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.

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"

Key features
- 4 analog inputs with reinforced insulation
- Measurement data rate up to 20 kHz via CAN
- Measurement range up to ±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
## Technical data

<table>
<thead>
<tr>
<th>Type designation</th>
<th>HV AD4 XW20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement inputs</td>
<td>4 analog inputs</td>
</tr>
<tr>
<td>Measurement ranges</td>
<td>±50, ±100, ±200, ±500, ±1,000 V</td>
</tr>
<tr>
<td>Internal resolution</td>
<td>16 bit</td>
</tr>
<tr>
<td>Internal sampling rate per ch.</td>
<td>80 kHz</td>
</tr>
<tr>
<td>Measurement data rate per ch.</td>
<td>1, 2, 5, 10, 20, 50, 100, 200, 500 Hz, 1, 2, 5, 10, 20 kHz</td>
</tr>
<tr>
<td>HW input filter</td>
<td>4th order Butterworth filter (threshold frequency approx. 5 kHz)</td>
</tr>
<tr>
<td>SW input filter</td>
<td>6th order Butterworth filter</td>
</tr>
<tr>
<td>Channel-specific comments</td>
<td>free text consisting of up to 100 characters per channel</td>
</tr>
</tbody>
</table>

### 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

| Measurement voltages (unipolar & bipolar) | up to 1,000 V peak |

### Isolation test

| Type approval test | by external accredited test laboratory |
| Routine test | test voltage 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

| Protection class | IP65 |
| Ground connection | M6 threaded hole |
| Weight | approx. 530 g |

[www.csmproductsinc.com](http://www.csmproductsinc.com)
### 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

- **Device safety**
  - EN 61010-1:2010

- **Part number**
  - ART1081200

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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.

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### 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.