

SGMF(T) series

Onsite Mobile AC High Voltage Test System

Onsite mobile AC high voltage test systems are used for withstand voltage testing, partial discharge measurement, tan delta measurement to instrument transformers, GIS, GIL, switchgears and etc after they are installed onsite and for purposes of diagnostics in asset management up to **900kV/10A**.

Onsite mobile AC high voltage test systems can be made by **SF6 high voltage test transformer or variable frequency AC resonant test system** and complies with requirements according to IEC 60076-3, IEC 60517, IEC62271-203.

The test object is connected to the test system using a flexible high-voltage connection via bushing to other connector. The SF6 high voltage test transformer features compact design with bushing output, fix 50Hz or 60Hz, testing frequency is same to the working condition. The high voltage reactor features a modular design. Several reactors can be connected in series or parallel to achieve higher test voltages or power. Test frequency is from 20Hz-300Hz.

Both test system can be transported in a container without taking up much space, or it can be set up on a trailer. it is suitable to frequency transportation.

Applications:

- ◆ Onsite GIS, GIL testing via bushing testing;
- ◆ Onsite Instrument transformer and switchgear testing;
- ◆ Withstanding voltage testing;
- ◆ Partial discharge measurements;
- ◆ Capacitance and Tan delta measurements;



800kV/4A AC Resonant Test System

Main Features (Variable Frequency Type):

- ◆ The system and its components are designed for onsite testing and frequent transportation and temporary outdoor operation under dry weather conditions.
- ◆ The test system has a very compact and robust design and is easy to install.
- ◆ Several system can be connected in series or parallel to increase voltage or current.
- ◆ Low PD level is lower than 5pC (AC Resonant Test System)
- ◆ IEC-compliant frequency range from 20Hz-300Hz, biggest current is happened in 50Hz, from 20Hz-50Hz can be extend load capacity.
- ◆ It has a very low power consumption
- ◆ The test system has an advanced computer-aided control for full automatic operation, easy data handing / recording and protocol printing.



400kV/4A SF6 HV Test Transformer System

Main Features (SF6 Test Transformer Type):

- ◆ The system and its components are designed for onsite testing and frequent transportation and temporary outdoor operation under any weather conditions.
- ◆ The test system has a very compact and robust design and is easy to install.
- ◆ Low PD level is lower than 2pC
- ◆ Test frequency is 50Hz or 60Hz, the same frequency condition to the working condition.
- ◆ The test system has an advanced computer-aided control for full automatic operation, easy data handing / recording and protocol printing.
- ◆ Easy test, few human power requirement, maintenance free.

Safety Feature:

- ◆ Main power circuit breaker with indicating light
- ◆ On/Off push-button control
- ◆ Emergency off mushroom switch
- ◆ High voltage "On" flashing warning light
- ◆ 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
- ◆ ARC flash over protection

Variable Frequency AC Resonant Test System

includes following main components:

- ◆ Air core fix inductance reactor
- ◆ Multiple taps Exciter transformer
- ◆ IGBT tunable frequency power source / Linear amplifier tunable frequency power source
- ◆ Switchgear cabinet (Option)
- ◆ Coupling capacitor / HV divider / HV filter
- ◆ SG3005 AC Measuring System

- ◆ Power Noise Filter (Option)
- ◆ SG2013 Automatic Control System
- ◆ 10ft container for control room
- ◆ 20-50ft Trailer for install the test products
- ◆ Accessories

SF6 high voltage test transformer includes following main components:

- ◆ Regulating transformer with shielded insulating transformer
- ◆ Power noise filter
- ◆ Compensating reactor
- ◆ SF6 filled test transformer
- ◆ Coupling capacitor / HV divider / HV filter
- ◆ Control system ACA2000
- ◆ Pre-stage high voltage switchgear cabinet
- ◆ Subordinate-stage high voltage switchgear cabinet
- ◆ 10ft container for control room
- ◆ 20-50ft Trailer for install the test products
- ◆ Accessories

Main Components Feature:

Voltage Regulator Feature:

- ◆ Oil Filled Contact Type Voltage Regulator (Best type for HV testing)
- ◆ Voltage Adjust from 2%-120%
- ◆ Single 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 Power Source Feature (IGBT TYPE):

