

HV AD4 evo CAN MM-Series

Type OW20



Product description

The measurement module **HV AD4 evo OW20** is equipped with 4 separate voltage inputs and has been specifically designed for measurements in high voltage environments such as found in a HV battery: Cell or module voltages.

This makes the device not only suitable for mobile use in the field of electro mobility - electric and hybrid vehicles - but also for stationary use, e.g. in test benches.



Key features

- ▶ 4 separate voltage inputs with reinforced insulation 1,000 V DC
- ▶ Measurement range ± 90 V, adjustable per channel
- ▶ Measurement data rate up to 20 kHz via CAN
- ▶ Type approval and routine test according to safety standard EN 61010

Scope of delivery

- ▶ Measurement module HV AD4 evo OW20
- ▶ Configuration software CSMconfig
- ▶ Documentation
- ▶ Calibration certificate in accordance with DIN EN ISO/IEC 17025


Maintenance


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

Accessories

- ▶ See "CAN Accessories" datasheet

Technical data

Type designation	HV AD4 evo OW20
	
Inputs	4 voltage inputs
Measurement ranges	± 5 , ± 10 , ± 20 , ± 45 , ± 90 V
Internal resolution	16 bit
Internal sampling rate per channel	80 kS/s
Measurement data rate/sending rate per channel ¹	1, 2, 5, 10, 20, 50, 100, 200, 500 Hz, 1, 2, 5, 10, 20 kHz
HW input filter	4 th order Butterworth filter (cut off frequency approx. 5 kHz)
SW input filter ²	6 th order Butterworth filter
Channel comments	Up to 100 characters of free text per channel
Error of measurement ³	
Gain error at 25 °C	max. ± 0.04 % of measured value
Offset and scaling error	max. ± 0.02 % of range
Gain drift	max. ± 10 ppm/K of measured value
Zero drift	max. ± 10 ppm/K of range
Field of application ⁴	measurements in HV environments ⁵
Nominal voltage (unipolar & bipolar)	up to 1,000 VDC
Isolation test ⁴	
Routine test	Test voltage ⁵ 3,100 VDC
Reinforced insulation ^{4,5}	
Channel/channel	1,000 V DC
Channel/CAN	1,000 V DC
Channel/power supply	1,000 V DC
Functional insulation	
CAN/power supply	designed for 12 V and 24 V supply voltages
Measurement categories ⁶	
CAT 0	1,000 V
CAT II	600 V
CAT III	300 V

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Power supply	
Minimum	6 V DC (-10 %)
Maximum	30 V DC (+10 %)
Power consumption	typ. 850 mW
LED indicator	power (green), status (red)
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, settings and configuration data stored in the device
Housing	aluminum with HV designation on the front-side (RAL2003)
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 ⁷	LEMO 0B, 5-pole, code G
Signal inputs	LEMO Redel 2P, 8-pole, code B (black)
Operating and storage conditions	
Operating temperature range	-40 °C to +125 °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	4
Storage temperature	-40 °C to +125 °C
Conformity	CE
Safety	EN 61010-1:2020+COR1:2022; EN 61010-2-030:2022

¹ 5 kHz: 2 channels @ 500 kbit/s CAN, 4 channels @ 1 Mbit/s CAN; 10 kHz: 2 channels @ 1 Mbit/s, 4 channels @ 2 Mbit/s CAN; 20 kHz: 2 channels @ 2 Mbit/s CAN

² Selectable per channel or cut off frequency is automatically adjusted to measurement data rate.

³ For further information, please refer to the Technical Information "Deviation of Measurement".

⁴ Please read the CSM document "Safety Instructions HV ADMM".

⁵ According to EN 61010-1:2020+COR1:2022 with EN 61010-2-030:2022

⁶ For further information, please refer to the Technical Information "Measurement Categories for CSM HV Measurement Modules".

⁷ Optionally available in other variants.



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