

TLM[®] Conductor Monitor

Real Time Transmission Line Conductor Monitor

Accurate, real-time, conductor clearance measurement device for facility ratings, compliance and dynamic line rating applications.

The Lindsey TLM[®] Conductor Monitor provides a complete picture of conductor behavior including actual conductor clearance-to-ground, conductor temperature, line current, and vibration. Unlike other transmission line monitors that use ancillary measurements to infer sag, not clearance, the TLM monitor provides accurate, actionable, clearance-to-ground distance measurements. The TLM monitor is an affordable, easily installed, self-powered conductor monitoring solution for system voltages up to 765kV.

Conductor Clearance

The distance of the nearest object to the conductor is measured using an on-board LIDAR sensor providing a highly accurate ($\pm 0.3\%$ at 120ft/36m) line clearance measurement regardless of tower or insulator motion, varying span lengths or other line conditions. Can be used to measure line clearance to under-crossing lines.

Line Current

Accurate line current is measured ($\pm 1\%$) simultaneously with conductor clearance and temperature; critical information on lines with multiple taps.

Conductor and Ambient Temperature

Keep track of excessive temperatures that lead to conductor annealing. Provide input to dynamic line rating systems such as Lindsey's SMARTLINE-DLR[™], and transmission line capacity forecasting systems such as Lindsey's SMARTLINE-TCF[™].

Vibration

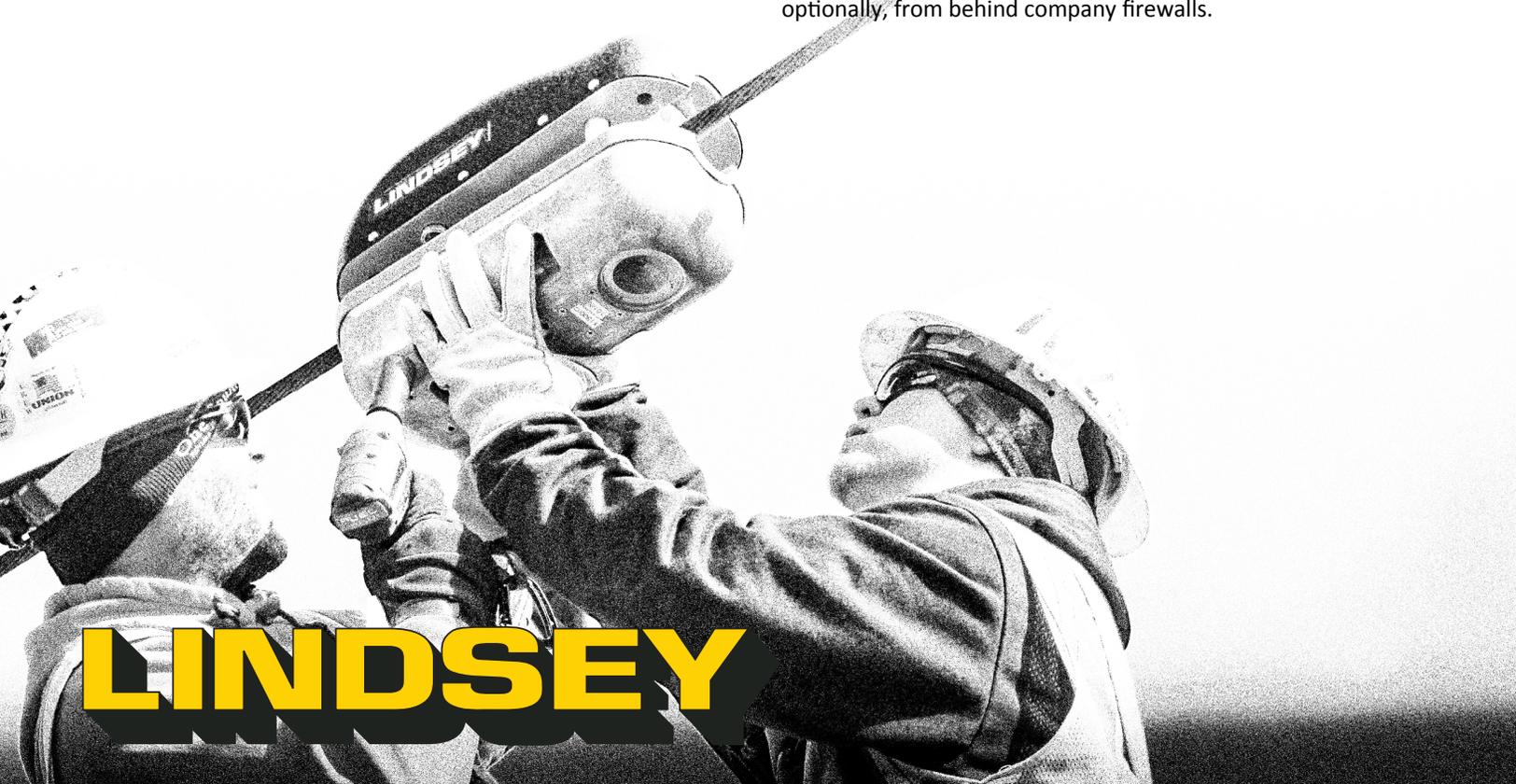
Three-axis MEMS accelerometer and built-in Fast Fourier Transform processing monitors the vibration frequency spectrum of the conductor providing tilt and roll indication and detection of the abnormal vibration patterns associated with line galloping and Aeolian vibration.

