



5K PI

Diagnostic Insulation Tester

CAT III	CAT IV	IP	CE	Bluetooth
600V	600V	65		

5K PI Diagnostic Insulation Tester is designed to conduct various diagnostic tests on electrical apparatus like Transformers, Cables, Bushings, Insulator, Switchgears, Lightning Arrester/Surge Arrester and Rotating Machines etc. 5K PI comes in three ranges of short circuit current of 3mA, 5mA and 6mA. 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 4 Kgs Approx making truly light weight & compact insulation resistance tester for outdoor applications. Our Insulation Tester's 3mA and 6mA variants are equipped with a self-replaceable battery. Thus, there is no need to send the tester to the supplier for battery replacement; in turn 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. The instrument features a large, white, backlit LCD that displays test information, including insulation resistance value, test voltage, leakage current, capacitance, battery status, and timer, along with other indications. 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 that allows remote access to testing data via the MOT-WARE mobile app, as well as cloud integration for further analysis and record-keeping

Features

- ✓ Available in three variants : 3mA, 5mA and 6mA
- ✓ Self-replaceable battery for 5K PI 3mA & 5K PI 6mA
- ✓ Compatibility under heavy induction environment.
- ✓ Programmable Test Voltage: 250V, 500V, 1000V, 2500V, 5000V
- ✓ Insulation Resistance upto 50TΩ
- ✓ Three Programmable Timers: T1, T2, T3 respectively
- ✓ Modes for conducting IR, Leakage current, PI, DAR, DD, SV and BDV test
- ✓ Mains & Battery Operation
- ✓ CE, CAT-IV 600V, IP 65, 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 MOT-WARE Mobile App
- ✓ For 5K PI 6mA, Interference Rejection: 1mA RMS per 250V test voltage up to a max. of 8mA

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 & BDV of high voltage electric apparatus like transformers generators, motors, cables, bushings, LA's, switchgear, etc. and is temperature independent. It can be operated in 220 kV, 400 kV and 765 kV* switchyards. Trending of data can reveal vital information about insulation quality and enables the user to take informed decision.

* Applicable for 5K PI 6mA only

Technical Details
5K PI
5K PI 3mA
5K PI 5mA
5K PI 6mA
TEST SPECIFICATIONS

Diagnostic Modes IR, PI, DD, DAR, SV & BDV

TEST VOLTAGE

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

Lock Test Voltage 250 V to 5 kV in 50V steps

Voltage Accuracy ± 5%

RESISTANCE RANGE

Analog & Digital Display 1KΩ to to 10TΩ 1KΩ to to 50TΩ

Accuracy ±(5% of reading + 5 digits) upto 1 TΩ ±(5% of reading + 5 digits) upto 1 TΩ

±(10% of reading + 5 digits), for 1 TΩ to 10 TΩ ±(10% of reading + 5 digits), for 1 TΩ to 50 TΩ

Guard Resistance 300kΩ ± 10%

Indication Audio-visual warnings available

SHORT CIRCUIT CURRENT

Current Range Up to 3mA

Up to 5mA

Up to 6mA

AC/DC VOLTAGE

Voltmeter Range 0 - 600 AC/DC

Voltmeter Accuracy ±(5% of reading + 5 digits); input resistance: 100MΩ Approx

CAPACITANCE MEASUREMENT

Capacitor Charging Time ≤ 5 sec per μF

Capacitor Discharge Time ≤ 2 sec per μF

Capacitance Range 1nF to 50μF; Measuring range C: 50 μF*

Capacitance Measurement Accuracy ±(10% of readings + 5 nF)

INTERFERENCE REJECTION

1mA RMS per 250V test voltage up to a max. of 4mA

1mA RMS per 250V test voltage up to a max. of 8mA

TIMER

Programmable timer from 0 sec to 99 minutes

MEMORY

Internal Memory storage of 1000 readings

INTERFACE

Bluetooth Communication

Galvanically isolated RS232 and USB ports; remote operation via PC using either RS232 or USB cable

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 includes continuous improvement of its product. 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 ± 5°C & 55% RH ± 10%. **6)** Image & weight are subjected to change.

Technical Details
5K PI
5K PI 3mA
5K PI 5mA
5K PI 6mA
POWER SUPPLY
Mains Input Voltage

100-230V, Frequency 50/60Hz

Battery Type

 4 x Replaceable Battery Li-ion 3.7v
3200mAh, INR18650MH1

 Rechargeable Battery 14.8V,
2600mAh

 4 x Replaceable Battery Li-ion 3.7v
3200mAh, INR18650MH1

Battery Life

Approx. 5 hours of continuous testing at 5kV on 250 MΩ load

Battery Charging Time

3 hours approx. (95% Charged)

Auto Power Off

NA

NA

 Instrument turns off after 5 minutes
of non-use to conserve battery life

ENVIRONMENTAL CONDITION
Operating Temperature Range

0°C to 55°C

Storage Temperature Range

-20°C to + 70°C

Humidity

< 95% RH Non-Condensing

SAFETY

Safety in accordance with EN 61010-1

Safety of test lead in accordance with EN61010-031

Measurement CAT III 600V / CAT IV 600V

EMC in accordance with EN 61326-1

CE Certified

Ingress Protection IP 65

PHYSICAL SPECIFICATIONS
Dimensions

190mm X 285mm X 365mm (Approx.) (H x W x L)

Weight

4 Kg (approx) (Without Accessories)

9 Kg (approx.) (With Accessories)

ACCESSORIES
Standard

■ 3m Test lead Set (3mA & 5mA)	: 01 Set.
■ 10m Test lead Set (6mA)	: 01 Set.
■ Mains Power Cord	: 01 Set.
■ Mains Protected Fuse 2A, 250V, Fast Blow	: 02 Nos.
■ Communication cable RS232 male to female serial cable 9 pin	: 01 No.
■ Instruction Manual	: 01 No.
■ Test & Calibration Certificate	: 01 No.
■ Carry Case	: 01 No.
■ Pen Drive	: 01 No.
■ USB 2.0 A/B cable 1.5 mtr long	: 01 No.

Optional

■ 15m Test lead Set	: 01 Set.
■ Bluetooth Software	
■ MOT-WARE Desktop Application	

ORDERING INFORMATION
Product
Order Code

5K PI with 3mA	109394K10
5K PI with 5mA	109394R10
5K PI with 6mA	109394Z10
with Standard Accessories	

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