

# TH evo CAN MM Series

## Type TH8 evo



### Product description

**TH evo** measurement modules are equipped with 8 signal inputs for temperature measurements with thermocouples (K type) and TEDS functionality. They are designed for applications used under extreme operating temperatures, like e.g. in engine compartments.

The measurement inputs are equipped with mini thermo single connectors and additional contacts, allowing the use of custom-engineered thermo plugs with integrated TEDS chips. This enables an unambiguous assignment of points of measurement (channel names), saves time during application and configuration and reduces the risk of errors.

### Scope of delivery

- ▶ MiniModule TH8 evo
- ▶ Configuration software CSMconfig
- ▶ Documentation
- ▶ Calibration certificate in accordance with DIN EN ISO/IEC 17025

CAN

### Key features

- ▶ 8 signal inputs, galvanically insulated
- ▶ TEDS functionality according to IEEE 1451.4 (Template 36) and channel names supported
- ▶ Measurement data rate up to 200Hz per channel
- ▶ Internal cold junction compensation per channel
- ▶ Median11 filter for interference pulse suppression
- ▶ Very good measurement accuracy under difficult temperature ranges and environmental conditions
- ▶ Very low power consumption


### Maintenance

- ▶ Calibration every 12 months recommended

### Accessories

- ▶ See "CAN Accessories" datasheet

## Technical data

<b>Type designation</b>	<b>TH8 evo</b>
	
<b>Measurement inputs</b>	8 NiCr-Ni
Measurement ranges	-100 °C to +1,372 °C
Internal resolution	16 bit
Internal sampling rate per ch.	1 kHz
Measurement data rate per ch.	1, 2, 5, 10, 20, 50, 100, 200 Hz adjustable per module or per channel via configurable CAN identifier
HW input filter	low-pass filter 150Hz
SW input filter	FIR filter (Finite Impulse Response), averaging automatically adjusted to measurement data rate median11 filter, single or double measurement data rate
Channel-specific comments	free text consisting of up to 100 characters per channel
Input protection <sup>1</sup> Operational safety Device safety	±60V permanent ±100 V permanent, additional ESD protection
TEDS functionality supported	according to IEEE 1451.4 (Template 36) and channel names
Broken sensor detection	yes
Cold junction compensation	internal reference per channel
<b>Measurement deviation<sup>2</sup></b>	
Gain error at 25 °C	max. ±0.05 % of measured value
Offset and scaling error	typ. ±0.1 K max. ±0.3 K ±12 µV
Gain drift	max. ±10 ppm/K
Zero drift	max. ±4 mK/K
<b>Galvanic isolation<sup>3</sup></b>	no safety isolation in terms of high-voltage applications
Channel/channel	500V
CAN/channel	500V
CAN/power supply	500V
<b>CAN interface</b>	CAN 2.0B (active), High Speed (ISO 11898-2:2016) 125 kbit/s to max. 1Mbit/s, up to 2Mbit/s with suitable CAN interface, data transfer "free running"
Configuration	via CAN bus with CSMconfig or CSM INCA AddOn settings and configurations are stored in the device
<b>Power supply</b>	
Minimum	6 V DC (-10 %)
Maximum	50V DC (+10 %)
Power consumption	typ. 800 mW

<b>Type designation</b>	<b>TH8 evo</b>
<b>LED indicators</b>	
CAN	Power/status
<b>Housing</b>	aluminum, gold anodized
Protection class	IP65
Weight (device)	approx. 300 g
Dimensions (w × h × d)	approx. 120 × 33 × 50 mm/ approx. 120 × 37 × 50 mm (Slide Case)
<b>Connectors</b>	
CAN/power supply	LEMO 0B, 5-pole, code G
Signal inputs	Miniature thermo connectors
<b>Operating and storage conditions</b>	
Operating temperature range	-40 °C to +125 °C
Relative humidity	5 % to 95 %
Pollution degree	3
Storage temperature	-55 °C to +150 °C
<b>Conformity</b>	<b>CE</b>

<sup>1</sup> Observe information regarding the intended use. See CSM document "Safety Instructions MiniModules".

<sup>2</sup> Further information can be found in the Technical Information document on the subject of "Deviation of Measurement".

<sup>3</sup> These MiniModules are designed for measurements in vehicles with 12V, 24V, or 48V on-board power supply systems. The maximum operating voltage at the measurement inputs is 60V. Not suitable to be directly connected to systems with higher operating voltages, e.g. high-voltage batteries of hybrid or electric vehicles.



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