

Computerized Battery Electrode Tab Welding Tensile Tester And Separator Performance Testing Machine

Item Number: DS21



Introduction

Evaluate battery electrode tab welding strength and separator mechanical performance with this computerized tensile testing machine featuring high precision load cells versatile test modes real time data acquisition and multi unit switching for advanced battery materials research and production

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Application	Description	Key Benefit
Battery Tab Welding Quality	Measures the tensile peel and shear strength of ultrasonic and laser-welded tabs on cathode and anode current collectors.	Prevents internal open circuits and contact resistance spikes by verifying joint integrity before cell assembly.
Battery Separator Puncture Testing	Evaluates the puncture resistance and tensile yield strength of micro-porous polyethylene, polypropylene, and ceramic-coated separators.	Assesses barrier resistance against dendrite penetration to eliminate short-circuit risks in high-energy cells.
Metal Current Collector Characterization	Quantifies elongation, tensile strength, and tear propagation across ultra-thin copper and aluminum foils.	Optimizes coating tension parameters and reduces foil breakage during high-speed roll-to-roll electrode processing.
Aluminum-Plastic Film Peel Testing	Determines the bond strength, interlayer adhesion, and seal integrity of pouch cell casing laminates.	Guarantees hermetic sealing performance and prevents electrolyte leakage or ambient moisture ingress over cell lifespan.
Adhesive Tape and Protection Film Peeling	Performs 90-degree and 180-degree peel resistance tests on functional tapes, release liners, and protective films.	Ensures uniform adhesion and residue-free removal during automated battery pack and electronics manufacturing.
Medical Patches and Package Sealing	Evaluates tensile strength, peel resistance, and elongation of transdermal patches, sterile wraps, and medical adhesive tapes.	Validates package seal integrity and compliance with rigorous healthcare and sterile packaging standards.
Polymer and Composite Film Mechanics	Tests tensile modulus, yield point, and breaking strength of flexible packaging, woven materials, and synthetic films.	Delivers precise mechanical profiling to satisfy international packaging, polymer, and paper testing protocols.

Parameter	Specification (DS21)
Primary Capacity	50 N
Optional Load Capacities	20 N, 100 N, 200 N, 500 N, 1000 N
Accuracy Class	Class 0.5
Load Accuracy	±0.5 % (Max Precision up to 0.25 %)
Load Resolution	1/250,000
Force Display Resolution	0.001 N
Displacement Resolution	0.001 mm
Effective Stroke	Approximately 500 mm
Testing Width	Ø120 mm
Test Speed Range	0.5 – 500 mm/min (Stepless Regulation)
Control Method	Fully Computerized PC Control

Parameter	Specification (DS21)
Display Interface	Computer LCD Monitor (Real-time curves, peak values, test count)
Selectable Force Units	N, kN, kgf, gf, lbf
Selectable Stress Units	MPa, kPa, Pa, kgf/cm ² , lbf/in ²
Selectable Displacement Units	mm, cm
Testing Modes	Fracture/Breakage Test, Constant Load Retention, Fixed Deformation Test, Fixed Time Test
Transmission Mechanism	Taiwan TBI High-Precision Ball Screw Drive
Sensor Configuration	High-Precision S-Type Alloy Steel Load Sensor
Shutdown & Safety Protection	Overload Stop, Emergency Stop, Specimen Rupture Auto-Stop/Reset, Upper/Lower Travel Limit Switches, Over-time Protection
Data Management & Storage	Unlimited Test Record Storage, Individual/Group Deletion, Direct A4 Printing via PC
Standard Fixture	1 Set (Configured per Customer Application Requirements)
Exterior Construction	A3 Steel Housing with Electrostatic Powder-Coated Plastic-Sprayed Finish
Power Supply	Single Phase, AC 220V, 50/60 Hz
Machine Dimensions (W × D × H)	400 × 400 × 1180 mm
Equipment Weight	80 kg