



# 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

CAN



- ▶ 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

<b>Type designation</b>	<b>HV AD4 XW20</b>
	
<b>Measurement inputs</b>	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. <sup>1)</sup>	1, 2, 5, 10, 20, 50, 100, 200, 500 Hz, 1, 2, 5, 10, 20 kHz
HW input filter	4th order Butterworth filter (threshold frequency approx. 5 kHz)
SW input filter <sup>2)</sup>	6th order Butterworth filter
Channel-specific comments	free text consisting of up to 100 characters per channel
<b>Measurement uncertainty</b>	
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
<b>Fields of application <sup>3)</sup></b>	for measurements in HV environments <sup>4)</sup> 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
<b>Isolation test <sup>3)</sup></b>	
Type approval test	by external accredited test laboratory <sup>4)</sup>
Routine test	test voltage <sup>4)</sup> 3,100 V (DC), isolation test is to be performed at least every 12 months
<b>CAN interface</b>	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
<b>Power supply</b>	
Minimum	6V DC (-10 %)
Maximum	30V DC (+10 %)
Power consumption	typ. 1.8 W
<b>LED indicators</b>	
CAN	power / status
Measurement channels	configuration / operation

<b>Type designation</b>	<b>HV AD4 XW20</b>
<b>Housing</b>	aluminium with HV designation on the front-side (RAL 2003)
Protection class	IP65
Ground connection	M6 threaded hole
Weight	approx. 530 g
Mounting	19 inch
Dimensions (w × h × d)	12 HP (approx. 61 mm) 3 U (approx. 129 mm) 100 mm (+ 25 mm protective bracket)

<b>Connectors</b>	
CAN / power supply <sup>5)</sup>	LEMO 0B, 5-pole, code G
Signal inputs	LEMO Redel 2P, 8-pole, code D (grey/red)

<b>Operating and storage conditions</b>	
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

<b>Conformity</b>	<b>CE</b>
<b>Device safety</b>	EN 61010-1:2010

<sup>1</sup> 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

<sup>2</sup> Selectable per channel; threshold frequency is automatically adjusted to measurement data rate.

<sup>3</sup> Please also read the CSM document "Safety Instructions HV AD-TBM"!

<sup>4</sup> According to EN 61010-1:2010

<sup>5</sup> 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  $\pm 90$  V per channel.



### HV AD-TBM 4LI+

**HV AD-TBM 4LI+** features four analog inputs with sensor excitation and measurement ranges up to  $\pm 20$  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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