

HV TH8 evo CAN TBM Series



Product description

HV TH8 evo from CSM's range of high-voltage measurement modules has been specifically developed for temperature measurements of e-mobility applications (electric and hybrid vehicles). Designed as a slide-in unit for 19-inch racks, it is excellently suited for test bench applications and it is also suitable for mobile use in all types of vehicles (e. g. to be mounted in the trunk of a car).

Scope of delivery

- ▶ Measurement module HV TH8 evo
- ▶ Configuration software CSMconfig
- ▶ Documentation
- ▶ Calibration certificate in accordance with DIN EN ISO/IEC 17025
- ▶ HV isolation test certificate



Key features

- ▶ NiCr-Ni temperature inputs (K type), with reinforced insulation up to 1,000V DC
- ▶ Very good measurement accuracy under all temperature ranges and environmental conditions
- ▶ Operating temperature range: -40 °C to +85 °C
- ▶ Type approval test and routine test according to safety standard EN 61010

Maintenance

- ▶ HV isolation test according to EN 61010 at least every 12 months
- ▶ Calibration every 12 months recommended

Accessories

- ▶ See datasheet "CAN Accessories"

Technical data

Type designation	HV TH8 evo
Technical data valid as of revision	B107
Measurement inputs	8 NiCr-Ni (K type)
Measurement ranges	-270 °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 150 Hz
SW input filter	FIR filter (Finite Impulse Response), averaging automatically adjusted to measurement data rate median11 filter, single or double internal clock rate
Channel-specific comments	free text consisting of up to 100 characters per channel
Broken sensor detection	yes
Cold junction compensation	internal reference per channel
Measurement deviation ¹	
Gain error at 25 °C	max. ±0.05 % of measured value
Offset and scaling error	typ. ±0.15 Kmax. ±0.3 K ±12 µV
Gain drift	max. ±10 ppm/K of measured value
Zero drift	max. ±4 mK/K
Fields of application ²	for measurements in HV environments ³
nominal voltage	up to 1,000V DC
Isolation test ²	
Routine test	test voltage ³ 3,100V DC
Reinforced insulation ^{2, 3}	
Channel/channel	1,000V DC
Channel/CAN	1,000V DC
Channel/power supply	1,000V DC
Functional insulation	
CAN/power supply	designed for supply voltages 12V and 24V
Measurement categories ⁴	
CAT 0	1,000V
CAT II	600V
CAT III	300V

Type designation	HV TH8 evo
CAN interface	CAN 2.0B (active), High Speed (ISO 11898-2:2016) 125 kbit/s to 1 Mbit/s, up to 2 Mbit/s with suitable CAN interface, data transfer free running
Configuration	via CAN bus with CSMconfig or CSM INCA AddOn, settings and configurations stored in the device
Power supply	
Minimum	6 V DC (-10 %)
Maximum	30 V DC (+10 %)
Power consumption	typ. 1.1 W
LED indicator	
CAN	power, status
Measurement channels	configuration, operation
Housing	aluminum with HV designation on the front-side (RAL 2003)
Protection class	IP65
Ground connection	M6 threaded hole
Mounting	19 inch
Weight (device)	approx. 600 g
Dimensions (w × h × d)	12 HP (approx. 61 mm) 3 U (approx. 129 mm) 100 mm (+ 25 mm protective bracket)
Connectors	
CAN/power supply ⁵	LEMO 0B, 5-pole, code G
Signal inputs	LEMO Redel 2P, 8-pole, code B (grey)
Operating and storage conditions	
Operating temperature range	-40 °C to +85 °C
Relative humidity	5 % to 95 % (non-condensing)
Operating altitude	max. 5,000 m above sea level (CAT 0) max. 3,000 m above sea level (CAT II and CAT III)
Pollution degree	3
Storage temperature	-40 °C to +85 °C
Conformity	CE
Device safety	EN 61010-1:2020+COR1:2022, +COR2:2023 EN 61010-2-030:2022

¹ Further information can be found in the Technical Information document on the subject of "Deviation of Measurement".

² Please also read the CSM document "Safety Instructions HV TH8 evo CAN TBM"

³ According to EN 61010-1:2020+COR1:2022,+COR2:2023, EN 61010-2-030:2022

⁴ Further information can be found in the Technical Information document "Measurement Categories for CSM HV Measurement Modules".

⁵ Optionally available in other variants



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