

20V 10A Battery Tester Battery Testing Equipment

Item Number: DC09



Introduction

20V 10A battery tester and battery testing equipment with 8 independent channels, precise charge discharge control, cycling, SMBUS compatibility, safety protection, and exportable data for demanding battery development and validation programs worldwide in laboratories.

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Application	Description	Key Benefit
Lithium-Ion Cell Research	Apply programmable constant-current, constant-voltage, constant-current/constant-voltage charging, and controlled discharge profiles to rechargeable cells.	Produces repeatable electrical data for chemistry screening, electrode evaluation, and cell-performance comparison.
Battery Formation and Aging	Configure long-duration charge, discharge, and cycle sequences with up to 1~65535 cycles and 255 steps per cycle.	Supports structured formation, capacity retention, cycle-life, and degradation studies.
Battery Quality Control	Use defined voltage, current, capacity, and relative-time cutoff conditions to verify incoming cells or production samples.	Improves test consistency and provides exportable records for quality review and traceability.
High-Current Performance Testing	Deliver up to 10A per channel with a 20ms hardware response to 10A for load and response evaluations.	Enables controlled investigation of current capability and dynamic electrical behavior.
Battery Management Communication Validation	Use SMBUS compatibility with HDQ and I2C communication protocols, plus compatibility with standard fields and commands defined by Smart Battery Data Specification Revision 1.1.	Helps engineers assess smart battery communication and validate data exchange behavior.
Advanced Materials Research	Evaluate experimental electrodes, cells, and energy-storage materials using configurable electrical profiles and condition-based recording.	Connects material development with measurable charge, discharge, and cycling performance.
Academic and Laboratory Testing	Run independent test programs across eight channels and export results as EXCEL, TXT, or charts.	Makes parallel experiments easier to organize, compare, analyze, and document.

Specification Category	Parameter	Specification
Identification	Product Item Number	DC09
Electrical Performance	Input power supply	AC□ 220V ±10% / 50Hz
Electrical Performance	Input power	1800W
Electrical Performance	Resolution	AD□ 16bit□ DA□ 16bit
Electrical Performance	Input impedance	≥1MΩ
Voltage	Per-channel charging output range	2.5V~20V
Voltage	Per-channel discharging output range	2.5V~20V
Voltage	Accuracy	± 0.05% of range□□□□

Specification Category	Parameter	Specification
Voltage	Stability	0.025%
Current	Per-channel charging output range	20mA~10A
Current	Per-channel discharging output range	20mA~10A
Current	Accuracy	± 0.05% of range□□□□
Current	Stability	0.025%
Power	Single-channel output power	200W
Power	Stability	0.05%
Time	Current response time	Hardware response time to 10A is 20ms
Time	Step time range	1~65535 minutes/step
Time	Supported time format	00□ 00□ 00 (h□ min□ s)
Data Recording	Time change condition	$\Delta t_{\square\square}$ 0.01s~60000s□
Data Recording	Voltage change condition	$\Delta U_{\square\square}$ 10mV~20V□
Data Recording	Current change condition	$\Delta I_{\square\square}$ 5mA~10A□
Data Recording	Recording frequency	100Hz
Charging	Charging modes	Constant-current charging; constant-voltage charging; constant-current/constant-voltage charging
Charging	Cutoff conditions	Voltage, current, relative time, capacity
Discharging	Discharging modes	Constant-current discharge; constant-power discharge
Discharging	Cutoff conditions	Voltage, current, relative time, capacity
Cycling	Cycle test range	1~65535 cycles
Cycling	Steps per cycle	255
Cycling	Nested cycling	Supports nested cycles with a maximum of 4 nesting levels
Protection	Safety protection settings	Configurable voltage upper and lower limits, current upper and lower limits, and delay time
Protection	Abnormal-condition protection	Configurable maximum constant-current charge/discharge fluctuation amplitude, current-rise amplitude during constant-voltage charging, and voltage-drop amplitude during constant-current charging
Protection	Additional abnormal-condition monitoring	Voltage-rise amplitude during constant-current discharging
Protection	Power-loss data protection	Supported
Protection	Hardware protection	Reverse-connection protection and reverse-connection alert
Channel Design	Current and voltage source structure	Independent dual closed-loop structure for constant-current and constant-voltage sources
Channel Design	Channel control mode	Independent control
Channel Design	Voltage and current detection sampling	Four-wire connection
Channels	Channels per unit	8
Noise	Noise level	<80dB
Communication	Host-computer communication	TCP/IP
Communication	Communication interface	Ethernet 10/100M
Data Output	Output formats	EXCEL, TXT, charts
Working Environment	Operating temperature range	10°C~40°C
Working Environment	Operating relative humidity range	30% ~ 80% RH□ without condensation□

Specification Category	Parameter	Specification
Storage Environment	Storage temperature range	10°C~45°C
Storage Environment	Storage relative humidity range	30% ~ 90% RH□ without condensation□
Fixture	Fixture type	Selected according to customer requirements
Dimensions	Unit cabinet dimensions (WDH)	480 * 660 * 130 (mm)
Dimensions	Cabinet dimensions (WDH)	606 * 800 * 1800 (mm)
SMBUS	Hardware compatibility	Compatible with SMBUS, HDQ, and I2C communication protocols
SMBUS	Software compatibility	Compatible with standard specification field information commands defined by Smart Battery Data Specification Revision 1.1
SMBUS	Data reading frequency	1S