



H.V. TEST

Specialists in High Voltage
Testing & Diagnostics

HVDTL Oil Tan Delta tester 2000V AC 500V DC

The HVDTL Insulating oil dielectric loss and resistivity tester, is designed and manufactured based on GB/T5654-2007 of (Liquid insulating material of relative permittivity, dielectric loss factor and DC resistivity measurements). It is used for measuring dielectric dissipation factor and DC resistivity of insulating oil and other insulating liquids.

The instrument is characterized by integrated structure, and integrates test cell, temperature controller, temperature sensor, dielectric loss test bridge, AC test power, standard capacitor, high resistance meter, DC high voltage source and other major components. The instrument adopts full digital technology and all of the intelligent automatic measurement and the test results can be automatically stored and printed.

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Features:

- The instrument adopts the medium frequency induction heating, PID temperature control algorithm
- This heating method has the advantages of the non-contact between the test cell and the heating body, even heating, fast speed, convenient control, strict control of the temperature within error range of the preset temperature.
- Internal standard capacitor is SF6 gas-filled three-electrode capacitance, and its capacitor dielectric loss and electrical capacity is independent of ambient temperature, humidity and other effects, so that the instrument accuracy can be ensured even after prolonged use.
- AC test power supply using AC-DC-AC conversion, effectively avoid the fluctuations in mains voltage and frequency on dielectric loss measurement accuracy effect.
- There is a temperature limiting relay in the medium frequency induction heating furnace. When temperature above 120 degrees, the instrument frees the relay and stops heating.
- Built-in real-time clock, the test date and time may be saved, displayed and printed with the test results.
- The test results of each step can be automatically stored and printed.
- Over voltage over current or high-voltage short circuit protection function

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Telephone: +27 11 782 1010

Email: sales@hvtest.co.za

Website: www.hvtest.co.za

Address: 17 Gaiety Avenue, Robindale, Randburg



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Additional Features:

- More convenient the experimental parameter is set. Temperature setting range 0~120°C, AC voltage setting range 500~2000V, DC voltage setting range 300~500V.
- Calibration functions of cleaned dry cell. The measurement of dry cell's capacitance and dielectric loss factor can determine its cleaning and assembly conditions. The calibration data is automatically saved and so that it facilitates the calculation of relative permittivity and DC resistivity.

TECHNICAL SPECIFICATIONS

- | | |
|---------------------------------|--|
| • Voltage supply | 220V±10% AC |
| • Power frequency | 50Hz/60Hz ±1% |
| • Measuring range | Electric capacity 5pF~200pF |
| • | Relative Permittivity 1.000~30.000 |
| • | Dielectric loss factor 0.00001~100 |
| • | DC Resistivity 2.5MΩm~20TΩm |
| • Measuring accuracy | Electric capacity ± (1% of measured value +0.5pF) |
| • | Relative Permittivity ±1% of measured value |
| • | Dielectric dissipation factor ± (1% of measured value +0.0001) |
| • | DC Resistivity ±10% of measured value |
| • Resolution | Electric capacity 0.01pF |
| • | Relative permittivity 0.001 |
| • | Dielectric dissipation factor 0.00001 |
| • Measured temperature range | 0~120°C |
| • Temperature measurement error | ±0.5°C |
| • Test Voltage AC (RMS) | 500~2000V Continuously adjustable, frequency 50Hz |
| • Test Voltage DC | 300~500V Continuously adjustable |
| • Power consumption | 100W |
| • External dimensions | 500 x 360 x 420 mm |
| • Total weight | 22kg |
| • Ambient temperature | 0°C~40°C |
| • Relative humidity (RH) | <75% |

Oil cup technical standards

- The test cell used of three-electrode structure in line with the national standard of GB/T5654-2007, with electrode gap spacing 2mm, can eliminate the effects of stray capacitance and reducing leakage on the dielectric loss test results.
- (1) Distance between high voltage and low voltage 2mm
- (2) Dry cell capacitance 60±5PF
- (3) Maximum test voltage (power frequency) 2000V
- (4) Dry cell dielectric loss $\tan \delta < 1 \times 10^{-4}$
- (5) Liquid capacity about 40ml
- (6) Electrode material Stainless steel
- (7) Volume 70mm (D) × 120mm (H)

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