- ◆ Siemens IGBT Module
- ◆ EPCOS DC Filter Capacitor

- ◆ Voltage Adjust from 1%-110%
- ◆ Wave Form Distortion is less than 2%
- ◆ Heavy Duty Design
- ◆ Frequency from 20-300Hz Available
- ◆ Manual/ Automatic Control Panel Available in the system
- ◆ Quality factor can be 0-0.98
- ◆ 0.1Hz Frequency Adjust Step, 0.01Hz Resolution
- ◆ Partial Discharge is lower than 30pC

Tunable Frequency Power Source Feature (Linear Amplifier TYPE):

- ◆ Mitsubishi Power Amplifier
- ◆ Voltage Adjust from 1%-105%
- ◆ Wave Form Distortion is less than 1%
- ◆ Heavy Duty Design
- ◆ Quality factor can be 0.5-0.98
- ◆ Frequency from 20-300Hz Available
- ◆ Manual/ Automatic Control Panel Available in the system
- ◆ 0.1Hz Frequency Adjust Step, 0.01Hz Resolution
- ◆ Partial Discharge is lower than 2pC

Switchgear Cabinet Feature:

- ◆ IP30 Protection Level
- ◆ Chint 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
- ◆ Professional Design and Producing with Perfect Protection

Fix Inductance High Voltage Reactor Feature:

- ◆ Air Core Design, it has perfect inductance stability and good voltage/frequency coefficient.
- ◆ Epoxy Glass Cylinder or Bushing Equip
- ◆ 20-300Hz Frequency Range
- ◆ Partial Discharge is lower than 5pC
- ◆ Heavy Duty and low loss

Exciter Transformer Feature:

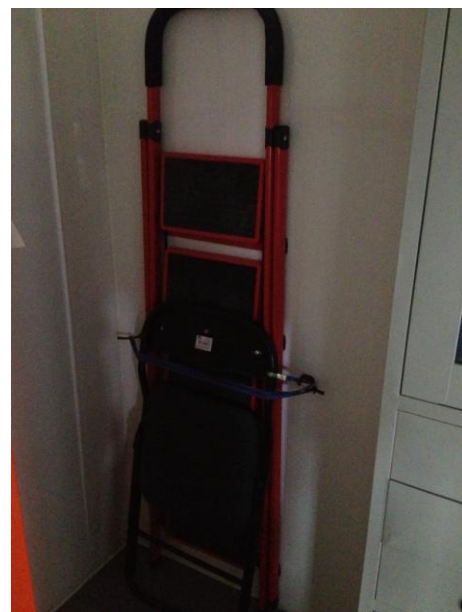
- ◆ 3 taps suitable for difference load and voltage
- ◆ Insulation cable output
- ◆ Protection Cover Include
- ◆ Impedance is lower than 4%
- ◆ 20-300Hz Frequency Range
- ◆ Partial Discharge is lower than 5pC
- ◆ Heavy Duty

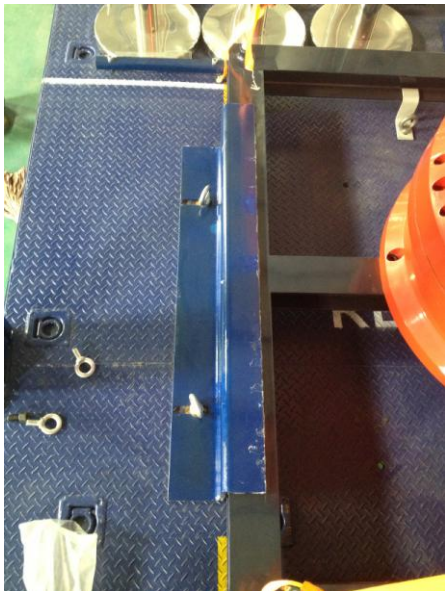
SF6 High Voltage Test Transformer Feature:

- ◆ SF6 insulation and bushing output
- ◆ Mechanical lifting Gear Equipped
- ◆ 50Hz/60Hz Power Frequency Input / Output
- ◆ Partial Discharge is lower than 2pC
- ◆ Heavy Duty, it can continuous running for 1 hour, winding temperature rise is lower than 45k
- ◆ Voltage divider/ Standard Capacitor/ HV Filter/ Coupling Capacitor inside the tank

10ft Control Container Feature:

- ◆ 10ft Standard Container (2991 x2438 x 2438)
- ◆ Personnel Door and Two Window which has anti-slide function
- ◆ Thermal isolation of floor, walls and ceiling
- ◆ Electrical Installation (lighting, sockets)
- ◆ Opening for power, control and measuring cable
- ◆ Air Conditioning
- ◆ Table for instruments, chairs





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