

ON THE ROAD TO SUCCESS

Since 2016, numerous customers from every continent have relied on TESTRANO 600, the world's first three-phase transformer test system. We took the opportunity to ask some of them to share their impressions and experiences with this new kind of testing solution.



«TESTRANO 600 is a very flexible piece of testing equipment, designed to make testing transformers easy and efficient.»

When quality and accuracy matter

"As a transformer manufacturer, we carry out factory acceptance testing (FAT) on all the transformers built in our factory as required by standard and special customer requests", says Liam Arnold. "As FAT are carried out at the end of the production line, we must ensure that the tests run on time so that we can meet the dispatch date." The FAT results are part of the contractual guarantees required by their customers. They become the baseline reference for the rest of the transformer's life-cycle, so the quality and accuracy of the results are critical.

"TESTRANO 600 has replaced three different single test sets to perform ratio, resistance and power/dissipation factor tests. With the CP TD1 accessory we also perform power/dissipation factor tests. Hence, when our existing tan delta equipment had reached the end of its life cycle, we were looking for a test set to replace it. The features that drove us to select TESTRANO 600 + CP TD1 included the ability to perform resistance and ratio measurements, three phase testing, demagnetization, frequency response tests for stray losses, digital storage for test results and the level of local support that was available for it.

Using a single test system for multiple tests helps us save pack up and setup time. Having the capability to control the tap changer, and getting results automatically also improves our efficiency substantially.

We usually use the Primary Test Manage (PTM) software as it enables us to easily collect and manage the test results. Once a test is completed, the data is compared with anticipated values that are based on the transformer design. Afterwards, all the data is exported from PTM into our existing management system," he finally notes. ►



Liam Arnold,
Testing Engineer,
Wilson Transformer Company



The Wilson Transformer Company (WTC) was founded in 1933 in Melbourne, Australia, and is a leading specialist in the delivery of transformer solutions. Liam Arnold is a Testing Engineer at WTC and responsible for providing operational support for the testing department. His role includes tasks such as the integration of new equipment into WTC's existing processes, running improvement projects as well as troubleshooting equipment faults.

Time is money

"We usually test service aged power transformers, but our testing scope also covers routine measurements after part replacements or repairs as well as commissioning tests after transport. Failure investigations are the most challenging part of our work. We help customers decide whether it is worth repairing a transformer or not," explains Marc Weber. "In addition to the interpretation of measurements, we tackle all challenges around logistics and environmental conditions. For example, measurements on an off-shore platform present us with many safety requirements, standards, and logistics. Thus, the less equipment we need, the better it is for the job."

Before purchasing our own TESTRANO 600, we had different measurement devices from different manufacturers for every type of power transformer test. The most time-consuming part of testing was doing the setups. Therefore, we decided to create our own test cable sets in order to perform as many measurements as possible with just one single setup. The easy connection concept of TESTRANO 600 reduces the overall rewiring effort and enables us to ensure quicker measurement results.

As we need to be fast and flexible, it was essential that we had the integrated TouchControl for quickly adjusting measurements on site. We also use the PTM software if a scheduled project gives us a chance to prepare the measurements in advance.

However, time is money for us and our customers. With TESTRANO 600, we can provide faster assessments, which helps our customers bring their assets back in service more quickly," he summarizes.

*«Integrating the three-phase TESTRANO 600 into our standard testing equipment means **being more competitive by being more efficient.**»*



Marc Weber,
Head of Transformer Diagnostic Center,
SIEMENS

SIEMENS

SIEMENS Transformer Lifecycle Management™ (TLM™) is part of the overall SIEMENS service portfolio for power transmission products. The Transformer Diagnostic Center (TDC), based in Nuremberg, Germany, belongs to TLM™ and is responsible for the electrical testing of all TLM™ hubs worldwide. Marc Weber is Head of Transformer Diagnostic Center and he's also a diagnostic engineer responsible for condition assessments on power transformers.

