

Polymer Battery Clamp Battery Test Clamp 3 To 5A Four Wire Cell Testing Fixture

Item Number: JA03



Introduction

Discover high precision polymer battery test clamps engineered for 3 to 5A cell evaluation featuring low contact resistance UL94V 0 flame resistance robust insulation and stable four wire measurement accuracy across demanding electrochemical testing environments.

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Application	Description	Key Benefit
Polymer Pouch Cell Cycling	Continuous charge-discharge characterization and Coulombic efficiency measurements on 3~5A lithium polymer cells.	Stable contact resistance eliminates measurement drift over thousands of continuous test cycles.
DCIR & Impedance Characterization	Direct current internal resistance (DCIR) and AC impedance spectroscopy on pouch-type energy storage cells.	High-conductivity interface prevents measurement distortion from parasitic fixture resistance.
Environmental Chamber Testing	Cell reliability, storage life, and rate capability testing inside extreme high/low-temperature climate chambers.	Thermally resilient polymer housing withstands temperatures from -55°C up to +155°C without material warping.
Factory Formation & Cell Grading	Mass production sorting, formation, and capacity verification across high-density multi-channel racks.	Consistent 20N clamping force accelerates manual cell loading while safeguarding delicate foil tabs.
Electrochemical Material R&D	Advanced evaluation of novel pouch cell chemistries, solid-state electrolytes, and high-energy cathode formulations.	Superior 500V DC dielectric isolation prevents micro-amperage signal leakage during precision analytical sweeps.
Quality Assurance & Tab Weld Verification	Pre-shipment electrical validation and weld integrity testing of ultrasonic or laser-welded pouch cell terminal tabs.	Ergonomic mechanical action and tight ± 0.05 mm tolerances ensure repeatable, non-destructive contact.

Specification Parameter	Standard 3~5A Polymer Clamp (JA03)	High-Current Variant (JA03-6330-20)	High-Power Variant (JA03-6430-20)
Product Item Code	JA03	JA03-6330-20	JA03-6430-20
Rated Operating Current	3 ~ 5 A	≤ 25 A	≤ 40 A
Rated Operating Voltage	Low-Voltage DC	≤ 500 V	≤ 500 V
Operating Temperature Range	≤ 125 °C	-55 °C ~ +155 °C	-55 °C ~ +155 °C
Contact Resistance	≤ 25 mΩ	≤ 2 mΩ	≤ 2 mΩ
Insulation Resistance	$\geq 1 \times 10^9$ Ω (at 500 V DC)	$\geq 1 \times 10^9$ Ω (at 500 V DC)	$\geq 1 \times 10^9$ Ω (at 500 V DC)
Flame Retardancy Rating	UL94V-0	Self-extinguishing Engineering Grade	Self-extinguishing Engineering Grade
Housing & Structural Materials	Flame-Retardant Polymer	Polysulfone (PSU), Brass, Stainless Steel	Polysulfone (PSU), Brass, Stainless Steel
Surface Plating / Coating	High-Conductivity Surface	Nickel Plating (Ni 3 ~ 5 μm)	Nickel Plating (Ni 3 ~ 5 μm)
Clamping Force	Optimized Tab Grip	20 N	20 N
Mechanical Service Life	Extended Cycle Life	$\geq 30,000$ Cycles	$\geq 30,000$ Cycles
Operating Humidity Range	Ambient Laboratory	$\leq 90\%$ RH	$\leq 90\%$ RH
Dimensional Tolerance	Standard Precision	± 0.05 mm	± 0.05 mm

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Measurement Units	Metric (mm)	Metric (mm)	Metric (mm)