



GDTF-240/240 Variable Frequency AC Resonant Test System



Product Description

GDTF-240/240 is applied for hipot test to 145KV GIS with 6 big intervals and 6 small intervals(the big interval is 1000pF, the small interval is 500pF), the capacity is less than 0.009uF, the testing frequency is 30-300Hz, the testing voltage is 220KV and the testing time is 1min.

Advantages in the power system application :

1. Rapidly reduce the required power supply capacity. The power source of series resonance uses the resonant reactor and test object capacitance to generate high

voltage and high current. In the whole system, the power supply only need to supply the part of active loss. Therefore, required test power is the $1 / Q$ of test capacity.

2. Weight and volume of the device are greatly reduced.

3. The output voltage waveform is improved. Resonant power source is resonant filter circuit, which improve the distortion of output voltage waveform and obtain good sine wave. It greatly prevent the test object free from breakdown of harmonic peak.

4. To avoid large short-circuit current burn the fault point. In the series resonant state, when the test object insulation weakness is breakdown, circuit detune immediately, and the loop current rapidly drop to $1 / Q$ of normal testing current.

While tested by parallel resonant or test transformer, the breakdown current rise dozens of times immediately. So series resonant can find the insulation weakness effectively but not exist large short-circuit current breakdown the fault point.

5. Any recovery overvoltage is not appeared. When the test object breakdown, due to resonance loss the resonant conditions, high voltage also disappear immediately, arc extinguish at once, and the time of recover voltage is very long, it will disconnect power supply before reaching the flashover voltage. The voltage recovery process is a kind of energy accumulation of intermittent oscillation, the process is long and any recovery overvoltage will not appeared.

Features

1. With the function of over-voltage, over-current, zero-start, system detune (flashover) protection. Over-voltage, over-current protection value can be set accordingly to user' need. Flashover protection action when flashover and record the flashover voltage value for testing analyze.

2. The unit piece of the device is light. Suitable for field use.

3. There are three kinds of working mode for user choosing according to on-site condition.

Automatic mode, Manual mode, Automatic tuning manual boost mode.

4. Data can be stored, and the series numbers are figures which is easy for identification and searching.
5. Frequency starting point can be setting in the specified scope when the device sweep frequency automatically, sweep frequency direction can choose upward or downward, meanwhile LCD displays the scanning curve, which is convenient for user to know if the resonant point find or not intuitively.
6. Adopted with DSP technology, which can increase or decrease functions and updated accordingly to the user's need, it also makes the human-machine interface more humanized.

Specifications

GDTF - means manufacturer's code.

240kVA means the maximum rated capacity of the equipment, the unit is kVA

240kV means the output voltage of the equipment, the unit is kV.

1. The rated voltage:

240kV—meet 145KV GIS with 6 big intervals and 6 small intervals AC hipot test.

Working frequency: 30~300Hz, testing voltage \leq 220kV, testing time 1min

2. Output voltage waveform distortion rate: $< 1.0\%$

3. Allowing continuous working time: rated condition one time 60s.

4. Quality factor of the equipment: $Q > 50$

5. Quality factor of GIS in full load test: $Q > 20$ (Related to load)

6. Input power supply: Single phase 220V or three phase 380V;

7. Frequency adjusting range: 30-300Hz

8. System measuring precision: 1.5%

9. Over-voltage, over-current, zero-start protection

Parameters for Individual Parts

1. Variable frequency power supply GDTF -15kW/220/380V (1 set)

- Rated output capacity: 15kW
- Working power supply: 220/380 \pm 10%V(single/3-phase), power frequency
- Output voltage: 0-400V, single phase
- Rated input current: 37.5A
- Rated output current: 37.5A
- Voltage resolution: 0.01kV
- Voltage measuring accuracy: 1.5%
- Frequency adjusting range: 30-300Hz
- Frequency adjusting resolution: \leq 0.1Hz
- Frequency stability: 0.1%
- Working time: constant working of 5mins under rated capacity.
- Temperature rise: \leq 65K after constant working of 5mins under rated capacity.
- Noise: \leq 50dB
- Weight: approx. 18kg.

2. HV Reactor GDDK-40kVA/40kV (6 sets)

- Rated capacity: 40kVA
- Rated voltage: 40kV
- Rated current: 1A
- Inductance: 100H (per set)
- Quality factor: $Q \geq 30$ ($f=45\text{Hz}$)
- Type: Dry type
- Weight: approx. 45kg

3. Exciting Transformer GDJL-15kVA/15kV/0.4kV (1 set)

- Rated capacity: 15kVA
- Input voltage: 0-400V, single phase
- Output voltage: 15kV

- Type: Dry type transformer
- Weight: approx. 58kg

4. Capacitive Divider GDFR-120kV/1000pF (2 sets)

- Rated voltage: 120kV
- Capacitance: 1000pF
- Dielectric loss: $\text{tg}\sigma \leq 0.5\%$
- Divider ratio: 3000:1
- Measuring accuracy: 1.5%
- Weight: approx. 26kg