«*TESTRANO 600 is a great addition to our measurement portfolio that **increases our flexibility and reaction time** for meeting customer's demands.*»

Increased flexibility

"As a leading service provider, we have to deal on a worldwide basis with every transformer brand, from each province, in every range with each kind of insulation system or sub-type. Thereby, our motivation during testing is to be as detailed as necessary but as efficient as possible, depending on the goal, the given time-frame and the circumstances.

When we're on site with a customer, having a well-maintained set of testing equipment with a wide measurement range, helps us meet their specifications and expectations with the results of our diagnostic investigations and acceptance tests," says Holger Lohmeyer.

"We saw investing in a TESTRANO 600 test system as a step toward extending our testing and measurement portfolio and expanding the flexibility of our service activities. The new test system enabled us to react more flexibly, for example when on-site measurements are requested on short notice. Additionally, as TESTRANO 600 combines easy demagnetization of the core with ratio and winding resistance measurements, the effort of carrying the equipment is minimized. All in all, TESTRANO 600 is a compact and highly developed device and easy to use - especially for personnel, who are not dealing with transformer testing and measurements on a daily basis," he summarizes. ▶



Holger Lohmeyer,
Engineering Solution Manager,
ABB



The transformer service group is part of ABB's Power Grid business in Halle, Germany. They provide complete power transformer service activities either in their repair shop or on site at the customer's location. Holger Lohmeyer is an Engineering Solution Manager and responsible for a wide range of diagnostic measurements, such as transformer condition assessment, fleet screenings and investigations into suspicious transformer circumstances.

«TESTRANO 600 helped us save a lot of set-up time as well as reduce the total testing time.»

Improving efficiency and effectiveness

“One of our biggest challenges is handling resources and scheduling. As our services are highly sought after, it is very challenging to meet market demands. Therefore, we are always on the lookout for new technologies and equipment that can improve the efficiency and effectiveness of our tests. We want to help our customers accurately evaluate and assess the condition of their assets so they can achieve maximum reliability and commercial life for their assets,” explains Jimmy Kuang.

“Prior to using TESTRANO 600, we had to carry several pieces of testing equipment to a site to perform various tests. Test leads had to be set up multiple times for the different test sets, and different software was needed to operate the equipment.

“One of the major reasons we bought a TESTRANO 600, was its ability to perform various tests with a single setup. This has significantly reduced our need to get to the top of the power transformer and hence minimized the risks and hazards associated with working at those heights. In my opinion, another advantage is the demagnetization function that prevents the protection relays from tripping when the transformer is energized.

“In terms of operation, I normally use the PTM software because of its user-friendliness. The test circuits are also displayed which helps the junior testers understand the principles of the measurements.”

Jimmy also shared one remarkable situation from the recent past: “During a power station maintenance outage, several power transformers had to be fully tested and there was a lot of pressure to finish all the tests on time. With TESTRANO 600, we could take advantage of the single setup for multiple tests. By only setting up the test leads once, we were able to complete ratio, short-circuit impedance and DC winding resistance measurements. Furthermore, due to the three-phase injection function we only had to operate the tap changer through the taps once.” All of this contributed to reducing the testing time by a significant amount. “The employment of TESTRANO 600 allowed us to complete all of the tests earlier than originally planned, which pleased our customers,” he adds with a smile. ■



Jimmy Kuang,
Senior High-Voltage (HV) Testing Engineer,
Mondo



Mondo is AusNet Services' commercial energy business, based in Victoria, Australia. It is the leading service provider for the electricity, gas, transport and infrastructure sectors, specializing in condition assessment, commissioning and investigative testing on primary assets. Jimmy Kuang is a Senior High-Voltage (HV) Testing Engineer at Mondo's HV Testing Group, which is responsible for testing all of the primary electrical assets in AusNet Services' Transmission and Distribution Network. He also serves a large pool of external clients.