SG-Link®-OEM- LXRS

Data Sheet

OEM Wireless Analog Sensor Node - Extended Range

Introduction

The SG-Link®-OEM-LXRS Analog Input Wireless Sensor Node features 1 differential input channel with optional bridge completion, 1 single ended input channel with 0-3 volt excitation, and an internal temperature sensor channel. This OEM array supports a wide range of Wheatstone bridge and analog sensors including acceleration, vibration, strain, load cells, torque, pressure, magnetic fields, displacement, geophones and more. Programmable communication range extends to 2km line-of-sight.

Features & Benefits

Ease of Integration

- Small, easy to integrate wireless form factor
- SDK for quick custom app development
- Rapidly deployed wireless solution

High Performance

- Scalable, ultra-long-range wireless sensor network
- High-speed, synchronized platform accepts most analog sensors
- Reliable wireless data collection
- Low-power for extended battery life
- SensorCloud – integrated web solution

Cost Effective

- Significantly reduced development cost
- Competitive OEM and volume discount schedule

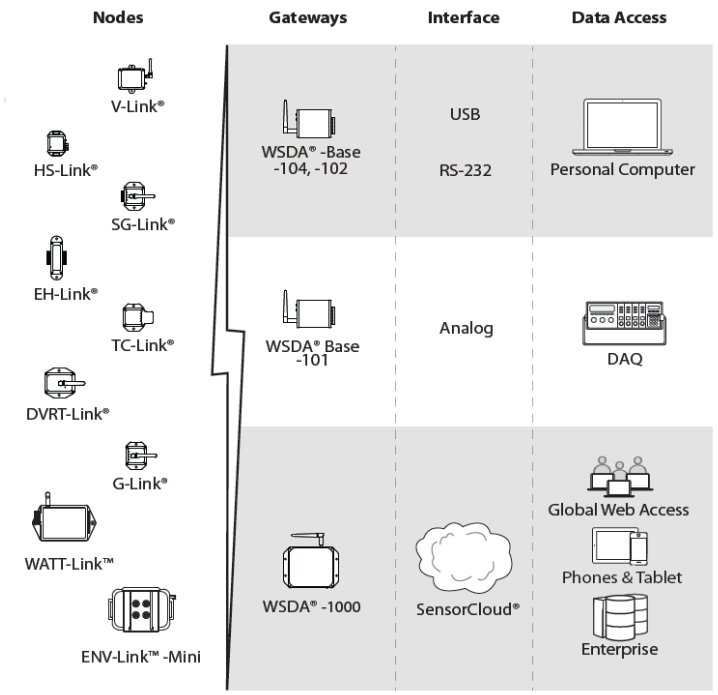
Applications

Provides easy wireless sensing capability to OEM manufacturers

- condition-based monitoring of machines and equipment
- health monitoring of aircrafts, structures, and vehicles
- experimental test and measurement
- robotics and machine automation

System Overview

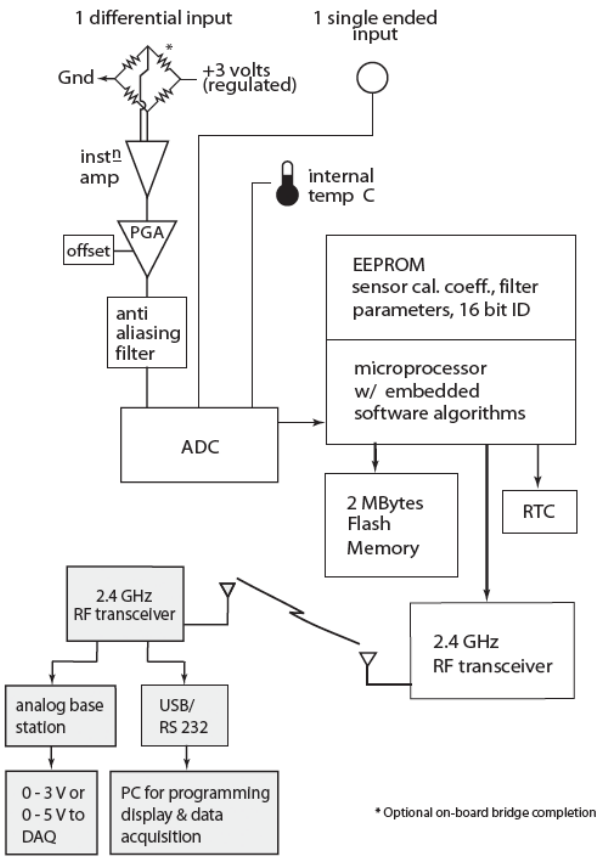
At the heart of MicroStrain's® LXRS™ Lossless Data Wireless Sensor Networks are WSDA® gateways, which use our exclusive beaconing protocols to synchronize precision timekeepers within each sensor node in the network. The WSDA® also coordinates data collection from all sensor nodes. Users can easily program each node on the scalable network for simultaneous, periodic, burst, or data logging mode sampling with our Node Commander® software, which automatically configures network radio communication to maximize the aggregate sample rate. Optional SensorCloud® enabled WSDA® support autonomous web-based data aggregation.



