APPLICATION FLYER

Switchgear and Busbar Temperature Monitoring

The Challenge

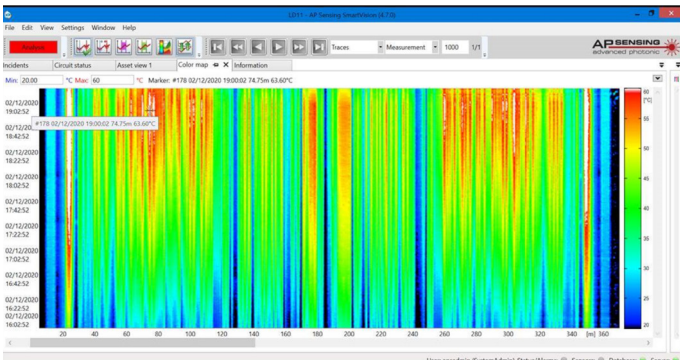
Facility managers seek peace of mind when monitoring the operations of their electrical power distribution infrastructure. Despite obtaining a manufacturer certification, panel builder verification and the execution of regular maintenance, switchgear and busbars are not immune to system failure and malfunction. Current-carrying devices disspate energy as heat, particularly under complex modern loads with unpredictable power demands. According to the Institute of Electrical Engineers (IEE), failure of electrical components is three times higher without preventative maintenance. Condition monitoring of switchgear is pertinent for **system reliability** and to **prevent failures and outages**.

Traditional monitoring methods such as thermography surveys are typically conducted as per business requirements. With large and complex assets, such surveys are time consuming. Additionally, not all assets in modern facilities provide line-of-sight accessibility.

The Innovation

The AP Sensing Fiber Optic Distributed Temperature Sensing (DTS) solution is a practical and low maintenance solution that **alerts, identifies and locates every hotspot or temperature rise** in real time. **Temperature rise testing** is one of the recommendations of **IEC 61439;** our system for monitoring switchgear and busbars is **easily integrated** with new installations or retrofitted to existing infrastructure.

Switchgear and busbars can be constantly and comprehensively monitored for temperature rises without a complicated setup. Our solution provides reliable and intelligent alarming to the facility manager well before any possible disruptive incidents occur.



SmartVision™ displaying busbar temperature color map

Extensive Coverage

The AP Sensing Linear Heat Detection (LHD) solution consists of a fiber optic sensor cable fitted within the switchgear or attached to the busbar, plus a DTS control instrument that measures a complete temperature profile within seconds. The single run of sensor cable **monitors the entire switchgear or busbar** infrastructure, covering all panels, busbars and joints.

Alarm zones are freely configurable, with various user-programmable temperature alarms utilizing static, rate-of-rise, maximum and adaptive parameters. This ensures **fast detection and localization** of critical high temperatures, while **minimizing false alarms**.

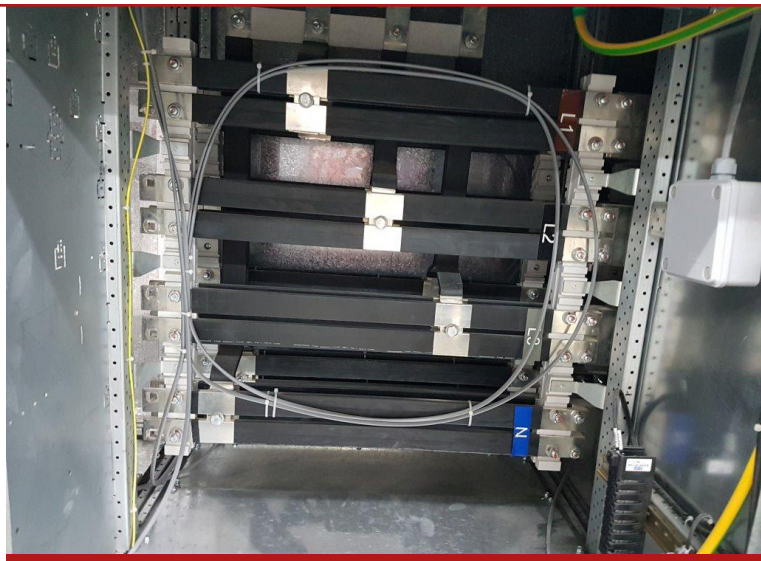
In the case of an alarm, operators automatically receive the precise physical location of the elevated temperature or hotspot. Our system also provides an intuitive visualization of the measured temperatures of the internal switchgear / panel temperature distribution, enabling an instant correlation between hotspots and alarms. Lastly, the system is integrable with SCADA, where temperature values and alarms can be presented and processed further.

Reliable & Cost-Effective

Our DTS solution is thoroughly tested, with the most complete set of certifications on the market (VdS, UL, FM, ATEX, IECEx, SIL) and a 33 year MTBF. It is robust and has passed highly demanding type testing.

The sensor cables are passive, immune to electromagnetic interference (EMI), resistant to dirt and dust, and virtually maintenance-free. They are also proofed for high temperatures, ensuring the DTS system can withstand the demands of temperature monitoring.

AP Sensing also enables customers to perform direct, **on-site IEC 61439 temperature rise testing** using the customer's own asset. This introduces tangible value by extending the switchgear manufacturer's product certification, as well as enabling customers to safely operate their critical assets throughout the economic ownership of busbar and electrical switchgears.



Why AP Sensing?

- Over 10 years of experience with busbar monitoring
- Industry-leading Linear Heat Detection (LHD) technology with fast response times, excellent accuracy and low maintenance
- All product variations are fully certified and in compliance with internationally recognized standards
- Our experience and proven deployment in all regions in the world – our project reference list is extensive and comprehensive
- Range of certified sensor cables to fit every need
- Easy system integration through flexible protocols and interfaces
- World-class service, support and training

For more information:
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Passion for Plants.
For every unit sold, AP Sensing plants 100 trees