

Voltage transformers can be found in many locations within energy supply networks. Their duties include protecting supply networks and accurately recording primary voltage levels for power determination. However, in order to perform these duties correctly, they require regular tests and calibration, based on operator directives or national regulations. For the first time ever, OMICRON's new VOTANO 100 combines mobility with the highest level of accuracy in a single system.

Products and technology

Portable accuracy

OMICRON presents: the new mobile voltage transformer testing system VOTANO 100

Until now, precise testing of the transformation ratio accuracy of voltage transformers was a major undertaking. Highly accurate measurement solutions are complex systems, made up of various devices that are calibrated and extremely accurate. This includes a high-voltage source, a reference transformer, a set of standard burdens, measuring bridges for comparative purposes, and a computer to evaluate all of the measured data. Transporting all of this equipment to the testing location can often be very awkward. The time and costs involved are immense. Smaller testing solutions typically lack the necessary accuracy or are incapable of taking all of the different burdens into account. Therefore, the only viable alternative is often to

Initial on-site measurements with VOTANO 100 at ESKOM in South Africa.

remove the voltage transformer and send it to a testing institute for accurate calibration. However, this is also time- and cost-intensive.

Precise mobile testing

VOTANO 100 combines mobility and accuracy, thereby reducing testing efforts to a minimum. The basis for this successful combination is the examination of the voltage transformer as an electrical model that is captured and then mathematically simulated by VOTANO 100. This model was developed on the basis of the successful CT Analyzer.

Safe and lightweight package

The VBO1 voltage booster comes with VOTANO 100. It supplies the primary side of the transformer with a maximum reference voltage of 4kV for the transformation ratio measurement. The VBO1 is positioned near the test object, while the test engineer operates VOTANO 100 in a secure area outside of the high-voltage environment. The compact dimensions guarantee easy and convenient transport. The combined total weight of both devices is less than 15 kg (33 lbs).

In a single pass, winding resistance, short-circuit impedances, transformation ratio, and the magnetic characteristics curve of inductive and capacitive voltage transformers are determined. During this process, VOTANO 100 assesses voltage transformers with up to five secondary windings—both for no-load and standard load operating conditions.

Ultimate accuracy

The measurement method offers an impressive degree of accuracy. Indeed, VOTANO 100 achieves a measurement tolerance of 0.05%. This allows voltage transformers with class 0.1 accuracy to be precisely calibrated on site with regard to their transformation ratio and phase error.

With VOTANO 100, OMICRON is unveiling a unique new development: a high-precision mobile voltage transformer testing system that is easy to use right where it is needed—in the field. 🚩

www.omicron.at/votano100

VOTANO 100

- > High measurement accuracy: class 0.1 transformers
- > Guided testing procedure: duration < 20 minutes
- > Small and lightweight: total weight < 15 kg
- > Maximum safety: testing outside the high-voltage environment
- > Automatic assessment to international standards

