

# SGMF(T) series

## Onsite Mobile AC High Voltage Test System

**On-site AC high voltage test systems** are used for voltage withstanding test, partial discharge measurement, tan delta measurement on those instrument transformers, GIS, GIL, switchgear etc, after they are installed on the site and for the purposes of periodic diagnostics in the electric equipment. The system can go up to **900kV/10A**.

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

The test object is connected to the test system via the bushing or other connector. The SF6 high voltage test transformer features compact design with bushing output, at 50Hz or 60Hz. While the frequency variable AC Resonant system 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 or it can be set up on a trailer.

### Applications:

- ◆ On-site GIS, GIL testing via bushing testing;
- ◆ On-site Instrument transformer and switchgear testing;
- ◆ Voltage withstanding testing;
- ◆ Partial discharge measurements;
- ◆ Capacitance and Tan delta measurements;



800kV/4A AC Resonant Test System

### Main Features (Frequency Variable Type):

- ◆ The system is designed for onsite testing, easy 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 sub-systems can be connected in series or parallel to increase voltage or current.
- ◆ Low PD level less than 5pC (AC Resonant Test System)
- ◆ IEC-compliant frequency range from 20Hz-300Hz, biggest current is happened in 50Hz, from 20Hz-50Hz, the load capacity can be expanded.
- ◆ It has a very low power consumption
- ◆ The test system has an advanced computer-aided control for full automatic operation, easy data processing / recording and printing.



400kV/4A SF6 HV Test Transformer System

### Main Features (SF6 Test Transformer Type):

- ◆ The system is designed for on-site testing and easy 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 less than 2pC
- ◆ Test frequency is 50Hz or 60Hz, the same frequency as the power
- ◆ The test system has an advanced computer-aided control for full automatic operation, easy data processing/ recording and printing.
- ◆ Easy test, low labor cost, 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

### Frequency Variable AC Resonant Test System

#### includes the main components:

- ◆ Air core reactor
- ◆ Multiple taps Exciter transformer
- ◆ IGBT frequency variable power source / Linear amplifier frequency variable 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 test equipments
- ◆ Accessories

**SF6 high voltage test transformer includes the 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 test equipments
- ◆ 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
- ◆ Linear 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

**Frequency Variable 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

**Frequency Variable 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 Adjusting , 0.01Hz Resolution
- ◆ Partial Discharge is less than 2pC

**Switchgear Cabinet Feature:**

- ◆ IP30 Protection Level
- ◆ Chint Circuit Breaker
- ◆ 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

**High Voltage Reactor Feature:**

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

### Exciter Transformer Feature:

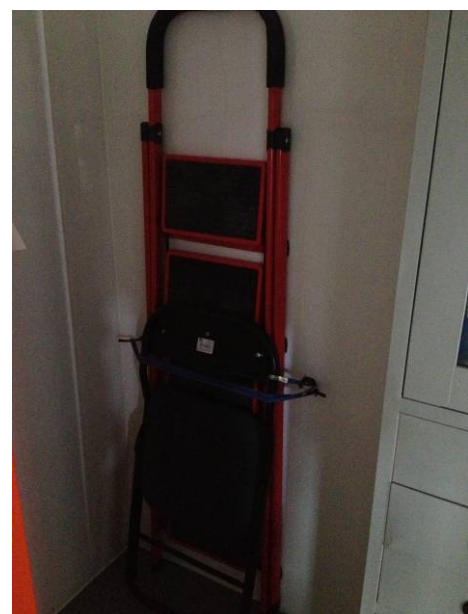
- ◆ 3 taps suitable for difference load and voltage
- ◆ Insulation cable output
- ◆ Protection Cover Include
- ◆ Impedance is less than 4%
- ◆ 20-300Hz Frequency Range
- ◆ Partial Discharge is less than 5pC
- ◆ Heavy Duty

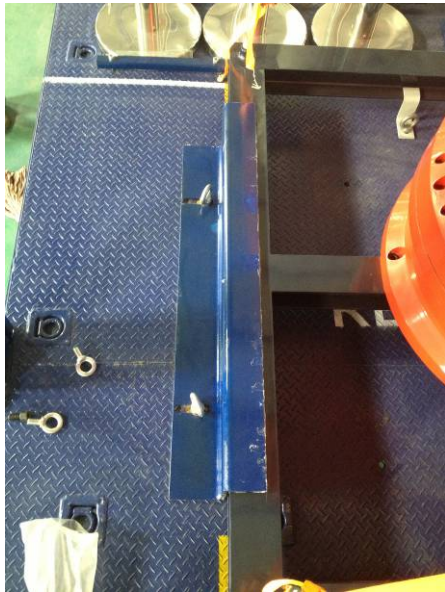
### SF6 High Voltage Test Transformer Feature:

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

### 10ft Control Container Feature:

- ◆ 10ft Standard Container (2991 x2438 x 2438mm )
- ◆ 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 Conditioner available
- ◆ Necessary furniture e.g table for instruments, chairs





**For further information please contact:**

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