



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	400-2400 V
Resolution	1V
Accuracy	±1%

DC Voltage	100 – 1000V
Resolution	1V
Accuracy	±1%

Dissipation Factor	10e-5 – 4.0
Resolution	1 X 10-5
Accuracy	±1% of rdg ± 0.0001 (1 X 10-4)

Capacitance	0 -1600 pF
Resolution	0.01 pF
Accuracy	±0.1% ±1pF

Dielectric Loss	0 -10.0 watts
Resolution	0.001 mili Watts
Accuracy	±1% of Reading ± 10-5 Watts

Dielectric Constant	1-30
Resolution	0.001

Resistivity	10e9Ωcm to 10e15Ωcm
Accuracy	± 2% of rdg at 10e9 – 10e13Ωcm ± 5% of rdg at 10e13 – 10e15Ωcm ± 10% of rdg above 10e15Ωcm

Test Cell

Cell Constant	620 Nominal
Capacitance	55pF ± 1pF
Insulation	Teflon (PTFE)
Electrode Spacing	2mm
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)

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 ±15%

Operating Temperature	-100C to 500C, 90% non condensing
Safety Standards	IEC61010-1, IEC61326-1
Dimension	510mm(H) X 320mm(W) X 380mm(L)
Weight	24kg

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

This Product is Connected (MOT-WARE Enabled)

MOT-WARE Cloud Application

Motwane has designed and developed MOT-WARE – a cloud based test data platform to aid in accurate Asset Health Assessment. Through MOT-WARE, the test and measurement industry has taken a huge leap forward. MOT-WARE captures data from full range of BLE enabled Motwane testing equipment. It is a user-friendly platform as it is also accessible from a web-based, desktop as well as a mobile application. In addition, it offers an open architecture that can seamlessly integrate with any non Motwane test and measurement equipment for quick and authentic digital test data, captured periodically as well as streamed with real-time data via sensors from loXn series of IOT devices.

MOT-WARE has a preloaded repository of test templates for various electrical assets as well as customizable test templates. A customized report builder in MOT-WARE allows the user to generate report in their own format. It also has a facility to upload historical test data and breakdown history of assets. Test results can also be viewed by various metrics, such as pass or fail.

Data Analysis is also done through MOT-WARE which includes Trend Analysis, MIS Reports and Pivot Tables. As an add-on, MOT-WARE also offers “Motwane AI Analytics” which uses a proprietary AI algorithm and Machine Learning to make accurate predictions about assets life, based on its behavioural patterns and operating conditions.

Being centralized test data, it helps in improving life of assets, its productivity and efficiency, cost reduction, etc. It can be used for various applications across customers’ segments like Utilities, OEMs, Industry, Electrical contractors (Testing, O&M) or Field repairs & Service Provider, EPCs, commercial premise and many more.

Important Benefits



**Accurate Digital
Data**



**Centralized
Data Access**



**Customizable Report
Templates**



**Alerts &
Notifications**



Trend Analysis



Minimum Training



Scheduling Tests



Reach out to us at setup@motware.com to setup a new MOT-WARE account.

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