

Eight Channel 5V 20A Lithium Ion Battery Supercapacitor Testing Equipment Battery Tester

Item Number: DC11



Introduction

Eight channel 5V 20A battery tester delivers precise lithium ion battery and supercapacitor charge discharge cycling pulse and DCIR testing with independent control detailed data logging and scalable auxiliary temperature voltage monitoring for demanding research and validation laboratories worldwide.

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Application	Description	Key Benefit
Lithium-ion cell lifecycle testing	Run repeated charge and discharge sequences with voltage, current, time, and capacity cutoff conditions for cell aging studies.	Up to 65535 cycles and three nested loop levels support long-term lifecycle programs.
Supercapacitor performance characterization	Apply constant-current, constant-voltage, constant-power, or constant-resistance discharge profiles to evaluate operating behavior.	Independent channels allow comparative assessment of multiple supercapacitor samples.
DCIR and pulse-response analysis	Configure charge or discharge pulses, then select custom data points for DCIR calculation.	500ms minimum pulse width and 32 pulses per pulse step enable structured transient testing.
Battery cell incoming inspection	Verify cell voltage response, capacity-related limits, and charge-discharge behavior before cells enter research or assembly workflows.	Per-channel independence lets teams evaluate different sample lots concurrently.
Electrode and electrolyte development	Compare cells produced with alternative active materials, formulations, or processing conditions under controlled cycling programs.	Accurate voltage and current control helps make differences between experimental samples easier to interpret.
Formation and validation research	Build multi-step charge-discharge routines with configurable cutoff conditions and extended step duration.	Up to 254 steps per cycle provide substantial program flexibility for research protocols.
Thermal behavior observation	Pair electrical cycling with thermistor-based temperature monitoring from -25C to 110C.	Auxiliary temperature protections help teams observe and control tests around defined thermal limits.
Multi-cell voltage monitoring	Use auxiliary voltage inputs to monitor voltage conditions in cell groups during electrical testing.	Configurable voltage and individual-cell voltage-difference protections add test oversight.

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Electrical Input and System	Specification
Input power supply	AC 220V +/-10% / 50Hz
Input active power	1418W
AD resolution	16bit
DA resolution	16bit
Input impedance	>=100kOhm
Total channels	8
IP protection rating	IP20
Noise	<85dB

Voltage Performance	Specification
Constant-voltage control range	0.025V~5V
Minimum discharge voltage	0V
Voltage accuracy	+/- 0.1% of FS
Voltage stability	+/- 0.1% of FS
Constant-voltage cutoff current	0.04A

Current and Power Performance	Specification
Output range per channel	0.1A~20A
Current accuracy	+/- 0.1% of FS
Current stability	+/- 0.1% of FS
Maximum output power per channel	100 W
Power stability	+/- 0.2% of FS
Current response time	Maximum current rise time 20ms

Time and Data Recording	Specification
Step time range	<=(365*24) hours/step
Supported time format	00:00:00.000 (h, min, s, ms)
Minimum time recording interval	100ms
Minimum voltage recording interval	10mV
Minimum current recording interval	40mA
Recording frequency	10Hz

Charge Functions	Specification
Charge modes	Constant-current charge, constant-voltage charge, constant-current constant-voltage charge, constant-power charge
Charge cutoff conditions	Voltage, current, relative time, capacity, -deltaV

Discharge Functions	Specification
Discharge modes	Constant-current discharge, constant-voltage charge, constant-current constant-voltage discharge, constant-power discharge, constant-resistance discharge
Discharge cutoff conditions	Voltage, current, relative time, capacity

Pulse and DCIR Functions	Specification
Charge pulse modes	Constant-current mode, constant-power mode
Discharge pulse modes	Constant-current mode, constant-power mode
Minimum pulse width	500ms
Pulses per single pulse step	32 different pulses
Charge-discharge switching	One pulse step can continuously switch from charging to discharging
Pulse cutoff conditions	Voltage, relative time
DCIR test	Supports customized point selection for DCIR calculation

Cycle Programming	Specification
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Cycle test range	1~65535 cycles
Steps per single cycle	254
Cycle nesting	Nested cycle function; maximum 3 nesting levels

Protection and Channel Design	Specification
Power-loss data protection	Offline testing function available
Configurable safety protection	Upper voltage limit, lower voltage limit, upper current limit, lower current limit, upper capacity limit, delay time
Reverse-connection protection	Available
Channel control mode	Independent control
Source structure	Dual closed-loop structure for constant-current source and constant-voltage source
Voltage and current sensing	Four-wire connection

Data Management and Communication	Specification
Database	MySQL database for centralized test-data management
Host computer communication	Based on TCP/IP protocol
Server disk configuration	500GB
Data output	EXCEL 2003, 2010, TXT
Server operating system	Windows 7
Communication interface	Network port

Operating Environment	Specification
Operating temperature range	0C~40C (within 25+/-10C, measurement accuracy is guaranteed: accuracy drift 0.005% of FS/C)
Storage temperature range	-10C~50C
Operating relative humidity	<=70% RH (without water vapor condensation)
Storage relative humidity	<=80% RH (without water vapor condensation)

Fixture and Enclosure	Specification
Fixture type	Alligator clip fixture
Available tester accessories	Alligator clip fixture, polymer fixture, terminal lug fixture
Fixture selection	Select one of the listed fixtures; images are for reference only and the actual product prevails
Dimensions per unit enclosure (WDH)	12U (19 inch), 600600740 mm

Auxiliary Channel Monitoring	Specification
Auxiliary channel types	Temperature, voltage
Temperature range	-25C~110C (thermistor)
Temperature accuracy	+/-1C (within 2m cable length)
Temperature resolution	0.1C
Auxiliary voltage range	-5V~5V
Auxiliary voltage accuracy	+/- 0.1% of FS
Temperature auxiliary channels per test channel	Configurable as required; maximum 248 temperature auxiliary channels
Voltage auxiliary channels per test channel	Configurable as required; maximum 248 voltage auxiliary channels

Auxiliary Channel Monitoring	Specification
Auxiliary-channel protection conditions	Configurable temperature upper limit, temperature lower limit, voltage upper limit, voltage lower limit, and individual-cell voltage difference
Compatibility note	Not compatible with testing batteries whose protection boards have a soft-start function