AD CAN MM Series

Type MX2

Product description

AD4 MX2 is the continuation of our smallest Minimodule ADMM 4 (CXS). While keeping the extremely compact size (approx. 93 × 30 × 46 mm), the technical features 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 bays 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
- ▶ 4 voltage inputs, galvanically isolated
- ▶ Measurement inputs adjustable per channel from ±100 mV to ±60 V
- ▶ TEDS functionality according to IEEE 1451.4 (template 30) supported

Scope of delivery

- ▶ 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".

Innovative Measurement and Data Technology

Technical data

Type designation	**AD4 MX2**
Technical data valid as of revision	C102
Inputs	4 voltage 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 filter options per channel	▶ 6th order Butterworth filter, range: 0.1 Hz to 500 Hz: ▶ automatically adjusted based on sending rate ▶ user-selectable cutoff frequency ▶ Average value per sending interval
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. 120 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	typ. 850 mW (without sensor excitation)
LED indicator (CAN)	power/status

Type designation	**AD4 MX2**
Housing	aluminum, gold anodized
Protection class	IP67
Weight (device)	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.

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