



HV AD CAN TBM Series

Type XW20



Product description

CSM's **HV AD4 XW20** measurement module from the **HV AD CAN TBM** series is designed for the measurement of high voltages in high-voltage environments. Designed as a slide-in unit for 19-inch racks, this module is ideally suited for test bench applications.

HV AD4 XW20 is also applicable for mobile use in all types of vehicles and can, for example, be mounted in the trunk of a car.

Key features



- ▶ 4 analog inputs with reinforced insulation
- ▶ Measurement data rate up to 20 kHz via CAN
- ▶ Measurement range up to $\pm 1,000$ V, adjustable per channel
- ▶ Type approval test according to safety standard EN 61010 by accredited test laboratory
- ▶ Routine test according to safety standard EN 61010

Shipping content

- ▶ Measurement module HV AD4 XW20
- ▶ Configuration software CSMconfig
- ▶ Documentation
- ▶ Calibration certificate
- ▶ HV isolation test certificate

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 AD4 XW20
Measurement inputs	4 analog inputs
Measurement ranges	±50, ±100, ±200, ±500, ±1,000 V
Internal resolution	16 bit
Internal sampling rate per ch.	80 kHz
Measurement data rate per ch. ¹⁾	1, 2, 5, 10, 20, 50, 100, 200, 500Hz, 1, 2, 5, 10, 20 kHz
HW input filter	4th order Butterworth filter (threshold frequency approx. 5 kHz)
SW input filter ²⁾	6th order Butterworth filter
Channel-specific comments	free text consisting of up to 100 characters per channel
Measurement uncertainty	
Gain error at 25 °C	max. ±0.04 % of measured value
Offset and scaling error	max. ±0.02 % of range
Gain drift	max. ±20 ppm/K of measured value
Zero drift	max. ±10 ppm/K of range
Fields of application ³⁾	
	for measurements in HV environments ⁴⁾ for details see the following document that is also applicable: "Technical Information: Fields of Application for CSM HV Measurement Modules"
Measurement voltages (unipolar & bipolar)	up to 1,000 V peak
Isolation test ³⁾	
Type approval test	by external accredited test laboratory ⁴⁾
Routine test	test voltage ⁴⁾ 3,100 V (DC), isolation test is to be performed at least every 12 months
CAN interface	
	CAN 2.0B (active), High Speed (ISO 11898-2:2016), 125 kBit/s to max. 1 MBit/s, up to 2 MBit/s with CSMcan Interface, data transfer free running
Configuration	via CAN bus using CSMconfig, settings and configurations stored in the module
Power supply	
Minimum	6 V DC (-10 %)
Maximum	30 V DC (+10 %)
Power consumption	typ. 1.8 W
LED indicators	
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
Weight	approx. 530 g

Type designation	HV AD4 XW20
Mounting	19 inch
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 D (grey/red)
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
Pollution degree	3
Storage temperature	-40 °C to +85 °C
Conformity	CE
Device safety	EN 61010-1:2010
Part number	ART1081200

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

² Selectable per channel; threshold frequency is automatically adjusted to measurement data rate.

³ Please also read the CSM document "Safety Instructions HV AD-TBM"!

⁴ According to EN 61010-1:2010

⁵ Optionally available in other variants.

additional products

HV AD-TBM 8LI

HV AD-TBM 8LI is especially designed for the measurement of analog voltages in high-voltage environments. The module features eight analog inputs without sensor excitation and measurement ranges up to ± 90 V per channel.



HV AD-TBM 4LI+

HV AD-TBM 4LI+ features four analog inputs with sensor excitation and measurement ranges up to ± 20 V per channel. If combined with special sensor cables, standard sensors, which are typically used in the field of low-voltage applications, can be safely operated even in a high-voltage environment.





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