Remote: (only D6072D) 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
- Installation in Zone 2 (pending)
- Installation in 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/external sensor fault monitor
- Alarm output with user-settable trip points
- Modbus RTU-485 for monitor & configuration
- Fully programmable operating parameters
- High Accuracy, uP 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.

TECHNICAL DATA

Supply
24 Vdc (18 to 30 Vdc), reverse polarity protected.
Current consumption: 50 mA (D6072D), 35 mA (D6072S), @ 24 Vdc with 20 mA out, typical.
Power dissipation: 1.0 W (D6072D), 0.75 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 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.
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 Ref. junction compensation accuracy: ± ≤ 1 °C.
Out Calibration accuracy: ± ≤ 10 μA.
Out Linearity error: ± ≤ 10 μA.
Out 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.

ORDERING INFORMATION
D6072S: 1 channel
D6072D: 2 channels

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