

Automatic Lithium Battery Electrode Sheet Resistance Tester
And Electrical Conductivity Meter

Item Number: DS18



Introduction

Streamline battery R&D quality control with our automatic lithium battery electrode sheet resistance tester, featuring programmable pressure loading up to 200kg, high-precision thickness monitoring, wide measurement ranges, and comprehensive real-time PC curve analytics.

[Learn More](#)

Application	Description	Key Benefit
Cathode & Anode Slurry Formulation R&D	Evaluates conductive agent distribution, binder concentration, and active material ratios by measuring the sheet electrical resistivity under varying simulated calendaring pressures.	Identifies optimal conductive network percolation thresholds to maximize active material utilization and minimize internal cell impedance.
Calendering & Compaction Process Optimization	Measures through-plane conductivity and thickness compaction curves across various rolling press loads ($0\text{--}200\text{ kg}$).	Determines optimal electrode density to balance electronic conductivity against electrolyte wetting and ion diffusion channels without over-compacting.
Current Collector Surface Treatment Verification	Analyzes the interfacial contact resistance between active electrode coatings and modified metal substrates (such as carbon-coated aluminum or copper foils).	Validates interfacial adhesion and contact impedance reductions, preventing delamination and capacity fading during rapid cycling.
High-Rate Cell Performance Screening	Screens candidate electrodes for fast-charging and high-power applications where through-plane electronic transport resistance dominates internal heat generation.	Guarantees batch-to-batch electrical uniformity, mitigating hot spots and uneven state-of-charge distributions across large-format pouch or prismatic cells.
Dry Battery Electrode (DBE) Process Characterization	Tests solvent-free dry-processed electrode films for binder fibrillization quality and structural conductive pathway continuity under mechanical stress.	Provides rapid, non-destructive feedback on dry mixing homogeneity and hot-lamination efficacy before cell assembly.
Solid-State Battery Composite Layer Evaluation	Characterizes composite solid electrolyte-electrode blends and solid electrolyte interphase (SEI) contact layers under variable compression.	Ensures uninterrupted electronic and ionic conduction pathways while verifying structural integrity under stack pressures.
Manufacturing Batch Quality Control & Incoming QA	Standardized benchtop testing of incoming raw electrode rolls and finished coated coils prior to slitting and winding operations.	Rapidly flags coating thickness variations, binder migration defects, and non-uniform conductive network issues, reducing final cell scrap rates.

Parameter Category	Specification Details (Model: DS18)
Model Designation	DS18
Measurement Method	Two-probe planar electrode method (through-plane electrical characterization)
Resistance Range	$10^{-7}\text{ }\Omega \sim 10^7\text{ }\Omega$
Resistivity Range	$10^{-7}\text{ }\Omega\cdot\text{cm} \sim 10^7\text{ }\Omega\cdot\text{cm}$
Conductivity Range	$5\times 10^{-7}\text{ S/cm} \sim 10^7\text{ S/cm}$
Selectable Test Currents	$1\text{ }\mu\text{A}$, $10\text{ }\mu\text{A}$, $100\text{ }\mu\text{A}$, 1 mA , 10 mA , 1000 mA
Resistance Accuracy	$\leq 0.3\%$ (Standard Resistance)
Resistance Resolution	$0.1\text{ }\mu\Omega$

Parameter Category	Specification Details (Model: DS18)
Applied Pressure Range	$0 \sim 200 \text{ kg}$ (programmable closed-loop control)
Pressure Loading Mechanism	Fully automatic motor-driven compression with target-set automatic execution
Planar Probe Electrode Material	High-conductivity copper (standard diameter: $\varnothing 10 \text{ mm}$; custom sizes available)
Test Stroke Range	$0 \sim 20 \text{ mm}$
Displacement Measurement Accuracy	0.01 mm
Sample Thickness Range	$0 \sim 10 \text{ mm}$
Sample Thickness Accuracy	0.001 mm ($\pm 1 \mu\text{m}$)
Software Interface Functions	Direct display of resistance, resistivity, conductivity, temperature, pressure, cross-sectional area, height/thickness, compacted density, real-time correlation curves, and automated test report generation
System Safety & Protection	Stroke limit protection, maximum pressure overload protection, emergency stop button, operator error prevention, and abnormal condition audible/visual alarms
Operation & Maintenance Guidance	Integrated safety compliance operational indicators and automated maintenance/calibration prompt notifications
Input Power Supply	$\text{AC } 220 \text{ V} \pm 10\%, 50 \text{ Hz}$
Total Power Consumption	$< 100 \text{ W}$