

# 5K PI

## 5KV Diagnostic Insulation tester



### Features

- Programmable test voltage 250 - 5000V in steps of 50V
- Insulation Resistance upto 10TΩ
- Three programmable timers
- Modes for conducting IR, Leakage current, PI, DAR, DD, SV and BDV test
- Mains & Battery Operation
- CE, CAT-IV 600V, IP65, Complies with latest IEC/IS Standards
- 1000 test result storage
- Optically Isolated RS 232 port & USB port
- AC / DC Voltage measurement

The New 5 KV Diagnostic insulation tester (Model: 5K PI) from MOTWANE is designed to conduct automatic diagnostic tests on high voltage equipments like Transformers, Cables, Bushings, Switchgears and rotating machines. Designed & developed indigenously at the state of the art R&D laboratory, the 5K PI is a microprocessor based instrument deploying latest technology and very high speed data sampling to give correct, repetitive and durable performance under harsh Indian conditions. It is mains and battery operated weighing less than 5 kgs making it truly light weight & compact insulation resistance tester for outdoor applications. The instrument is specially designed to suit operator's ease and test requirement. The instrument and its accessories are certified as per relevant IS/IEC standards.

Information displayed on large white backlit LCD includes insulation resistance, test voltage, leakage current, capacitance, battery status and timer. Three programmable timers are provided to conduct various tests like Polarization Index (PI), Dielectric Absorption Ratio (DAR), Dielectric Discharge (DD), Step Voltage (SV) test and Breakdown Voltage (BDV) test. At the end of any test, capacitive loads are automatically discharged.



### Applications

The instrument is designed for routine and diagnostic testing like IR, PI, DD, DAR & SV of high voltage electric equipment like Transformers, generators, motors, cables, bushings, LA's, switchgears, etc. Trending of data can reveal vital information about insulation quality and enables the user to take informed decision.

# 5K PI Technical Specification \*

## Test Parameter Specifications

- Test Regimes (Automatic) : IR, Leakage Current, PI, DAR, DD, SV & BDV
- Test Voltage : 250V - 5KV in 50V steps
- Test Voltage Accuracy :  $\pm 5\%$
- Short Circuit Current : 5 mA
- Three Programmable timers : T1, T2 & T3 (max. 99 min 59 sec.)

## Measurement Ranges

### Insulation Resistance

- Analog Display : 1K $\Omega$  to 5T $\Omega$
- Digital Range (3 Digit display) : 1K $\Omega$  to 10T $\Omega$
- Accuracy (25°C) :  $\pm 5\%$  (up to 999 G $\Omega$ )

### Guard

- 2% error guarding <300 K $\Omega$  leakage with 100 M $\Omega$  load

### Leakage Current

- Range : up to 5mA
- Accuracy :  $\pm 5\%$

### Capacitance

- Range : 10nF to 50 $\mu$ F
- Accuracy :  $\pm 10\%$  of rdg.

### Voltage Measurement

- Range : Upto 600V DC  
Upto 600V AC rms
- Accuracy :  $\pm 5\%$  of rdg

## Power Supply

### AC mains

- Voltage : 90 - 270V AC
- Frequency : 50/60Hz

### Battery

- Internal Rechargeable Battery
- Backup : Approx. 6 hours of continuous testing at 5KV on a load of 10 G $\Omega$
- Charging time : 4 hours (approx.)

### Interference Rejection

- 1mA rms per KV test voltage

## Standards & Approvals

- Safety In accordance with EN 61010-1
- EMC In accordance with EN 61326-1
- Type Test In accordance with IS 11994
- Ingress Protection IP 65
- CE & CAT III 600V / CAT IV 600V
- Safety of Accessories with IEC61010-31

## Physical Specifications

- Dimensions : 195mm (H) x 290mm (W) x 360mm (L)
- Weight : 5Kg. (excluding accessories)

## Environmental Specifications

- Operating Temperature : 0°C to 55°C
- Storage Temperature : -20°C to 70°C
- Relative Humidity : <95%RH, Non condensing

## Indications & Annunciations

- Audio visual indication for HV presence
- LED indication for HV presence
- Battery status indication, Battery charging indication
- Audible discharge annunciation
- Mains / Battery Indication

## Display details

- Real-time display of Insulation Resistance
- After end of test scrolling display of test results including resistance, leakage current, time & capacitance

## Accessories

### Standard Accessories

- 3 x 3m test leads for Earth, Guard and Line connection with large insulated clamps
- 1.5m Main power cord
- Mains protected fuse
- Instruction Manual
- Carrying Bag

### Optional Accessories

- 3 X 10m test leads with large insulated clamps
- RS 232 communication Cable
- USB Cable
- Software CD

## Notes

1. The Instrument is accompanied with Test & calibration sheet. 2. Test Facilities can be provided at the factory with the available test set-ups only. 3. The company's policy is continuous improvement of its products. We therefore reserve the Right of any deviation from illustration or specifications without notice. 4. Stated accuracies are valid from 10% of the range to 95% of the range. 5. Accuracy Specified for temperature range of 25°C  $\pm$  5°C & 55% RH  $\pm$  10%

Designed and Manufactured by:

## The Motwane Manufacturing Company Pvt. Ltd.

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