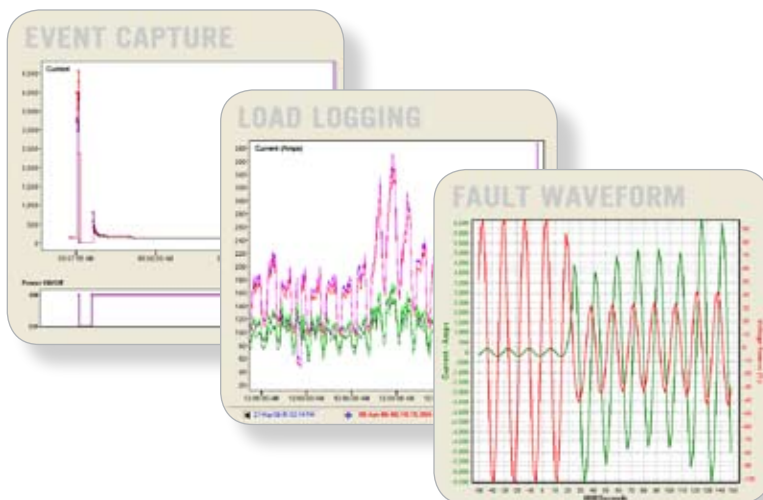# LineTracker
Intelligent Grid Monitoring
LT40

Distribution Load Logger & Fault Recorder

- Distribution Monitoring
- Substation Monitoring
- Fault Finding
- Line Balancing
- Capacity Planning

The LT40 System offers cost effective, real-time wireless Smart Grid monitoring of overhead distribution circuits up to 69KV. 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.

EVENT CAPTURE

LOAD LOGGING

FAULT WAVEFORM

Features
- ☑ Up to 69KV
- ☑ Live Installation
- ☑ Wireless
- ☑ Self-Powered
- ☑ Easy to use

GridSense™
T&D Solutions Since 1974

LineTracker **LT40**
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**.
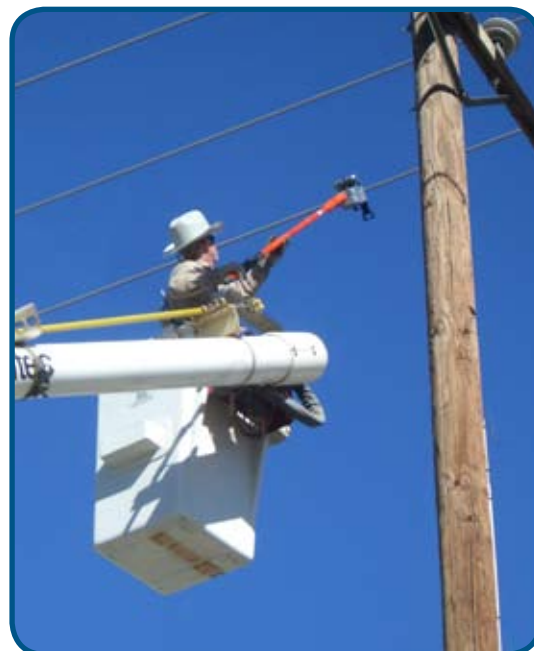
Sensing & Detection

LT40 The LT40 Current and E-field sensors continuously monitor and adapt to line conditions. A hierarchy of algorithms is used to capture data when a Fault, Power-Loss or Power-Return occurs. Upon event trigger, a 60 sec RMS and 12-Cycle Waveform snapshot are captured and recorded to memory. Visual fault indication is provided for patrolling line crews. In parallel to event recording, the LT40 also functions as a distribution load logger.

Wireless Communications

LT-DataLink 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.
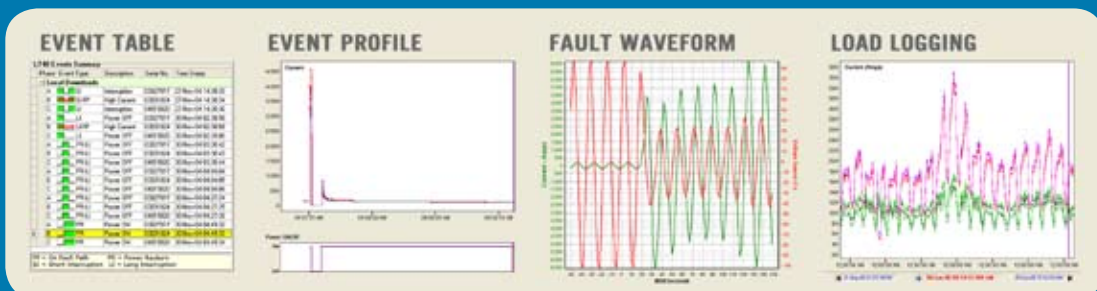
Remote Monitoring

PAC 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

LineView 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.

EVENT TABLE	EVENT PROFILE	FAULT WAVEFORM	LOAD LOGGING

Technical Specifications

Line Voltage	1 to 69kV Phase-to-Phase	**Measured Parameters**	Current and Power (On/Off)
Frequency	45-65Hz	Fault / Event Capture	60-Sec RMS profile (I & E-Field)
Circuits	Overhead radial lines		Pre-event Line Loading
Conductor Range	0.25" (6mm) to 1" (26mm) diameter		Fault Current Magnitude up to 25KA
Visual Indication	High Intensity Red and Amber LEDs		Fault Current Waveform (12-cycles)
Fault Indication	Red LED every 10 seconds		E-Field Waveform % Change (12-cycles)
Line Status	Amber LED every 30 seconds		Post-event Line Loading
Fault Indication Reset	Time based and/or line restoration reset	Protection Operations	Time to Trip
Communications	Wireless Local and Remote options		Number of Trips
Local RF	low powered. License free range 150ft (46m)		Inrush Current
Remote	Cell (GSM/CDMA), TCP-IP, Landline, Satellite	Power Outage	Time of Power-Off
Systems Integration	SCADA & Historian integration tools available	Power Restoration	Time of Power-On and Outage Period
Energy Storage	1x2v 8Ah rechargeable sealed lead acid battery	Load Profiling	User defined averaged profile (1-60 mins)
Power Source	0.5W solar cell	**Sample Rate**	Current 1200Hz, E-Field 600Hz
Operating Temperature	-14F (-25C) to +120F (+65C)	**Accuracy**	Current +1% of reading +2 A
Survival Temperature	-58F (-50C) to +185F (+85C)	**Memory Storage Capacity**	Rolling partitioned memory
Housing Material	UV Stabilized Polycarbonate and Aluminium Diecast	RMS Records (60sec)	100+ events
Ingress Protection	IP65 Weatherproof	Fault Waveforms	34
Dimensions	14 H x 5 L x 5 W in. (35 H x 13 L x 13 L cm)	Load Profiling	Up to 85 days
		Weight	4.4lbs (2kg)