

# Testing and Commissioning

Megavar specialises in high voltage design, testing, commissioning and asset maintenance for our clients. Our experienced engineers, project managers, designers and technicians will work closely with you to deliver quality outcomes across your power generation, transmission and distribution assets.

## New systems and upgrades

Whether it be a transformer replacement or a new power station or substation, we have the expertise and equipment to perform all your protection and high voltage testing. We provide inspection and test plans, factory acceptance testing, site acceptance testing, pre-commissioning and commissioning services for new and upgraded equipment.



We provide our clients with the widest range of testing and commissioning services for power system assets including:

- motors and generators
- current transformers
- voltage transformers
- power transformers
- transmission lines
- switchgear
- earthing systems
- protection and control relays
- SCADA
- gas leak detection
- thermographic imaging
- partial discharge testing
- and more.

## Our people

Our engineers and testers are able to provide a wide range of testing and commissioning services for primary energy assets, secondary protection and supporting systems. We have extensive experience in distribution and transmission networks as well as generation plants, mine sites, refineries and heavy industrial plants. We are able to mobilise at short notice, as many of our people are multi-skilled across testing, commissioning, condition monitoring and asset maintenance.

Visit [www.megavar.com.au](http://www.megavar.com.au) to find out more about tests and services we provide for our clients Australia-wide.

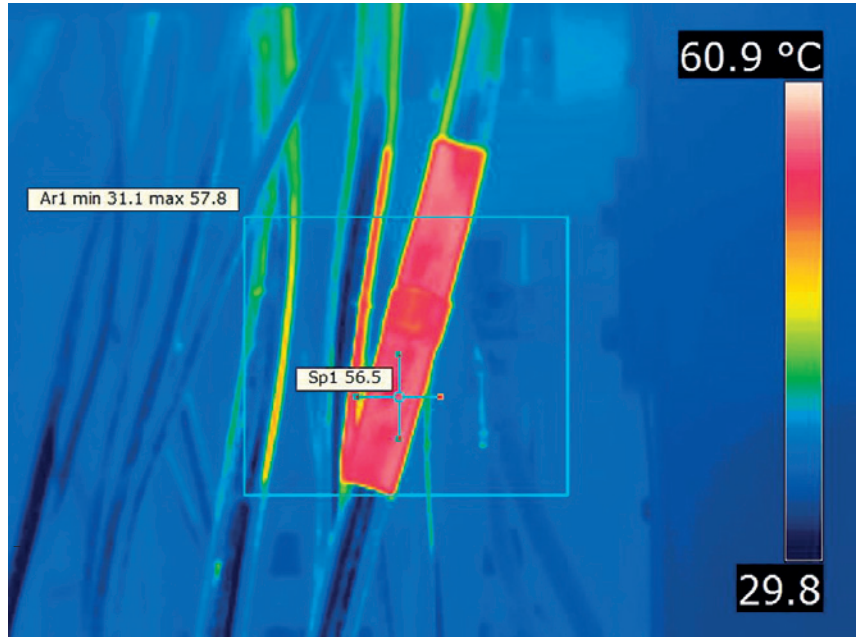


## Motors and generators

Megavar owns and operates the latest test gear for commissioning hydro generators, turbo generators and large motors. We test for **stator core inter-lamination imperfections** causing heating and damage during operation. The **insulation resistance and polarisation index** is one of our cornerstone tests and we offer **Rotor RSO, AC Hipot, partial discharge testing** and more.

## Transformers

Upon delivery of a new transformer we test the **ratio** of high to low voltage winding turns, ensuring internal connections are correct and the transformer matches specification. Ratio can change due to damage from faults, deteriorating insulation, contamination and handling. Whenever we commission or maintain transformers we test winding resistance to ensure windings are within specification. Transformers are subject to vibration, and faults occur due to poor design, assembly, handling, maintenance, environments and overloading. Measuring **winding resistance** assures connections are correct and there are no severe mismatches or opens. We do **frequency response analysis**, tests for **vector group relationship, HV applied testing** and more.



## Switchgear

Regardless of type, Megavar can test switchgear on both high and low voltage systems. We use the latest test gear to analyse oil, air, gas, hybrid, vacuum and CO<sup>2</sup> units. We provide **thermal imaging** to assess the state of the system and predict failures. We offer **dynamic resistance measurement** to determine wear on primary contacts of circuit breakers. DRM is also a cost effective test for SF6 insulated switchgear.

## Earth systems

An effective earth system is a vital element in ensuring safety and reliability of high voltage installations. During commissioning the earth

system should be tested to assure good performance. We use state of the art testing equipment to test **soil resistivity, impedance, voltage contour measurements, step and touch potential and continuity checks**.

## Protection and control relays

With any new high voltage installation, it is critical to prove the entire system fit for purpose with rigorous quality assurance involving **functional and relay protection testing**. Megavar performs comprehensive testing for all types and vintages of protection and control apparatus to ensure that trips, alarms and controls function as designed.

