

Commissioning and Diagnostics of Power Transformers

- Summary:** After an introduction of selective measurements to perform on power transformers, you will develop your skills through theoretical and practical sessions performing conventional and diagnostic tests with CPC 100 or TESTRANO along with the CP TD1. Furthermore, you will learn how to perform reliable Sweep Frequency Response Analysis (SFRA) measurements to detect winding deformation with FRANEO 800 and to use DIRANA to perform dielectric response measurements and determine the moisture content in oil-paper insulated power transformers.
- Products:** CPC-Family, TESTRANO 600, FRANEO 800, DIRANA
- Prerequisites:** Basic knowledge of Power Transformers
- Duration:** 3 days **Language:** English **Code:** C.0176.BBX



Objectives

- > Overview of the structure of the power transformer, core, insulation, windings, bushings and the tap-changer
- > Analysis of the condition of power transformers to fully exploit the lifetime of your asset
- > Carry out time-optimized tests and diagnostics in our workshop
- > Preparing and performing SFRA measurements on power transformers
- > Using DIRANA to measure the dielectric response on power transformers and determine the moisture content
- > Applying the Primary Test Manager (PTM) software as support tool for the entire measurement process



Content

- > Introduction to power transformer commissioning, maintenance, condition assessment and diagnostics
- > Theoretical background and performance of ratio, excitation current, vector group, winding resistance, short circuit impedance measurements and demagnetization of the transformer
- > Theoretical background and performance of capacitance & power/dissipation factor (tan delta) tests on power transformers and bushings
- > Basics and theory to understand the SFRA measurement method and connection techniques
- > Influences on the reproducibility of an SFRA measurement trace
- > Measurement of the dielectric response of power transformers
- > Understand the causes of the ageing of cellulose and insulation oil
- > Analysis of dielectric response curves
- > Sources of moisture in transformers
- > Interpretation of test results
- > A new approach to facilitated power transformer testing with a software tool (PTM) for intuitive power transformer testing and reporting



Products

- > CPC 100
- > CP TD1
- > CP SB1
- > TESTRANO 600
- > FRANEO 800
- > DIRANA
- > Primary Test Manager (PTM)

Audience

Technical staff from utilities or companies working mainly in commissioning or maintenance testing of power transformers.