

Simcenter SCADAS Mobile and Lab Eight-channel thermocouple module

Simcenter/T8-RT/2406/20240625

Product Information Sheet

Summary

The T8-RT module extends Simcenter SCA DAS Mobile and Simcenter SCADAS Lab signal conditioning to slow or fast changing temperature signals from thermocouple sensors.

All common thermocouple types B, E, J, K, N, R, S and T thermocouples are supported, and each type is selectable on channel-by-channel basis.

The high-speed ADC allows measurement of fast changing temperature signals up to a sample frequency of 3.2 kHz.

The accurate cold junction compensation and on-board linearization provides a high degree of accuracy over the thermocouple measurement range.

Supported transducers



Typical applications



BENEFITS

- Support for B, E, J, K, N, R, S and T types thermocouples
- Channel selectable thermocouple type

FEATURES

- Standard miniature thermocouple connection
- Linearization of thermocouple signals on the module
- Cold junction compensation
- Up to 3.2 kHz sample rate for fast changing thermocouple signals
- Galvanic isolation up to 70 V
- EtherCAT support with ESO64 module

Specifications

Input function

Signal conditioning and data acquisition for up to eight thermocouples

Connector

Miniature thermocouple connector: standard type B in accordance with IEC584-3

Input range

±100 mV, fixed

Maximum input voltage (no damage):

±40 V peak
Isolation
Operational: ±70 V between channels and to instrument ground
Sample tested: ±500 V (60 seconds)

Thermocouple types

B, E, J, K, N, R, S, T

Linearization

On board linearization in accordance with the ITS-90 standard, offering an accuracy of 0.1 °C or better

Cold junction compensation

On board cold junction compensation with an accuracy of 0.3°C or better, given an ambient temperature between -10 °C and +55 °C

Total measurement error

After calibration: less than 0.5 °C or 0.1 %, given an ambient temperature between +5 °C and +40 °C

Analog to digital conversion

24-bit oversampling SAR ADC, with an output sampling rate of 3.2 kHz at a bandwidth of 800 Hz

Common mode rejection (60Hz)

Better than 165 dB

Calibration

Gain & offset calibration factors are stored in non-volatile RAM and applied online

Power consumption

During normal operation: 1.5 W

EtherCAT digital networks

EtherCAT is a real-time network used in test benches or automation applications which require short data update times (low latency) with ultra-low communication jitter for synchronization purposes.

Dimensions

One SCADAS Mobile slot

Ordering information:

Support of Simcenter SCADAS Frames and Modules may be restricted in specific Simcenter Testlab application workbooks. Please check with your local representative for full details.

SCM-T8-RT: Simcenter SCADAS Mobile 8-channel thermocouple input module with EtherCAT support*

SCL-T8-RT: Simcenter SCADAS Lab 8-channel thermocouple input module with EtherCAT support*

*SCM-ESO64 or SCL-ESO64 module is needed for the EtherCAT support



SCM-T8-RT



SCL-T8-RT