

Mx-SENS2 4 FAST

4 fast analog measurement inputs each up to 400 kHz

- Measurement modes: SENS, mA, IEPE, individual for each input
- 4 separate dual sensor excitations (up to ± 15 V, up to ± 60 mA)
- Offset adjust functions
- TEDS Class-2 supported
- Measurement data output via XCP on Ethernet or CAN
- Designed for engine compartment applications
- Toolless module to module connection
- Ruggedized and compact modules for harsh environments



Channel volt	
Measurement range SENS	$\pm 0.1 / 0.2 / 0.5 / 1 / 2 / 5 / 10 / 20 / 50 / 100$ V
Accuracy at ambient temperature 25 °C	0.06 % from the selected measuring range
Drift for ambient temperature -40 ... 105 °C	20 ppm/K
Measurement input IEPE	
Filter limits (high pass)	1 Hz / 200 Hz adjustable (accuracy 20%)
Regulated nominal output current	4.5 mA ± 10 %
IEPE measuring range	$\pm 0.1 / \pm 0.2 / \pm 0.5 / \pm 1.0 / \pm 2.0 / \pm 5.0 / \pm 10$ V
Open circuit voltage	24 V
Channel current	
Measurement range	0 ... 20 mA, ± 20 mA
Accuracy at ambient temperature 25 °C	± 0.30 %
Internal shunt resistor	50 Ω
General channel properties	
Special functions	Sensor breakage detection (activation via software setting) Offset adjust, during measurement, multiple groups
AD converter	16 bit / SAR (successive approximation register)
Oversampling	400 kHz
Channel sampling rates	10/ 20/ 50/ 100/ 200/ 500 Hz 1 / 2 / 5 / 10 / 20 / 50 / 100 / 200 / 400 kHz (CAN up to 2 kHz)
Aggregate sample rate	1600 kHz

Hardware filter (switchable)	Accuracy 5 % 48 kHz (optional 20 kHz) cut off frequency Butterworth (8-pole)
Hardware filter (fixed)	Accuracy 25 % Typ RC 4-Pol 190 kHz cut off frequency without HW/SW filter
Software filter types	Butterworth Elliptic (8-pole) Bessel
Channel impedance	2 M Ω
Software filter (DSP selectable)	1.0 / 1.25 / 1.67 / 2.5 / 5 / 6.67 / 10 / 15 / 16.67 / 25 / 50 / 66.67 / 100 / 125 / 166.67 kHz 50 / 66.67 / 100 / 125 / 166.67 / 250 / 500 / 666.67 Hz Accuracy 0.05 %
Channel LED	Yes
Channel LED	Channel LED is flashing during configuration Yes
TEDS	Class 2
Excitation	
Sensor excitation ranges	Bipolar $\pm 2.5 / \pm 5 / \pm 7.5 / \pm 8 / \pm 10 / \pm 12.5 / \pm 15$ V
Accuracy excitation at ambient temperature 25 °C	± 0.50 %
Accuracy excitation at ambient temperature 85 °C	± 0.70 %
Sensor excitation current	30 mA (for V output $\pm 2.5 / \pm 10.0$ V) 40 mA (for V output $\pm 5.0 / \pm 12.5$ V) 60 mA (for V output $\pm 7.5 / \pm 15.0$ V)
Galvanic isolation	
Input ↔ module power supply	± 100 V (indefinitely), ± 500 V (pulse voltage)
Input ↔ CAN	± 100 V (indefinitely), ± 500 V (pulse voltage)
Input ↔ enclosure	± 100 V (indefinitely), ± 500 V (pulse voltage)
Input ↔ input	± 100 V (indefinitely), ± 500 V (pulse voltage)
Input ↔ excitation	± 100 V (indefinitely), ± 500 V (pulse voltage)
Device	
Inputs	4
Maximum input protection voltage (channel)	± 100 V (continuous), ± 200 V (short-time, $t < 1$ ms)
Voltage supply	9 ... 59 VDC
Supply voltage thresholds	On 9 ± 0.3 VDC / Off 6 ± 0.3 VDC
Power consumption, typical	5.4 W (all excitations off)
Working temperature range	-40 ... 85 °C (-40 ... 185 °F)
Storage temperature range	-55 ... 105 °C (-67 ... 221 °F)

IP-Code	IP 67 (ISO 20653 - 2013)
Relative humidity	5 ... 95 %
Operating altitude (above sea level)	55.000 Fuß / 16.764 m
Dimensions	W106 mm x H60 mm x D62 mm (4.17 in x 2.36 in x 2.44 in)
Weight	500 g (1.10 lb)
Configuration interface	Ethernet
Data transfer rate	100 Mbit Ethernet (IEEE 802.3)
Input sockets	Lemo EGG 1B 307 (7-Pin)
Status LED	Yes
Accessories	
System cable	<p>630-302 X-Link system cable ES ETH LEMO 1B8p 630-500 X-Link system cable 630-501 X-Link cable PWR banana 630-504 X-Link cable M-CAN 630-505 X-Link PWR cable X-Link-CAN/M-CAN 630-507 X-Link cable M-LOG PR08 ETH 630-522 X-Link system cable PC RJ45 (galv) 630-524 X-Link system cable LOG X-Link 630-502 X-Link cable RJ45 ETH 630-528 X-Link cable, ETH RJ45/PWR banana/ for M3 integration X-Link-DEF X-Link-TERM USB2ETH-XLINK</p>
Input cable	<p>600-866 SENS LEMO 1B7p cable BNC/P 620-674 SENS LEMO 1B6p I-measure cable open 620-695 MxSENS 1B 7p adapter BNC/S-ICP TEDS 670-807 SENS LEMO 1B 6p cable open 670-810 SENS LEMO 1B 7p cable open 670-811 SENS LEMO 1B 7p TEDS cable open 600-731 SENS LEMO 1B 7p cable banana 620-128 SENS LEMO 1B 6p IEPE BNC</p>