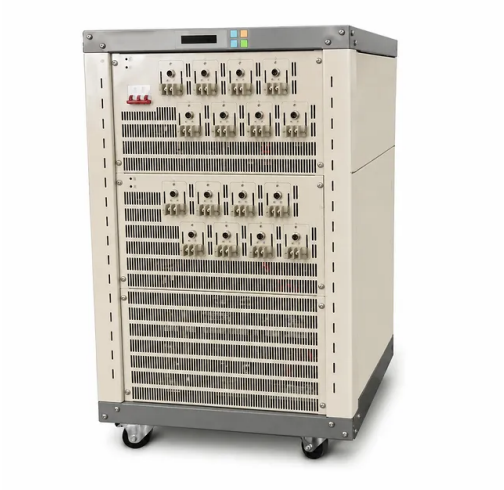
5V 30A Lithium Ion Battery Supercapacitor Testing Equipment Battery Tester

Item Number: DC12



Introduction

High precision 5V 30A battery tester for lithium ion batteries and supercapacitors delivers independent 16 channel charge discharge cycling pulse and DCIR testing with 10Hz recording robust protection and centralized data management.

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Application	Description	Key Benefit
Lithium-ion cell R&D	Execute charge, discharge, capacity, rate, and cycle-life protocols on development cells within the stated 5 V and 30 A channel limits.	Independent channels enable parallel comparison of cell formulations and operating conditions.
Supercapacitor characterization	Apply constant-current, constant-power, pulse, and DCIR sequences to assess energy-storage behavior and resistance trends.	Fast recording and custom DCR points support time-resolved performance analysis.
Battery incoming inspection	Verify charge acceptance, discharge response, capacity-related cutoff behavior, and protection-limit compliance for incoming cells.	Repeatable programmable conditions support consistent supplier and lot evaluation.
Cell manufacturing validation	Run defined cycling and pulse procedures on pilot-line or production-validation samples.	Up to 65,535 cycles and nested programs support long-duration verification plans.
Materials research laboratories	Compare electrochemical cell behavior after changes in electrode, electrolyte, separator, or assembly parameters.	Multiple charge and discharge modes allow protocols to match research objectives.
Quality and reliability testing	Subject cells to controlled high-current operation and monitor voltage, current, time, and capacity cutoff conditions.	Configurable safety limits and power-loss data protection improve test continuity and control.
Academic electrochemistry programs	Teach and conduct structured battery and supercapacitor testing with networked data collection.	Centralized database storage and common file exports simplify result review.
Terminal and pouch-cell evaluation	Select alligator, polymer, or ring-terminal fixtures according to the tested cell connection requirement.	Appropriate fixture selection supports practical contact arrangements for different samples.

Parameter	Specification
Site-facing identifier	DC12
Input power supply	AC 380V ±10% / 50Hz
Input active power	4253 W
AD resolution	16bit
DA resolution	16bit
Input impedance	≥1MΩ
Total channels	16
Channel control mode	Independent control
Constant-current and constant-voltage source structure	Dual closed-loop structure
Voltage and current detection sampling	Four-wire connection

Parameter	Specification
Noise	<85dB
Leakage current	0.005mA
IP protection rating	IP20
Communication interface	Network port
Host computer communication	Based on TCP/IP protocol
Database	MySQL database centralized management of test data
Data output	EXCEL2003,2010, TXT
Server disk configuration	500GB
Server operating system	Windows 7
Per-unit chassis dimensions (WDH)	18U (19”), 600*600*1000 mm
Compatibility note	Not compatible with batteries using protection boards with a soft-start function

Electrical Control Category	Parameter	Specification
Voltage	Constant-voltage range control	0.025V~5V
Voltage	Minimum discharge voltage	2.5V
Voltage	Accuracy	± 0.1% of FS
Voltage	Stability	± 0.1% of FS
Current	Output range per channel	0.15A~30A
Current	Accuracy	± 0.1% of FS
Current	Constant-voltage cutoff current	0.06A
Current	Stability	± 0.1% of FS
Power	Maximum output power per channel	150W
Power	Stability	± 0.2% of FS
Time	Current response time	Maximum current rise time 20ms (10% to 90% or 90% to 10%)
Time	Step time range	≤(365*24) hours/step; time format supports 00:00:00.000 (h, min, s, ms)

Data Recording Category	Parameter	Specification
Data recording conditions	Minimum time interval	100ms
Data recording conditions	Minimum voltage interval	10mV
Data recording conditions	Minimum current interval	60mA
Data recording	Recording frequency	10Hz

Test Function	Mode or Parameter	Specification
Charge	Charge modes	Constant-current charging, constant-voltage charging, constant-current constant-voltage charging, constant-power charging
Charge	Cutoff conditions	Voltage, current, relative time, capacity, -△V
Discharge	Discharge modes	Constant-current discharge, constant-power discharge, constant-resistance discharge, constant-voltage discharge, constant-current constant-voltage discharge
Discharge	Cutoff conditions	Voltage, current, relative time, capacity
Pulse mode charge	Modes	Constant-current mode, constant-power mode
Pulse mode discharge	Modes	Constant-current mode, constant-power mode

Test Function	Mode or Parameter	Specification
Pulse mode	Minimum pulse width	500ms
Pulse mode	Pulse count	A single pulse step supports 32 different pulses
Pulse mode	Charge/discharge continuous switching	One pulse step can continuously switch from charge to discharge
Pulse mode	Cutoff conditions	Voltage, relative time
DCIR test	DCR calculation	Supports customized sampling points for DCR calculation
Cycling	Cycle test range	1~65535 times
Cycling	Steps per single cycle	254
Cycling	Cycle nesting	Nested cycle function; maximum support for 3 nesting levels

Protection and Operating Environment	Parameter	Specification
Protection	Power-loss data protection	Included
Protection	Offline testing function	Included
Protection	Configurable safety protection conditions	Voltage upper limit, voltage lower limit, current upper limit, current lower limit, capacity upper limit, delay time
Protection	Reverse-connection protection	Included
Operating environment	Operating temperature range	0℃~40℃ (within 25±10℃ range, measurement accuracy is guaranteed: accuracy drift 0.005% of FS /℃
Operating environment	Storage temperature range	-10℃~50℃
Operating environment	Operating relative humidity range	≤70% RH (no water vapor condensation)
Operating environment	Storage relative humidity range	≤80% RH (no water vapor condensation)

Fixture Category	Specification
Fixture type	Alligator fixture
Available fixture options	Alligator fixture, polymer fixture, ring-terminal fixture
Fixture selection note	Select one of the above fixtures per unit; images are for reference only and the actual product prevails