

SIM-STG

8 fast multi-analog measurement inputs up to 5 kHz

- Measurement modes: SENS, STG, IEPE, individual for each input
- 8 dual sensor excitations (up to ± 15 V, up to ± 45 mA)
- Internal resistors for bridge completion selectable
- Internal resistors for bridge completion selectable
- Measurement data output to CAN
- Designed for engine compartment applications
- Toolless module to module connection
- Ruggedized and compact modules for harsh environments



Device	
Maximum input protection voltage (channel)	± 100 V (indefinitely), ± 200 V (short-time, $t < 1$ ms)
Channel sampling rates	1/ 2/ 5/ 10/ 20/ 50/ 100/ 200/ 500 Hz
Channel sampling rates	1/ 2/ 5 kHz
Aggregate sample rate	20 kHz
Oversampling	10 kHz
Voltage supply	9 ... 36 VDC
Supply voltage thresholds	Switch-on 9 ± 0.3 VDC / Switch-off 6 ± 0.3 VDC
Power consumption, typical	7.0 W (all excitations off)
Working temperature range	$-40 \dots 85$ °C ($-40 \dots 185$ °F)
Storage temperature range	$-55 \dots 125$ °C ($-67 \dots 257$ °F)
IP-Code	IP 54 (ISO 20653 - 2013)
Relative humidity	5 ... 95 %
Dimensions	W69 mm x H112 mm x D185 mm (2.72 in x 4.41 in x 7.28 in)
Weight	1400 g (3.09 lb)
Configuration interface	CAN high speed
Data transfer rate	Software selectable up to 1 Mbit/s (ISO11898-2)
Input sockets	Lemo EGB 1B 307 (7-pin) SIM-DMS compatible
Input sockets	Lemo EGG 2B 308 (8-pin)
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)
General channel properties	
A/D converter	16 bit / SAR (successive approximation register)
Special functions	Offset adjust, during measurement, multiple groups

Sensor break detection	For sensor excitation
Channel LED	No
Channel impedance	10 M Ω (differential), 5 M Ω (ground related)
Hardware filter (fixed)	4.75 kHz cut off frequency
Hardware filter (fixed)	Type RC 2-pole
Hardware filter (fixed)	Accuracy 25 %
Hardware filter (switchable)	1.2 kHz cut off frequency
Hardware filter (switchable)	Type Butterworth (8-pole)
Hardware filter (switchable)	Accuracy 10 %
Software filter types	Butterworth, Bessel, Elliptic (8-pole)
Software filter (DSP selectable)	1.0/ 1.25/ 1.67/ 2.5/ 5.0/ 6.67/ 10/ 12.5/ 16.67/ 25 Hz
Software filter (DSP selectable)	50/ 66.67/ 100/ 125/ 166.7/ 250 Hz
Software filter (DSP selectable)	Accuracy 0.1 %
Excitation	
Sensor excitation ranges	Unipolar 0.5/ 1.25/ 2.5/ 5/ 10/ 12/ 15V
Sensor excitation ranges	Bipolar $\pm 0.5/ \pm 1.25/ \pm 2.5/ \pm 5/ \pm 10/ \pm 12/ \pm 15$ V
Accuracy excitation at ambient temperature 25 °C	0.5 %
Sensor excitation current	45 mA, short-circuit proof (software controlled)
Channel volt	
Measurement range SENS	$\pm 0.01 / 0.02 / 0.05 / 0.1 / 0.2 / 0.5 / 1 / 2 / 5/ 10/ 20/ 50$ V
Accuracy at ambient temperature 25 °C	0.075 % of selected measurement range
Drift for ambient temperature -40 ... 85 °C	30 ppm/K
Channel IEPE	
Nominal current, regulated	4.5 mA ± 10 %
IEPE measurement range	$\pm 0.1/ \pm 0.2/ \pm 0.5/ \pm 1.0/ \pm 2.0/ \pm 5.0$ V
Off-load voltage	24 V
Cut-off frequency range (high pass)	0.1 ... 4750 Hz
Channel strain gauge	
Measurement range strain gauge	± 2 V for STG measurement mode
Accuracy at ambient temperature 25 °C	0.1 %
Drift for ambient temperature -40 ... 85 °C	30 ppm/K
Measurement range 1	$\pm 2 \dots \pm 62$ mV
Accuracy at ambient temperature 25 °C	± 0.10 % + 15 μ V corresponding to the measurement range
Measurement range 2	$\pm 64 \dots \pm 998$ mV
Accuracy at ambient temperature 25 °C	± 0.05 % + 7 μ V corresponding to the measurement range
Measurement range 3	$\pm 1000 \dots \pm 2000$ mV
Special functions STG	Bridge adjust
Special functions STG	Shunt check
Special functions STG	Shunt resistor simulation 5 ... 390 k Ω
Special functions STG	Resistor for bridge completion 120, 350, 1000 Ω
Special functions STG	4-wire / 6-wire connection

Accuracy at ambient temperature 25 °C	±0.075 % + 7 µV corresponding to the measurement range
Accuracy at ambient temperature 25 °C	0.1 %
Sensor excitation ranges	±0.5/ ±1.25/ ±2.5/ ±5 V
Sensor excitation current	45 mA, short-circuit proof (software controlled)
Drift of excitation at ambient temperature -40 ... 85 °C	30 ppm/K
Accessories	
System cable	600-851.pdf
System cable	600-855.pdf
System cable	600-830.pdf
System cable	620-562.pdf
System cable	600-974.pdf
System cable	600-949.pdf
System cable	600-893.pdf
System cable	SIM-DEF.pdf
Input cable	600-850.pdf