LORD DATASHEET

DVRT-Link®-LXRS®

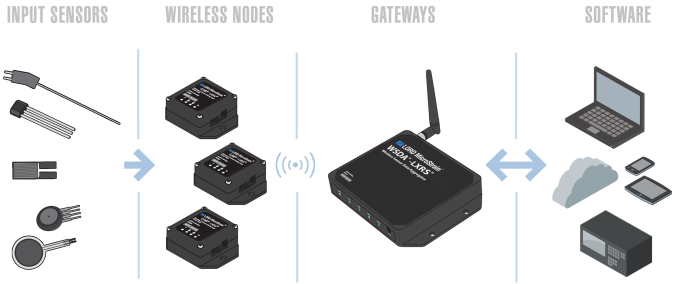
Wireless Displacement Node

DVRT-Link®-LXRS® - *specialized node designed for high performance data acquisition from inductive displacement sensors including all of the LORD MicroStrain® DVRT sensors*

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, 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

- Designed for a wide range of inductive displacement sensors including all LORD MicroStrain DVRT®'s
- Wireless technology and a rechargeable battery make the DVRT-Link®-LXRS® ideal for remote, long-term monitoring of micro-miniature displacement measurements.
- User-programmable sample rates up to 4096 Hz

Features and Benefits

High Performance

- Lossless data throughput and node-to-node sampling synchronization of ±32 µS in LXRS-enabled modes.
- Wireless range up to 2 km (800 m typical)

Ease of Use

- Scalable networks for easy expansion
- Low power consumption allows extended use.
- Remotely configure nodes, acquire and view sensor data with Node Commander®.
- Optional web-based SensorCloud™ interface optimizes data storage, viewing, alerts, and analysis.
- Easy custom integration with comprehensive SDK

Cost Effective

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

Applications

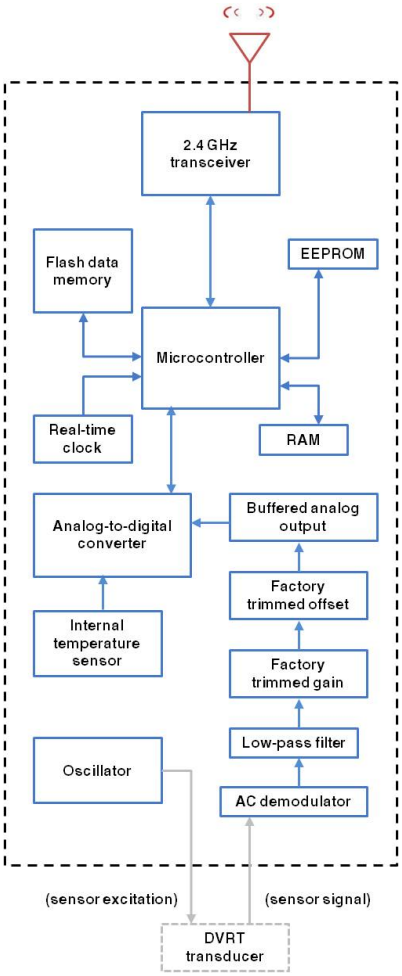
- Structural load and stress monitoring
- Production process monitoring
- Quality control
- Linear and angular positioning of optical components
- Robotics and machine control

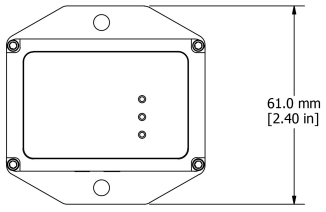
LORD MicroStrain®
SENSING SYSTEMS

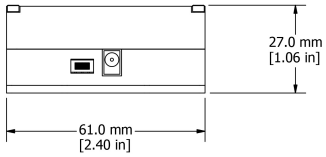
DVRT-Link®-LXRS® Wireless Displacement Node

Specifications

General	
Sensor input channels	**Inductive displacement sensor**,1 channel
Integrated sensors	**Internal temperature,** 1 channel
Data storage capacity	2 M bytes (up to 1,000,000 data points, data type dependent)
Displacement Sensor Input	
Sensor excitation	Regulated sine wave, 150 kHz standard (other frequency options available)
Low-pass filter	250 Hz standard (factory configurable 10 Hz – 20 kHz)
Resolution	12 bit
Signal-to-noise ratio	1,000 to 1 typical (factory calibrated with DVRT® sensor)
Integrated Temperature Channel	
Measurement Range	-40 °C to 85 °C
Accuracy	± 2 °C (at 25 °C) typical
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	
Wireless communication range	Outdoor/line-of-sight: 2 km(ideal)*, 800 m (typical)** Indoor/obstructions: 50 m (typical)**
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.A.- limited to 10 dBm (10 mW)
RF communication protocol	IEEE 802.15.4
Power source	Internal: 3.7 V dc, 250 mAh rechargeable Lithium polymer battery. External: 3.2 V dc to 9.0 V dc
Power consumption	See power profile : http://files.microstrain.com/DVRT-Link-LXRS-Power-Profile.pdf
Operating temperature	-20 ˚C to + 60 ˚C (extended temperature range available with custom battery and enclosure, -40 ˚C to + 85 ˚C electronics only)
Maximum acceleration limit	500 *g* standard (high *g* option available)
Physical Specifications	
Dimensions	61 mm x 61 mm x 27 mm
Weight	58 grams
Enclosure material	ABS plastic
Integration	
Compatible gateways	All WSDA® base stations and gateways
Compatible sensors	All LORD MicroStrain DVRT® sensors. Other inductive displacement transducers possible (contact LORD MicroStrain Technical Support)
Connectors	LORD MicroStrain DVRT® sensor connector
Sensor warm-up time	30 seconds recommended
Software	SensorCloud™, SensorConnect™, Node Commander®, WSDA® Data Downloader, Live Connect™, Windows XP/Vista/7 compatible
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







***Measured with antennas elevated, no obstructions, and no RF interferers.**
****Actual range varies depending on conditions such as obstructions, RF interference, antenna height, & antenna orientation.**

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