

M-SENS3 8

Freely selectable voltage, current, and frequency measurement incl. sensor excitation for each channel

- Freely selectable operating mode for each input: voltage, current, frequency
- Measurement data output to CAN FD
- System status information (system, devices, channel)
- TEDS class 2 support
- Toolless, magnetic connection
- Channel and device status display in the software (e.g. sensor excitation/undervoltage monitoring)
- System connection without connection cable
- IP 67 and extended temperature range
- Highly compact and ruggedized
- Galvanic isolation (channel, CAN, supply, enclosure)
- Channel status LED for each input displaying the selected measurement mode



General channel properties	
AD converter	18 Bit (SAR)
Special functions	Selectable number of averaging values (1-100) Offset adjust, during measurement, multiple groups
Internal sampling rate	5 kHz
Channel sampling rates	2 / 5 / 10 min - 1 / 2 / 5 / 10 / 100 / 200 / 500 / 1000 / 5000 Hz
Total sampling rate	40 kHz
Hardware filter (switchable)	600 Hz 8. Order
Input resistance	10 MΩ
Software filter (DSP adjustable)	0.1 / 0.125 / 0.166 / 0.25 / 0.5 / 0.666 / 1 / 1.25 / 1.666 / 2.5 / 5 / 6.666 Hz 10 / 12.5 / 16.666 / 25 / 50 / 66.666 / 100 / 125 / 166.666 / 250 / 500 Hz Accuracy 0.05 %
Channel LED	Yes Displays the color of the selected measurement mode Channel-LED is activated for 10s after initialization in color of measurementmode In case of overcurrent of sensor supply
TEDS	Class 2
Channel volt	
Measurement range	±0.01 / 0.02 / 0.05 / 0.1 / 0.2 / 0.5 / 1 / 2 / 5 / 10 / 25 / 100 V
Deviation at 23 °C	± 0.05 % (± 0.01 ...± 0.02 V) ± 0.025 % (± 0.05 ...2 V) ± 0.05 % (5 ...100 V)

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Drift at ambient temperature -40...125°C	10 ppm/K 20 ppm/K ($\pm 0.01 \dots \pm 0.02$ V)
Channel frequency	
Measurement range	0...200 Hz
Channel current	
Measurement range	± 20 mA
Deviation at 23 °C	± 0.05 %
Temperature drift at -40 °C to 125 °C	10 ppm/K
Internal burden	50 Ω
Excitation	
Sensor supply voltage	Bipolar $\pm 2.5 / \pm 5 / \pm 7.5 / \pm 10 / \pm 12 / \pm 15$ V Unipolar 2.5 / 5 / 7.5 / 10 / 12 / 15 V
Accuracy supply at ambient temperature 25°C	± 0.25 % (at 15 V)
Drift at ambient temperature -40 ... 125 °C	10 ppm/K
Sensor supply Output current	35 ... 75 mA (depending on supply voltage combination)
Galvanic isolation	
Measurement input ↔ CAN	± 100 V (indefinitely), ± 500 V (pulse voltage)
Measurement input ↔ Housing	± 100 V (indefinitely), ± 500 V (pulse voltage)
Measurement input ↔ Measurement input	± 100 V (indefinitely), ± 500 V (pulse voltage)
Measurement input ↔ Sensor supply	± 100 V (indefinitely), ± 500 V (pulse voltage)
Device	
Inputs	8
Power supply	6 ... 59 VDC
Switching thresholds of the operating voltage	On 9 ± 0.3 VDC / Off 6 ± 0.3 VDC
Power consumption, typical	2.7 W
Operating temperature range	-40 ... 125 °C (-40 ... 257 °F)
Storage temperature range	-55 ... 150 °C (-67 ... 302 °F)
IP protection class	IP 67 (ISO 20653 - 2013)
Relative humidity	5 ... 95 %
Operating altitude (above sea level)	max. 5000m
Dimensions	L165 mm x B33 mm x H58 mm (L6.50 in x B1.30 in x H2.28 in)
Weight	500 g (1,10 lb)
Configuration interface	CAN FD (ISO 11898-2-2016)) 125kBit/s to 5MBit/s 64 data bytes Via CAN-FD or X-Link (tunneling) with IPEmotion PC, RT

Data rate	Software adjustable up to 5Mbit/s (ISO11898-2-2016)
Input sockets	001 - Lemo HGG 1B 307 (7-Pin) 002 - ODU Serie F,1 (5+1-Pin)
Status-LED	Yes Display of the operating status as well as warnings in case of undervoltage or expired calibration
Accessories	
Module	IPE-COV-M3-001 cover cap IPE-HWI-M3-001 mounting plate IPE-HWI-M3-002 mounting plate
System cable	623-500 M3-CAN/PWR cable, SubD9/S term, banana 623-502 M3-CAN/PWR cable, LOG term 623-503 M3-CAN/PWR cable, Mx-CAN/PWR 623-504 M3-CAN/PWR cable, M-CAN/PWR 623-506 M3-CAN cable, SUB-D/9S term 623-507 Mx-CAN/PWR cable, banana 623-508 M3-CAN/PWR cable, CAN/PWR 0B-5p. 623-509 M3-CAN/PWR cable, X-LINK/PWR 623-510 M3-CAN/ cable, CAN 1B-8p 623-511 Mx-CAN cable, M-CAN/noPWR M-feed
Input cable	600-731 SENS LEMO 1B 7p cable banana 620-715 SENS LEMO 1B7p cable IPEshunt3 670-810 SENS LEMO 1B 7p TEDS Chip Kabel offen 670-811 SENS LEMO 1B 7p TEDS Kabel offen SENS8-TEDS SENS LEMO 1B 7p TEDS-chip plug 620-478 SENS LEMO 1B 7p Adapter ODU-F 5p 620-674 SENS LEMO 1B6p I-measure cable open 600-541 SENS ODU-F 5pol extension 620-713 SENS FIPS 5p. cable IPEshunt 3 670-867 ODU-F 5pol cable open