LORD PRODUCT DATASHEET

WSDA®-Base-102-LXRS®

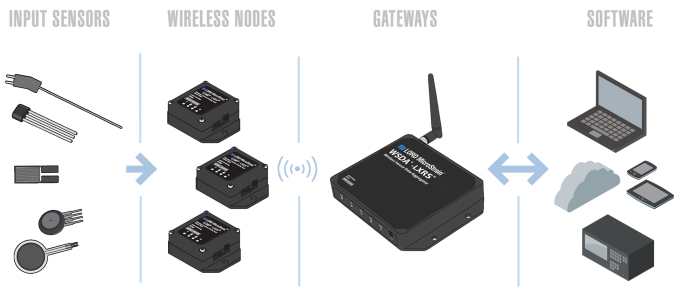
Wireless Sensor RS232 Base Station

WSDA®-Base-102-LXRS® - *RS232 data gateway for easy, reliable sensor data acquisition*

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.



Product Highlights

- Data acquisition gateway collects synchronized data from scalable networks of wireless sensors
- Provides seamless communication between the wireless sensor nodes and host computer
- Quick deployment with RS-232 host computer interface
- Compatible with all LORD MicroStrain® sensor nodes

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

- Easy out-of-the-box installation with data collection in minutes
- Scalable networks for easy expansion
- Remotely configure nodes, acquire and view sensor data with Node Commander®.
- Data visualization through web-based SensorCloud™ portal provides quick data navigation and analysis
- Easy custom integration with comprehensive SDK

Cost Effective

- Thousands of sensors managed from a single gateway
- Out-of-the box wireless sensing solution reduces development and deployment time.

Applications

- Structural health monitoring
- Equipment performance monitoring, verification, evaluation, and diagnostics
- Experimental test and measurement
- System control
- Environmental monitoring

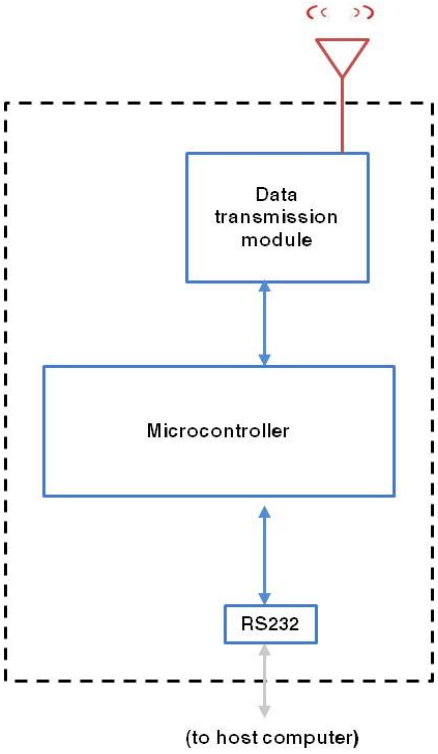
Wireless Simplicity, Hardwired Reliability™

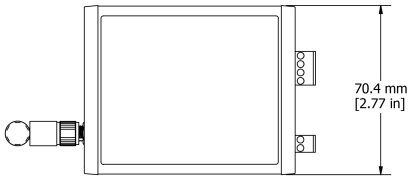
LORD MicroStrain®
SENSING SYSTEMS

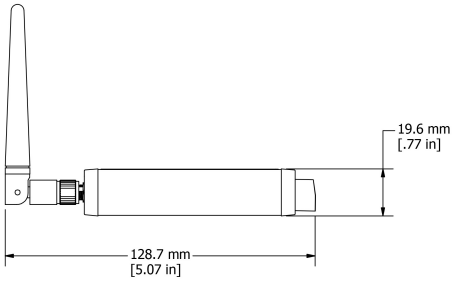
WSDA®-Base-102-LXRS® Wireless Sensor RS232 Base Station

Specifications

General	
Connectivity	RS-232 @ 921,600 bps (all sampling modes), 115,200 (not available in synchronized sampling mode)
Sampling	
Supported node sampling modes	Synchronized, low duty cycle, continuous, periodic burst, event-triggered, and datalogging
Synchronization beacon interval	1 Hz beacon provides ± 32 µsec node-to-node synchronization
Synchronization beacon 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
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 consumption	Idle: 45.7 mA; Eight active node channels operating at 256 Hz low duty cycle: 65.6 mA
Operating temperature	-40 °C to + 85 °C (electronics) -30 °C to +70 °C (enclosure/antenna)
Physical Specifications	
Dimensions	128 mm x 70 mm x 20 mm without antenna
Weight	131 grams
Enclosure material	Black anodized aluminum
Integration	
Connectors	Screw terminal blocks, micro-USB (optional power input only, no USB communication)
Communications cable	Pin terminal to DB9
Compatible sensor nodes	All LXRS® sensor nodes, all legacy 2.4 GHz nodes
Firmware	Firmware upgradeable through software interface
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,**

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