

Digital Detection of Leaking Transformers: Faster, Smarter, and Cost Effective

Reduce costs and transition to proactive maintenance with enhanced visibility and analytics

LIMITED VISIBILITY IMPEDES EFFECTIVE TRANSFORMER LEAK DETECTION

Research indicates that 10-15% of transformers experience oil leaks during operation. Even minor leaks can lead to soil and water contamination, resulting in costly cleanup efforts and regulatory fines. Additionally, oil leaks reduce transformer lifespan and increase the risk of fires and outages.

With limited visibility into distribution infrastructure—where 92% of outages occur—utilities rely on expensive, inefficient physical inspections to detect and address leaking transformers. In many cases, they must wait for customer complaints after damage has already occurred.

AN INTELLIGENCE-LED APPROACH TO DIGITAL INSPECTION AND FAST, EFFECTIVE MITIGATION

Ubicquia's UbiGrid® Distribution Transformer Monitor and UbiVu® Intelligent Asset Management platform offer deep visibility into distribution infrastructure, enabling utilities to proactively detect and mitigate leaking transformers. By combining sensor data with GPS mapping and advanced analytics, utilities can pinpoint key attributes associated with oil leaks, such as oil pressure, transformer load, and ambient temperature.

This enhanced situational awareness allows utilities to conduct digital inspections and accurately identify problem transformers, moving away from costly scheduled inspections to a condition-based maintenance approach.

Our sensors and analytics provide real-time reporting on transformer health and performance, issuing alerts to address potential issues before they lead to outages. With the UbiVu platform, utilities can maintain an accurate transformer inventory, rapidly identifying problem units to schedule timely repairs or replacements.

MAKING DISTRIBUTION INFRASTRUCTURE SMARTER AND MORE VISIBLE



Normal Transformer Operations

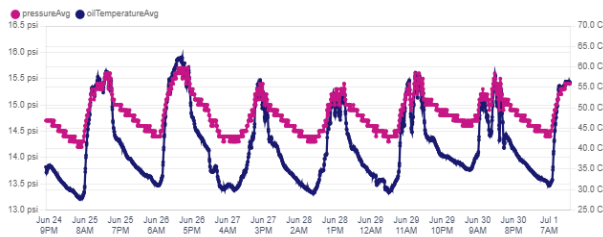
UbiGrid DTM+ tracks vital metrics, including transformer load, oil temperature, oil pressure, and ambient temperature. When the transformer is sealed properly and functioning, the oil pressure will fluctuate in direct correlation with the transformer's oil temperature and load.



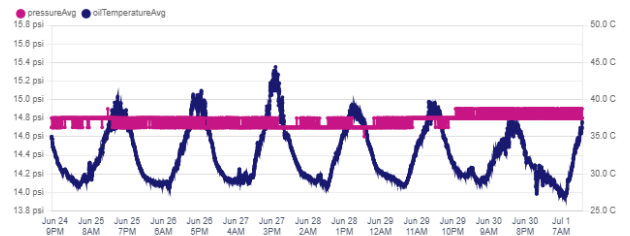
Lost Seal and Potential Oil Leak

When a transformer loses its hermetic seal and begins leaking oil, the pressure will no longer fluctuate with oil or ambient temperature, instead remaining static—an early indicator of a leak.

Leak Detection



Leak Detection



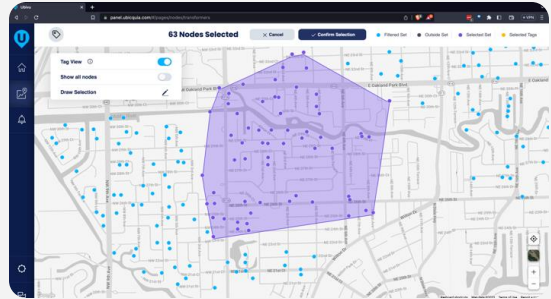
INSIGHTS FOR FASTER ACTION

By providing direct insights into failing seals, Ubiacqua's solution reduces operations and maintenance costs while minimizing environmental impacts from leaking transformers. These proactive alerts help prevent minor issues from escalating into critical problems.

Beyond addressing transformer leaks, the UbiGrid DTM+ and UbiVu platforms offer real-time situational awareness of primary and secondary current and voltage, as well as overall transformer health. This capability enables utilities to identify potential issues before they lead to failures or outages.



ADVANCED SENSORS, COMMUNICATIONS AND DATA SCIENCE



UbiGrid DTM+ and UbiVu: Delivering Comprehensive Visibility into Distribution Infrastructure

VISIBILITY FROM SUBSTATION TO METER

The UbiGrid DTM+ installs on single or three-phase pole or pad mount transformers in minutes, instantly transmitting data to enhance grid visibility.

It collects and sends vital transformer and grid data over LTE to the UbiVu cloud-based asset management platform. UbiVu leverages predictive analytics, detailed reporting, and data visualization to close the visibility gap and identify problems before they cause outages.

With open APIs, UbiGrid DTM+ seamlessly integrates with existing grid operations and OSS systems for streamlined operations.



ABOUT UBICQUIA

Ubicquia® revolutionizes critical infrastructure, transforming it into intelligent systems that drive energy efficiency, bolster grid resilience, and streamline operations for utilities and municipalities. Harnessing the power of advanced analytics and AI, Ubicquia processes over 2 billion data points daily, providing insights to optimize the management of streetlights, distribution transformers, and utility poles. Its cutting-edge platforms—featuring sensors, software, and seamless connectivity—are deployed in more than 800 cities and integrated with top-tier manufacturers of streetlights, transformers, and public safety solutions. Ubicquia is head quartered in Florida, supported by a team of over 185 innovators, and holds 95+ U.S. patents.

To learn more:

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