Watt-Link™ -LXRS®

Wireless Energy Monitoring Node

The **Watt-Link™ -LXRS® Wireless Energy Monitoring Node** makes it easy for users to collect time-synchronized power and energy measurements without the need to install expensive and maintenance intensive wiring. A flexible software configuration menu allows users to define their preferred monitoring settings including measurement type, CT ratings, sample rates, etc. Once configured, the Watt-Link will periodically transmit measurement values at user-settable intervals. The Watt-Link may be deployed in both local and remote monitoring applications. For local applications, users can select a WSDA®-Base gateway with USB, RS232, or Analog interface options. For remote monitoring applications, Watt-Link can be paired with a WSDA®-1000 gateway for secure, long term data publishing to SensorCloud™.

Features & Benefits

Wireless Simplicity, Hardwired Reliability

- Equipment performance monitoring, verification, evaluation, and diagnostics
- Synchronized monitoring of critical power system values
- Reliable wireless energy management, building automation, and metering
- SensorCloud – web-based power monitoring solution

Ease of Integration

- Small, wireless form factor
- Easy installation inside most electrical panels
- SDK enables quick custom app development
- Parasitically powered for long-term deployment

Cost Effective

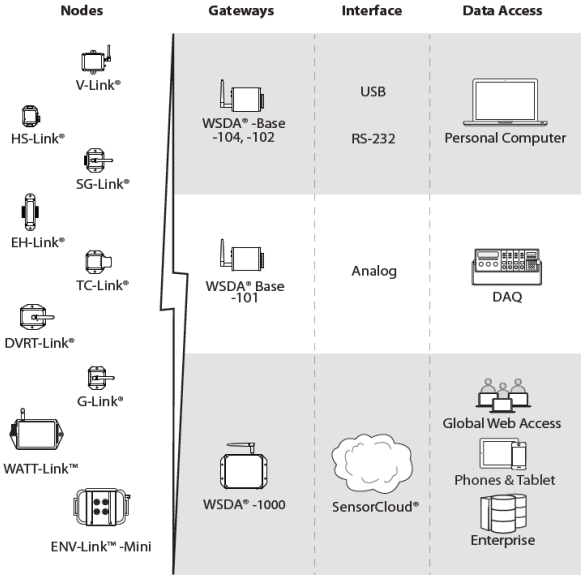
- Reduced cost and rapid time to market for customer's applications
- Aggressive volume discount schedule

Applications

- energy management
- building automation
- end use metering
- equipment performance monitoring

System Overview

At the heart of **LORD 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 radio communication to maximize the aggregate sample rate. Optional **SensorCloud™** enabled wireless sensor data aggregators support autonomous web-based data visualization, alerts, and reports.



Wireless Sensor Network (WSN)

LORD MicroStrain® SENSING SYSTEMS

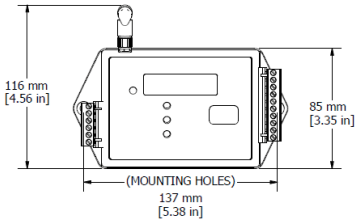
Watt-Link™ -LXRS® Wireless Energy Monitoring Node