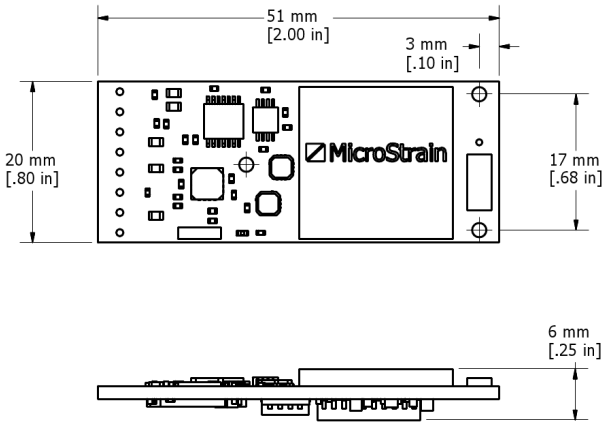
Specifications:

Input channels	1 full differential input channel, 350 Ω resistance or higher (with optional bridge completion), 1 single ended input (0 - 3 volts maximum), and internal temperature sensor
Temperature sensor	-40 ˚C to 70 ˚C range, typical accuracy ±2 ˚C (at 25 ˚C)
Anti-aliasing filter bandwidth:	-3 dB cutoff at 250 Hz (factory adjustable)
Measurement Accuracy	± 0.1% full scale typical
Resolution	1 bit: 0.024% 1 microstrain typical for 3 wire full bridge strain gauge (when used in accordance with MicroStrain® recommendations)
DC bridge excitation	+3 volts DC at 50 mA maximum (pulsed to sensors for sample rates below 32 Hz to conserve power)
Programmable gain	software programmable: 20 to 2560
Programmable offset	software programmable
Analog to digital (A/D) converter	successive approximation type, 12 bit resolution
Data storage capacity	2 megabytes (approximately 1,000,000 data points)
Data logging mode	log up to 1,000,000 data points (from 100 to 65,500 samples or continuous) at 32 Hz to 2048 Hz
Sensor event driven trigger	commence datalogging when threshold exceeded
Sample Rates	Continuous: 1/hr - 512Hz; Datalog or Burst: 32 Hz - 4 kHz
Synchronous Sampling Mode Network Capacity	transmit real time data from node to PC - rate depends on number of active channels and transmitting nodes. sample rates and # of channels are easily configured within Node http://www.microstrain.com/configure-your-system
Synchronization between nodes	+/- 32 µsec in synchronous sampling mode
Synchronous sample rate stability	+/- 3 ppm
Wireless shunt calibration	channel 1. Internal shunt calibration resistor 499 KΩ
Radio frequency (RF) transceiver carrier	2.4 GHz direct sequence spread spectrum, license free worldwide (2.405 to 2.480 GHz) - up to 16 channels; 0dBm (1 mW) transmit power
RF data packet standard	IEEE 802.15.4, open communication architecture
RF data downloading	8 minutes to download full memory
Range for bi-directional RF link	Programmable communication from 70 m to 2,000 meters line of sight
Internal Li-Ion battery	3.7 volt 250 mAh lithium ion rechargeable battery or external power 3.2 to 9 volts
Power consumption	SG-Link® node only: real-time streaming - 2.4 mA, datalogging - 25 mA, sleeping - 0.1 mA with 1000 ohm strain gauge
Operating temperature	-40 to +85˚C
Maximum acceleration limit	500g standard (high g option available)
Dimensions/weight	standard configurations: unpotted; 51 mm x 20 mm x 6 mm - weight 4.8 grams custom configurations available on request for dimensional print go to www.microstrain.com
Software	Node Commander® Windows XP/Vista/7 compatible
Compatible base stations	USB, RS-232, Analog, WSDA-Base, WSDA
FCC ID	XJQMSLINK0002
IC ID	8505A-MSLINK0002

Node



Base Station



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