MicroStrain Sensing Product Datasheet

SG-Link®-200
Ruggedized Wireless Analog Input Node

The SG-Link®-200 is a 3-channel wireless sensor with rugged, weatherproof enclosure. It includes onboard PGA, filtering, and a high-resolution ADC for precise measurement of a large range of sensor types including strain gages, load cells, pressure transducers, and accelerometers.

Lord wireless sensor networks eliminate the time and complexity of running long sensor wires. They are fast to deploy and provide reliable, lossless data throughput. These networks have been proven to work in demanding industries where reliable data acquisition is critical.

SensorConnect software can be used for device configuration, live data monitoring, and data analysis. SensorCloud is Lord's optional cloud-based platform that optimizes data aggregation, analysis, and alerts for sensor data collected from remote networks.

INPUT SENSORS   WIRELESS NODES   GATEWAYS   SOFTWARE

HIGH PERFORMANCE SENSING

- 3 differential input channels
- On-board temperature sensor
- Noise as low as 1 µV p-p
- On-board shunt calibration for strain gages
- Factory installed bridge completion available

RUGGED AND WEATHERPROOF

- IP-68 weatherproof enclosure
- AMPSEAL connector
- -40 to +85°C operating temperature
- M8 mounting with compression limiters

RELIABLE DATA COLLECTION

- Lossless, synchronized, and scalable networks using LXRS and LXRS+ protocol
- Remotely configure nodes and view sensor data with SensorConnect (PC), SensorCloud (web), or MSCL (API library)

CONFIGURABLE FOR MANY APPLICATIONS

- Report raw data and/or derived parameters (mean, RMS, pk-pk)
- Up to 1024 Hz sampling
- Continuous, periodic, or event-triggered operation
- Transmit data real-time and/or save to onboard memory

APPLICATIONS

- Strain, load, force, pressure, acceleration, vibration, displacement, or torque sensing
- Condition-based monitoring (CBM)
- Structural load and stress monitoring
- Test and measurement
- Strain gauge rosettes
- Off-highway machine monitoring
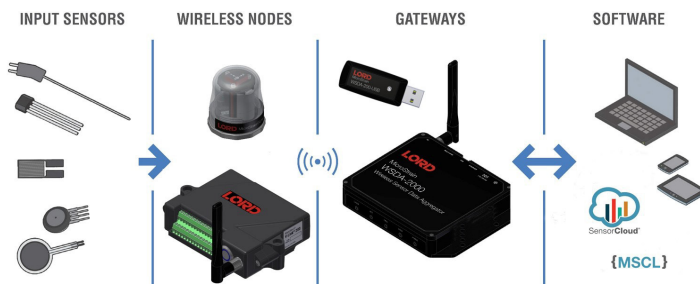
Ruggedized Wireless Analog Input Node
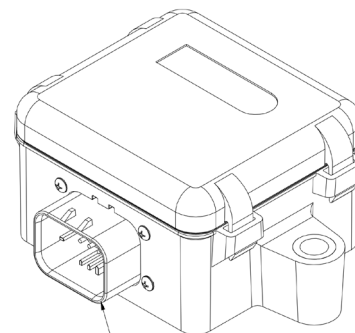
Specifications

Analog Input Channels	
Sensor input channels	3 differential
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	0.172 µV/°C (typical)
Digital filter**	Configurable SINC4 low pass filter for reducing noise
Strain calibration	Onboard shunt resistor for deriving linear strain calibration coefficients
Shunt calibration resistor	499k Ohm (± 0.1%)

Integrated Temperature Channel	
Measurement range	- 40°C to 85°C
Accuracy	±0.25°C

Sampling	
Sampling modes	Continuous, periodic burst, event triggered
Output options	Analog: Calibrated engineering units, adc counts and derived channels (mean, RMS and peak-peak)
Sampling rates	1 S/hr to 1024 SPS (1 - 2 channels) 1 S/hr to 512 SPS (3 channels)
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 MB (up to 8,000,000 data points)

Operating Parameters	
Wireless range	Onboard antenna: 1 km (ideal), 400 m (typical) Indoor/obstructions: 50 m (typical)
Radio frequency (RF)	License-free 2.405 to 2.480 GHz (16 channels)
RF transmit power	User-settable 0 dBm to 20 dBm (restricted regionally)
Power input range	Battery: 3.6 V Lithium D-cell, 1.5 V Alkaline D-cell*** External Input Power: 4.0 - 36 VDC
Battery lifetime	https://microstrain.com/wireless/sg-link-200 for details
Operating temperature	-40°C to +85°C
Mechanical Shock Limit	1000g/1.5ms
ESD	4 kV

Physical Specifications	
Sensor Interface	AMPSEAL 14-pin connector with 1.3 mm contacts
Mounting	2 x M8
Ingress Protection	IP68, 3.0m for 30 mins
Enclosure Material	PBT base, polycarbonate lid, stainless steel compression limiters
Dimensions	3.536" x 5" x 2.02" (89.8 x 127 x 51.3 mm)
Weight	326 grams (with battery), 235 grams (without battery)

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)

AMPSEAL 16 14-PIN CONNECTOR
MATES WITH **TE 776273-1**

4.993 (5.00 TYP)

2.020
1.484
1.180
.925
3.005 (3.00 TYP)
.251
3.536

2X Ø.346 FOR M8 FASTENERS
STAINLESS STEEL COMPRESSION LIMITERS
RATED FOR UP TO CLASS 10.9 BOLTS

4.250
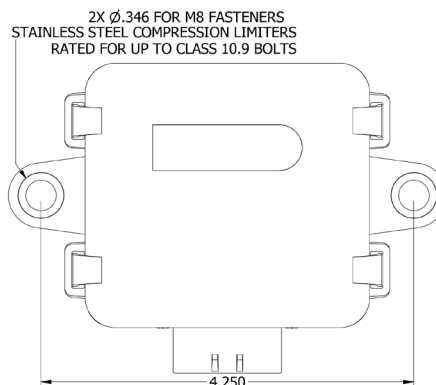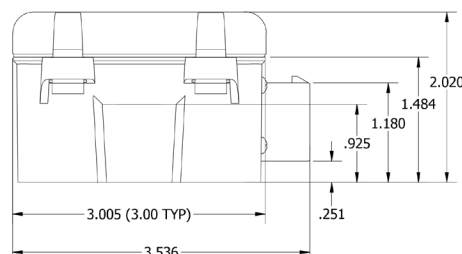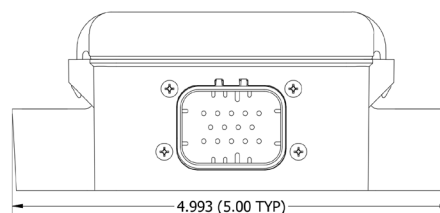
  * Sensor excitation may be duty cycled to conserve power for sampling rates less than 1024 Hz.

 ** Extend battery life by using a faster filtering setting.

*** Limited temperature range and transmit power (10 dBm)