PRODUCT DATA

SG-Link-200-OEM: Wireless 2 Channel Analog Input Node

The MicroStrain wireless sensor networks enable simultaneous, high-speed sensing and data aggregation from scalable sensor networks. Our wireless sensing systems are ideal for test and measurement, remote monitoring, system performance analysis, and embedded applications.

The SG-Link-200-OEM allows for remote data collection from a range of sensor types, including strain gauges, pressure transducers, and accelerometers. The node supports high resolution, low noise data collection from 1 differential and 1 single-ended input channels at sample rates up to 1 kHz. A digital input features compatibility with a hall effect sensor for reporting RPM and total pulses, ideal for many torque sensing applications.

Users can easily program nodes for continuous, periodic burst, or event-triggered sampling with the SensorConnect software. The optional web-based SensorCloud interface optimizes data aggregation, analysis, presentation, and alerts for sensor data from remote networks.

PRODUCT HIGHLIGHTS

- 1 differential and 1 single-ended input channel
- Differential channel compatible with 120, 350, and 1k Ohm Wheatstone bridge sensing circuits
- On-board temperature sensor
- Digital input channel for RPM and pulse counting
- Supply power from 3.3 VDC to 30 VDC
- Continuous, periodic burst, and event-triggered sampling
- Output raw data and/or derived channels such as mean, RMS and peak-peak
- LXRS and LXRS+ protocol allows lossless data collection, scalable networks and node synchronization of ±50 µs
- Remote strain calibration using on-board shunt resistor

HIGH PERFORMANCE

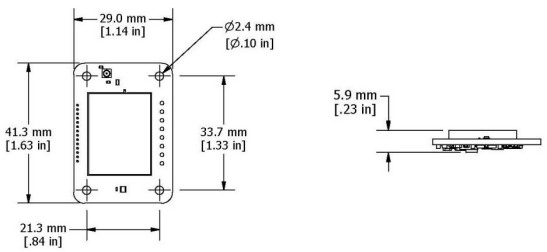
- Up to 1024 Hz sampling
- Low noise 1.5 VDC to 2.5 VDC sensor excitation
- Noise as low as 1 µV p-p
- High resolution 24-bit data
- Datalog up to 8 million data points
- Low power operation, well-suited for battery powered applications
- Wireless range up to 1 km (400 m ideal)
- -40°C to +105°C operating temperature range

APPLICATIONS

- Strain, load, force, pressure, acceleration, vibration, displacement, or torque sensing
- Condition-based monitoring (CBM)
- Structural load and stress monitoring
- Test and measurement
- RPM and pulse counting

MICROSTRAIN SG-LINK-200-OEM SPECIFICATIONS

Analog Input Channels	
Sensor input channels	1 differential, 1 single-ended and 1 RPM/pulse input
Sensor excitation output	Configurable 1.5 VDC to 2.5 VDC (100 mA)
Measurement range	0 to Excitation voltage (1.5 VDC or 2.5 VDC)
Adjustable gain	1 to 128
ADC resolution	24 bit
Noise (Gain = 128)	1 µVp-p to 20 µVp-p (filter setting dependent)
Noise (Gain = 1)	15 µVp-p to 250 µVp-p (filter setting dependent)
Temperature stability (-40°C to +105°C)	0.172 µV/ °C (typical)
Digital filter*	Configurable SINC4 low pass filter for reducing noise
Strain calibration	Onboard shunt resistor used for deriving strain calibration coefficients (y = mx + b)
Shunt calibration resistor	499 kOhm (± 0.1%)
Integrated Temperature Channel	
Measurement range	-40°C to 105°C
Accuracy	±0.25°C
Attitude (pitch and roll) Outputs	
Sampling modes	Continuous, periodic burst, event triggered
Output options	Analog: Calibrated engineering units, ADC count and derived channels (mean, RMS and peak-peak) Digital: Speed (Hz or RPM) and pulse counts
Sampling rates	Up to 1024 Hz
Sample rate stability	±5 ppm
Network capacity	Up to 128 nodes per RF channel (bandwidth calculator)
Node synchronization	±50 µsec
Data storage capacity	16 M Bytes (up to 8 million data points)



RPM Sensing				
Sensor input	Open collector, open drain or digital pulses from hall effect or other source			
Range	0.1 Hz to 100 Hz (6 to 6000 RPM)			
Accuracy	±0.1% (typical)			
Operating Parameters				
Wireless communication range **	External antenna: 2 km (ideal), 800 m (typical) Onboard antenna: 1 km (ideal), 400 (typical)Indoor/ obstructions: 50 m (typical)			
Antenna	Surface mount or external via U.FL connector			
Radio frequency (RF) transceiver carrier	License-free 2.405 GHz to 2.480 GHz (16 channels)			
RF transmit power	User-set 0 dBm to 20 dBm. Regional restrictions may apply			
Power input range	3.3 VDC to 30 VDC			
Pulse Current***	Tx Power	VIN=3.6V	VIN=5.0V	VIN=12V
	+20 dBm	135 mA	100 mA	45 mA
	+16 dBm	100 mA	70 mA	32 mA
Operating temperature	-40°C to +105°C			
Mechanical Shock Limit	1000g/1.5ms			
ESD	± 4 kV			
Physical Specifications				
Dimensions	41.3 mm x 29.0 mm x 5.9 mm			
Interface	Solder or screw-down terminal available			
Weight	7 grams			
Integration				
Compatible gateways	All WSDA gateways			
Software	SensorCloud, SensorConnect, Windows 7, 8 & 10 compatible			
Software development kit	MSCL available on Git			
Regulatory compliance	FCC (USA), IC (Canada), CE, RoHS (EU) MIC (Japan), UKCA (UK)			

** Extend battery life by using a faster filtering setting*
*** Actual range varies with conditions*
**** Power source must supply short duration pulse currents as determined by the transmit power setting and the supply voltage*

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