



# 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
- User configurable alarms/events
- Remote monitoring of grid infrastructure
- Integrated reporting tools
- Data storage up to 30 days
- Browser based user interface
- Grid intelligence for reducing operating and maintenance costs and improving grid stability
- Simple installation; clamp fits a wide variety of conductors and bus bars
- Integrated voltage and current sensors

# Technical Specifications

## Sensing System Capabilities

<b>Available Configuration</b>	Up to 6 Sensors per Data Collector	<b>Reporting Interval</b>	60 seconds
<b>Electrical Frequency</b>	50 and 60 Hz	<b>Rated Current</b>	400 Arms
<b>Rated Voltage</b>	2.4 to 19.9 kV <sub>RMS</sub> $\phi$ to Neutral	<b>Maximum Current</b>	600 Arms
<b>Voltage Accuracy</b>	$\pm 0.5\%$	<b>Current Accuracy</b>	$\pm 0.5\%$
<b>Power &amp; Energy Accuracy</b>	$\pm 1\%$	<b>Power Quality</b>	Computes amplitude of voltage/current up to the 13th harmonic; total harmonic distortion
<b>Power Factor Accuracy</b>	$\pm 24$ arc minutes	<b>Data Storage</b>	30 days of data; downloadable CSV or .XLSX file
<b>Fault Detection</b>	Waveform capture of fault current 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

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

### Communications and Security

<b>Communication Option</b>	Wired Ethernet Port	<b>System Logs</b>	30 days of storage of 1 minute intervals of measurement, system and status data
	WiFi 802.11 b/g/n		
	Cellular Modem Communications Supports 4G LTE Networks and CDMA/GSM	<b>DNP3 Communication</b>	DNP3 Level 4+ Subset Definitions
	WiMAX	<b>Communications Protocols</b>	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



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