SG-Link®-OEM-LXRS®

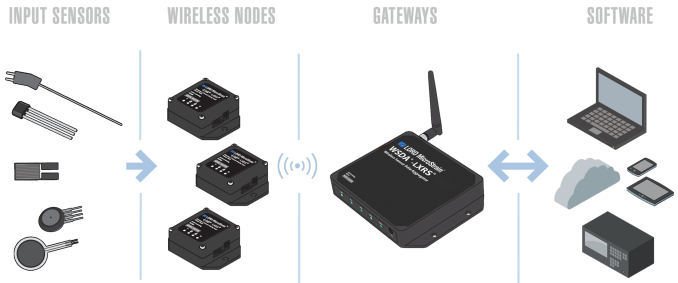
Wireless 2 Channel Analog Input Sensor Node

SG-Link®-OEM-LXRS® - *small, low-cost two-channel analog sensor node ready for OEM integration*

LORD MicroStrain® LXRS® Wireless Sensor Networks enable simultaneous, high-speed sensing and data aggregation from scalable sensor networks. Our wireless sensing systems are ideal for sensor monitoring, data acquisition, performance analysis, and sensing response applications.

The **gateways** are the heart of the LORD MicroStrain wireless sensing system. They coordinate and maintain wireless transmissions across a network of distributed wireless sensor **nodes**. The LORD MicroStrain LXRS wireless communication protocol between LXRS nodes and gateways enable high-speed sampling, ±32 microseconds node- to- node synchronization, transmission range up to 2 kilometers, and lossless data throughput under most operating conditions.

Users can easily program nodes for data logging, continuous, and periodic burst sampling with the **Node Commander®** software. The web- based **SensorCloud™** interface optimizes data aggregation, analysis, presentation, and alerts for gigabytes of sensor data from remote networks.



Wireless Simplicity, Hardwired Reliability™

Product Highlights

- One differential and one single-ended analog input channel and an internal temperature sensor
- Ideal for remote and long term measurement of many Wheatstone bridge and analog-type sensors including: strain, force, torque, pressure, acceleration, vibration, magnetic field, displacement and geophones
- Supports continuous, burst, and event-triggered sampling and datalogging to internal memory
- User-programmable sample rates up to 4096 Hz
- Comprehensive SDK and OEM form factor for rapid integration
- Simultaneously transmit real-time data and log to memory.

Features and Benefits

High Performance

- Scalable, long range wireless sensor networks up to 2 km
- Lossless data throughput under most operating conditions

Ease of Use

- Rapid deployment with wireless framework
- Low power consumption allows extended use.
- Wide range of sample rates and duty cycles
- Optional web-based SensorCloud™ interface optimizes data storage, viewing, and analysis.

Cost Effective

- Out-of-the box wireless sensing solution reduces development and deployment time.
- Volume discounts

Applications

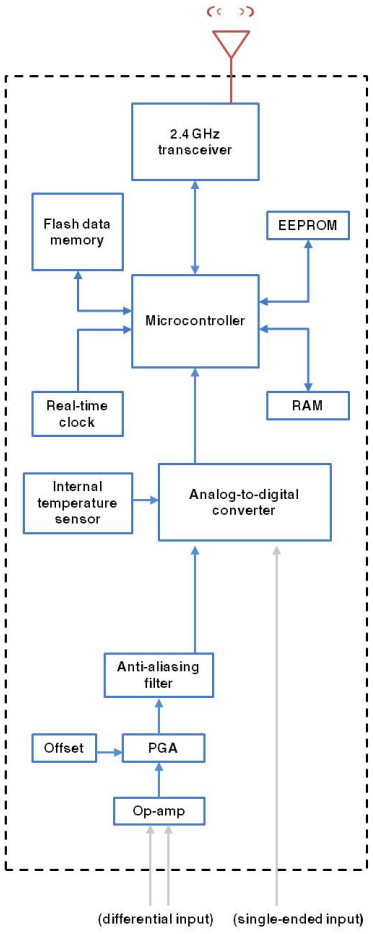
- Condition-based monitoring
- Health monitoring of rotating components, aircraft, structures, and vehicles
- Experimental test and measurement
- Robotics and machine control

