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## GDYT-10kW PD-free Induced Voltage Test System for Voltage Transformer



### I. General Information

GDYT-10kW PD free induced voltage test set is variable frequency AC power supply (hereinafter called VF power supply). It inputs single AC voltage and frequency, after inversion, it generates stable and pure sine wave.

The equipment uses PWM (Pulse Width Modulation) technology to make the device small size, light weight and highly efficient. Digital signal processing technology provides high-precision and high-speed measurement functions such as voltage, frequency, current, apparent power, and power factor. Meanwhile, it use high-power IGBT module design to reduce circuit complexity, improve product stability, reduce power consumption, and increase the capacity of a single unit, plus a number of ultra-isolation transformers to completely isolate the mains and the load to increase the functions, which can ensure the accuracy.

This equipment is mainly used for induction withstand voltage partial discharge test of transformers with voltage of 24kV and below and low voltage side voltage of 3.25V.

## II. Use Condition

- Altitude:  $\leq 1000\text{m}$
- Ambient temperature:  $-5^{\circ}\text{C} \sim +40^{\circ}\text{C}$
- Maximum daily temperature difference:  $\leq 25^{\circ}\text{C}$
- Relative humidity:  $\leq 90\%$  ( $20^{\circ}\text{C}$ )
- Seismic resistance:  $\leq 8$  levels
- Horizontal acceleration of the ground:  $3.0\text{m/s}^2$ , vertical acceleration of the ground:  $1.5\text{m/s}^2$
- The waveform of the power supply voltage is a real sine wave, and the waveform distortion rate is  $< 3\%$
- There is a reliable grounding point, and the grounding resistance is  $< 1.0 \Omega$
- Installation location: Indoor

## III. Standards

JB/T9641 Testing transformers  
GB10229 Reactors  
GB1094.1~5 Power transformers  
GB/T.311.1 Insulation co-ordination  
GB/T16927.1~2 High-voltage test techniques  
JB/T8169 Coupling capacitors and capacitor dividers  
GB4208 Degrees of protection provided by enclosure (IP code)  
GB/T191 Packaging-Pictorial Marking for Handling of Goods  
GB/T11920 General specification of central control equipment and system for electrical parts in power stations and substations  
IEC60060-1 High-voltage test techniques  
DL/T 846.1 General technical specifications for high voltage test equipments

## IV. Equipment composition

- |   |        |
|---|--------|
| 1. GDWB-10kW PD free variable frequency voltage regulating power supply | 1 unit |
| 2. YDQW-10kW /100kV PD free gas-type transformer                        | 1 unit |
| 3. GR-100kV protection resistor   | 1 unit |
| 4. TAWF-100kV/1000pF PD free coupling capacitor                         | 1 unit |
| 5. GDJF-2008 Partial Discharge Detector                                 | 1 unit |

## V. Parameters for Individual Parts

### 1. PD free Variable Frequency Power Supply GDWB-10kW 1set

- Rated capacity: 10kW
- Input voltage: three-phase AC220V $\pm$ 10%, single phase, 50Hz
- Output voltage: AC 0-400V, 1.0% $\pm$ 1 digit
- Output frequency: 45~400Hz
- Instrument voltage: 0-100V AC (only used for step-up transformer to display high voltage)
- Partial discharge: <5Pc
- Protection: over current, over temperature, overload, short circuit
- Ambient temperature: -10 $^{\circ}$ C ~40 $^{\circ}$ C



### 2. PD free gas-type transformer YDQW-10kW /100kV 1set

- Capacity: 10kW
- Low voltage: 400V
- Low current: 25A
- High voltage: 100kV
- High current: 100mA
- Instrument voltage: 100V
- Transformation ratio: 1000:1
- Partial discharge: <5PC
- Frequency: 50Hz 100Hz 150Hz



### 3. Protection Resistor GR-100kV

- Rated voltage: 100kV
- Rated current: 0.1A
- Rated resistance: 1k $\Omega$



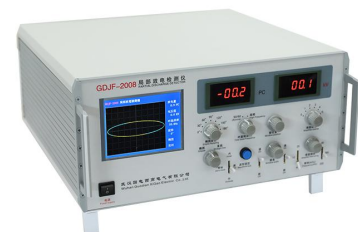
## 4. PD-free Coupling Capacitor TAWF-100kV/1000pF

- Rated voltage: 100kV
- Nominal capacity: 1000PF
- Measurement accuracy:  $<\pm 1\%$
- Dielectric loss:  $<0.2\%$
- Structure: movable
- Withstand voltage level: 1.1 times the rated voltage for 1 minute, no abnormality
- Partial discharge under rated voltage  $\leq 5\text{pC}$
- Running time: 1 hour
- Structural type: Insulated shell oil-paper capacitor Structure: It consists of top cover, grading ring, capacitor body, mobile base, low-voltage arm, etc.



## 5. Partial Discharge Detector GDJF-2008

- The capacitance range of the testable product is 6PF--250 $\mu\text{F}$
- Amplifier frequency band:
  - ① Low end: 10kHz, 20kHz, 40kHz optional
  - ② High end: 80kHz, 200kHz, 300kHz optional
- Amplifier gain adjustment: six coarse adjustment levels, gain between levels  $20\pm 1\text{ db}$ ;
- Fine adjustment range  $>20\text{db}$ .
- Time window:
  - ① Time window is displayed in yellow
  - ② Window width: adjustable range  $15^\circ \sim 150^\circ$ ;
  - ③ Window position: Each window can be rotated  $0^\circ \sim 170^\circ$ ;
  - ④ Two time windows can be opened separately or simultaneously.
- Discharge meter: Digital meter head: displayed with  $3\frac{1}{2}$ LED digital meter 0-100.0 Error  $<\pm 5\%$  (measured by full scale)
- Ellipse time base:
- Frequency 50Hz and any frequency.



- Ellipse is displayed in blue
- Ellipse rotation: 30° as a level, can be rotated 180°.
- Display mode: ellipse-straight line.
- The input voltage of the high-frequency time-base ellipse is less than 220V, and its power intake is less than 1 volt-ampere.
- Waveform lock: You can lock the waveform at any time as required, which is convenient for your observation and analysis.
- Test voltmeter:
  - ① Range: 100kV (expandable)
  - ② Display: 3½ digital voltmeter indication
  - ③ Accuracy: better than  $\pm 5\%$  (full scale)
- Internal and external zero mark function
- Volume: 450mm\*450mm\*190mm (width\*depth\*height)
- Weight: about 15kg.



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