

## **Thermography unveiling hidden hot spots on transformers**

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Transformers are important devices in electrical systems, whether they are small (e.g., mounted on a printed circuit board) or huge (e.g., located in a high-voltage distribution switch yard). Therefore, monitoring their condition and regular maintenance are very important for the reliable operation of the systems in which they are incorporated. One of the techniques for transformer checking is infrared thermography, which shows the surface temperature distribution.

As a service provider and an independent thermographic auditor, we survey many different types of transformers every year. In addition to the usual overheating connections faults, the thermographic inspections also find numerous other anomalies, such as overheating of windings, local overheating due to eddy currents, poor grounding, induced currents in cable shields, and dangerous overheating of bushings. This paper provides thermograms with associated images for typical anomalies.

Thermography is also a valuable measuring method for large transformer: producers use it in the final stage of the temperature rise test. Thermograms of a high-power transformer working in two cooling modes during tests are provided.

### **Keywords**

Hot spot, thermography, transformer