

5V 50Ma Coin Cell Battery Testing Equipment Battery Tester

Item Number: DC03

Introduction

5V 50mA Coin Cell Battery Testing Equipment and Battery Tester for Precise Eight Channel Charge Discharge Cycling Pulse and DCIR Analysis with Flexible Controls Reliable Data Management and Export for Research Laboratories and Advanced Materials Development

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Application	Description	Key Benefit
Coin Cell Formation and Screening	Run controlled constant-current, constant-voltage, constant-current constant-voltage, or constant-power procedures on newly assembled coin cells.	Produces repeatable formation records across multiple samples and operating conditions.
Lithium Battery Electrode Evaluation	Compare electrode materials, active material loadings, binders, and formulations through controlled charge discharge cycling.	Enables direct performance comparison using consistent voltage, current, capacity, and time conditions.
Battery Cycle Life Research	Configure repeated charge and discharge sequences with up to 65,535 cycles and nested loop routines.	Supports long-term degradation studies and automated endurance testing.
Pulse Performance and Power Response	Apply multi-step current or power pulses, including continuous charge-to-discharge transitions, to study transient behavior.	Generates time-resolved response data for dynamic performance analysis.
DCIR Characterization	Define custom measurement points and calculate direct current internal resistance during selected test procedures.	Helps researchers track resistance changes associated with aging, materials, and operating conditions.
Academic and Advanced Materials Research	Operate independent channels for parallel experiments involving novel battery chemistries, separators, coatings, and cell components.	Improves laboratory throughput while preserving separate control of each experimental condition.
Battery Quality and Process Verification	Use configurable safety conditions, structured records, and Excel or TXT output for laboratory verification and reporting.	Strengthens traceability and simplifies data review across development and quality workflows.

Category	Parameter	Specification
Identification	Product item number	DC03
Power	Input power	AC 220 V $\pm$ 10% / 50 Hz
Power	Input active power	25 W
Resolution	AD resolution	16 bit
Resolution	DA resolution	16 bit
Measurement	Input impedance	$\geq$ 1 G Ω
Voltage	Constant-voltage control range	25 mV to 5 V
Voltage	Minimum discharge voltage	-5 V
Voltage	Accuracy	$\pm$ 0.05% of FS
Voltage	Stability	$\pm$ 0.05% of FS
Current	Channel output range one	5 μ A to 1 mA
Current	Channel output range two	1 mA to 25 mA
Current	Channel output range three	25 mA to 50 mA

Category	Parameter	Specification
Current	Accuracy	±0.05% of FS
Current	Constant-voltage cutoff current range one	2 µA
Current	Constant-voltage cutoff current range two	50 µA
Current	Constant-voltage cutoff current range three	100 µA
Current	Stability	±0.05% of FS
Power output	Maximum single-channel output power	0.25 W
Power output	Stability	±0.1% of FS
Time response	Current response time	<500 µs from 10% FS to 90% FS
Time control	Step time range	≤365 × 24 hours per step
Time control	Supported time format	00:00:00:00 (h, min, s, ms)
Data recording	Minimum time interval	100 ms
Data recording	Minimum voltage interval	10 mV
Data recording	Minimum current interval range one	2 µA
Data recording	Minimum current interval range two	50 µA
Data recording	Minimum current interval range three	100 µA
Data recording	Recording frequency	10 Hz
Charging	Charging modes	Constant-current charging; constant-voltage charging; constant-current constant-voltage charging; constant-power charging
Charging	Cutoff conditions	Voltage, current, relative time, capacity, -ΔV
Discharging	Discharging modes	Constant-current discharge; constant-voltage discharge; constant-current constant-voltage discharge; constant-power discharge; constant-resistance discharge
Discharging	Cutoff conditions	Voltage, current, relative time, capacity
Pulse	Charging pulse modes	Constant-current mode; constant-power mode
Pulse	Discharging pulse modes	Constant-current mode; constant-power mode
Pulse	Minimum pulse width	500 ms
Pulse	Pulse quantity	Up to 32 different pulses per pulse step
Pulse	Continuous charge discharge switching	One pulse step supports continuous switching from charging to discharging
Pulse	Cutoff conditions	Voltage, relative time
DCIR	DCIR calculation	Supports user-defined measurement points for DCIR calculation
Cycling	Cycle test range	1 to 65,535 cycles
Cycling	Steps per single cycle	254
Cycling	Nested loop capability	Maximum three levels of nested loops
Protection	Power-failure data protection	Supported
Protection	Offline testing	Supported
Protection	Configurable safety conditions	Voltage upper limit, voltage lower limit, current upper limit, current lower limit, capacity upper limit, delay time
Enclosure	IP protection rating	IP20
Channel design	Current and voltage source structure	Dual closed-loop structure
Channel control	Control mode	Independent control

Category	Parameter	Specification
Sampling	Voltage and current detection	Four-wire connection
Noise	Operating noise	<45 dB
Database	Data management	MySQL database for centralized test data management
Communication	Host computer communication	TCP/IP protocol
Server	Operating system	Windows 7
Data output	Export formats	EXCEL 2003, EXCEL 2010, TXT
Server storage	Disk configuration	500 GB
Interface	Communication interface	Ethernet port
Leakage	Leakage current	0.005 μ A
Capacity	Total equipment channel count	8
Operating environment	Working temperature range	0°C to 40°C
Operating environment	Measurement accuracy condition	Within 25 $\pm$ 10°C, accuracy drift is 0.005% of FS /°C
Storage environment	Storage temperature range	-10°C to 50°C
Operating environment	Working relative humidity	$\leq$ 70% RH, without water vapor condensation
Storage environment	Storage relative humidity	$\leq$ 80% RH, without water vapor condensation
Fixture	Fixture type	Upper and lower fixtures
Fixture accessories	Included or available fixture accessories	Tester fixture, alligator fixture, polymer fixture, wire lug
Dimensions	Each unit chassis dimensions W $\times$ D $\times$ H	1U, 19 in, 483 $\times$ 310 $\times$ 48 mm
Equipment presentation	Fixture and equipment images	Images are for reference only; actual delivered equipment shall prevail