MicroStrain Sensing Product Datasheet

SG-Link®-200-OEM

Wireless 2 Channel Analog Input Node

LORD Sensing 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 to 30 V
- Continuous, periodic burst, and event-triggered sampling
- Output raw data and/or derived channels such as mean, RMS and peak-peak
- LXRS protocol allows lossless data collection, scalable networks and node synchronization of ±50 µs
- Remote strain calibration using on-board shunt resistor

FEATURES AND BENEFITS

HIGH PERFORMANCE

- Up to 1024 Hz sampling
- Low noise 1.5 or 2.5 V 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 typical)
- -40 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

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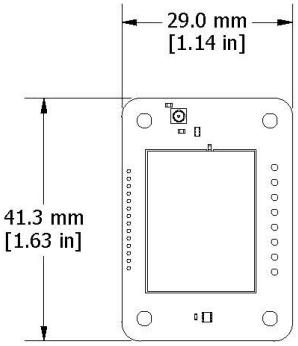
Wireless 2 Channel Analog Input Node

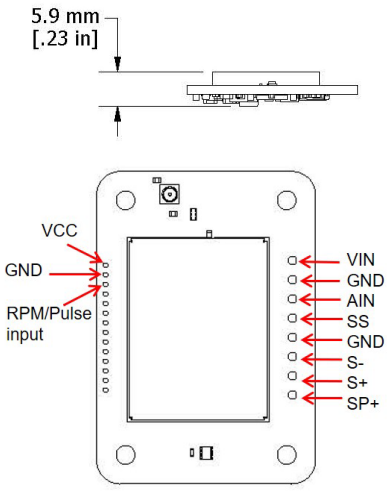
Specifications

Analog Input Channels	
Sensor input channels	1 differential, 1 single-ended and 1 RPM/pulse input
Sensor excitation output*	Configurable 1.5 or 2.5 V (100 mA)
Measurement range	0 to Excitation voltage (1.5 or 2.5 V)
Adjustable gain	1 to 128
ADC resolution	24 bit
Noise (Gain = 128)	1 µVp-p to 20 µVp-p (filter selection dependent)
Noise (Gain = 1)	15 to 250 µVp-p (filter selection dependent)
Temperature stability (-40 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	499k Ohm (± 0.1%)
Integrated Temperature Channel	
Measurement range	- 40°C to 105°C
Accuracy	±0.25°C
RPM Sensing	
Sensor input	Open collector, open drain or digital pulses from hall effect or other source
Range	0.1 to 100 Hz (6 to 6000 RPM)
Accuracy	±0.1% (typical)
Sampling	
Sampling modes	Continuous, periodic burst, event triggered
Output options	Analog: Calibrated engineering units,account sand 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:) www.microstrain.com/configure-your-system
Node synchronization	±50 µsec
Data storage capacity	16 M Bytes (up to 8,000,000 data points)
Operating Parameters	
Wireless communication range**	Outdoor 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 to 2.480 GHz (16 channels)
RF transmit power	User-set 0 dBm to 20 dBm. Restricted regionally
Power input range	3.3 V dc to 30 V dc
Pulse Current***	**Tx Power** / **VIN = 3.6 V** / **VIN = 5.0 V** / **VIN = 12 V**
	+20 dBm / 135 mA / 100 mA / 45 mA
	+16 dBm or less / 100 mA / 70 mA / 32 mA
Operating temp	-40°C to +105°C
Angular acceleration limit	500*g* sustained,1000*g* intermittent

Mechanical Shock Limit	1000*g*/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	http://www.microstrain.com/software/mscl
Regulatory compliance	FCC (USA), IC (Canada), CE, RoHS (EU) MIC(Japan)

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





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