

# HV AD CAN TBM Series

## Type XW20



### Product description

The **HV AD4 XW20** module of 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.

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

### Maintenance

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



### Key features

- ▶ 4 voltage 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 and routine test according to safety standard EN 61010


### Scope of delivery

- ▶ Measurement module HV AD4 XW20
- ▶ Configuration software CSMconfig
- ▶ Documentation
- ▶ Calibration certificate in accordance with DIN EN ISO/IEC 17025
- ▶ HV isolation test certificate

### Accessories

- ▶ See datasheet "CAN Accessories"

## Technical data

Type designation	HV AD4 XW20
	
Measurement inputs	4 galvanically isolated voltage 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	4 <sup>th</sup> order Butterworth filter (cutoff frequency approx. 5 kHz)
Option SW filter per channel	<ul style="list-style-type: none"> <li>▶ Off</li> <li>▶ 6<sup>th</sup> order Butterworth filter, range: 0.1 Hz to 2 kHz: <ul style="list-style-type: none"> <li>▶ automatically adjusted based on sending rate or</li> <li>▶ user-selectable cutoff frequency</li> </ul> </li> <li>▶ Average value per sending interval</li> </ul>
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 <sup>2</sup>	for measurements in HV environments <sup>3</sup>
Measurement voltages (unipolar & bipolar)	up to 1,000 V <sub>peak</sub>
Routine test	HV isolation test according to EN 61010-2-030
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 suitable CAN 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

<b>Type designation</b>	<b>HV AD4 XW20</b>
<b>Housing</b>	aluminum with HV designation on the front-side (RAL 2003)
Protection class	IP65
Ground connection	M6 threaded hole
Weight (device)	approx. 530 g
Mounting	19 inch rack
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>4</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 61010-1:2020+COR1:2022, COR2:2023 with EN 61010-2-030:2022

<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> Please also read the CSM document "Safety Instructions HV AD-TBM".

<sup>3</sup> According to EN 61010-1:2020+COR1:2022, COR2:2023 with EN 61010-2-030:2022

<sup>4</sup> Optionally available in other variants.



**CSM GmbH Headquarters** (Germany)

Raiffeisenstraße 36 • 70794 Filderstadt  
☎ +49 711-77 96 40 ✉ [sales@csm.de](mailto:sales@csm.de)

**CSM Office Southern Europe** (France, Italy)

ArchParc • Immeuble ABC 1 • Entrée A  
60, rue Douglas Engelbart • 74160 Archamps, France  
☎ +33 4 50 95 86 44 ✉ [info@csm-produits.fr](mailto:info@csm-produits.fr)

**CSM Products, Inc. USA** (USA, Canada, Mexico)

1920 Opdyke Court, Suite 200 • Auburn Hills, MI 48326  
☎ +1 248 836-4995 ✉ [sales@csmproductsinc.com](mailto:sales@csmproductsinc.com)

**CSM** (RoW)

Vector Informatik (China, Japan, Korea, India, Great Britain, Sweden)  
DATRON-TECHNOLOGY (Slovakia, Czech Republic)  
Our partners guarantee you worldwide availability.  
Feel free to contact us.

CSM GmbH Germany is certified.



All trademarks mentioned are property of their respective owners.  
Specifications are subject to change without notice.  
CANopen® and CiA® are registered community trademarks of CAN in Automation e.V.  
EtherCAT® is registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.