Self-Powered, Simple Installation

Self-powered by line current as low as 100A. Fast live line installation using hot stick, helicopter, or bare hand practices. No modifications to transmission towers or insulator/hardware assemblies are required. Suitable for use on bundled conductor.

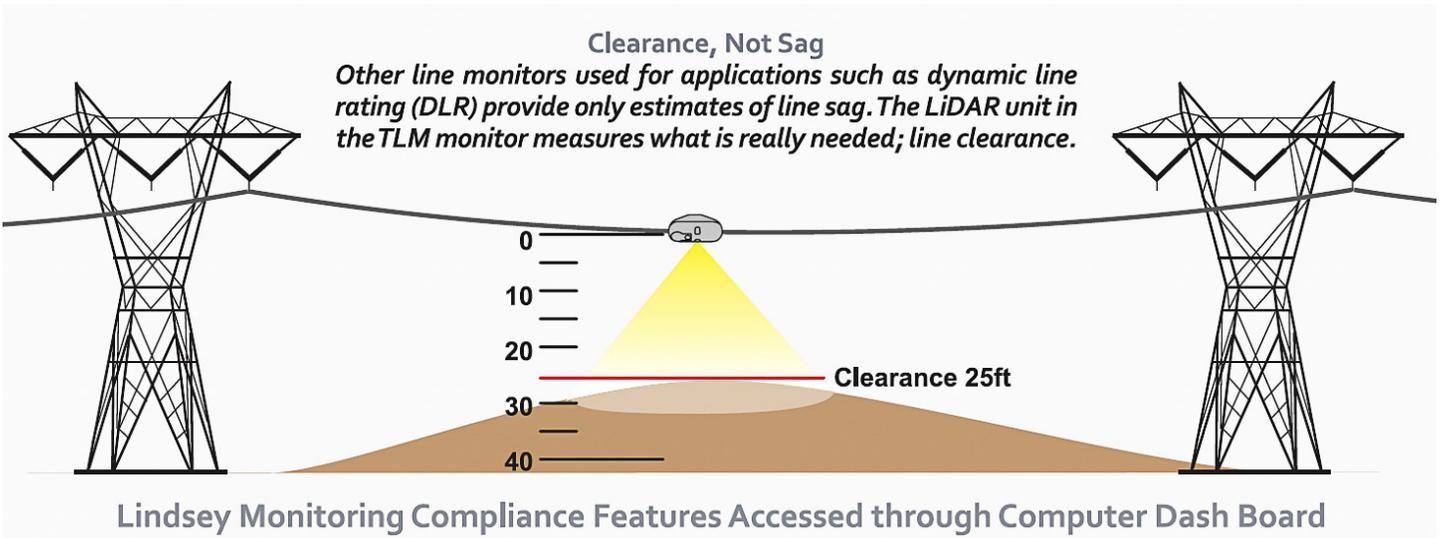
Flexible Data Output

All data from the TLM monitor may be directly passed as SCADA points for immediate use with the need for additional software. Lindsey's TLM dashboard application provides a graphical view of history data, and may be accessed from the cloud, or optionally, from behind company firewalls.



LINDSEY

TLM Conductor Monitor



Reliable, See Anywhere, Satellite Communications

Satellite radio ensures reliable communications in even the most remote locations with no dependence on any other infrastructure. Use of the Iridium satellite network requires no other hardware to be installed on the line other than the TLM devices, and requires no other setup or configuration effort as is typically associated with an RTU. TLM monitors are factory configured for immediate connection to the Iridium network after installation on a transmission line.

All TLM monitors are pre-configured to ensure hands-free communication upon power-up.



Simple Installation
 Hotstick, helicopter, and bare hand installation methods may be used with the TLM monitor.

Specifications

Parameter	Specification
Conductor current	100 - 1500A
Conductor voltage	765kV L-L max
AC voltage frequency	50Hz - 60Hz
Conductor temperature	356°F (180°C) max
Conductor size	Up to 1.8" (46mm)
Conductor type	Aluminum or copper
Vibration sensor frequency	1 kHz max
Tilt-pitch	-90° to +90°
Angle-roll	-90° to +90°
Height sensor distance	120ft (36.6m) max
Height sensor accuracy	+/- 4" (+/- 100mm)
Operating ambient temperature	158°F (70°C) max
Dimensions	16.5" (L) x 6.75" (W) x 8.75" (H) (420mm x 170mm x 220mm)
Weight	17 lbs (7.7kg)

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