



MOTR

Oil Tan Delta & Resistivity Tester

CAT III	IP	CE	USB	Bluetooth
600V	54			

Motwane's MOTR is a microprocessor-based compact designed for precise measurement of the dissipation factor and volume resistivity of insulating oils. MOTR is built in a single unit and on boarded with international test standards for automatic measurement of all parameters and also available with customized test sequences to conduct tests as per the user's requirement. The test cell is designed as per IEC 60247 with precise control for measuring dissipation factor and resistivity at 27°C & 90°C. MOTR also has an auto drain facility. It is provided with internal memory & printer for on-field reports and also has a USB interface available for data transfer. The calibrator with standard dissipation factor & resistivity ranges are available for validating the performance of MOTR.

MOTR has a Bluetooth connectivity module with Motware mobile app for remote access of testing data & storage in the cloud for further analysis & record purposes.

Features

- ✓ Dissipation Factor , Volume Resistivity, Dielectric Constant (Permittivity), Watt Loss
- ✓ Inbuilt Oil Heating Chamber with precise temperature control
- ✓ Test Cell according to IEC 60247
- ✓ Preprogrammed & Customized Test Sequences
- ✓ Inbuilt Thermal Printer
- ✓ Internal Memory for 250 Test
- ✓ USB Interface
- ✓ Portable Calibrator
- ✓ Oil Auto Drain Facility
- ✓ Auto Sequence Test
- ✓ Bluetooth enabled for Motware Mobile App

Applications

The dissipation factor indicates the dielectric loss of the liquid and thus it's dielectric heating. The dissipation factor test is widely used as an acceptance and preventive maintenance test for insulating oil. The dissipation factor of new oil should not exceed 0.05 % and the dissipation factor can gradually increase in service to a value as high as 0.5%, in most cases, indicating deterioration and/or contamination with moisture, carbon, varnish, glyptal, sodium soaps, or deterioration products.

Used Oil having a dissipation factor of less than 0.5% is usually considered satisfactory for service and with dissipation factor between 0.5% and 2% should be considered as being in doubtful and further investigation recommended and in excess of 2.0 % may be an operational hazard. It should be reconditioned or replaced.

Useful for measuring the quality of insulating oil, used in electrical apparatuses like:

- Power & Distribution Transformers
- OLTC
- HV Cables
- Switchgear
- Capacitor
- Bushing
- Instrument Transformer

Technical Details

MOTR

Technical Specification

AC Voltage 100-2400 V

Resolution 1V

Accuracy $\pm 1\%$

DC Voltage 100 – 1000V

Resolution 1V

Accuracy $\pm 1\%$

Dissipation Factor $10^{-6} - 4.0$

Resolution 1×10^{-6}

Accuracy $\pm 1\%$

Capacitance 0 -1600 pF

Resolution 0.01 pF

Accuracy $\pm 0.1\% \pm 1\text{pF}$

Dielectric Loss 0 -10.0 watts

Resolution 0.001 mili Watts

Accuracy $\pm 1\%$ of Reading $\pm 10^{-5}$ Watts

Dielectric Constant 1-30

Resolution 0.001

Resistivity 10^6 to $10^{15} \Omega \text{m}$

Accuracy $\pm 2\%$ at $10^9 - 10^{13} \Omega \text{m}$

$\pm 5\%$ at $10^{13} - 10^{14} \Omega \text{m}$

$\pm 10\%$ above $10^{14} \Omega \text{m}$

Resolution 0.001

Test Cell

Cell Constant 620 Nominal

Capacitance $55.5\text{pF} \pm 1\text{pF}$

Insulation Teflon (PTFE)

Electrode Spacing 2mm

Volume of Oil 60ml

Heater

Temperature Range $20^\circ\text{C} - 150^\circ\text{C}$

Accuracy $\pm 0.5^\circ\text{C}$

Resolution 0.1°C

Temperature Control One set point (max 110°C)

Heating Element Induction Type

Sensor Solid state (PT100)

Test Standards IEC 60247, VDE 0380, BS 5737, ASTM D924, ASTM D1169, JISC2101:2010

Display Alphanumeric LCD Display

Printer Inbuilt Thermal Printer

Memory 250 Test

Power Supply 110V / 230V, 50/60Hz $\pm 15\%$

Operating Temperature -100°C to 500°C , 90% non condensing

Safety Standards IEC61010-1, IEC61326-1

Dimension 510mm(L) X 320mm(W) X 380mm(H)

Weight 24 Kg (Approx)

Accessories

Standard

- Test Lead sets
- Oil Test Cell with 3 Terminals
- Standard Calibrator
- Pen drive loaded with MOTR software
- software
- USB Cord
- Calibration Certificate
- Transportation case

Optional

- Motware Mobile App
- Oil Auto Drain Facility



Calibrator



Test Cell