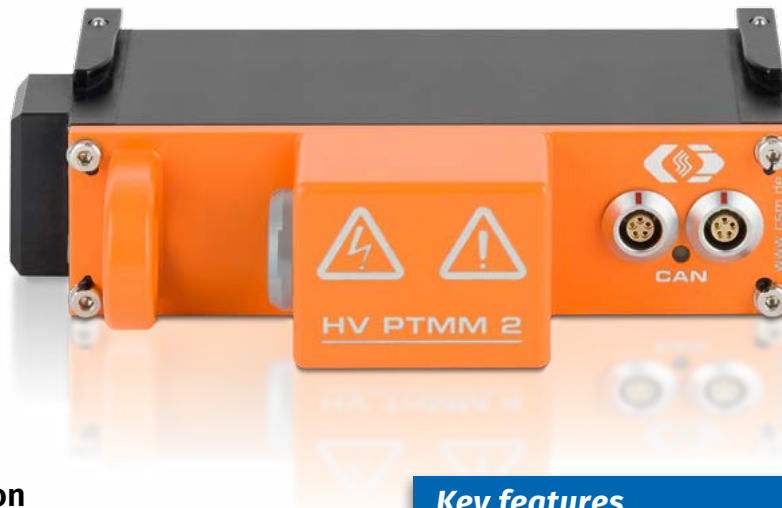




HV PTMM 2



Product description

Measurement module **HV PTMM 2** features two measurement inputs in 4-wire-connection for PT100 and PT1000 sensors and has been especially designed for precise temperature measurements in high-voltage environments.

HV PTMM 2 is excellently suited for measuring the temperature of individual battery cells and battery packs in high-voltage batteries. Due to the thin-film design of special foil PT sensors, it is possible to precisely monitor the temperature of battery cells, even under very limited space conditions.

Shipping content

- ▶ Measurement module HV PTMM 2
- ▶ Configuration software CSMconfig
- ▶ Documentation
- ▶ Calibration certificate
- ▶ HV isolation test certificate

Key features



- ▶ *2 inputs in 4-wire connection for PT100 and PT1000 sensors*
- ▶ *Individual PT coefficients can be entered for best possible sensor adjustment*
- ▶ *Reinforced insulation up to 846 V*
- ▶ *Type approval test according to safety standard DIN EN 61010 by an accredited test laboratory*
- ▶ *Routine test according to safety standard DIN EN 61010*
- ▶ *Low power consumption typ. 1 W*


Maintenance

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

Accessories

- ▶ See datasheet "CAN Accessories"

Technical data

Type designation	HV PTMM 2
	
Measurement inputs	2 inputs in 4-wire connection for PT100 and PT1000 sensors, configurable via software
Measurement ranges	-50 °C to +100 °C and -100 °C to +500 °C
Internal resolution	16 bit
Internal sampling rate per ch.	8 kHz
Measurement data rate per ch.	1, 2, 5, 10, 20, 50, 100 Hz
HW input filter	4th order Butterworth filter (threshold frequency approx. 5 kHz)
SW input filter	FIR filter (Finite Impulse Response) threshold frequency automatically adjusted to measurement data rate
Linearization	via individual PT coefficients R0, A, B and C
Measurement current	PT100: 500 µA, PT1000: 400 µA
Measurement uncertainty ¹⁾	
Gain error at 25 °C	max. ±0.1 % of measured value
Offset and scaling error	max. ±0.1 K
Gain drift	max. ±10 ppm/K of measured value
Zero drift	max. ±3 mK/K
Reinforced insulation ²⁾	
Channel / channel	846 V
Channel / CAN	846 V
Channel / power supply	846 V
Functional insulation	
CAN / power supply	designed for supply voltages 12 V and 24 V
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 CSMcan interface, data transfer rate free running
Configuration	via CAN bus with CSMconfig settings and configuration date are stored in the device
Power supply	
Minimum	6 V DC (-10 %)
Maximum	30 V DC (+10 %)
Power consumption	typ. 1 W
LED indicator	power (green), status (red)

Type designation	HV PTMM 2
Housing ³⁾	aluminium with HV designation on the front-side (RAL 2003)
Protection class	IP67
Ground connection	M6 threaded hole
Weight	approx. 350 g
Dimensions (w × h × d)	approx. 130 × 33 × 75 mm / approx. 130 × 38 × 75 mm (Slide Case)
Connectors	
CAN / power supply ³⁾	LEMO 0B, 5-pole, code G
Signal inputs	LEMO Redel 2P, 8-pole, code C (grey)
Operating and storage conditions	
Operating temperature range	-40 °C to +100 °C
Relative humidity	5 % to 95 % (non-condensing)
Operating altitude	max. 5,000 m above sea level
Pollution degree	4
Storage temperature	-40 °C to +100 °C
Conformity ⁴⁾	
	CE
Device safety	DIN EN 61010:2010

¹ In interference-polluted environments, additional measurement errors can occur.

² For operating the device directly in systems with operation voltages of > 60 V, e.g. high-voltage batteries of hybrid or electric vehicles. Please read the CSM document "Safety Instructions HV PTMM 2"!

³ Optionally available in other variants

⁴ The measurement modules are designed for cable lengths < 3 m.

additional products

HV THMM

Measurement module **HV TH4** is especially designed for safe temperature measurements with type K sensors on high-voltage live parts and is therefore excellently suited for mobile and stationary use in the fields of e-mobility (electric and hybrid vehicles).



PTMM 4 evo

Measurement module **PTMM 4 evo** features four measurement inputs for PT100 and PT1000 RTD elements used in non-high-voltage environments. The module is available in different housings.





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