The DTTS Series Distribution and Traction Transformer Test System are self-contained test sets incorporating all features necessary for testing single and three phase distribution transformer at factory and onsite.

Distribution and traction transformers are highly quality requirement products in the power transmission system, so it need the testing products with compromising quality and high technology. The DTTS system can totally arrive all the requirement form customer, it have the most modern design with best quality components inside. For all routine test, within one system, the DTTS system supply customer a turn key test solution.

Our DTTS system supply customer highly automated and minimal manual intervention to keep the test duration of a single transformer as short as possible.

The DTTS Distribution and Traction Transformer Test System has been designed with these requirements in mind, as a multifunctional tool for testing distribution transformers. All supported tests are performed in conformity with IEC, IEEE/ANSI, GB and GOST.

Applications:
- 44kV and Below Dry and Oil Filled Distribution and Traction Transformer

Testing Applications:
- Transformer No Load Loss
- Transformer Load Loss
- Induce Withstanding Voltage Test
- Apply Voltage Test
- Temperature Rise Test
- Transformer Turn Ratio Test
- Winding Resistance Test
- Insulation Test
- Partial Discharge Test
- Impulse Voltage Test
- Transformer Oil Test

Benefit and Advantage:
- No Load / Load / Induce Voltage ? Apply Voltage Test by One Connection
- Significantly Reduce Testing Time
- Increase Production
- High Repeatability
- Direct Build-Up of Database
- Pass-Fail Criteria from Database
- Short Throughput Time
- Less Manpower
- All Measured Results are Directly Compared
- Barcode Reading Capability
- Integrates all routine tests within one unique system
- Fulfills all international standards (IEC, IEEE/ANSI and GOST).
- Easy integration into existing production lines
- Output Tap Selector Switch (Motorized)
- Normal/ Yokogawa Wattmeter
- Fluke 2835 Temperature Meter
**Safety Feature:**
- Main Power Circuit Breaker with Indicating Light
- On/Off Push-button Control
- Emergency Stop Mushroom Switch
- High Voltage “On” Flashing Warning Light
- “Foot Switch” Safety Interlock
- External Interlock Provision for Test Cage or Other Safety Interlock
- “Zero Start” Interlock
- Slow and Fast-Acting Resettable Overload Protection
- Over Current/ Over Voltage Alarm (Over Current Relay)
- Door Switch
- Intelligent Circuit Breaker

**Oil Filled Contact Type Voltage Regulator:**
- Best type for HV testing
- Voltage Adjust from 2%-120%
- Three Phase Input/Output
- Liner Adjust Voltage
- Low Impedance to 8%
- Low Noise to 60dB
- Easy Maintenance / Repair
- Wave Form Distortion is less than 1%
- Heavy Duty
- DC Motor with Position Indication
- Double Limit Position Switch
- Oil Temperature Meter with Temperature Limit

**Tunable Frequency Electronics Power Source Feature:**
- Siemens IGBT Module
- EPCOS DC Filter Capacitor
- Voltage Adjust from 5%-110%
- Wave Form Distortion is less than 2%
- Heavy Duty Design
- Frequency from 30-300Hz Available
- Manual/ Automatic Control Panel Available in the system
- 0.1Hz Frequency Adjust Step
- Partial Discharge is lower than 50pC (<2pC model also can be special request)
- Three Phase/ Single Phase Output
- Output Frequency Stability is less than 0.1%
- Output Voltage Stability is less than 0.1V
TMS System Feature:
- Use Norma/ Yokogawa Wattmeter to Permit Accuracy and Stability
- Automatic Generate Test Report
- 0.01% Accuracy of Ratio Error and Phase Error for CT and PT
- 5%-120% Range Permit the Accuracy
- 5W Output Power Suitable to Any Other Power Analyzer
- Typical 0.1A-2000A Test Range for CT
- Typical 5V-12kV Test Range for PT

Motorized TMS

Intermediate Transformer Feature:
- Oil Filled, Tank, Bushing Output, Motorized Tap

Switch
- Low Impedance to 8%
- Low Noise to 65dB
- Wave Form Distortion is less than 2%
- Oil Temperature Meter with Temperature Limit
- Three Phase Input/Output
- Heavy Duty, Temperature Rise is lower than 35K
- Typical 800V-35000V, 8 Taps Available
- Frequency from 30-300Hz Available
- Partial Discharge is lower than 50pC, (<10pC model also can be special request)
- Software Control Tap Switch and calculate User Time

Switchgear Cabinet Feature:
- IP22 Protection Level
- Intelligent Circuit Breaker be used in the system
- Army Level Contactor be used, 5kV DC Insulation between each tap
- ABB Over Current Relay
- Voltage and Current Indication In the Each Cabinet and Control Software
- Manual and Automatic Switch On/OFF and Indication
- One Spare Switchgear Cabinet for Spare also Put the tools and etc.
- Professional Design and Producing with Perfect Protection
Impulse Voltage Test System Feature:
- 300kV/30kJ Impulse Voltage Generator with Chopping gap
- Modern Design Structure: S
- Generate LI: 1.2±30%/50±20%μS
- Generate Chopping Wave with Delay Time 2-6us
- Efficiency is higher than 90%
- Automatic Control and 12bit/100Ms/s, 2 channels Measuring System
- Grainger Circuit for Low Voltage Winding Test
- Automatic Grounding Switch
- Automatic make out Pass/Failure

