

PRODUCT DATA

MicroStrain WSDA-101

Wireless Analog Output Base Station

MICROSTRAIN WSDA-101 SPECIFICATIONS

MicroStrain by HBK 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 MicroStrain by HBK wireless sensing system. They coordinate and maintain wireless transmissions across a network of distributed wireless sensor nodes. The MicroStrain by HBK LXRS wireless communication protocol between LXRS nodes and gateways enable high-speed sampling, ± 50 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 SensorConnect 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
- Quick deployment with USB host computer interface
- Supports up to eight channels of analog outputs to data acquisition equipment (DAQ) from multiple nodes
- Can be used as a stand-alone device or simultaneously with a host computer
- Compatible with all MicroStrain by HBK sensor nodes

FEATURES AND BENEFITS

High Performance

- Lossless data throughput and node-to-node sampling synchronization of ± 50 μ s in LXRS-enabled modes
- Wireless range up to 2 km (800 m typical)

Ease of Use

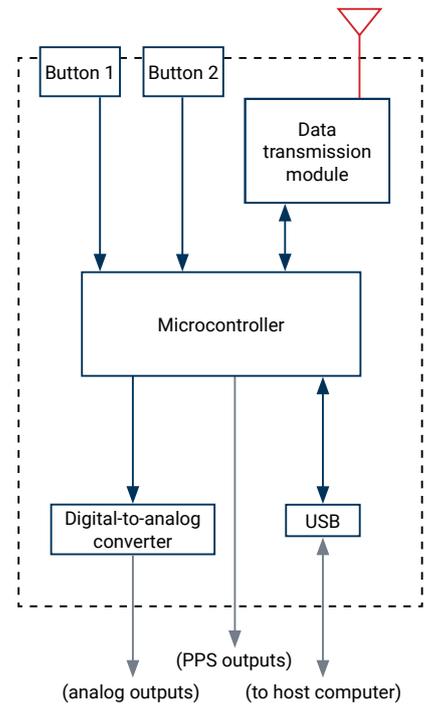
- Scalable networks for easy expansion
- Supports eight-channel connection with analog DAQ's
- Stand alone operation using front panel buttons
- Remotely configure nodes, acquire and view sensor data with SensorConnect.
- Data visualization through web-based SensorCloud™ portal provides quick data navigation and analysis
- Easy custom integration with comprehensive SDK

Cost Effective

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



General	
Connectivity	USB 2.0 virtual serial communication @ 921,600 bps
Analog Outputs	
Analog output	Eight channels, 0 VDC to 3 VDC, 1 analog update indicator channel and 1 input/output pulse per second channel, supports streaming and low duty cycle data collection
Analog stand alone operation	Front panel buttons provide access to most software functions including trigger, sleep, beacon and more
Analog low pass filter	-3 dB cutoff @ 375 Hz
Zero scale error	+ 5 mV (typical), + 20 mV (maximum)
Full scale error	- 4.5 mV (typical), - 30 mV (maximum)
Zero to full scale error	± 3 mV (maximum)
Sampling	
Supported node sampling modes	Synchronized, low duty cycle, continuous, periodic burst, event-triggered, and datalogging (analog output support in low duty cycle mode only)
Synchronization beacon interval	1 Hz beacon provides ± 50 µsec node-to-node synchronization
Synchronization beacon stability	± 5 ppm
Network capacity	Up to 127 nodes per RF channel (& per gateway) depending on number of active channels and sampling settings.
Operating Parameters	
Wireless communication range	Outdoor/line-of-sight: 2 km(ideal)*, 800 m (typical)** Indoor/obstructions: 50 m (typical)**
RF transmit power	User-adjustable from 0 dBm to 16 dBm. Power output restricted regionally to operate within legal requirements.
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	-30 °C to +70 °C
Physical Specifications	
Dimensions	128 mm x 70 mm x 20 mm without antenna
Weight	Weight 140 grams
Enclosure material	Black anodized aluminum
Physical Specifications	
Connectors	Micro-USB, screw terminal block
Communications cable	USB standard to USB micro-B (3 foot cable included in starter kit)
Front panel interface	Buttons for controlling node operation and sampling
Compatible sensor nodes	All LXRS sensor nodes, all legacy 2.4 GHz nodes
Firmware	Firmware upgradeable through software interface
Software	SensorConnect and SensorCloud
Software development kit (SDK)	www.hbkworld.com/en/products/software/inertial-sensor-software/mscl
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.