

Sx-STG

8 fast multi-analog measurement inputs up to 40 kHz

- Measurement modes: SENS, STG, IEPE, individual for each input
- 8 dual sensor excitations (up to ± 15 V, up to ± 45 mA)
- Offset adjust functions, shunt check
- Internal resistors for bridge completion selectable
- 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



Device	
Maximum input protection voltage (channel)	± 100 V (dauerhaft), ± 200 V (kurzzeitig, $t < 2$ ms)
Channel sampling rates	1/ 2/ 5/ 10/ 20/ 50/ 100/ 200/ 500 Hz
Channel sampling rates	1/ 2/ 5/ 10/ 20/ 40 kHz (CAN up to 2 kHz)
Oversampling	40 kHz
Aggregate sample rate	320 kHz
Voltage supply	9 ... 36 VDC
Supply voltage thresholds	Switch-on 9 ± 0.3 VDC / Switch-off 6 ± 0.3 VDC
Power consumption, typical	7.5 W (all excitations off)
Working temperature range	$-40 \dots 85$ °C ($-40 \dots 185$ °F)
Storage temperature range	$-55 \dots 105$ °C ($-67 \dots 221$ °F)
IP-Code	IP 54 (ISO 20653 - 2013)
Relative humidity	5 ... 95 %
Dimensions	W75 mm x H119 mm x D185 mm (2.95 in x 4.69 in x 7.28 in)
Weight	1430 g (3.15 lb)
Configuration interface	Ethernet
Data transfer rate	100 Mbit Ethernet (IEEE 802.3)
Input sockets	Lemo EGG 1B 307 (7-pin) SIM-DMS compatible
Input sockets	Lemo EGG 2B 310 (10-pin) for TEDS
Galvanic isolation	
Input module power supply	± 100 V (indefinitely), ± 200 V (short-time, $t < 2$ ms)
Input CAN	± 100 V (indefinitely), ± 200 V (short-time, $t < 2$ ms)
Input enclosure	± 100 V (indefinitely), ± 200 V (short-time, $t < 2$ ms)
Input input	± 100 V (indefinitely), ± 200 V (short-time, $t < 2$ ms)
General channel properties	
A/D converter	16 bit / SAR (successive approximation register)
Sensor break detection	For sensor excitation

Special functions	Offset adjust, during measurement, multiple groups
Channel LED	Available
Flashing mode of channel LED	During configuration - blinking
TEDS	Class 2 (included)
Channel impedance	10 M Ω (differential), 5 M Ω (ground related)
Hardware filter (fixed)	17 kHz cut off frequency
Hardware filter (fixed)	Type RC 2-pole
Hardware filter (fixed)	Accuracy 25 %
Hardware filter (switchable)	4.8 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/ 166.67/ 250/ 500/ 667 Hz
Software filter (DSP selectable)	1.0/ 1.25/ 1.67/ 2.5/ 5.0/ 6.67/ 10/ 12.5/ 16.67 kHz
Software filter (DSP selectable)	Accuracy 0.05 %
Excitation	
Sensor excitation ranges	Unipolar 0.5/ 1.25/ 2.5/ 5/ 10/ 12/ 15V
Sensor excitation ranges	Bipolar ± 0.5 / ± 1.25 / ± 2.5 / ± 5 / ± 10 / ± 12 / ± 15 V
Accuracy excitation at ambient temperature 25 °C	0.5 %
Sensor excitation current	45 mA, kurzschlussfest (Software-überwacht)
Channel volt	
Measurement range SENS	± 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	± 0.1 / ± 0.2 / ± 0.5 / ± 1.0 / ± 2.0 / ± 5.0 V
Off-load voltage	24 V
Cut-off frequency range (high pass)	0.1 ... 16 kHz (accuracy 20%)
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	± 2 ... ± 62 mV
Accuracy at ambient temperature 25 °C	± 0.10 % + 15 μ V corresponding to the measurement range
Measurement range 2	± 64 ... ± 998 mV
Accuracy at ambient temperature 25 °C	± 0.05 % + 7 μ V corresponding to the measurement range
Measurement range 3	± 1000 ... ± 2000 mV
Special functions STG	Bridge adjust
Special functions STG	Shunt check
Special functions STG	

	Shunt resistor simulation 5 ... 200 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	$\pm 0.075\%$ + 7 μV corresponding to the measurement range
Sensor excitation ranges	$\pm 0.5 / \pm 1.25 / \pm 2.5 / \pm 5$ 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	630-501.pdf
System cable	630-522.pdf
System cable	630-500.pdf
System cable	630-504.pdf
System cable	630-507.pdf
System cable	630-505.pdf
System cable	630-524.pdf
System cable	630-302.pdf
System cable	USB2ETH-XLINK.pdf
System cable	X-Link-TERM.pdf
System cable	X-Link-DEF.pdf
Input cable	600-747.pdf
Input cable	600-850.pdf
Input cable	STG-TEDS.pdf