Cylinder Type Test Transformer Feature:
- Fulfilled One Test Process in the Software, Test Finished by itself
- Heavy Duty Design
- 0.5% Measuring Accuracy for Voltage/Current
- Partial Discharge is lower than 10pC
- 2% Start Voltage
- 6% Short Circuit Impedance
- 50Hz/60Hz Available
- Manual/Semi-automatic/Fully Automatic Available

TTR Feature:
- SG7001
- 10V and 160V Exciter Voltage Suitable to Difference Size and Voltage Ratio Transformer
- Single Phase/Three Phase Transformer
- Ratio Range from 0.9-9999
- Accuracy: 0.2%
Exciter Current Measuring Function
- Input: 110V-230V 50Hz/60Hz

Automatic Synchronism Input Frequency
- Powerful Anti-influence Function Inside
- Input: 110V-230V 50Hz/60Hz

DC Winding Resistance Tester Feature:
- SG5002
- 10A, 5A, 1A, 10mA available to Selected
- Test Range from 0.2mΩ - 20kΩ
- Y or △ Winding Transformer Available
- 40V Output Voltage, Make the charging time shortly
- Three Phase and Heat Running Type Available
- Accuracy: 0.2%
- Input: 110V-230V 50Hz/60Hz

Partial Discharge Detector Feature:
- SG4008
- 0.1pC-10nC Test Range
- 6 Channels

Digital Control and Measuring System
Introduction and Feature:
Samgor supply the control and measuring system has modern design with complete function according to IEC, IEEE/ANSI, GB and GOST for destruction transformer test.

The first feeling for the control room, the one of most important is the outlook of the control units, so Samgor supply the best metal type control desk with perfect surface treatment. After many years using, it also look like fresh and new. Control desk from Samgor also has the compact design, two separate computer be installed in one control desk.

The Software has concise interface and perfect function. It is be designed by Labview in the Window environment. It is consist the control and measuring function by Transformer No Load Loss, Transformer Load Loss, Induce Withstanding Voltage Test, Apply Voltage Test, Temperature Rise Test, partial discharge test and Impulse Voltage Test together.

The Software is being designed perfect recording function and test reports generate function, also it can automatic update the test detail to the internet host computer by ACSII automatically. All the test process can be managed by the test file, after managed the test file, each test can finished just by one bottom.
High Voltage • High Current • High Power Test System and Components
WWW.SAMGOR.COM
Block Diagram for Typical Destruction Transformer Test System:

DTTS includes following main components:

- Voltage Regulator
- Step Up Transformer
- IGBT Tunable Frequency Power Source
- Switchgear Cabinet
- Automatic Selection Capacitor Bank (LV/HV)
- Testing Transformer System
- CT,PTs
- Power Analyzer
- Automatic/ Manual Control and Measuring System
- Partial Discharge Detector
- Coupling Capacitors
- Winding Resistance Meter
- Transformer Turn Ratio Meter
- Insulation Meter
- Multi-Channel Temperature Detector
- Impulse Voltage Generator
- Control, Measuring, Power Cable

Update to Fully Automatic Test System (Apply Voltage / Induce Voltage / No Load / Load Test By
One Type Connection)
- Control Container
- Machine Container
- Shielding Room Container
- High Voltage Insulation Switch
Shielding Room Container

Electrical Diagram for Typical Destruction Transformer Test System:
DTTS Series Distribution and Traction Transformer Test System For Onsite Testing

In recent years, several successful high voltage on-site tests have been reported as acceptance test of large EHV and distribution and traction transformers repaired onsite in all around world.

As a natural extension, the same onsite testing technology has also been applied in many cases as an efficient diagnostic tool for transformers where a fault has been detected by another means. More recently, the same technology has also used as an acceptance test for new transformers after problematic factory station shipment.

Samgor has developed the DTTS system is suitable for onsite routine and type testing, it can install in container, compact design for transportation.

The following HV tests have performed on site:

◆ Apply Voltage Test
◆ Longtime induced voltage (1 hour) with electrical and acoustic monitoring and measurement of Partial Discharge and voltage level up to 150% of rated voltage
◆ No load energization with rated voltage during 24 hours with electrical and acoustic monitoring and measurement of Partial Discharge and voltage level up to 115% of rated voltage
11MVA Traction Transformer Onsite Testing System
Company Profile:

Over 20 years professional supplier in the high voltage test equipment business make the high voltage test department become most important branch of SAMGOR group. SAMGOR has a reputation for quality and reliability based on extensive products and vast experience. SAMGOR provides test, measurement and diagnostic equipments for a wide range of electrical applications. Test systems for laboratory, factory and field use are available.

Welcome to send us your spec and test object details, Samgor’s professional engineers will provide you a most suitable test solution. Samgor promise not supply you anything no worth or no useful!

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