

Applied voltage test with separate AC source

1 General

If required on site, the applied voltage test should precede the induced voltage test. The preliminary procedures described for the induced voltage test should be applied before the applied voltage test (see 6.1.7.2 and 6.1.7.3). The test shall be carried out on each separate winding in turn. For the test, all accessible high-voltage terminals of the windings under test shall be connected together and all accessible terminals of the remaining (e.g. low-voltage) windings, core, frame and tank shall be connected to earth.

The test can be performed with any type of mobile AC test system of sufficient rated voltage and power. Efficient testing can be realized with the light-weight resonant systems of variable frequency.

2 Test parameters

The applied voltage test shall be made with a single-phase alternating voltage as close as possible to the sine-wave form and not less than 80 % of the rated frequency. The peak value of voltage shall be measured. The peak value divided by $\sqrt{2}$ shall be equal to the test value. Test voltage and test duration are a matter of agreement.

For field application a test voltage of 80% of the factory test voltage and a test duration of 1 minute may be considered.

On windings with non-uniform insulation, the test is carried out with the test voltage specified for the neutral terminal.

3 Test procedure and test acceptance criteria

The test (Fig.1) should begin at a voltage not greater than one-third of the specified test voltage, then the voltage shall be increased to the test voltage U_t as rapidly as it is consistent with voltage measurement. It shall be kept constant for the agreed duration of the test.

At the end of the test period, the voltage shall be reduced rapidly to less than one-third of the test value before switching off.

The test is successful if no collapse of the test voltage occurs during the whole cycle.

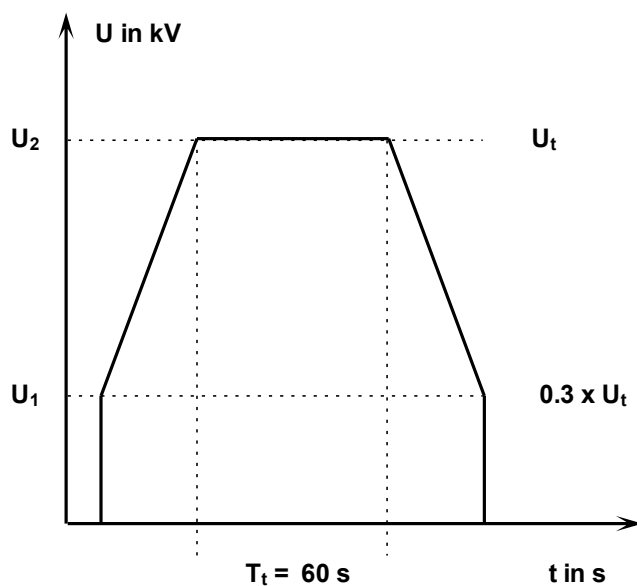


Figure 1