

LineWatch M



Distribution Grid Sensing and Monitoring for Medium Voltage Applications

Power performance monitoring of the medium voltage distribution grid without a neutral connection

LineWatch M delivers near revenue grade (0.5%) current and voltage accuracy to address a variety of utility applications. The “bird-on-wire” design supports fast and safe hot stick installation greatly reducing deployment expense and total cost of ownership. LineWatch incorporates a flexible design that supports any utility communications platform.

Market applications:

Grid Automation

Enable remote monitoring and operation of grid infrastructure for more efficient and lower operational cost management.

Volt/VAR Optimization

Sensors can be used as part of a centralized VVO system or locally—an easily installable alternative to instrumentation transformers or line post sensors.

Substation Monitoring

Enables remote monitoring and supervision of critical assets located at substations without need for costly renovations or service interruptions.

Fault Detection and Outage Management

Easily identify the location of a fault to quicker power restoration.

Asset Management

Asset monitoring for improved management and allocation of capital.

Theft Detection/Anomalous Usage

Identify, reduce and eliminate power theft by deploying sensor technology as an energy balancing tool identifying losses, interruptions and anomalous usage.

Voltage , Current and Power Measurement

Improve the efficiency of the distribution grid by monitoring voltage, real and reactive power

Green Energy/Renewables Integration

Distributed generation interconnection permitting and ongoing monitoring.

FEATURES/BENEFITS

- Delivers near revenue-grade (0.5%) current and voltage accuracies
- No neutral connection
- Safe and easy installation with a hot stick
- Accommodates any utility communications platform
- Power quality measurements for voltage and current up to the 13th harmonic
- Records up to 40 fault current waveforms in the 10kA and 25kA range
- Continuous monitoring; data recorded in one minute intervals
- User configurable alarms/events
- Reporting available in three modes:
 - At scheduled intervals
 - By exception
 - On demand polling



Technical Specifications

Sensing System Capabilities

Available Configuration	Up to 6 Sensors per Data Collector	Reporting Interval	60 seconds
Electrical Frequency	50 and 60 Hz	Rated Current	400 Arms
Rated Voltage	2.4 to 19.9kVRMS ϕ to Neutral	Maximum Current	600 Arms
Voltage Accuracy	$\pm 0.5\%$	Current Accuracy	$\pm 0.5\%$
Power & Energy Accuracy	$\pm 1\%$	Power Quality	Computes amplitude of voltage/current up to the 13th harmonic; total harmonic distortion
Power Factor Accuracy	± 24 arc minutes	Data Storage	30 days of data; downloadable CSV or .XLSX file
Fault Detection	Waveform capture of fault currents as per IEEE 495 (10 kA and 25 kA scales, 4 cycles before fault, 8 after event starts)		

LineWatch M tested to ANSI C12.20 Standard

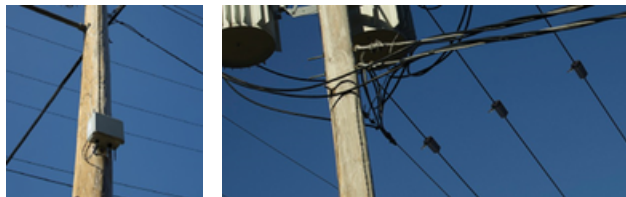
Physical and Environmental

Weight	Sensor – 4.4 lbs. Data Collector – 3.45 lbs.	Dimensions	Sensor – 9.1"W x 5.1"H x 10.2"D Data Collector – 10.5"W x 18.1"H x 5.9"D
Operating Temperature	-40°C to 50°C	Storage Temperature	-40°C to 85°C
Humidity	0 – 95% RH	NEMA Rating	Sensor – IP65 Data Collector – NEMA 4X (6 available)
Environmental Condition	Patent-pending weather resistant sensing method, impervious to rain/snow/etc.	Conductor Size	Maximum conductor size: 447 kcmil Minimum conductor size: #2 AWG

Communications and Security

Communication Option	Wired Ethernet Port	System Logs	Maximum conductor size: 447 kcmil Minimum conductor size: #2 AWG
	WiFi 802.11 b/g/n		
	Cellular Modem Communications Supports 4G LTE Networks and CDMA/GSM	DNP3 Communication	DNP3 Level 4+ Subset Definitions
	WIMAX	Communications Protocols	On demand reporting to a central monitoring or SCADA system compatible via DNP3
	Serial Port for NIC integration		Support also includes TCP / IPv4, TCP / IPv6, UDP / IPv4, UDP / IPv6

LineWatch Medium Voltage Collector mounted on utility pole



LineWatch Medium Voltage Sensors deployed on utility lines



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