

S431 10KV INSULATION TEST SET



FEATURES

Insulation resistance measurement up to 20 TΩ
Automatic DAR and PI calculation
Selectable noise filter
SV and DD diagnostics
Capacitance and leakage current measurement in real time
AC/DC external voltage measurement up to 1000 V
Compact, lightweight, waterproof design for field use
PC software: 1 s data log, trend view, and report generation



GENERAL SPECIFICATION

Function	Measurements: Insulation Resistance, Leakage Current, Capacitance, PI, DAR Diagnostics: SV (Step Voltage), DD (Dielectric Discharge), Ramp Test Utilities: Auto Discharge, Noise Filter, Timer, External Voltage (AC/DC), Data Storage, Ambient Temperature Display
Power	DC 14.8 V, 5200 mAh Li-ion Battery (approx. 16.8 V when fully charged)
Test Voltage	250 V, 500 V, 1 kV, 2.5 kV, 5 kV, 10 kV
Voltage Measurement	AC/DC up to 1000 V
Short Circuit Current	≥ 5 mA
Connection	L (Line): High-voltage output terminal, connected to one end of the DUT G (Guard): Shielding terminal, used for 3-electrode measurement of insulation materials or cables to eliminate surface leakage current E (Earth): Ground terminal, connected to the ground of the DUT
Time	Max 99 min 99 s (adjustable, depending on test method)
Step Voltage	250 V to 1.00 kV: 10 V step 2.50 kV to 10.00 kV: 20 V and 30 V step
Resolution	Insulation Resistance: 0.01 MΩ Capacitance: 0.001 μF
Capacitance Test	Range: 0.200 μF to 100.0 μF Accuracy: ±20% ±0.005 μF

Backlight	Adjustable (High / Medium / Low)
LCD	5.6-inch color LCD
Test Indication	LED flash and buzzer alert during test
Charging Indication	Red = charging; Green = full
Data Storage	Auto-save up to 1,000 records
Data View	Built-in data view and browse function
Automatic Shut-Down	Auto power-off after 15 minutes of inactivity when on battery
Standard Test Lead	Red/Green/Black clip leads included
Battery Status	Real-time battery level display; output disabled at low battery
Display Info	Date, ambient temperature, and humidity
Dimensions	320 mm (L) × 240 mm (W) × 145 mm (H)
Weight	Approximately 3.5 kg (battery included)
Connectivity	USB (PC software) and Bluetooth (App)
PC Software	Data export, real-time display, and continuous logging
USB Cable	1.5 m
Operating Environment	-10 ° C to 40 ° C; ≤80% RH (non-condensing)
Storage Environment	-20 ° C to 60 ° C; ≤70% RH (non-condensing)
Dielectric Strength	5 kV AC, 50 Hz, 1 min (leads to enclosure)
Safety Standard	IEC 61010-1, Pollution Degree 2
Measurement Category	CAT IV 600 V
IP Rating	IP54
Test Range	Keypad-selectable voltage ranges
Over-range Prompt	Displays ">XX.X [Unit]" when the value exceeds the current range (e.g., ">20.0 TΩ" at 10 kV range)
Communication Interface	USB interface for PC connectivity, data upload, saving, and printing
Cloud Service	Android App (Bluetooth); supports photo uploads, data sync, test report generation, trend graphs, multi-user view, and Excel export
Auto Discharge	Automatic discharge after test completion
Step Voltage Setting	Voltage and duration freely adjustable for each step
	Voltage: 250 V to 10 kV
	Duration: 1 s to 99 min
PI Setting	Flexible PI timing configuration (T1 / T2)

Insulation Resistance Range & Accuracy

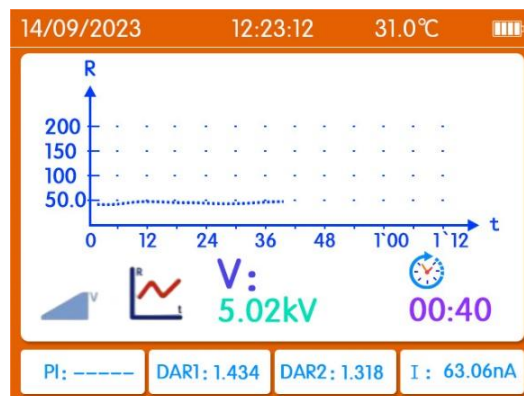
Output Voltage	Range	Accuracy
250 V (±10%) DC	0.01 MΩ to 10.0 GΩ	±3% rdg ±5 dgt
	10.0 GΩ to 500 GΩ	±15% rdg ±5 dgt
500 V (±10%) DC	0.01 MΩ to 25.0 GΩ	±3% rdg ±5 dgt
	25.0 GΩ to 1.00 TΩ	±15% rdg ±5 dgt
1000 V (±10%) DC	0.01 MΩ to 50.0 GΩ	±3% rdg ±5 dgt
	50.0 GΩ to 2.00 TΩ	±15% rdg ±5 dgt
2.5 kV (±10%) DC	0.01 MΩ to 100 GΩ	±3% rdg ±5 dgt
	100 GΩ to 5.00 TΩ	±15% rdg ±5 dgt
5 kV (±10%) DC	0.01 MΩ to 200 GΩ	±3% rdg ±5 dgt
	200 GΩ to 10.0 TΩ	±15% rdg ±5 dgt
10 kV (±10%) DC	0.01 MΩ to 400 GΩ	±5% rdg ±5 dgt
	400 GΩ to 20.0 TΩ	±20% rdg ±5 dgt

Capacitance and Current Measurement Range & Accuracy

	Range	Accuracy
Current Measurement Range	0.01 nA to 20.00 mA	±1.5% ±5 dgt
Capacitance Range	0.200 μF to 100.0 μF	±20% ±0.005 μF
AC/DC Voltage	1 V to 1000 V	±2% rdg ±5 dgt



Testing Interface



Trend Graph Interface



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