SOLUTIONS

Medium Voltage Transformer Substation Testing

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Medium Voltage Transformer Substation Testing

Heat Run Tests At Medium Voltage Transformers And Transformer Substations

Highlights

This solution was specially designed for heat run tests at transformers, transformer substations and low voltage switchboards according to the standards IEC 62271-202, IEC 60076, IEC 60439-1 and IEC 61439.

- Transformer and Substation Heat Run Testing
- For Transformers with up to 5MVA and 36kV
- Substation, Transformer and Switchboard Test
- LV Switchboard Test with up to 6300A

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Requirements

For transformer substations, transformers and switchboards heat run type tests under defined load conditions are needed.

A transformer substation heat run test requires the transformer, MV and LV switchboards to be tested at the same time with defined currents. Two AC power supplies are needed, one high power supply for the MV switchgear and the transformer in short circuit and a high current supply for the LV switchboard.

Challenges

A supply with very high power is needed. It must fit to different transformer power and voltage ratings.

The LV Switchboard needs to be supplied with 3-phase high currents up to 6300A.

Heat run test last often more that 48 hours, the temperatures at many points of the whole setup need to be recorded and monitored for certain limits.

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Our Solution

The system consists of two power supplies, two precision power analyzers and one 60 channel temperature data acquisition unit. All equipment is completely remote controlled from the control room via Ethernet.

The first power supply delivers up to 500kVA with voltage ranges 0…500/750/1000/1500/2250/3000V, which fit to the short circuit voltage requirements of typical MV transformers. The second power supply is specially suited for high current tests of the LV switchboard with up to 6300A.

The operation at the whole test field is protected by a configurable safety control and safety components according to EN 50191 to provide maximum safety for operators during every day work.

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Technical Specifications

Power Supply 1	Sine Inverter Power Supply 3 phase AC 500kVA 50-60Hz 0… 500/750/1000/1500/2250/3000V
Power Supply 2	Sine Inverter Power Supply 3 phase AC, 100kVA, 50-60Hz 0…6300A
Power Measurement	Precision Power Analyzer Basic accuracy 0.1% Current Sensors 1000A and 10kA Voltage Sensor 3AC 8,4kVrms
Temperature Measurement	Precision Data Aquisition Unit 60 Channels J-Type thermocouple

Features

- 500kVA Sine Inverter Power Supply
- 6300A High Current Power Supply
- 2 Precision Power Analyzers
- 60 channel temperature data acquisition unit
- Safety equipment according to EN50191
- Complete remote operation from control room
- Customized Data Logging Software with limit monitoring
- Power Supply shutdown when limits exceeded

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SOLFAS TECHNOLOGIE GMBH

We are specialized in the development and implementation of test systems, power supplies and instrumentation. As an expert in electrical testing and automation, our company offers global innovative and reliable solutions for the industry. Our products are characterized by a precisely matching to individual customer needs hardware and software.

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