

# LineTracker

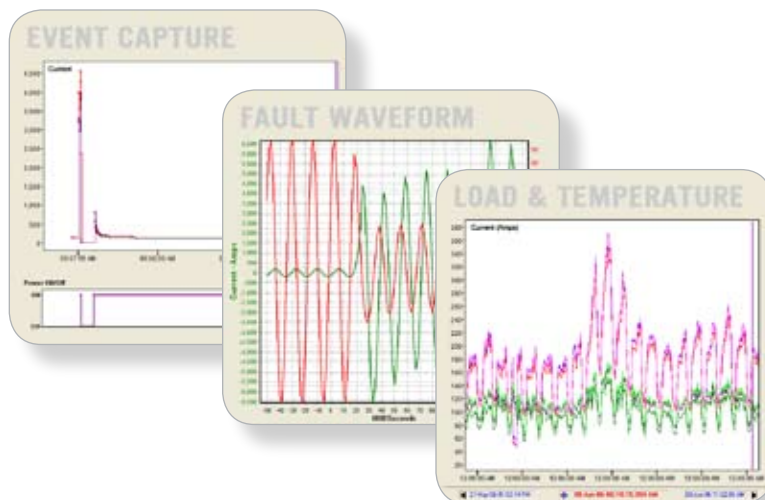
Intelligent Grid Monitoring

## LT50

Transmission Temperature,  
Load & Event Recorder

- Transmission Monitoring
- Line Capacity Ratings
- Troubleshooting
- Capacity Planning
- Asset Optimization

The LT50 System offers cost effective, real-time wireless Smart Grid monitoring of overhead distribution circuits up to 138KV. Critical line condition and performance parameters, including Fault, Protection Operation, Outage, Restoration and Loading are captured providing the data needed to optimize asset utilization and to improve system reliability and quality of supply.



### Features

- ✓ Up to 138KV
- ✓ Live Installation
- ✓ Wireless
- ✓ Self-Powered
- ✓ Easy to use

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# LineTracker LT50

## Intelligent Grid Monitoring

The LineTracker series of overhead line recorders are the most versatile, powerful and the only self-powered intelligent devices available to Power Utilities. The LineTracker provides accurate information on the performance and condition of the lines allowing utilities to quickly respond to failing equipment, over-loading conditions and reliability issues.

LineTracker recorders can be quickly installed on live lines at any point on the overhead distribution system (e.g. substation busbar, beyond non-intelligent reclosers, switches, risers, taps, midpoints etc.) to measure and record critical load, fault and operational parameters.

With the LineTrackers built-in wireless communications, utilities can wirelessly download data onsite or remotely without removing the recorders from the line or waiting for available line crews. The solar cell and battery power system provides the means for long term monitoring without the risk of battery failure, high maintenance costs or lost data.

The LineTracker System is a proven, smart and versatile monitoring solution for Power Utilities and is used daily by System Planners, Distribution Engineers, Troubleshooters, and Protection and Substation Engineers.



### Sensing & Detection

The LT50's Current, E-field and temperature sensors continuously monitor and adapt to line conditions. Advanced algorithms identifies when a Fault, Power-Loss or Power-Return, Overload or Over-Temperature occurs recording a 60 sec RMS and 12-Cycle Waveform snapshot to memory. Visual fault indication is provided for patrolling line crews. The LT50 also functions as a transmission load, and conductor and ambient temperature recorder.



### Wireless Communications

The LineTracker uses license-free radio communications for wireless link-up. The LT-DataLink reader is connected to a laptop and, with the software, the user can retrieve data within 150ft of the LineTracker without the need or expense of scheduling a line crew or bucket truck. Utilizing flash memory firmware the LineTracker can also be upgraded wirelessly whenever new features are made available.



### Remote Monitoring

Remote monitoring is achieved by simply installing a Pole Attached Concentrator (PAC) within 150ft of the LineTrackers. The PAC wirelessly links up with the LineTrackers to retrieve data and facilitates unsolicited and scheduled remote data transfer using Cellular, Satellite, TCP/IP or Radio communications. The sites can be queried by operators and the data can be integrated seamlessly to SCADA, Historians and other third party systems.



### Viewing & Analysis

The intuitive LineView software is used to analyze LineTracker data files and provides graphical and table displays of event captures, waveforms and load profiles. Individual or multiple files can be viewed on the same graph and can be exported to Excel.



### Technical Specifications

**Line Voltage** 1 to 138kV Phase-to-Phase  
**Frequency** 45-65Hz  
**Circuits** Overhead radial lines  
**Conductor Range** 0.25"(6mm) to 1.33" (32mm) diameter  
**Visual Indication** High Intensity Red and Amber LEDs  
 Fault Indication Red LED every 10 seconds  
 Line Status Amber LED every 30 seconds  
 Fault Indication Reset Time based and/or line restoration reset  
**Communications** Wireless Local and Remote options  
 Local RF low powered. License free range 150ft (46m)  
 Remote Cell (GSM/CDMA), TCP-IP, Landline, Satellite  
 Systems Integration SCADA & Historian integration tools available  
**Energy Storage** 1x2v 8Ah rechargeable sealed lead acid battery  
**Power Source** 0.5W solar cell  
**Operating Temperature** -14F (-25C) to +120F (+65C)  
**Survival Temperature** -58F (-50C) to +185F (+85C)  
**Housing Material** UV Stabilized Polycarbonate and Aluminium Diecast  
**Ingress Protection** IP65 Weatherproof  
**Dimensions** 14 H x 5 L x 5 W in. (35 H x 13 L x 13 L cm)

### Measured Parameters

Fault / Event Capture

Current and Power (On/Off)  
 60-Sec RMS profile (I & E-Field)  
 Pre-event Line Loading  
 Fault Current Magnitude up to 25KA  
 Fault Current Waveform (12-cycles)  
 E-Field Waveform % Change (12-cycles)  
 Post-event Line Loading

### Protection Operations

Time to Trip  
 Number of Trips  
 Inrush Current  
 Time of Power-Off  
 Time of Power-On and Outage Period  
 User defined averaged profile (1-60 mins) of Load,  
 Conductor & Ambient Temperatures up to +257F (+125C)  
 Current +1% of reading +2 A, Temp + 1 DegF  
 Rolling partitioned memory  
 100+ events  
 34  
 Up to 85 days  
 4.4lbs (2kg)

### Sample Rate

Accuracy  
 Memory Storage Capacity  
 RMS Records (60sec)  
 Fault Waveforms  
 Load Profiling  
 Weight