



Connected to Cloud

## 5K PI

### Diagnostic Insutester

CAT III	CAT IV	IP	CE	Bluetooth
600V	600V	54		

5K PI Insulation Diagnostic Tester is designed to conduct various diagnostic tests on electrical apparatus like Transformers, Cables, Bushings, Insulator, Switchgears, Lightning Arrester/Arrestor and Rotating Machines etc. Designed & developed indigenously at the state of the R&D laboratory, the 5K PI is a microprocessor based instrument deployed with latest technology and very high speed data sampling to give correct, repetitive and durable performance under harsh conditions. It is operated through mains and (as well as) the battery, weighing less 4 Kgs Approx making truly light weight & compact insulation resistance tester for outdoor applications. Our Insulation Tester is equipped with a self-replaceable batter that means no need to send the tester to OEM for its replacement. hence reducing the downtime of the instrument. The instrument is specially designed to suit operator's ease and test requirement, also certified as per relevant IS/IEC standards. Instrument has large white backlit LCD displayed with indication and display test information like insulation resistance value, test voltage, leakage current, capacitance, battery status and timer. Equipped with three programmable timers, which provides to conduct various tests like Polarization Index (PI), Dielectric Absorption Ratio (DAR), Dielectric Discharge (DD), Step Voltage (SV) test and Breakdown Voltage (BDV) test. The instrument has the automatic capacitive load discharge at the end of the test.

5K-PI has Bluetooth connectivity module with Motware mobile app for remote access of testing data & in the cloud for further analysis & record purpose.

## Features

- ✓ 5 KPI available in three variants : 3mA, 5mA and 6mA
- ✓ Self Replaceable Battery
- ✓ Compatibility under heavy induction environment.
- ✓ Programmable Test Voltage 250 - 5000V in steps of 50V
- ✓ Insulation Resistance upto 50TΩ
- ✓ 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 results storage
- ✓ Optically Isolated RS-232 port & USB port
- ✓ AC / DC Voltage Measurement
- ✓ LCD Display with backlit
- ✓ Bluetooth enabled for Motware Mobile App

## Applications

The Insulation Resistance Test is an essential test that helps 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, DD, DAR & SV of high voltage electric apparatus like transformers generators, motors, cables, bushings, LA's, switchgear, etc. and is temperature independent. Trending of data can reveal vital information about insulation quality and enables the user to take informed decision.

## Technical Details

5K PI

### Test Parameter Specifications

**Test Regimes (Automatic)** IR, Leakage Current, PI, DAR, DD, SV & BDV

**Test Voltage** 250V - 5KV in 50V steps

**Test Voltage Accuracy**  $\pm(5\%$  of reading + 5 digits)

**Short Circuit Test Current**  $\leq 6\text{mA} + 0.5\text{mA}$

**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 $\Omega$  for 3mA & 5mA

1K $\Omega$  to 50T $\Omega$  for 6mA

**Accuracy (25°C)**  $\pm(5\%$  of reading + 5 digits) upto 1 T $\Omega$

$\pm(10\%$  of reading + 5 digits) 1 T $\Omega$  to 50 T $\Omega$

**Guard** 300k $\Omega \pm 10\%$

### Leakage Current

**Range** Up to 6mA

**Accuracy**  $\pm(5\%$  of reading + 5 digits)

### Capacitance

**Range** 10nF to 50 $\mu\text{F}$

**Accuracy**  $\pm(10\%$  of reading + 5 nF)

### Voltage Measurement

**Range** Upto 600V DC / Upto 600V AC RMS

**Accuracy**  $\pm(5\%$  of reading + 5 digits)

### Power Supply

**AC Mains Voltage** 100 - 230V AC

**Frequency** 50/60Hz

**Battery** Internal Rechargeable Battery 14.8V, 26Ah  
User Replaceable Battery

**Backup** Approx. 5 Hours of continuous

testing at 5KV on a load of 250M $\Omega$

**Charging Time** 3 hours approx. (95% Charged)

**Interference Rejection** 1mA rms per 250V up to a max of 4mA.

### Physical Specifications

**Dimensions** 365mm(L) x 285mm(W) x 190mm(H)

**Weight** 4Kg. (Excluding Accessories) (Approx)

### Serial Communication

**RS232, USB** Galvanic isolated

**Baud Rate** 115200, 1 Stop bit, no parity

**Data Transfer** Bluetooth (ISM band 2.4 Ghz)

### 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 54

CE & CAT III 600V / CAT IV 600V

Safety of Accessories with IEC61010-31

### 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 and charging indication

Mains / Battery Indication

### Display Details

Real-time display of Insulation Resistance

After the end of the test, the result including resistance, leakage current, time & capacitance information will be displayed.

### Accessories

#### Standard

- 3m Test lead set - for 3mA & 5mA : 01 Set.
- 10m Test lead set - for 6mA : 01 Set.
- Main Power Cord : 01 No.
- Mains Protected fuse : 02 Nos.
- Instruction Manual : 01 No.
- Carrying Bag : 01 No.
- Pen Drive : 01 No.
- USB 2.0 A/B cable 1.5 mtr long : 01 No.
- Test & Calibration Certificate : 01 No.
- Communication cable RS232 male to female serial cable 9 pin : 01 No.

#### Optional

- 15m Test Lead Set : 01 Set.

#### Note

- Bluetooth Software
- Motware Desktop Application