



ADMM pro



Product description

The **ADMM pro** measurement modules feature 4 or 8 differential, galvanically isolated voltage inputs. Additionally, they are equipped with a very precise, bipolar sensor excitation, which is adjustable per channel.

Thus, the **ADMM pro** measurement modules cover an extremely wide range of application. They can be used for “simple” voltage measurement, high-precision current measurement (via shunts), measurement of very low voltages (mV level, e. g. for strain gauge based sensors), and the acquisition of higher frequency signals with measurement data rates up to 10 kHz.

Shipping content

- ▶ MiniModule ADMM pro
- ▶ Configuration software CSMconfig
- ▶ Documentation
- ▶ Calibration certificate in accordance with DIN EN ISO/IEC 17025

Key features

CAN

- ▶ *Measurement inputs adjustable per channel from ± 10 mV to ± 60 V*
- ▶ *Measurement data rate per channel up to 10 kHz (ADMM 4 pro HS)*
- ▶ *Sensor linearization with axis points*
- ▶ *TEDS functionality according to IEEE 1451.4 (Template 30) supported (ADMM 8 pro)*
- ▶ *Status LED per channel*



Maintenance

- ▶ Calibration every 12 months recommended

Accessories

- ▶ See datasheet “CAN Accessories”.

Technical data

Type designation	ADMM 4 pro HS	ADMM 8 pro
		
Inputs	4 analog inputs	8 analog inputs
Measurement ranges	±10, ±20, ±50, ±100, ±200, ±500 mV and ±1, ±2, ±5, ±10, ±20, ±60 V	
Internal resolution	16 bit	
Internal sampling rate per ch.	10 kHz	2 kHz
Measurement data rate per ch.	1, 2, 5, 10, 20, 50, 100, 200, 500 Hz and 1 kHz, 2 kHz, 5 kHz ¹⁾ , 10 kHz ¹⁾	1, 2, 5, 10, 20, 50, 100, 200, 500 Hz and 1 kHz, 2 kHz
	adjustable per module	adjustable per module or per channel via configurable CAN identifier ²⁾
HW input filter	Low-pass filter 3 rd order, approx. 2.5 kHz	Low-pass filter 3 rd order, approx. 500 Hz
SW input filter	switchable 6 th order Butterworth filter, range: 0.1 Hz to 2 kHz	switchable 6 th order Butterworth filter, range: 0.1 Hz to 500 Hz
	automatically adjusted to measurement data rate, alternatively: threshold frequency adjustable per channel	
Channel-specific comments	free text consisting of up to 100 characters per channel	
Axis points	4 tables, each with up to 32 axis points	8 tables, each with up to 32 axis points
Input protection ³⁾	Operational safety ±60 V permanent Device safety ±100 V permanent, additional ESD protection	
TEDS functionality supported	–	according to IEEE 1451.4 (Template 30) ⁴⁾
Gain error		
at 25 °C	max. ±0.05 % of measured value	
Temperature drift	max. ±10 ppm/K	
Sensor excitation	bipolar, switchable and adjustable per channel ⁵⁾	
Voltage	±5, ±8, ±10, ±12, ±15 V DC	
Current	per channel typ. ±60 mA, max. ±120 mA ⁶⁾	per channel typ. ±30 mA, max. ±120 mA ⁶⁾
Galvanic isolation⁷⁾	no safety isolation in terms of high-voltage applications	
Channel / channel	500 V	
CAN / channel	500 V	
CAN / power supply	500 V	
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 ⁸⁾ with CSMcan Interface, data transfer free running	
Configuration	via CAN bus using CSMconfig or CSM INCA AddOn, settings and configurations stored in the module	
Power supply		
Minimum	6 V DC (-10 %)	
Maximum	50 V DC (+10 %)	
Power consumption ⁹⁾	typ. 0.85 W (without sensor excitation)	typ. 1.3 W (without sensor excitation)

Type designation	ADMM 4 pro HS	ADMM 8 pro
LED indicators		
CAN	power / status	
Measurement channels	configuration / operation / sensor excitation	
Housing	aluminium, gold anodized	
Protection class	IP67	
Weight	approx. 300 g	approx. 500 g
Dimensions (w × h × d)	approx. 120 × 32 × 50 mm approx. 120 × 37 × 50 mm (Slide Case)	approx. 200 × 35 × 50 mm approx. 200 × 40 × 50 mm (Slide Case)
Connectors ¹⁰⁾		
CAN / power supply	LEMO 0B, 5-pole, code G	
Signal inputs	LEMO 0B, 6-pole, code A	
Operating and storage conditions		
Operating temperature range	-40 °C to +125 °C	
Relative humidity	5 % to 95 %	
Pollution degree	3	
Storage temperature	-55 °C to +150 °C	
Conformity	CE	

¹ ADMM 4 pro HS: 5 kHz: 2 channels @ 500 kbit/s, 4 channels @ 1 Mbit/s, 10 kHz: 2 channels @ 1 Mbit/s, 4 channels @ 2 Mbit/s.

² ADMM 8 pro: configuration per channel as of hardware revision F.

³ Observe information regarding the intended use. See CSM document "Safety Instructions MiniModules".

⁴ ADMM 8 pro: TEDS support as of hardware revision H400.

⁵ In case of full load (7.2 W) a power supply > 8 V is required (> 10 V as of an operating temperature of +85 °C), see "Application Note".

⁶ Distributive sensor excitation, see "Application Note".

⁷ These MiniModules are designed for measurements in vehicles with 12 V, 24 V, or 48 V on-board power supply systems. The maximum operating voltage at the measurement inputs is 60 V. Not suitable to be directly connected to systems with higher operating voltages, e.g. high-voltage batteries of hybrid or electric vehicles.

⁸ ADMM 8 pro: 2 MBit/s as of hardware revision F.

⁹ The specified power consumption is valid as of hardware revision F. It also depends on sampling rate (see "Application Note") and TEDS wiring. For older hardware revisions the following applies: typ. 1.5–2.3 W (ADMM 4 pro HS) or typ. 1.8 W (ADMM 8 pro).

¹⁰ Optionally available in other variants.

additional products

ADMM classic

With its comprehensive operating temperature range and its extremely compact housing ADMM classic measuring modules have been originally designed for measuring tasks in the engine compartment. Due to their wide range of application, these devices are also increasingly used in test benches.



AD4 OG10

AD4 OG10 provides the means to perform measurements with measurement data rates up to 10 kHz per channel at a high Ethernet bandwidth. EtherCAT® time synchronizations are fully supported. AD4 OG10 is either operated by using an EtherCAT® master via CANopen over EtherCAT® (CoE) or by using the Ethernet/EtherCAT® protocol converter XCP-Gateway in combination with an XCP-compatible data acquisition software.





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To product page
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