



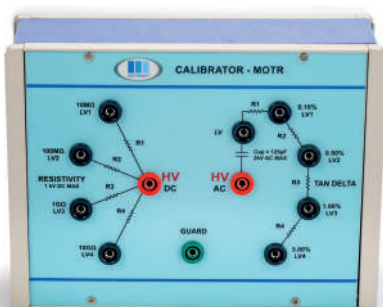
MOTR

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.



Calibrator



Test Cell

Features

- ✓ Dissipation Factor, Volume Resistivity, Dielectric Constant (Permittivity), Watt Loss
- ✓ Inbuilt test cell heating and cooling systems with precise temperature control
- ✓ Test Cell according to IEC 60247 help for easy assembly and Cleaning
- ✓ 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
- ✓ Calibration certified to ISO 17025

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

Measuring Parameter	Dissipation Factor, volume resistivity, Dielectric constant, watt loss
Tan Delta Measurement or Dissipation Factor range	1 x 10 ⁻⁶ to 4.0
Resolution	1 x 10 ⁻⁶
Accuracy	±1% of reading ± 0.0001 (1 x 10 ⁻⁴)
Relative Permittivity or Dielectric constant Measurement Range	1 to 30
Resolution	0.001
Accuracy	±0.1% + 10 digits
Resistivity Measurement or Volume Resistivity range	10 ⁻⁶ TO 10 ⁻¹³ Ohm Cm 1MΩm to 1000 TΩm
Resolution	0.001
Accuracy	±2% at 10 ⁻⁹ TO 10 ⁻¹⁵ cm ±5% at 10 ⁻¹³ TO 10 ⁻¹⁴ cm ±10% above 10 ⁻¹⁴ cm
AC Voltage	400v-2400V
DC Voltage	100V - 1000V
Resolution	1V
Accuracy	±2%, ±1V
Results Frequency	Tandelta - 45 - 55Hz

Test Cell

Cell Constant	620 Nominal
Capacitance	55pF + 1pF
Insulation	Teflon (PTFE)
Electrode Spacing	2 mm
Volume of Oil	60ml

Heater:

Temperature Range	20°C - 150°C
Accuracy	+0.5°C
Resolution	0.1°C
Temperature Control	One set point (max110°C)
Heating Element	Induction Type
Sensor	Solid state (Pt100)

Environmental Specifications

Operating Temperature Range	0°C - 50°C, 90% non-condensing
Storage Temperature Range	-10 to 55deg
Humidity	95% Non condensing
Dimensions	510mm(L) x 320mm(W) x380mm(H)
Weight Instrument	24 Kg.
Interface	USB Type B
Test Standards	IEC 60247, VDE 0380, BS 5737, ASTM D924, ASTM D1169, JISC2101:20104
Display	Alphanumeric LCD Display
Printer	Inbuilt Thermal Printer
Memory	250 Test
Power Supply	110V / 230V, 50/60Hz +15% Single Phase
Power Consumption	< 250VA @ 230V / 50Hz
IP Rating	IP54 with Carrying Case
EMC	IEC61010-1, IEC61326-1
Oil test cell heater	Induction type
Optional Auto Drain Feature provided	
Safety-1	Interlock provided in heating chamber to connect the oil cell
Safety-2	Emergency stop provided on front panel

Accessories

Standard

■ Test Lead	: 1 Set.
■ Oil Test Cell with 3 terminals	: 1 No.
■ Standard Calibrator	: 1 No.
■ Pen Drive with PC Communication software	: 1 No.
■ USB Cord	: 1 No.
■ Test & Calibration Certificate	: 1 No.
■ Instruction Manual	: 1 No.

Technical Details

MOTR

Optional

- Oil Auto Drain Facility

Note:

- Bluetooth Software (Optional)
- Motware Desktop Application (Optional)

ORDERING INFORMATION

Product	Order Code
MOTR with Standard Accessories	109614010