

Solution 211

DDX9121b partial discharge test on dry type transformers

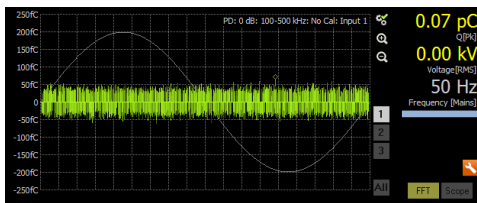
Problem

According to IEC 60076-11 and IEEE Std C57.12.01 partial discharge test is mandatory for dry type transformers on all high voltage phases with $U_m > 3.6\text{kV}$. To reduce testing time, the partial discharge test is normally combined with the induced test. The maximum acceptable level of partial discharge for solid cast windings is 10 pC and 50 pC for resin-encapsulated windings.

Normally a PD detector with a manual switch to change between the phases or three separate detectors can be used. The second solution is usually too sophisticated and cost preventative for this application.

Solution

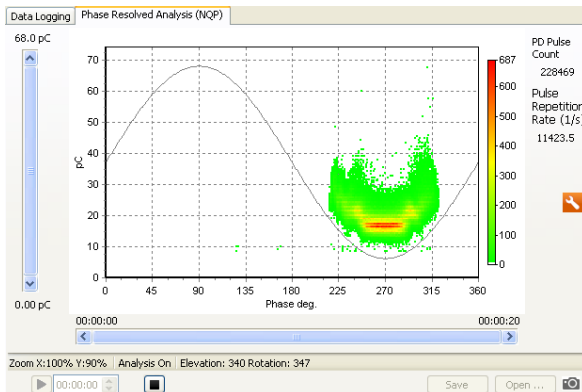
This solution is based on bringing PD signal from all three phases to the one detector equipped by the multiplexer option (DDX 9121b/SKMX). Operator can use the selector switch and in a second check the PD level of the transformer phase by phases to find out if the PD level is above the requirements.



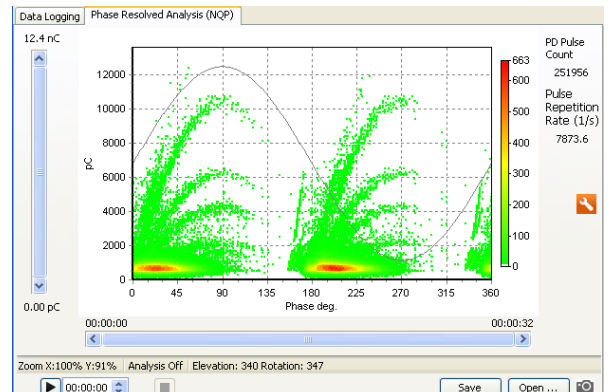
Input 1 selected

Only the pulses coming from input one are shown (normally phase A of the transformers). Input 2, 3 and 4 can be selected individually as necessary.

The included analysis function (NQP, PD pattern) allows further investigation of the origin of the discharges.



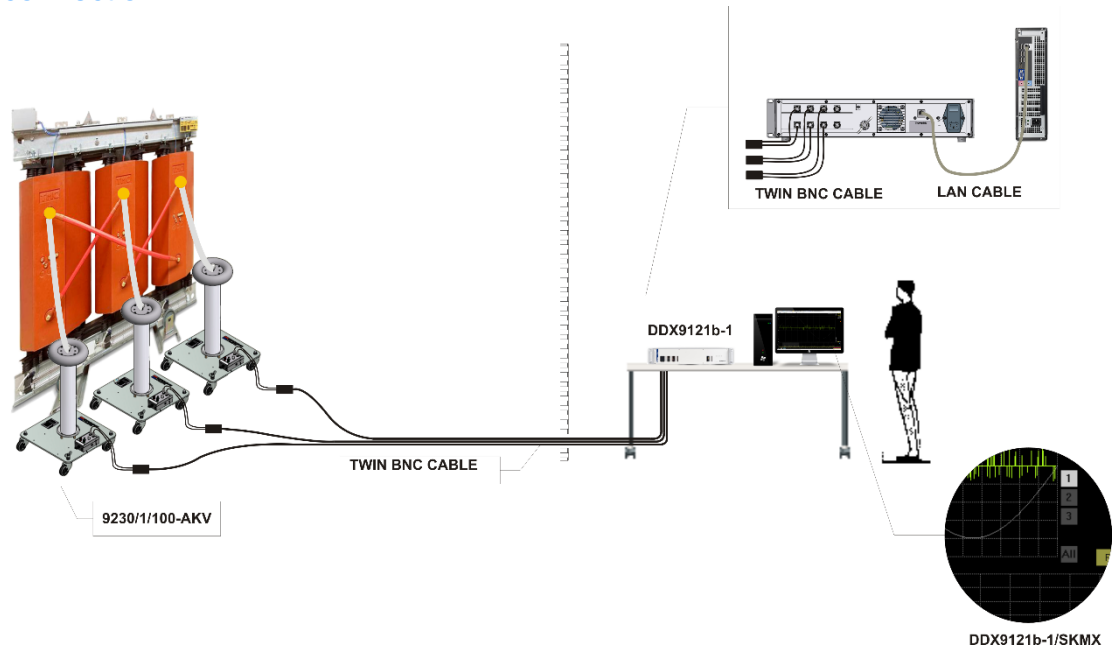
NQP pattern from DDX9121b software- Corona



NQP pattern DDX9121b software- Internal PD



System connection



Note -> Computer and desk has to be provided by the customer

Scope of supply

- DDX 9121b-1 PD detector
- DDX 9121b/SKMX Embedded multiplexer for DDX 9121b
- 9230/1/100-AKV9310 (3 units) Coupling capacitor with measuring impedance
- KAL 9510 / 9511 / 9520 PD calibrator

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