

Insulation Resistance Battery Cell Short Circuit Tester For Advanced Electrical Safety And Quality Control

Item Number: CD15



Introduction

Evaluate cell insulation integrity with our high precision battery core short circuit tester. Delivering continuous 25V to 1000V DC output, programmable delay timers, rapid automated discharge, and PLC remote integration, it ensures dependable quality assurance across high throughput manufacturing lines.

[Learn More](#)

Application	Description	Key Benefit
Pouch Cell Separator Integrity Testing	High-voltage insulation verification across cathode and anode tabs prior to electrolyte injection.	Pinpoints micro-tears and separator misalignment before irreversible chemical filling.
Prismatic & Cylindrical Cell Winding QA	Dielectric breakdown screening of bare jelly-rolls and electrode-separator stacks under controlled DC bias.	Eliminates short-circuit hazards caused by metal burrs, particulate contamination, and foil overhangs.
Solid-State Battery Electrolyte Validation	High-resistance characterization of novel ceramic, polymer, and composite solid-state electrolyte sheets.	Provides micro-ampere leakage resolution across high-voltage gradients to confirm ceramic density.
Supercapacitor Dielectric Isolation	Controlled-delay leakage current testing across high-capacitance electrochemical double layers.	Compensates for capacitive absorption current to yield precise, steady-state leakage measurements.
Battery Module & Pack Busbar Isolation	Insulation resistance testing between cell terminals, cooling plates, structural enclosures, and busbars.	Guarantees compliance with international high-voltage electrical safety standards (e.g., UN 38.3, UL 2580).
Automated Inline Cell Sorting	Integration into automated pick-and-place sorting stations via PLC control and RS232 telemetry.	Enables sub-second go/no-go screening with automated test-data logging for full traceability.

Specification Parameter	Standard Configuration (CD15)	Low-Voltage Custom Variant (CD15-LV)
Output Voltage Range	25 V □ 1000 V DC	8 V □ 1000 V DC
Voltage Setting Resolution	1 V	1 V
Voltage Setting Accuracy	±(2% setting + 2 dgt.)	±(2% setting + 2 dgt.)
Voltage Measurement Accuracy	±(2% rdg. + 2 dgt.)	±(2% rdg. + 2 dgt.)
Maximum Output Current	1 mA	1 mA
Output Mode	Floating Ground	Floating Ground
Isolation Voltage	±1000 V	±1000 V
Voltage Ripple (1000V No Load)	≤ 5 Vp-p	≤ 5 Vp-p
Voltage Ripple (1000V Full Load)	≤ 10 Vp-p	≤ 10 Vp-p
Load Regulation Rate	1% (Full Load to No Load)	1% (Full Load to No Load)
Output Rise Time	15 ms (No Load, Umax)	15 ms (No Load, Umax)
Automatic Discharge Resistance	20 kΩ (Discharges 1 μF at 1000V in 200 ms / RC constant)	20 kΩ (Discharges 1 μF at 1000V in 200 ms / RC constant)
Delay Time Range & Accuracy	0.1 s □ 999.9 s; ±(0.1% setting + 1 dgt.)	0.1 s □ 999.9 s; ±(0.1% setting + 1 dgt.)

Specification Parameter	Standard Configuration (CD15)	Low-Voltage Custom Variant (CD15-LV)
Test Duration Range & Accuracy	0.5 s □ 999.9 s; ±(0.1% setting + 1 dgt.)	0.5 s □ 999.9 s; ±(0.1% setting + 1 dgt.)
Insulation Resistance Range Tier 1	2.000 MΩ □ 200.0 MΩ; ±(2% rdg. + 5 dgt.)	2.000 MΩ □ 200.0 MΩ; ±(2% rdg. + 5 dgt.)
Insulation Resistance Range Tier 2	200 MΩ □ 4000 MΩ; ±(5% rdg. + 5 dgt.)	200 MΩ □ 4000 MΩ; ±(5% rdg. + 5 dgt.)
Insulation Resistance Range Tier 3	4000 MΩ □ 9999 MΩ; ±(10% rdg. + 5 dgt.)	4000 MΩ □ 9999 MΩ; ±(10% rdg. + 5 dgt.)
Primary Displayed Parameters	Insulation Resistance (MΩ), Leakage Current (mA/μA)	Insulation Resistance (MΩ), Leakage Current (mA/μA)
Comparator Logic	Independent Upper Limit / Lower Limit screening	Independent Upper Limit / Lower Limit screening
Automatic Detection Mode	Continuous test with sustained high-voltage output	Continuous test with sustained high-voltage output
Capacitive Contact Check	Optional hardware module	Optional hardware module
Sampling Speed Settings	Fast, Medium, Slow	Fast, Medium, Slow
Parameter Storage Capacity	100 recipe memory groups	100 recipe memory groups
External Control Interfaces	RS232 Serial Port, Isolated PLC Interface	RS232 Serial Port, Isolated PLC Interface
Operating Environment	0°C □ 40°C, 20% RH □ 70% RH	0°C □ 40°C, 20% RH □ 70% RH
Power Supply Requirements	AC 220 V ± 10%, 50/60 Hz, 100 VA	AC 220 V ± 10%, 50/60 Hz, 100 VA
External Dimensions (W × H × D)	300 mm × 88 mm × 380 mm (Foot height: 15 mm excluded)	300 mm × 88 mm × 380 mm (Foot height: 15 mm excluded)
Standard Accessories Included	User Manual × 1, 1m Test Leads × 1, Communication Cable × 1	User Manual × 1, 1m Test Leads × 1, Communication Cable × 1