

# AEOLUS® LINE MONITORING

The World's Most Advanced System for Measuring and Analyzing  
Wind-Induced Conductor Motion

Aeolus is a revolutionary new field testing solution that enables line engineers and electric utilities to monitor and analyze wind-induced conductor motion on overhead lines, empowering individuals to delve deeper into the mechanical behavior of overhead conductors and associated transmission line hardware like never before.

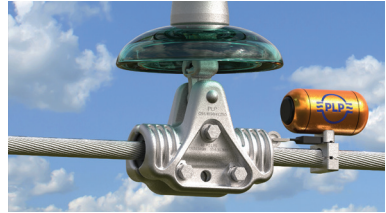
Whether validating newly installed damping systems or investigating line performance and failures, Aeolus is transforming the industry's understanding and management of conductor dynamics.

## NEXT-GENERATION SENSOR NODES

Multiple lightweight sensor nodes installed on a transmission line span accurately detect and measure all forms of wind-induced conductor motion.

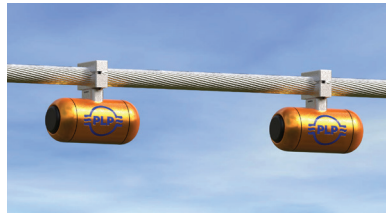
### AEOLIAN VIBRATION

- Bending amplitude
- Antinode amplitude
- Damping efficiency



### HIGH-AMPLITUDE CONDUCTOR MOTION

- Galloping
- Wake-induced motion
- Subspan oscillation
- Ice shedding
- Conductor sway / Wind gust response



## WIRELESS DATA HUB & WEATHER STATION

The Aeolus data hub seamlessly connects the sensor nodes to the cloud, enabling reliable data synchronization, transmission, and access.

- Aggregates and synchronizes time-domain data from all sensor nodes
- Secure cellular upload to cloud-based analytics platform
- Self-sustaining, renewable power system with lithium iron phosphate batteries
- Supports multiple wireless weather stations for accurate environmental monitoring



## WEB-BASED USER INTERFACE

The Aeolus web platform puts real-world conductor motion data at your fingertips, delivering near-real-time visibility, analysis, and control from anywhere in the world.

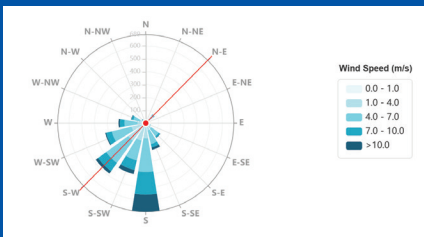
- Access sensor data anytime, anywhere
- Advanced analytics and visualization tools
- Download raw time-domain data for in-depth study
- Run custom, user-defined processing scripts
- Set intelligent alerts based on operating conditions
- Configure and manage sensors remotely



