AD4 MX2

Product description

AD4 MX2 is a new edition of our classic ADMM 4. Its extremely compact size (approx. 93 × 30 × 46 mm) remains unchanged, the technical characteristics have been further improved and optimized.

AD4 MX2 is the smallest member of the CSM measurement module family and was designed for applications in engine compartments with limited space. Four differential voltage inputs with unipolar sensor excitation provide excellent measurement accuracy.

The integrated TEDS functionality supports sensor configuration and identification for the application.

Key features

- *Extremely compact measurement module*
- *TEDS functionality according to IEEE 1451.4 (template 30) supported*
- *4 voltage inputs, galvanically isolated*
- *Measurement inputs adjustable per channel from ±100 mV to ±60 V*

Shipping content

- MiniModule AD4 MX2
- Configuration software CSMconfig
- Documentation
- Calibration certificate in accordance with DIN EN ISO/IEC 17025

Maintenance

- Calibration every 12 months recommended

Accessories

- See datasheet "CAN Accessories".

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Technical data

Type designation	**AD4 MX2**
Inputs	4 analog inputs
Measurement ranges	±100, ±200, ±500 mV and ±10, ±20, ±60 V
Internal resolution	16 bit
Internal sampling rate per ch.	10 kHz
Measurement data rate / sending rate per channel	1, 2, 5, 10, 20, 50, 100, 200, 500 Hz and 1 kHz, 2 kHz
HW input filter	low-pass filter 3rd order, approx. 2.5 kHz
SW input filter	switchable 6th order Butterworth filter, range: 0.1 Hz to 500 Hz
	automatically adjusted to measurement data rate alternatively: threshold frequency adjustable per channel
Input protection [1]	
Operational safety Device safety	±60 V permanent ±100 V permanent, additional ESD protection
TEDS functionality supported	according to IEEE 1451.4 (template 30)
Gain error [2]	
at 25 °C	max. ±0.05 % of measured value
Temperature drift	max. ±10 ppm/K
Sensor excitation	unipolar, switchable and adjustable per module
Voltage	5, 8, 10, 12, 15 V DC
Current	max. 30 mA per channel, max. 120 mA per module
Galvanic isolation [3]	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, 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 [4]	typ. 1 W (without sensor excitation)
LED indicator (CAN)	power / status

Type designation	AD4 MX2
Housing	aluminium, gold anodized
Protection class	IP67
Weight	approx. 230 g
Dimensions (w × h × d)	approx. 93 × 30 × 46 mm
Connectors	
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] Observe information regarding the intended use. See CSM document "Safety Instructions MiniModule".

[2] Further information can be found in the Technical Information document on the subject of "Deviation of Measurement".

[3] 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. Do not connect directly to systems with higher operating voltages, e.g. high-voltage batteries of hybrid or electric vehicles.

[4] At room temperature

additional products

AD4 pro MC10

AD4 pro measurement modules cover an extremely wide range of applications. They can be used for voltage measurement, high-precision current measurement (via shunts), measurement of very low voltages (such as strain gauge based sensors measuring at mV levels), and the acquisition of higher frequency signals with measurement data rates up to 10 kHz.

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.

Innovative Measurement and Data Technology

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