

Acoustic Monitoring of Partial Discharges in Transformers

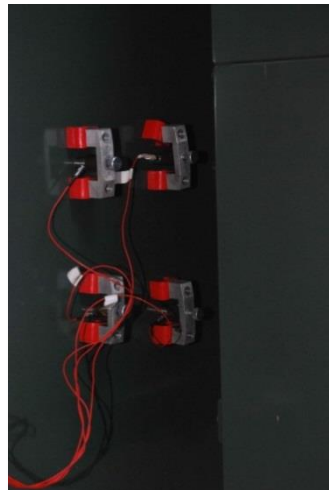
AVTech's acoustic method for partial discharge (PD) monitoring of transformers uses a third-generation detection, localisation and analysis system: the APDD v3. The main advantages of this method are that monitoring can be carried out without interruptions or disturbance to the production, thus avoiding costly downtime, using a system requiring no fixed installation that is easy to use and that can be carried by one person.

The service provides the transformer owner with an exhaustive and comprehensive report that identifies and locates possible PD sources inside the transformer and also estimates the significance of the levels of PD found. This information can be used to gauge the deterioration of the transformer insulation system and assist in determining if and what kind of changes and service that the transformer may require.

AVTech offers three types of monitoring services: recurrent monitoring, one-time measurement and fixed monitoring.

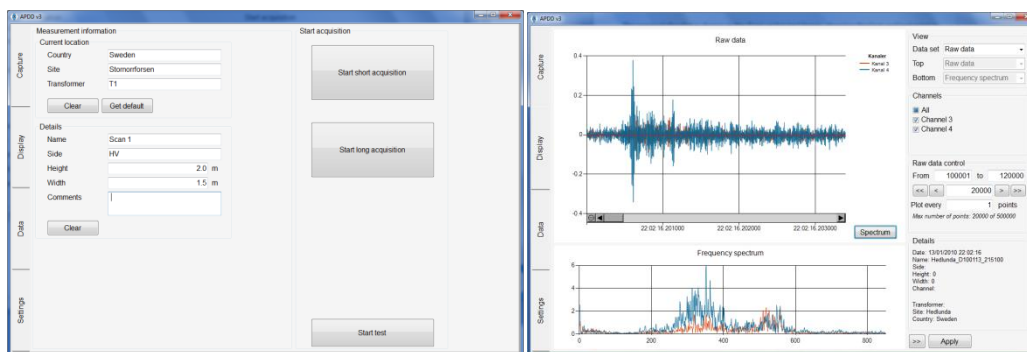
The recurrent and one-time monitoring services begins with measurements and initial analysis performed by an AVTech service technician using the APDD system, either as a follow-up of earlier measurements or as a one-off scan for PD activity. The data is then evaluated by an expert and added to the AVTech Acoustic Analysis Database. A report is then produced and delivered to the customer.

For fixed monitoring the APDD system is installed in a fixed position on the transformer for a period of about a week up to several months.



APDD v3 Measurement System features

- Integrated solution featuring eight sensor interfaces, a high-resolution screen and keyboard & pointing device inputs
- Monitoring of PD frequencies and energy levels
- Online presentation of the measured data
- Storage of data enabling detailed offline analysis



Enablers for the Service

The key tools for the service are shown below.

Tool	Description
AVTech Acoustic Partial Discharge Detection system v3	The APDD is a measurement system that uses acoustic sensors to identify and locate partial discharges.
AVTech Acoustic Analysis Database	The AAD is a database for storing measurement data and providing additional analysis capabilities.

Transformer PD Monitoring Report

The standardised AVTech PD monitoring report describes the performed service and the collected results

Report section	Description
Executive summary	A brief summary of the activities and results
General overview of the service	General information about the measurement service and instructions on how to interpret the report
Overview of methodology and measurement activities	A description of how the measurements were carried out including any significant events or environmental details
Information for each measurement	Detailed information of each measurement including sensor placement, environment details, PD energy and frequency, PD development over time (if available) and an evaluation
Summary and conclusion	A summary of the findings with conclusions and recommendations

Other related services

AVTech also provides other types of services. You are most welcome to contact us to discuss your needs within the energy sector. Extended services include enhanced monitoring information in the PD monitoring report, analysis of the transformer maintenance process and project management consultancy within this area.

Additional information

For additional information please contact us:

Kristina Bychkovska
Project manager

kristina.bychkovska@avtechnologies.se
+46 8 519 718 86

Tomas Eriksson
Service manager

tomas.eriksson@avtechnologies.se
+46 739 77 86 11