

Precise. Rugged. Universal.

AD-Scan MiniModules

- ▶ Extremely compact CAN bus measurement modules
- ▶ 4 or 8 voltage inputs, bipolar, completely electrically isolated
- ▶ Bipolar sensor excitation, independently adjustable (ADMM 8)
- ▶ Digital 6th order Butterworth filter
- ▶ Unrivalled low power consumption
- ▶ Operating temperature:
-40 °C to +125 °C (Automotive Version)
-40 °C to +85 °C (Industrial Version)
- ▶ Robust aluminum housing:
IP67 (Automotive), IP50 (Industrial)
- ▶ Good price-performance ratio

The measurement modules of the CSM MiniModule family solve extreme and combine competing demands on automotive measurement technology. Developed for use inside engine compartment, they are designed for extreme temperature and environmental conditions and are very compact. All CSM MiniModules have excellent specifications and a very good price-performance ratio.

AD-Scan 4 (ADMM 4)

The *ADMM 4* was developed consequently for use **inside engine compartment** and optimized for the often limited space there. The dimensions of the module are only approx. **93 x 30 x 46 mm**.

The **4 bipolar voltage inputs with unipolar sensor supply** provide a very good measurement accuracy. If required, an additional digital 6th order Butterworth filter can be activated. The filter threshold frequency is automatically adjusted to the measurement data rate with 2kHz / channel maximum or can be adjusted manually per channel.

The *ADMM 4* is available as Automotive Version only and is equipped with 6-pole Lemo 0B connectors for signal inputs and sensor excitation.

AD-Scan 8 (ADMM 8)

The *ADMM 8* has **8 bipolar voltage inputs**. The **sensor supply** is also **bipolar** and can be adjusted separately per channel. Measurement accuracy, galvanically isolation, filter and measurement data rates correspond with *ADMM 4*.

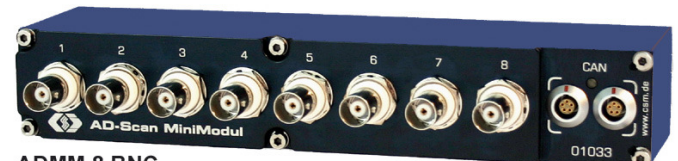
This module is particularly suitable for **multi channel applications**, where space is not so extremely limited, e.g. in the trunk or at test stands.



ADMM 4



ADMM 8



ADMM 8 BNC

Measurements at test stands, even at totally unprotected places close to electric generators show no interferences. Due to the double number of channels compared to *ADMM 4*, the *ADMM 8* has still a better price/channel, with the same excellent specifications.

By default *ADMM 8* is equipped with the same 6-pole Lemo 0B connectors for signal inputs and sensor excitation, as *ADMM 4*. On request it is available with IPT compatible Lemo 1B connectors. All types are available as Automotive and Industrial version.

In Industrial version, *ADMM 8* is also available with BNC connectors without sensor excitation.

Accessories

Interface cables for CAN and power supply, Connection cables CAN, Adapter cables CAN, Signal cables for sensors, Termination plug and mechanical mounting parts please see data sheet "**Accessories for CSM MiniModules**".

Part Numbers (standard versions with Lemo 0B 5-pole for CAN/power supply and Lemo 0B 6-pole or BNC for signal inputs):

ADMM 4 Automotive:	ART0201020
ADMM 8 Automotive:	ART0201021
ADMM 8 Industrial:	ART0201024
ADMM 8 BNC:	ART0201042


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Specifications AD-Scan MiniModules

Technical Data	ADMM 4	ADMM 8 and ADMM 8 BNC
Inputs Measurement ranges Internal resolution Internal sampling rate per channel Measurement data rates per channel Input protection SW Input filter HW Input filter Sensor excitation	4 analog inputs $\pm 0,1 \text{ V}, \pm 0,5 \text{ V}, \pm 10 \text{ V}, \pm 20 \text{ V}, \pm 60 \text{ V}^1)$ 1, 2, 5, 10, 50, 100, 500, 1000, 2000 Hz $\pm 100 \text{ V}$ permanent, additional ESD protection switchable 6 th order Butterworth filter, range 0,1 Hz to 500 Hz, automatically adjusted to the measurement data rate, alternatively threshold frequency adjustable per channel low-pass filter 3 rd order, 230 Hz 5V, 8V, 10V, 12V, 15V DC max. 30mA per channel, switchable	8 analog inputs $\pm 0,1 \text{ V}, \pm 0,5 \text{ V}, \pm 10 \text{ V}, \pm 20 \text{ V}, \pm 60 \text{ V}^1)$ 16 bit 2000 Hz 1, 2, 5, 10, 50, 100, 500, 1000, 2000 Hz $\pm 100 \text{ V}$ permanent, additional ESD protection switchable 6 th order Butterworth filter, range 0,1 Hz to 500 Hz, automatically adjusted to the measurement data rate, alternatively threshold frequency adjustable per channel low-pass filter 3 rd order, 500 Hz $\pm 5 \text{ V}, \pm 8 \text{ V}, \pm 10 \text{ V}, \pm 12 \text{ V}, \pm 15 \text{ V DC}^2)$ max. 30mA per channel ³⁾ , switchable and adjustable per channel
Galvanically Isolation Channel / Channel CAN / Channel CAN / Power Supply	500 V DC 500 V DC 500 V DC	
CAN Interface Configuration	CAN2.0B (active), High Speed (ISO 11898) 125 kBit/s up to 1 MBit/s, data transfer is free running via CAN bus with CSM Config Tool or CSM INCA AddOn all settings and configuration data stored in module alternatively: Configuration and data transfer using CANopen protocol ⁴⁾	
Light emitting diodes	LED: Power (green), Status (red)	
Power Supply Power consumption	approx. 5 V to 60 V DC typ. 1,4 W (without sensor excitation) typ. 1,6 W (without sensor excitation)	
Dimensions (W x H x D) Weight	approx. 93 x 30 x 46 mm ⁵⁾ approx. 230 g	approx. 200 x 35 x 50 mm approx. 500 g
Operating temperature / Protection Storage temperature Relative Humidity	Automotive Version: -40 °C to +125 °C / IP67 Industrial Version: -40 °C to +85 °C / IP50 -55 °C to +150 °C 5 % to 95 %	
Connectors CAN / Voltage Connectors signal inputs / sensor excitation	Lemo 0B 5-pole Lemo 0B 6-pole or Lemo 1B 6-pole IPT compatible or BNC (without sensor excitation and ADMM 8 only)	
Housing	Aluminum – Automotive Version: gold anodized Industrial Version: blue anodized	
Conformity		

1) Optional current measurement ranges ADMM 4: 0...20 mA, ADMM 8: $\pm 20 \text{ mA}$; Ranges: $\pm 0,1 \text{ V}$ and $\pm 0,5 \text{ V}$: Full accuracy only in industrial temperature range

2) ADMM 8 BNC: Without sensor excitation

3) In case of full load (7,2W) a power supply >8V is required, see Application Note

4) CANopen see separate data sheet

5) ADMM 4 with 6-pole Lemo 1B connectors for signal inputs and sensor excitation: Dimensions (W x H x D) approx. 120 x 30 x 50 mm

Shipping Content: CAN-Bus MiniModules, CSM ConfigTool, documentation, Calibration certificate according to DIN EN ISO/IEC 17025.

We recommend a calibration interval of 1 year. For further technical information and references please ask our technical sales and distribution.

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