



THMM classic



Measurements at high operating temperatures

THMM classic measurement modules are equipped with 8 or 16 signal inputs for temperature measurements with thermocouples and are designed for applications used under extreme operating temperatures, like e.g. in engine compartments. The measurement inputs are equipped with NiCr-Ni mini thermo connectors. The maximum measurement data rate per channel is 10 Hz.

Measurement module **THMC 8** provides 8 measurement inputs and is equipped with one LEMO 2B NiCr-Ni multi-connector. The usage of **THMC 8** measurement modules with multi connectors is recommended if the devices need to be changed frequently and rapidly.

Shipping content

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

Key features



- ▶ *Internal cold junction compensation per channel*
- ▶ *Very good measurement accuracy under difficult temperature ranges and environmental conditions*
- ▶ *Very low power consumption*


Maintenance

- ▶ Calibration every 12 months recommended

Accessories

- ▶ See datasheet "CAN Accessories"

Technical data

Type designation	THMM 8 classic	THMM 16 classic	THMC 8
			
Measurement inputs	8 NiCr-Ni	16 NiCr-Ni	8 NiCr-Ni
Measurement ranges	-100 °C to +1372 °C		
Internal resolution	16 bit		
Internal sampling rate per ch.	1 kHz		
Measurement data rate / sending rate per channel	1, 2, 5, 10 Hz		
HW input filter	low-pass filter 250 Hz ¹⁾		
SW input filter	FIR filter (Finite Impulse Response), averaging automatically adjusted to measurement data rate		
Input protection ²⁾			
Operational safety	±60 V permanent		
Device safety	±100 V permanent, additional ESD protection		
Broken sensor detection	yes		
Cold junction compensation	internal reference per channel		
Measurement deviation ³⁾			
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	typ. ±0.15 K max. ±0.3 K ±12 µV	
Gain drift	max. ±10 ppm/K		
Zero drift	max. ±4 mK/K		
Galvanic isolation ⁴⁾	no safety isolation in terms of high-voltage applications		
Channel / channel	500 V		
CAN / channel	500 V		
CAN / power supply	500 V		
CAN interface	CAN 2.0B (active), High Speed (ISO 11898-2:2016) 125 kbit/s to max. 1 Mbit/s, data transfer "free running"		
Configuration	via CAN bus with CSMconfig or CSM INCA AddOn settings and configurations are stored in the device		
Power supply			
Minimum	6V DC (-10 %)		
Maximum	50V DC (+10 %)		
Power consumption	typ. 1.0 W	typ. 1.4 W	typ. 0.8 W ⁵⁾
LED indicator			
CAN	power / status		

Type designation	THMM 8 classic	THMM 16 classic	THMC 8
Housing	aluminium, gold anodized		
Protection class	IP65		IP67
Weight	approx. 300 g	approx. 500 g	approx. 200 g
Dimensions (w × h × d)	approx. 120 × 33 × 50 mm / approx. 120 × 37 × 50 mm (Slide Case)	approx. 200 × 36 × 50 mm / approx. 200 × 40 × 50 mm (Slide Case)	approx. 50 × 32 × 6 mm (front) approx. 35 × 29 × 100 mm (housing)
Connectors			
CAN / power supply	LEMO 0B, 5-pole, code G ⁶⁾		
Signal inputs	miniature thermo connectors		LEMO 2B NiCr-Ni multi-connector
Operating and storage conditions			
Operating temperature range	-40 °C to +125 °C		
Relative humidity	5 % to 95 %		
Pollution degree	3		
Storage temperature	-55 °C to +150 °C		
Conformity	CE		

¹ THMC 8: 250 Hz as of hardware revision B, the threshold frequency of previous revisions is 15 Hz.

² Observe information regarding the intended use. See CSM document "Safety Instructions MiniModules".

³ Further information can be found in the Technical Information document on the subject of "Deviation of Measurement".

⁴ These MiniModules are designed for measurements in vehicles with 12 V, 24 V, or 48 V on-board power supply systems. The maximum operating voltage at the measurement inputs is 60 V. Not suitable to be directly connected to systems with higher operating voltages, e.g. high-voltage batteries of hybrid or electric vehicles.

⁵ THMC 8: 0.8 W as of hardware revision B, the typical power consumption of previous revisions is 1.0 W.

⁶ Optionally available in other variants.

additional products

PT4 evo

PT4 evo MiniModules are designed for temperature measurements with PT100 and PT1000 elements and are available in different housings.



HV TH4 evo

HV TH4 evo MiniModules are especially designed for safe temperature measurements on high-voltage components and are excellently suited for applications in the field of e-mobility.





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