CADEX

C8000
Battery Testing System

Specifications

Application	Digital battery testing system that includes: ▪ C8000 Battery Testing Unit. Desktop or 19” rack mount with option ▪ PC-BatteryLab™ Software (CD-ROM) ▪ 4 Power Port Cables ▪ 4 Auxiliary Cables ▪ 1 Dual Power Port Cable ▪ 1 Ethernet Cable ▪ 3AC Power Cords (N. America, Europe, UK type) ▪ QuickStart Guide1
Independent channels	4 separate Battery Ports and I/O Ports.
Battery voltage range 1.2V–36V nominal (max 45V)	▪ Lithium-ion: up to 10 cells in series (3.6V/cell) ▪ Lead Acid: up to 18 cells in series (2.0V/cell) ▪ Nickel-based: up to 30 cells in series (1.2V/cell); 45V max.
Charge/discharge current	30mA–10A, settable in 1mA increments. 20A discharge with Dual Power Port Cable
Maximum charge power	Continuous dissipation of 100W per station; 400W in total.
Maximum discharge power	Continuous dissipation 80W per station; 320W in total Dual Power Port Cable doubles discharge current to 20A and 160W Optional load bank increases power up to 2400W at 48V
Power management	Fully loaded, batteries go on waiting queue. Will resume when demand moderates. Ah values entered above the analyzer’s current limit are automatically lowered to workable values with C-rate adjustments.
Charge Methods	Li-ion: Constant voltage with current limit and saturation charge, no trickle charge when full. Also services LiFePO. Lead Acid: Constant voltage with current limit and saturation charge. Float charge when full. Nickel-based: Constant current with negative slope or plateau timer to terminate charge. Applies a 0.05C trickle charge.
Discharge Methods	▪ Constant current to set discharge voltage ▪ Constant power to set discharge voltage
Target Selector	Serves as gatekeeper User-selectable from 50% to 100%. Batteries that meet performance meeting expectation get a green light, low capacity get an amber, and anomalies get a red light.

info@cadex.com

Programs

Basic Programs	Charge: Applies fast charge with full-charge termination. Auto: Charge-discharge-charge; applies Recondition on nickel-based batteries if user-set target capacity cannot be met. Prime: Prepares batteries by cycling until the maximum capacity is reached. Thefirst reading is the spare capacity before charge. Extended Prime: 16h trickle charge prior to Prime. Assists in formatting batteries Boost: Activates batteries that became deactivated due to low discharge.
Advanced Programs	Load Test: Tests batteries under discharge protocols, 50µs steps; minimum setting 500µs. Runtime: Provides 3 discharge levels, programmable in hours and minutes. Lifecycle: Cycles battery until capacity fades to Target Selector threshold. Self-Discharge: Measures self-discharge of batteries to assure safety. Discharge Only: Prepares battery for shipping and storage while measuring the battery capacity. Load Capture: Discharges battery on recorded load signature. (Requires Load Capture Unit). SMBus: Checks fuel gauge settings, provides calibration, and verifies performance to support design.
Rapid Test Programs	OhmTest™: Tests battery resistance with DC pulses (IEC61436 standard). Impedance: Checks battery resistance with 1000Hz signal. (Channel 1 only) Note: A reactive part gives different readings with DC and AC test methods.
Custom Programs	Allows 100 user-defined programs of charge, discharge, waits, repeats, etc. Note: Supervision recommended when overriding safety redundancies.
Security	Password protection prevents unauthorized access
Display	320 x 240 graphics display with backlight (5.7” diagonal) QVGA resolution
Power failure recovery	Retains test data; resumes when power is restored. Time of power failure is recorded
Accuracy	+/-0.1% on voltage; +/-0.25% on current; full scale
Sample rate	Up to 500µs, display updated every 1 second; data logging 1–60 seconds
Response time	50–100µs depending on voltage and current
Data Capture Rate	2–200 microseconds (last 500 samples)
Load Capture	Minimum sample rate 500 microseconds; number of samples 10–500
Battery Ports Circular; front-mounted	Battery Positive (+), Battery Negative (–), Sense Positive (+), Sense Negative (–), Thermistor Input, Thermistor Ground
I/O Port DB25, front mounted	4 user-selectable analog input ranges: 0-5V, 0–10V, 0–15V; 12-bit resolution, floating ground, 0–50V common mode range.; 2 analog outputs, 0–5V (+/-1mA); 4 digital, 5V TTL levels with open-drain output and 20mA (max) sinking ability. 2 general purpose analog inputs, 0–3.3V. SMBus, clock, data and ground. Each port is protected by a resettable fuse.

info@cadex.com

Data Ports Mounted on the back	RS-232; Ethernet 10/100 for PC connection, control of external load bank and environmental chamber with F4 module	
Data Acquisition	System Sample Rate: 500ms; Capture/Display Rate (non-termination): 1-60s	Terminal Data (last 500 samples) Capture Rate: 2-200ms Load Capture: Min Sample Rate Increment 500ms; # of Samples = 10-500
Dimensions	W: 17”; 430mm D: 17”; 430mm H: 5.1”; 130mm 3U standard	
Weight	12.6kg (27.7 lb) net; 15.5kg (34 lb.) shipping	
Environmental	Recommended operating temperature 5°C to 35°C (41°F to 95°F) Recommended storage temperatures –20°C to 70°C (–4°F to 159°F)	
Firmware	Upgradeable with PC-BatteryLab™ (Included with system).	
Approvals	CSA 22.2 No: 61010-1, UL 61010-1 and EN61010-1; RoHS and WEEE compliant; UL, CE marked.	
Warranty	Cadex warrants two (2) years against defective materials and workmanship from original purchase date.	
Calibration	Recommended factory calibration every 1 year; contact Cadex	
PC-BatteryLab™ Software	PC-BatteryLab™ accommodates 1 to 8 analyzers to service 32 batteries independently (on most PCs).	
Computer requirements	Dedicated computer for Cadex BatteryLab (not used to run other programs). Microsoft Windows OS (Windows XP or newer). Ethernet connector, recommended 1.2Ghz CPU or better, 512MB of RAM and at least 10 GB free hard disk space.	

Options

Adapter Unit	SnapLock™ Battery Adapters interface with SnapLock Adapter Unit
Load Capture Unit	Maximum load signatures 48V, 100A; I/O Ports and Type K thermocouple accessible from the front
External load bank	2,400W, maximum 48V; SCPI compatible

info@cadex.com