IPETRONIK

Mx-STG2 6

6 fast strain gauge measurement inputs up to 100 kHz

- 6 dual sensor excitations (up to ±5 V)
- 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

Measurement input DMS	
Accuracy at ambient temperature 25 °C	±0.075 % in measuring range ±0.005 / ±0.01 / ±0.02 V ±0.02 % in measuring range ±0.05 / ±0.1 / ±0.2 / ±0.5 V ±0.01 % in measuring range ±1 V
Special functions	Bridge adjustment Shunt check Shunt resistance simulation 5 ... 200 kΩ Resistance for bridge completion 120, 350, 1000 Ω Internal bridge completion
Special functions	Sensor breakage detection (activation via software setting) Offset adjust, during measurement, multiple groups Shuntcheck, also during measurement Bridge adjustment Shunt resistance simulation 5 ... 200 kΩ Resistance for bridge completion 120, 350, 1000 Ω Internal bridge completion
General channel properties	
AD converter	24 bit / SAR (successive approximation register)
Oversampling	100 kHz
Channel sampling rates	10/ 20/ 50/ 100/ 200/ 500 … 100 kHz 10/ 20/ 50/ 100/ 200/ 500/ 1000/ 2000 Hz (CAN up to 2 kHz)
Aggregate sample rate	600 kHz
Hardware filter (switchable)	12 kHz Cut-off frequency Butterworth (8-pole) Accuracy 10 %

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Hardware filter (fixed)	46 kHz Cut-off frequency for measuring ranges (±0.05/ 0.1/ 0.2/ 0.5/ 1 V) Typ RC 2-Pol 30 kHz Cut-off frequency for measuring ranges (±0.005 / 0.01 / 0.02 V) Typ RC 3-Pol
Software filter types	Bessel Butterworth Elliptic (8-pole)
Channel impedance	10 MΩ (differential), 5 MΩ (mass-related)
Software filter (DSP selectable)	10/ 12.5/ 16.67/ 25/ 50/ 66.67/ 100/ 125/ 166.67/ 250/ 500/ 667 Hz 1.0 / 1.25 / 1.67 / 2.5 / 5.0 / 6.67 / 10 / 12.5 / 16.67 / 25 / 33,34 kHz Accuracy 0.00002 %
Channel LED	Yes Sensor break detection In case of overcurrent of sensor supply Channel LED is flashing during configuration
Channel LED	Yes
TEDS	Class 2
ENOB (Effective Number Of Bits)	
ENOB 1.8Vpp Sinus, Messbereich 2Vpp, bei 125 Hz	16.9 bit, without filter (full bandwidth) 17.5 bit, with hardware and software filter (250 Hz, Butterworth)
ENOB 1.8Vpp Sinus, Messbereich 2Vpp, bei 1 kHz	16.5 bit, without filter (full bandwidth) 21.3 bit, with hardware and software filter (1250 Hz, Butterworth)
THD (Total Harmonic Distortion)	
THD 1.8Vpp Sinus, Messbereich 2Vpp, bei 1 kHz	16.5 bit, without filter (full bandwidth) 21.3 bit, with hardware and software filter (1250 Hz, Butterworth)
Offset drift AAF (Anti Aliasing Filter) ON	
Offset drift AAF ON - Umgebungstemperatur -40 … 85 °C	Type. ±0.13 µV/°C (±0.005 V measuring range) Max. ±0.40 µV/°C (±0.005 V measuring range) Typ. ±0.13 µV/°C (±0.05 V measuring range) Max. ±0.40 µV/°C (±0.05 V measuring range) Typ. ±1.67 µV/°C (±1 V measuring range) Max. ±5 µV/°C (±1 V measuring range)
Offset drift AAF ON - Umgebungstemperatur 85 … 105 °C	Typ. ±0.30 µV/°C (±0.005 V measuring range) Max. ±0.90 µV/°C (±0.005 V measuring range) Typ. ±0.27 µV/°C (±0.05 V measuring range) Max. ±0.80 µV/°C (±0.05 V measuring range) Typ. ±2.33 µV/°C (±1 V measuring range) Max. ±7 µV/°C (±1 V measuring range)
Gain drift AAF ON	
Gain drift AAF ON - Umgebungstemperatur -40 … 105 °C	Typ. ±6.7 ppm/°C (±0.005 V measuring range) Max. ±20 ppm/°C (±0.005 V measuring range) Typ. ±6.7 ppm/°C (±0.05 V measuring range) Max. ±20 ppm/°C (±0.05 V measuring range) Typ. ±5 ppm/°C (±1 V measuring range) Max. ±15 ppm/°C (±1 V measuring range)
Excitation	

Sensor excitation ranges	Bipolar ±0.5/ ±1.25/ ±2.5/ ±5 V
Accuracy excitation at ambient temperature 25 °C	0.1 %
Sensor excitation current	45 mA, short-circuit proof (software monitored)
Sensor Anschluss	4-wire 6-wire
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)
Device	
Inputs	6
Maximum input protection voltage (channel)	±100 V (continuous), ±200 V (short-time, t < 1 ms)
Voltage supply	9 … 36 VDC
Supply voltage thresholds	On 9 ±0.3 VDC / Off 6 ±0.3 VDC
Power consumption, typical	5.0 W (all excitations off)
Working temperature range	-40 … 105 °C (-40 … 221 °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	W212 mm x H60 mm x D35 mm (8.35 in x 2.36 in x 1.38 in)
Weight	700 g (1.54 lb)
Configuration interface	Ethernet
Data transfer rate	100 Mbit Ethernet (IEEE 802.3)
Housing material	Aluminum, gold anodized
Input sockets	Lemo EGG 2B 310 (10-pin) for TEDS Lemo EGG 1B 307 (7-Pin) SUB D (9-Pin) Socket
Status LED	Yes
Accessories	

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System cable	630-500 630-501 630502 630-504 630-505 630-507 630-524 X-Link-DEF X-Link-TERM USB2ETH-XLINK
Input cable	620-700 670-850 600-747 600-760

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