

AD-Scan MiniModule pro

- ▶ Universally applicable, extremely compact CAN bus measurement modules
- ▶ Measurement rate per channel up to 10 kHz (ADMM 4 pro HS)
- ▶ Enhanced sensor linearization with up to 32 sampling points per channel (ADMM 4 pro HS)
- ▶ 4 or 8 differential voltage inputs, completely electrically isolated
- ▶ Measurement range adjustable per channel, from 10 mV to 60 V
- ▶ High-precision differential sensor excitation, adjustable per channel, perfect for ratiometric sensors
- ▶ Operating temperature: -40 °C to +125 °C
- ▶ Robust aluminium housing: IP67
- ▶ LED status indicator per channel
- ▶ Excellent price-performance ratio

The AD-Scan MiniModule pro HS covers an **extremely wide range of applications**: “Simple” voltage measurement, high-precision current measurement (via shunts), measurement of very low (mV level) voltages, and acquisition of higher frequency signals with **measurement data rates up to 10 kHz**. These modules are designed to operate in temperature up to 125 °C.

Multiple measurement ranges and high-precision sensor excitation

The AD-Scan MiniModule pro has extremely stable, very robust, and high-precision differential sensor excitation over the complete operating temperature range from -40 °C to +125 °C. The module is suited for use of **ratiometric sensors**, such as motor vehicle production series sensors for challenging measuring problems – such as in the engine compartment.

To address these applications, the sensor excitation is implemented in a distributive manner, where the overall available power is distributed according to requirements of the connected sensors as assigned per channel. Therefore, current clamps can be directly connected to the module.

To resolve low signal voltages of mV/V sensors, piezo-electric sensors or strain gauge-bridges, measurement ranges of 10 mV, 20 mV and 50 mV are available.

The CSM Config Tool offers the possibility of zero-point and span amplification factor compensation. additionally implemented within the module.



ADMM 4 pro HS (Slide Case Small)



ADMM 8 pro (Slide Case Large)

4 or 8 channels

The ADMM 4 pro is a four-channel unit featuring a very small form factor, while the ADMM 8 pro is an economically-priced eight-channel unit. Both modules have a two-color status LED per channel for indication of CAN bus errors, status, and sensor short circuit.

ADMM 4 pro HS: 4 high-speed channels

Each analog input is extremely low-noise and sampled at 10 kHz. Up to 2 channels at **10 kHz**, or 4 channels at **5 kHz** can be transferred securely over the CAN bus. Therefore the acquisition of **higher frequency sensors**, such as accelerometers or pressure sensors, can be accomplished with **traditional CAN bus measurement technology**.

Extended scale (32 sampling points)

The ADMM 4 pro HS enhances the traditional 2-point sensor scaling and offers the possibility to characterize up to 32 sampling points per channel, which are directly stored in the module.

This extended linearization is often applied for flow and pressure **sensors with non-linear characteristics**, producing optimal measurement results over the entire sensor measurement range. This feature is available in the CSM Config Tool and CSM INCA AddOn for INCA 6.x.

To simplify the configuration and the usability of the modules, there is the possibility to import and export the **sensor characterization tables** as .csv-file.



Specifications AD-Scan MiniModules pro

Technical Data	ADMM 4 pro HS	ADMM 8 pro
Inputs	4 analog inputs	8 analog inputs
Measurement ranges	±10 mV, ±20 mV, ±50 mV, ±100 mV, ±500 mV, ±1 V, ±2 V, ±5 V, ±10 V, ±20 V, ±60 V ¹⁾	
Internal resolution	16 bit	
Internal sampling rate per channel	10 kHz	2 kHz
Measurement data rate per channel	1, 2, 5, 10, 50, 100, 500 Hz, 1 kHz, 2 kHz, 5 kHz ²⁾ , 10 kHz ³⁾	1, 2, 5, 10, 50, 100, 500 Hz, 1 kHz, 2 kHz
Input protection	±100 V permanent, additional ESD protection	
SW Input filter	selectable 6 th order Butterworth, range 0.1 Hz to 2 kHz automatically adjusts to the measurement data rate or threshold frequency adjustable per channel	
HW Input filter	Low-pass filter 3 rd order, approx. 2 kHz	Low-pass filter 3 rd order, approx. 500 Hz
Sensor excitation	±5 V, ±8 V, ±10 V, ±12 V, ±15 V DC per channel typ. ±30 mA, max. ±120 mA ⁴⁾ , selectable and adjustable per channel ⁵⁾	
Accuracy at 25 °C Temperature Drift	0.05 % typ. ± 10 ppm/K	
Galvanic isolation Channel / Channel CAN / Channel CAN / Power Supply	500 V DC 500 V DC 500 V DC	
CAN Interface	CAN2.0B (active), High Speed (ISO 11898) 125 kBit/s up to max. 1 MBit/s, data transfer is free running	
Configuration	via CAN bus with CSM Config Tool or CSM INCA AddOn all settings and configuration data are stored within module	
Sampling points	32 points	2 points
LED Power/Status	LED: Power (green) / Status (red)	
LED per input channel	Configuration: general (green blinking), short-circuit at sensor excitation (red blinking) Measurement operation: with sensor excitation (green) / short-circuit (red)	
Power Supply	approx. 5 V to 60 V DC	
Power consumption	typ. 1.5 to 2.3 W ⁶⁾ (without sensor excitation)	typ. 1.8 W (without sensor excitation)
Dimensions (W x H x D)	approx. 120 x 32 x 50 mm approx. 120 x 37 x 50 mm (Slide Case)	approx. 200 x 35 x 50 mm approx. 200 x 40 x 50 mm (Slide Case)
Weight	approx. 300 g	approx. 500 g
Operating temperature / Protection class	-40 °C to +125 °C IP67	
Storage temperature Relative Humidity	-55 °C to +150 °C 5 % to 95 %	
Connectors CAN / Voltage	LEMO 0B 5-pole or Fischer Series 102, 7-pole	
Connectors signal inputs / sensor excitation	LEMO 0B 6-pole⁷⁾	
Housing	Aluminium Version: gold anodized	
Conformity	CE	

- 1) Current measurement ranges: ± 20 mA (Optional)
- 2) 4 channels @ 1 MBit/s, 2 channels @ 500 kBit/s
- 3) 2 channels @ 1 MBit/s
- 4) Distributive sensor excitation, see Application Note
- 5) In case of full load (3,6 W) a power supply > 8 V is required, see Application Note
- 6) Power consumption depends on sampling rate, see Application Note
- 7) Other versions on request

Accessories: Cables for CAN and power supply, CAN adapter cable, signal cables for sensor connection, CAN bus termination and mechanical mountings, see data sheet „**Accessories for CSM MiniModules**“.

Shipping Content: CAN-Bus MiniModule, CSM Config Tool, 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 contact technical sales and distribution.

Part numbers:

(Standard version with LEMO 0B 5-pole for CAN/power supply and LEMO 0B 6-pole for signal inputs):

ADMM 4 pro HS	ART0200822 (Slide Case)
ADMM 4 pro HS	ART0200816
ADMM 8 pro	ART0200814 (Slide Case)
ADMM 8 pro	ART0200801

CSM GmbH

Raiffeisenstr. 34, D-70794 Filderstadt

Phone: +49 711 77964-20 Fax: +49 711 77964-40

E-Mail: info@csm-products.com

www.csm-products.com