



10K PI

Diagnostic Insulation Tester



10K PI is an Insulation Diagnostic Tester having test voltage range up to 10KV, designed & developed indigenously at the state of the art R&D laboratory to conduct automatic insulation tests on high voltage equipment's like Transformers, Cables, Bushings, Switchgears & Rotating Machines. 10KPI comes in two ranges of short circuit current of 3mA and 6mA. 10K PI is a microprocessor based instrument deploying the latest technology & very high speed data sampling to give correct, repetitive readings & quality performance under harsh electrical conditions. It has a wide insulation resistance range up to 50TΩ.

Model 10K PI is mains and battery operated portable & compact insulation tester for outdoor applications. The battery backup of 8 Hours makes it suitable for field operations. IP 65 rating keeps 10K PI safe from water & dust ingress. It complies with CAT IV 600V for safe operation. The instruments & its accessories are certified as per relevant IS/IEC standard.

The Information displayed on the large backlit LCD includes insulation resistance, leakage current, capacitance, battery status & timer. Three programmable timers are provided to conduct various tests like Polarization Index (PI), Dielectric Absorption Ratio (DAR), Dielectric Discharge (DD), Step Voltage (SV), & Breakdown Voltage (BDV) Test. 10K PI can store up to 1000 test results*. PC interface via USB & RS-232 for data transfer. The PC software for report generation & data trending analysis helps to keep records of capital equipment. Instrument has automatic discharge facility for capacitive loads discharging. The instrument has the automatic discharge facility for capacitive load discharge at the end of the test.

Features

- ✓ 10 KPI available in two variants : 3mA, 6mA
- ✓ IR Testing with Diagnostic Modes PI, DAR, DD, Step Voltage, BDV.
- ✓ Programmable Test Voltage from 250V-10KV
- ✓ Insulation Resistance Range from 10KΩ to 50TΩ
- ✓ Three Programmable Timers
- ✓ Programmable Break Down Current Settings
- ✓ Mains & Battery operation
- ✓ Internal Data Storage up to 1000 tests*
- ✓ Galvanic Isolated RS 232 & USB Port
- ✓ Application Software for Data Trending Analysis
- ✓ AC/DC voltage measurement up to 600V
- ✓ Auto Calibration at every start up
- ✓ Burn Mode for uninterrupted Insulation Resistance Testing
- ✓ Alarm Mode with Min-Max Settings & Pass Fail Indication
- ✓ CAT IV 600V, IP 65, Complies with latest IEC/IS Standards
- ✓ Operation from an AC source when the battery is flat
- ✓ Digital filter designed with three different levels F-1, F-2, F-3 useful when testing insulation in heavy noise environment
- ✓ Test Voltage 250V, 500V, 1000V, 2500V, 5000V, 7500V, 10000V

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 insulation resistance testing and diagnostic testing like PI, DD, DAR & SV of high voltage electric apparatus like transformers, generators, motors, cables, bushings, LAs, switchgear, etc. and is temperature independent. Trending of data can reveal vital information about insulation quality and enables the user to take informed decision.

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10K PI
Specifications

AC Voltage	Mains Input voltage 85V/265Vrms, Frequency 50/60Hz $\pm 10\%$
Battery life	Battery Pack, Rechargeable 14.8V, 5200mAh, Li-Ion, Type 18650 8 hours continuous testing at 10kV with a 250 M Ω load (approx).
Auto Power Off	Instrument turns off after a few minutes if non-use to conserve battery life
Battery Charge Time	8 hours approx. (95% Charged)
Test Voltage	250V, 500V, 1000V, 2500V, 5000V, 7500V, 10000V
Lock Test Voltage	250 - 1000V adjustable in steps of 10V, 1000 - 10000V adjustable in steps of 25V.
Test Voltage Accuracy	$\pm 5\%$ of reading, ± 5 digit, nominal test voltage at 1 G Ω load (0°C to 30°C)
Resistance Range	10K Ω to 50T Ω
Accuracy At 23°C	1M to 1T $\pm(5\%$ of reading + 5 digits) 1T to 10T $\pm(10\%$ of reading + 5 digits) 10T to 20T/50T $\pm(20\%$ of reading + 7 digits)
Guard Terminal Performance	Guard resistance: 300 k Ω $\pm 10\%$
Display Range	Up to 50T Ω
Short Circuit / Charge Current	Up to 6mA
Accuracy	10KPI 6mA: 6mA ± 0.7 mA@ 23°C at 10kV 10KPI 3mA: 3mA ± 0.7 mA@ 23°C at 10kV (Battery Fully charged)
Capacitor Charge	Capacitor charging time ≤ 5 sec per μ F
Capacitor Discharge	Capacitor discharge time ≤ 2 sec per μ F
Capacitance Range	1nF to 50 μ F
Capacitance Measurement Accuracy	$\pm(10\%$ of readings + 5 nF)
Current Range	Current range 0.01 nA to 6 mA
Current Accuracy	10nA to 3mA/6mA $\pm(5\%$ of reading + 5 digits) 0 nA to 9.99 nA $\pm(10\%$ of reading + 5 digits) at all voltages (20 °C)
Interference	1mA rms per 250V test voltage up to a max. of 4mA
Voltmeter Range	0 - 600 Ac and DC
Voltmeter Accuracy	$\pm(8\%$ of reading + 5 digits) Input resistance: 250M Ω Approx.
Timer	Programmable timer from 0 sec to 99 minutes.
Memory	Internal Memory storage of 1000 readings.
Interface	Galvanic isolated RS232, USB port.

Note: Image & weight are subjected to change.

Real Time Output

Remote Operation	Remote operation through PC by using Rs232 cable and USB cable
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Environmental

Operating Temperature Range	-10°C to 55°C,
Storage Temperature Range	-20°C to + 70°C.
Humidity	< 95% RH Non-Condensing.

Safety

Safety in accordance with EN61010-1
EMC in accordance with EN61326-1
Type test in accordance with IEC 60068
Test lead in accordance with IEC 61010-31
CE& CAT III 1000V & IV 600V, IP65

Physical Specification

Dimensions	190 mm X 285 mm X 365 mm (Approx.) (HxWxL)
Weight	: 5 Kg (approx) (without accessories) : 9.5 Kg (approx) (with accessories)

Accessories

Standard	
■ 3m Test lead Set (3mA)	: 1 Set.
■ 10m Test lead Set (6mA)	: 1 Set.
■ Mains Power Cord	: 1 No.
■ Mains Protected Fuse	: 2 No.
■ RS232 Communication cable	: 1 No.
■ Instruction Manual	: 1 No.
■ Calibration Certificate	: 1 No.
■ Carry Case	: 1 No.
■ Pen Drive	: 1 No.
■ USB Cable	: 1 No.

Optional

■ 15m Test lead Set	: 1 Set.
■ Interlock Cable	: 1 No.

ORDERING INFORMATION

Product	Order Code
10K PI 6mA	1096AD010
10K PI 3mA	109385010
with Standard Accessories	

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 $\pm 5^\circ$ C & 55% RH $\pm 10\%$.