

5V 20Ma Coin Cell Battery Tester Battery Testing Equipment

Item Number: DC02



Introduction

Eight channel 5V 20mA coin cell battery testing equipment delivers programmable charge discharge cycling pulse and DCIR analysis for electrode research formation grading and reliable small battery performance evaluation.

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Application	Description	Key Benefit
Lithium-ion coin cell formation	Apply controlled constant-current, constant-voltage, or combined charge sequences to newly assembled laboratory coin cells.	Eight independently controlled channels allow multiple formation recipes to run in parallel.
Electrode material screening	Compare small cells made with candidate cathode, anode, binder, conductive additive, or electrolyte formulations.	Low-current ranges beginning at 5uA support controlled electrochemical testing of research-scale cells.
Capacity grading	Execute repeatable charge-discharge routines and terminate on voltage, capacity, energy, current, or time conditions.	Programmable cutoff logic supports consistent grading criteria across a test batch.
Cycle-life evaluation	Run long-term cycling protocols for coin cells under defined operating windows and step sequences.	Up to 65535 cycles, 254 steps per cycle, and three levels of nesting support sophisticated cycle plans.
DCIR characterization	Use custom selected data points to calculate DCIR during battery evaluation.	Integrated DCIR calculation capability supports structured resistance analysis without separating the workflow.
Pulse-power testing	Assess cell response through constant-current or constant-power charge and discharge pulses.	500ms minimum pulse width and 32 distinct pulses per pulse step support controlled transient studies.
Ni-MH and Zn-Mn watch battery testing	Evaluate compatible nickel-metal hydride and zinc-manganese watch batteries with appropriate programmed charge and discharge methods.	The 25mV to 5V constant-voltage control range accommodates small-cell test requirements.
Academic teaching and laboratory validation	Run managed multi-cell practical experiments, verification routines, and battery-performance studies.	Centralized database management, Ethernet communication, and standard data export simplify result review.

Parameter	Specification
Site-facing identifier	DC02
Equipment type	8-channel coin cell battery testing equipment
Input power supply	AC 220V $\pm$ 10% / 50Hz
Input active power	25W
AD resolution	16bit
DA resolution	16bit
Input impedance	$\geq$ 1G Ω
Total channels	8
IP protection rating	IP20
Noise	<45dB
Leakage current	0.005 μ A
Channel control mode	Independent control
Channel architecture	Constant-current source and constant-voltage source use dual closed-loop structure

Parameter	Specification
Voltage and current detection sampling	Four-wire connection
Constant-voltage control range	25mV~5V
Minimum discharge voltage	-5V
Voltage accuracy	± 0.05% of FS
Voltage stability	± 0.05% of FS
Per-channel current output range, range 1	5uA~1mA
Per-channel current output range, range 2	1mA~10mA
Per-channel current output range, range 3	5mA~20mA
Current accuracy	± 0.05% of FS
Current stability	± 0.05% of FS
Constant-voltage cutoff current, range 1	2μA
Constant-voltage cutoff current, range 2	0.02mA
Constant-voltage cutoff current, range 3	0.04mA
Maximum output power per channel	0.1W
Power stability	± 0.1% of FS
Current response time	<500μs (10%FS~90%FS)
Work-step time range	≤(365*24) hours/step
Supported time format	00□ 00□ 00□ 00(h□ min□ s□ ms)
Minimum data-recording time interval	100ms
Minimum data-recording voltage interval	10mV
Minimum data-recording current interval, range 1	2uA
Minimum data-recording current interval, range 2	0.02mA
Minimum data-recording current interval, range 3	0.04mA
Recording frequency	10Hz
Charge modes	Constant-current charging, constant-voltage charging, constant-current constant-voltage charging, constant-power charging
Charge cutoff conditions	Voltage, current, relative time, capacity, energy, -ΔV
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, energy
Pulse charge modes	Constant-current mode, constant-power mode
Pulse discharge modes	Constant-current mode, constant-power mode
Minimum pulse width	500ms
Pulses per single pulse work step	Supports 32 different pulses
Charge-discharge switching	One pulse work step can continuously switch from charging to discharging
Pulse cutoff conditions	Voltage, relative time
DCIR test	Supports custom point selection for DCIR calculation
Cycle test range	1~65535 cycles
Work steps per single cycle	254
Cycle nesting	Nested-cycle function; maximum 3 levels of nesting
Power-loss protection	Data protection on power failure
Offline testing	Supported

Parameter	Specification
Configurable safety protection conditions	Voltage upper limit, voltage lower limit, current upper limit, current lower limit, capacity upper limit, delay time
Database	MySQL database for centralized test-data management
Host-computer communication	Based on TCP/IP protocol
Server operating system	Windows 7
Data output	EXCEL2003,2010 TXT
Server disk configuration	500GB
Communication interface	Ethernet port
Operating temperature range	0°C~40°C 25±10°C 0.005% of FS /°C
Storage temperature range	-10°C~50°C
Operating relative humidity range	≤70% RH
Storage relative humidity range	≤80% RH
Fixture type	Upper and lower fixture
Available test-instrument accessories	Test instrument fixture, alligator fixture, polymer fixture, wire lug
Fixture and accessory image note	Images are for reference only; actual product shall prevail
Per-unit chassis size (WDH)	1U 19" 48331048 mm
Equipment image note	Images are for reference only; actual product shall prevail