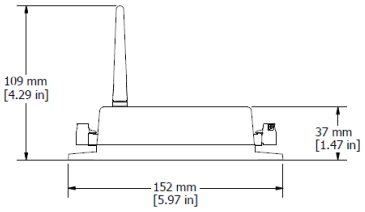
Specifications

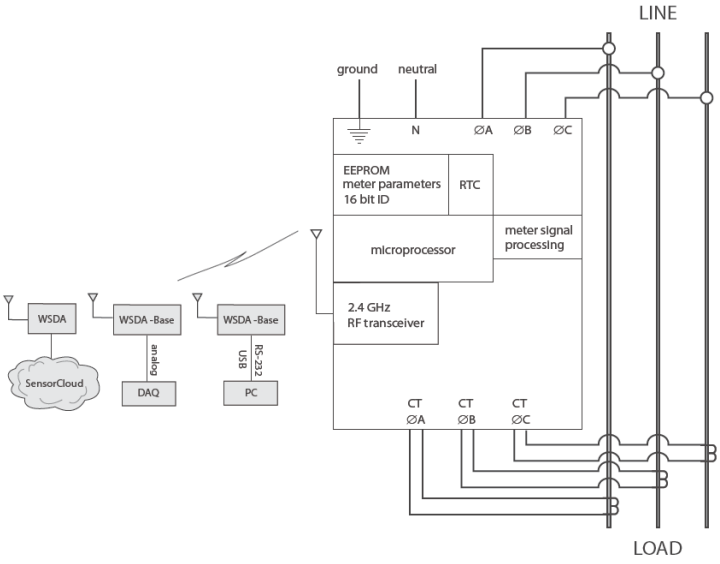
Input channels	current transformers (CT) 0.333 VAC nominal; 0 to 0.5 VAC operating; 3 VAC maximum
Connectors	Euroblock style pluggable screw terminal blocks • Green: 22 to 12 AWG (1.0 to 3.2 mm), 600 V • Black: 22 to 12 AWG (1.0 to 3.2 mm), 300 V
Measurement values	• true RMS Power in Watts (Phase A,B,C and sum of all phases) • reactive Power in VARs (Phase A,B,C and sum of all phases) • power Factor (Phase A,B,C and sum of all phases) • true RMS Energy in kWh (Phase A,B,C and sum of all phases) • reactive Energy in kVAR-hours (All Phases) • AC Frequency • computed RMS Current (Phase A,B,C) • demand, peak demand
Measurement accuracy	± 0.5 % nominal, see manual for details
Sample modes	synchronized & low duty cycle
Synchronized sampling rate	1/hr - 1Hz
Synchronization between nodes	± 32 µsec in synchronous sampling mode with 10 second beacon resync interval
Synchronous sample rate stability	± 3 ppm
Low duty cycle sampling rates	1/hr - 1Hz
Radio frequency (RF) transceiver carrier	2.4 GHz direct sequence spread spectrum, license free worldwide (2.405 to 2.470 GHz) – 14 channels, radiated power programmable from 0 dBm (1 mW) to 20 dBm (100 mW)
RF data packet standard	IEEE 802.15.4, open communication architecture
Range for bi-directional RF link	programmable communication range from 70 m to 2 km
Status LEDs	status indicators for phase A,B & C
Flame resistance rating	94V-0, IEC FV-0
Power	parasitically powered
Power consumption	10-30 mA
Operating temperature	-30 ˚C to +55 ˚C
Altitude	up to 2000 meters
Environmental	suitable for indoor use; suitable for outdoor use when mounted inside an electrical enclosure that is rated NEMA 3R or 4.
Dimensions	143 mm × 85 mm × 38 mm without antenna
Weight	305 g
Enclosure material	high impact ABS plastic
Compatible gateways	WSDA® -Base, WSDA® -1000
Software	Node Commander® Windows XP/Vista/7 compatible, SensorCloud™
Software development kit (SDK)	includes data communication protocol, EEPROM maps and sample code (OS and computing platform independent)
FCC ID	XJQMSLINK0003
IC ID	8505A-MSLINK0003
UL	E312220 (US & Canada)

Warning ⚠	**Watt-Link product must be installed and handled only by a licensed electrician authorized to conduct business in the jurisdiction in which the Watt-Link product is to be installed. See Watt-Link installation manual for full terms and conditions of use.**

Model	VAC Phase to Neutral	VAC Phase to Phase	Electrical Service Types	Neutral Required
3Y-208	120	208-240	1 Phase 2 Wire 120V with neutral 1 Phase 3 Wire 120V/240V 3 Phase 4 Wire 120V/208V	Yes
3Y-400	230	400	1 Phase 2 Wire 230V with neutral 3 Phase 4 Wire 230V/400V	Yes
3Y-480	277	480	3 Phase 4 Wire 277V/480V	Yes
3Y-600	347	600	3 Phase 4 Wire 347V/600V	Yes
3D-240	120-140	208-240	1 Phase 2 Wire 208V (No neutral) 1 Phase 2 Wire 240V (No neutral) 1 Phase 3 Wire 120V/240V 3 Phase 3 Wire 208V (No neutral) 3 Phase 4 Wire 120V/208V	No
3D-400	230	400	3 Phase 3 Wire 400V (No neutral) 3 Phase 4 Wire 230V/400V	No
3D-480	240-277	400-480	3 Phase 3 Wire 480V (No neutral) 3 Phase 4 Wire 277V/480V	No







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Patent Pending