5V 5A Lithium Ion Battery Testing Equipment Battery Tester

Item Number: DC13

Introduction

5V 5A lithium ion battery testing equipment with four channels, high precision current control, fast sampling, DCIR measurement, pulse testing, and secure data management for advanced research applications

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Application	Description	Key Benefit
Lithium-Ion Cell Development	Characterize prototype cells through controlled formation, capacity testing, rate testing, and repeated charge-discharge cycling.	Generates consistent electrochemical data for cell design decisions and formulation comparison.
Battery Materials Research	Evaluate electrodes, separators, electrolytes, and material modifications under programmed electrical conditions.	Supports accurate comparison of material performance across multiple test channels.
DCIR and Pulse Response Testing	Apply short, controlled current pulses to examine dynamic resistance, voltage response, and transient behavior.	Provides high-speed response data useful for power capability and model development.
Cell Quality Control	Run repeatable verification procedures for incoming cells, pilot production, or finished battery components.	Improves test consistency and creates traceable records for quality review.
Academic and Institutional Research	Conduct programmable experiments involving cycling, pulse loads, capacity limits, and energy measurements.	Offers broad test-method flexibility for changing research requirements.
Battery Pack and Power-System Evaluation	Assess cell behavior under constant-power, constant-resistance, and application-relevant current profiles.	Helps researchers understand performance under realistic operating conditions.

Parameter	Specification
Product item number	DC13
Device main channel quantity	4
Input power supply	AC 220V +10% / -20%, 50Hz
Input power	300W
AD resolution	16bit
DA resolution	16bit
Input impedance	≥ 500MΩ in power-on state; leakage current is 100uA when powered off
Channel characteristics	Four ranges; wide dynamic range; high-speed sampling; high precision
Fixture type	Universal fixture
Server operating system	Windows 7 / Windows10
Communication method	TCP/IP protocol, 100M Ethernet
Communication interface	Ethernet port
Database	MySQL database for test data management
Data output formats	EXCEL2003, 2010, TXT

Parameter	Specification
Voltage range per channel	Charge: -5 ~ +5V; discharge: +5 V ~ -5V
Voltage accuracy	± 0.02% of FS
Voltage stability	±0.005% of FS
Single-channel output power	25W
Power stability	± 0.01% of FS
Current response time	<= 100μS (10% to90%or90% to 10%)
Minimum step time	>=10ms
Current range 1	0.1uA---150uA
Current range 2	[1]50uA---5mA
Current range 3	5mA---150mA
Current range 4	150mA---5000mA
Current accuracy	± 0.02% of FS
Current accuracy, range 1	± 30nA
Current accuracy, range 2	± 1uA
Current accuracy, range 3	± 30uA
Current accuracy, range 4	± 1mA
Current stability	±0.005% of FS
Data recording condition, time interval	Time △t: >=1ms
Data recording condition, voltage interval	Voltage △U: >= 1mV
Data recording condition, current interval	Current △I: >= 100nA
Recording frequency	1000Hz in continuous charge-discharge mode; individual pulse recording in GSM pulse mode
Charge modes	Constant-current charge; constant-current/constant-voltage charge; constant-voltage charge; constant-power charge; constant-power/constant-voltage charge; constant-resistance charge
Charge cutoff conditions	Voltage, current, relative time, capacity, energy, power
Discharge modes	Constant-current discharge; constant-power discharge; constant-resistance discharge; pulse discharge; constant-current/constant-voltage discharge
Discharge cutoff conditions	Voltage, current, relative time, capacity
Pulse charge mode	Constant-current mode
Pulse discharge mode	Constant-current mode
Minimum pulse width	400μs
Pulse segments per pulse step	16 different pulse segments
Pulse cutoff conditions	Voltage, pulse quantity, step time
DCIR testing	Supports DCIR measurement steps
Cycle measurement range	1~65535 cycles
Steps per single cycle	255
Nested cycle function	Supports nested cycles, maximum 4 levels of nesting
Software protection	Power-failure data protection; offline testing capability; configurable safety protection conditions
Configurable safety limits	Upper voltage limit; lower voltage limit; upper current limit; lower current limit; upper capacity limit protection; voltage fluctuation protection; current fluctuation protection
Voltage and current detection sampling	Four-wire connection
Barcode scanning	Software-supported; scanner configuration enables test data binding to barcodes; scanner not included
Operating temperature, accuracy-guaranteed range	25±5℃

Parameter	Specification
Operating temperature, limit-use range	25±20℃
Storage temperature range	0~60℃
Operating relative humidity	≤70% RH, without water vapor condensation
Storage relative humidity	≤80% RH, without water vapor condensation