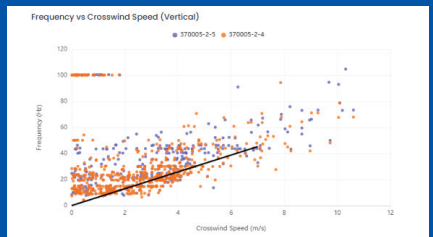
Temperature



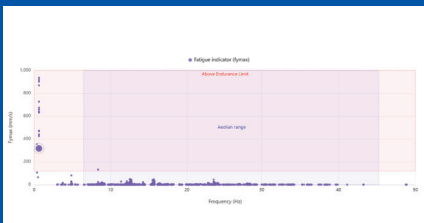
Wind Speed Distribution



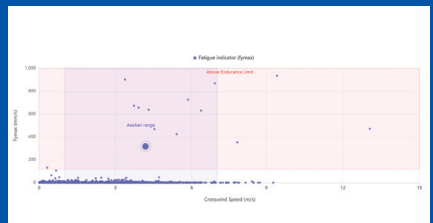
Wind Direction



Frequency vs. Crosswind Speed



Fymax vs. Frequency



Fymax vs. Crosswind Speed

# AEOLUS® LITE

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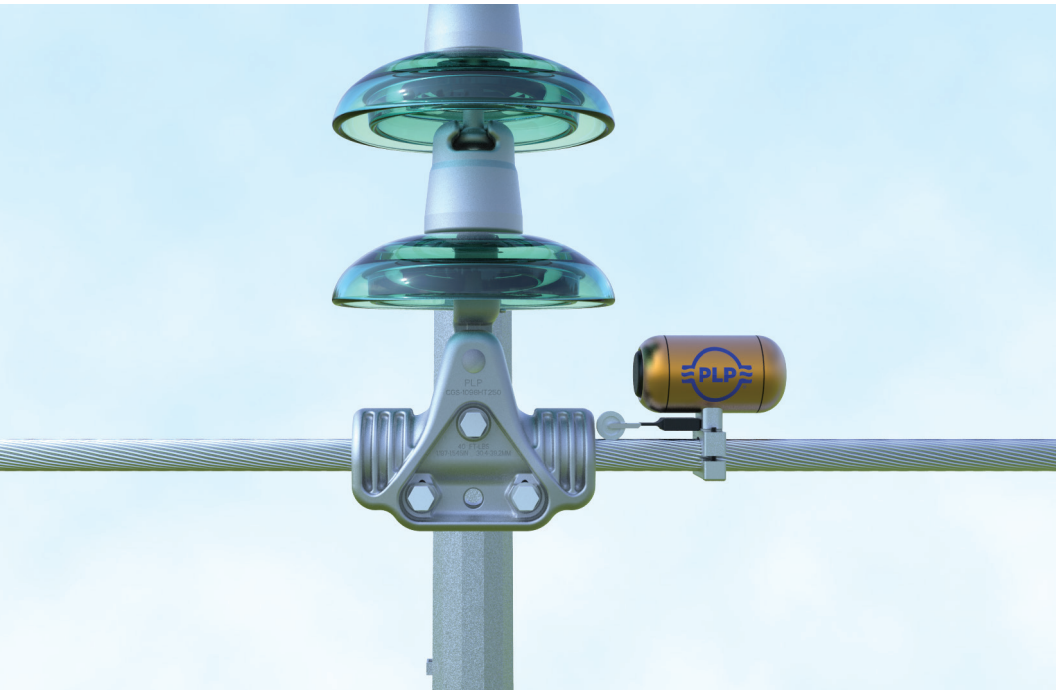
## ACCESSIBLE VIBRATION MONITORING FOR EVERY LINE

Aeolus Lite is a compact, self-contained vibration monitoring device that delivers professional-grade conductor fatigue assessment without the complexity of a full system deployment.

Bridging the gap between traditional recorders and cloud-connected monitoring, Aeolus Lite provides a simple, effective way to evaluate vibration performance during commissioning, new construction, or maintenance activities.

### KEY BENEFITS

- Easy deployment — Installed by in-house crews, no specialist support required
- Ground-based access — Configure and retrieve data via smartphone and BLE
- Proven analysis — Industry-standard vibration and fatigue assessment
- On-demand insights — Generate reports anytime via the web app
- Cost-effective — Entry-level solution with upgrade path to full Aeolus



## HOW IT WORKS

Aeolus Lite utilizes a single, self-powered unit that clamps directly onto the conductor near the suspension clamp.

- Install on the conductor — no gateway, weather station, or external power required
- Connect via smartphone — configure and retrieve data using the Android app and BLE from the ground
- Measure vibration — captures conductor motion using the Inverse Bending Amplitude Method
- Transfer data — download to smartphone and upload to the Aeolus Lite web application
- Analyze results — visualize vibration levels, assess fatigue, and generate reports on demand



# PRODUCT COMPARISON

## CHOOSING THE RIGHT SOLUTION

Aeolus and Aeolus Lite are complementary solutions designed for different monitoring needs. Aeolus is built for continuous remote monitoring, multi-span coverage, and full conductor motion diagnostics, whereas Aeolus Lite is ideal for commissioning damping systems and performing spot checks.

	Aeolus®	Aeolus® Lite
<b>Deployment</b>	Multi-location — Aeolus field support required	Single point — self-installed
<b>Monitoring Duration</b>	Long-term	Short-term
<b>Data Access</b>	Remote, automatic cloud connectivity	Periodic cloud upload via smart-phone — requires site visit
<b>Conductor Motion</b>	Aeolian vibration, galloping, wake-induced motion, conductor sway	Aeolian vibration
<b>Best For</b>	Troubleshooting complex motion control issues, long-term line health monitoring	Commissioning damping systems, spot checks

## SYSTEM SPECIFICATIONS

	Aeolus®	Aeolus® Lite
<b>Autonomy</b>	Sensor nodes: 12 months Hub: self-powered	6 months
<b>Power Source</b>	Sensor nodes: primary lithium battery Hub: solar/wind	Primary lithium battery
<b>Weight</b>	Sensor nodes: 500 g Hub: 10 kg	500 g
<b>Clamp Range</b>	Ø 19 mm – 79 mm (0.354 in – 2.36 in)	Ø 19 mm – 79 mm (0.354 in – 2.36 in)
<b>Operating Temperature</b>	Ambient: -40°C to 50°C Conductor: -40°C to 220°C	Ambient: -40°C to 50°C Conductor: -40°C to 220°C
<b>Connectivity</b>	Automatic cellular upload (3G/4G/LTE/5G) to cloud. Sensor nodes: 868/915 MHz	BLE (Bluetooth Low Energy) download to Android app, then uploaded to web platform Range: 100 ft
<b>App / Interface</b>	Web platform	Android app + Aeolus Lite web platform



Visit [aeolus.plp.com](https://aeolus.plp.com) for more information.





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