



Features

- ✓ Selectable Test Voltage from 250V, 500V, 1000V, 2500V, 5000V DC.
- ✓ Insulation Resistance Measurement up to 1T Ω
- ✓ PI & DAR Measurement Facility
- ✓ Short Circuit Current 2mA
- ✓ Auto Power Off.
- ✓ AC/DC Voltage Measurement up to 600V.
- ✓ Three Programmable Timer from 0 sec to 99 minutes
- ✓ Liquid Crystal Display with pleasant white backlit.
- ✓ Internal rechargeable Battery.
- ✓ Safety - IP 54, CAT IV 600V and CE conformity.
- ✓ Robust ABS body with self-carrying handle for easy portability.
- ✓ Automatic discharge for capacitive circuits.
- ✓ Guard Terminal to minimize the surface leakage
- ✓ Pass - Fail Limit

IT 51

5KV Digital Insulation Resistance with Polarization Index

CAT IV	IP	CE
600V	54	

The Motwane IT-51 is a microprocessor based Digital Insulation Tester designed for testing all types of electrical apparatuses like transformers, switchgears, motors, generators, cable and substation products. IT-51 has a digital display and an analog arc display. The instrument automatically performs IR Test, PI & DAR Test by selecting the mode. IT-51 has a large LCD white backlit display, it shows leakage current in scrolling form along with IR, PI & DAR value.

Insulation Resistance Test : This is an important test for future comparative purposes, acceptance test and also for determining the suitability of the electrical apparatus of energizing or application of the high-potential (hi-pot) test. The IR test must be successfully completed for factory warranty to be valid. The IR test must be conducted immediately prior to energizing the electrical apparatus or beginning the high potential test

Polarization Index Test : This is an extension of the IR test. In this test, two IR measurements are taken, the first reading at 1 min and the second reading at 10 min. Then the ratio of the 10 min reading to 1 min reading is calculated to give the PI value. A PI of winding-to-winding and winding-to-ground should be determined. A PI value below 2 indicates insulation deterioration and the cause for further investigation.

Dielectric Absorption Ratio Test : This test recognizes the fact that "good" insulation will show a gradually increasing insulation resistance after the test voltage is applied. The test voltage is applied; insulation resistance is read at three different times (T_1 , T_2 , T_3) after the connections are made. When the insulator is subjected to an insulation resistance test and the resistance values are measured after time ' T_1 ' (default 30 seconds), again after time T_2 (Default 60 seconds) and again after time T_3 (Default 30 min). Always $T_2 > T_1$ and $T_3 > T_2$.

Applications

The Insulation Resistance Test is an essential test that help to verify the condition of electrical insulation. Insulation resistance quality of an electrical system degrades with time, environment condition i.e. temperature, humidity, moisture and dust particles. The instrument is designed for routine and diagnostic testing like IR, PI, DAR of high voltage electric apparatus uses like.

- All electrical rotating machineries
- Transformers
- HV & LV Switchgears
- Cables
- Insulators etc.

Technical Details

IT 51

Terminal Voltage

Test Voltage 250V, 500V, 1000V, 2500V, 5000V

Test Voltage Accuracy $\pm 5\%$ of rdg

Short Circuit Current 2 mA

Programmable Timers T1, T2 & T3

Insulation Resistance

Analog Display 1 k Ω to 1 T Ω

Digital Display 1 k Ω to 1 T Ω (3 Digit Display)

Insulation Accuracy

Up to 1G Ω All Ranges $\pm(5\% + 2 \text{ digits})$

Over 1G Ω 5000V $\pm(5\% + 0.04\% \text{ per G}\Omega)$

2500V $\pm(5\% + 0.08\% \text{ per G}\Omega)$

1000V $\pm(5\% + 0.2\% \text{ per G}\Omega)$

500V $\pm(5\% + 0.4\% \text{ per G}\Omega)$

250V $\pm(5\% + 0.8\% \text{ per G}\Omega)$

AC/DC Voltage Measurement

Range Up to 600V

Accuracy $\pm 5\%$ of reading ± 5 digits

Power Supply Specifications

Battery Internal Rechargeable

Display LCD Display with White Backlit

Mains Power Supply 100/ 230VAC 50/60Hz

General

Dimensions 365 mm(L) X 290 mm(W) X 195 mm(H)

Weight 4.0 Kg (Approx) (without Accessories)

Environmental Specifications

Operating Temperature -10°C to 55°C

Storage Temp -20°C to 70°C

Humidity less than 95% RH, non-condensing max
at 40°C

Safety and Standards

Safety in accordance with : EN61010-1 : 2001

EMC in accordance with EN 61326-1 : 2006

Type Test in accordance with IS 11994

Ingress Protection IP54

CE & CAT IV 600V

Safety of test lead in accordance with

EN61010-031 : 2002 +A1 : 2008

Accessories

Standard

- Test leads 3 meter : 1 Set
- User Manual : 1 No
- Calibration Sheet : 1 No
- Carrying bag : 1 No
- Mains Protected Fuse : 2 No

Optional

- Test leads 15 meter : 1 Set
- Test leads 10 meter : 1 Set