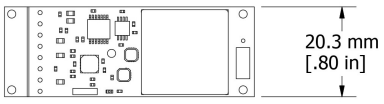
LORD MicroStrain®
SENSING SYSTEMS

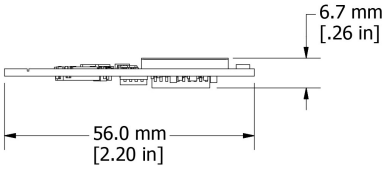
SG-Link®-OEM-LXRS® Wireless 2 Channel Analog Input Sensor Node

Specifications

General	
Sensor input channels	**Differential analog,** 1 channel **Single-ended analog,** 1 channel
Integrated sensors	**Internal temperature,** 1 channel
Data storage capacity	2 M bytes (up to 1,000,000 data points, data type dependent)
Analog Input Channels	
Measurement range	Differential: full-bridge, ≥ 350 Ω (factory configurable) Single-ended: 0 to 3 V dc
Accuracy	± 0.1% full scale typical
Resolution	12 bit
Anti-aliasing filter bandwidth	Single-pole Butterworth -3 dB cutoff @ 250 Hz (factory configurable)
Bridge excitation voltage	+ 3 V dc, 50 mA total for all channels (pulsed @ sample rates ≤ 16 Hz to conserve power)
Measurement gain and offset	User-selectable in software on differential channels, gain values from 104 to 2560
Integrated Temperature Channel	
Measurement range	-40 °C to 85 °C
Accuracy	± 2 °C (at 25 °C) typical
Resolution	12 bit
Sampling	
Sampling modes	Synchronized, low duty cycle, datalogging
Sampling rates	**Continuous sampling:** 1 sample/hour to 512 Hz **Periodic burst sampling:** 32 Hz to 4096 Hz **Datalogging:** 32 Hz to 4096 Hz
Sample rate stability	±3 ppm
Network capacity	Up to 2000 nodes per RF channel (and per gateway) depending on the number of active channels and sampling settings. Refer to the system bandwidth calculator: http://www.microstrain.com/configure-your-system
Synchronization between nodes	± 32 µsec
Operating Parameters	
Radio frequency (RF) transceiver carrier	2.405 to 2.470 GHz direct sequence spread spectrum over 14 channels, license free worldwide, radiated power programmable from 0 dBm (1 mW) to 16 dBm (39 mW); low power option available for use outside the U.S.- limited to 10dBm (10mW)
RF range	**70 m to 2 km line of sight** with RF power setting
RF communication protocol	IEEE 802.15.4
Power source	External: +3.2 to +9.0 V dc (9 V dc alkaline battery provided)
Power consumption	See power profile : http://files.microstrain.com/SG-Link-OEM-LXRS-Power-Profile.pdf
Operating temperature	-40 ˚C to + 85 ˚C (excluding 9 V battery)
Acceleration limit	500 *g* standard (high *g* option available)
MTBF	1,300,000 hours (Telcordia method, SR332)
Physical Specifications	
Dimensions	56 mm x 20 mm x 6 mm
Weight	7 grams
Integration	
Compatible gateways	All WSDA® base stations and gateways
Compatible sensors	Bridge type analog sensors, 0 to 3 V dc analog sensors
Connectors	Solder pads or screw terminal connector
Shunt calibration	Internal shunt calibration resistor 499 KΩ, differential channel
Software	SensorCloud™, Node Commander®, Windows XP/Vista/7
Software development kit (SDK)	Data communications protocol available with EEPROM maps and sample code (OS and computing platform independent) http://www.microstrain.com/wireless/sdk
Regulatory compliance	FCC (U.S.), IC (Canada), ROHS







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