Wireless Thermal Monitoring Solutions for Low and Medium Voltage Switchgear

Effectively Monitor the Temperature of your Switchgear for Long Term, Cost-Effective Reliability and Safety

Overview

- Temperature sensors installed in equipment interface with monitoring units to remotely report overheating for proactive planning and minimize downtime.
- Designed for continuous monitoring of ambient bus and power connections through measurement of wireless temperature sensors that require NO power or wiring.
- User-configurable alarms, both limit and differential via optional HMI monitoring system.
- Industry standard Modbus RTU communications to customer SCADA

Why Measure Temperature?

- Bus joints and power connections are subject to overheating due to overload, corrosion, loose connections and environmental conditions
- Increase in heat will intensify until complete thermal failure of the connection or nearby insulation
- Next generation continuous Thermal Monitoring in lieu of traditional IR windows and periodic thermal imaging.
How it Works

Temperature sensors are powered by RF signals through the Thermal Monitoring Module and antenna, ensuring the temperature is sent directly to critical measuring points while ensuring all safety requirements are maintained.

No Maintenance:

20+ year life expectancy

Easy Installation:

Sensors do not require “line of sight” and can be mounted under insulation boots or tape

Reliability:

Sensors designed to withstand harsh environments

Temperature Measurement Methods

Traditional Approach

Periodic, 1 or 2 times per year

Unable to measure under boots and locate all bus joints and connections

Requires engineering personnel

Dangerous if measuring with live energization of switchgear requiring high level PPE

The IEM Approach

Safety:

Directly mounted wireless sensors to critical measuring points while ensuring all safety requirements are maintained.

No Maintenance:

20+ year life expectancy

Easy Installation:

Sensors do not require “line of sight” and can be mounted under insulation boots or tape

Reliability:

Sensors designed to withstand harsh environments

Options

- Partial Discharge Sensor / Interface Module
- Humidity Sensors
- MB RTU to TCP/IP Gateway

- Thermal Monitoring Software
- 17” HMI/Panel PC
Installation Overview

Low Voltage Example: Up to 600V

Medium Voltage Example: 5kV - 38kV Metal-clad / Metal-enclosed and custom assemblies
Benefits of Utilizing Wireless Thermal Monitoring

Safety
- Predict potential problem areas
- Prevent catastrophic failure
- Improve response time
- Monitor areas with limited access
- Keep personnel and facility safe

Reliability
- Optimize bus performance
- Quick identification of issues
- Proactive planning
- Avoid downtime

Profitability
- Lower maintenance costs
- Minimize downtime
- Extend bus life
- Increased ROI