SBT8050 Battery Life Test System
R&D Test Equipment

The SBT8050 is a 12-Channel Battery Tester, ideal for testing and evaluating HEV as well as industrial battery modules and packs. Our equipment is designed for both laboratory and production scale applications, including formation and ranking.

By adding more test channels to the master controller and more test systems to the same network, the number of channels can easily be expanded.

Preparing a test can be done off-line on an existing desktop PC, running our LifeTest™ application. The End User can configure the specific test by filling out the Event Table with the individual cycle steps. For complex or HEV cycles, the software allows a direct import to the events through a preformatted CSV file.

The system supports current, voltage, power and resistive based loads, with a minimum pulsing width of 1 msec. Our SBT8050 system will give you ultra fast switching capabilities between charging and discharging modes, guaranteeing you the accuracy you need.

Every channel is independent, microprocessor-controlled and features a dynamic electronic load to obtain very high accuracy, reliability and flexibility. Using a CANbus or SMbus interface the unit can communicate with the battery module or pack to obtain additional data, such as the individual cell voltages and temperatures.

The power MOSFETS are mounted on a central liquid cooled heat sink which will evacuate the discharging heat to a central heat exchanger. This heat exchanger is either built into the rack or can be mounted outdoors. In large installations, energy recuperation can be considered as well.

HIGHLIGHTS

12 independent 80V/50A channels controlled by master microcontroller

Parallel channel switching mode for high current applications

DYNAMIC linear electronic load

4 automatic switched current ranges

High accuracy of +/- 0.03% FSD

Ultra fast rise, fall and switching time between charging and discharging modes

Climate Chamber Control functionality

Autonomous calibration and temperature compensation guaranteeing extreme stability

Liquid cooling with central heat exchanger for accuracy and stability of high power

High speed communication with the LifeTest™ Operator computer for fast data retrieval

Temperature and analogue inputs per channel for e.g. temperature monitoring

Fully programmable test profile in current, resistance, power and voltage

Internal Resistance measurement (AC & DC method)

Over 10.000 teachable program steps for simulating complex power demand simulations (e.g. Drive Cycle simulation,...)

External Control via I/O for HIL applications, ...

Optional : Auxiliary I/O such as Analog Voltage, Temperature & Digital Input/Analog Voltage and Digital Output (e.g. measuring cell temperature & individual cell Voltages)

Optional: Battery Management System interface per channel

SBT8050 Battery Life Test System
For testing High Power Battery Modules and Packs

Technical specifications

Voltage

Range:	0 to 80 Vdc (2 voltages ranges 0-8 Vdc, 8-80 Vdc)
Measurement Accuracy:	±0.03% FSD (Full Scale Deviation)
Resolution:	100 µV (range 8 V), 1000µV (range 80 V)
Input Impedance:	> 10 MΩ

Current

Range:	0 to 50 A (4 automatic switched current ranges 50 mA, 500 mA, 5A and 50A)
Measurement Accuracy:	±0.02% FSD in each range
Control Accuracy:	±0.03% FSD in each range
Resolution:	0.002% FSD: 1µA (range 50mA), 10µA (range 500mA), 100µA (range 5A), 1mA (range 50A)
Capacity Calculation:	Accuracte on board calculation of capacity values
Maximum Discharge Power:	3 kW per channel

Features

Measurement:	4-point measurement, differential input
Sampling Parameters for Storage:	Δvoltage, Δcurrent, Δtime, End of Event
Sampling Frequency:	1 msec
Minimum Pulse Width:	1 msec
Rise, Fall & Switch Time:	< 1 msec (typically 100µsec)
Buffer Memory:	13000-20000 measurements/channel
AD converters:	2 x 24 bit converters for Voltage and Current
Calibration:	Automatic integral digital calibration (based on internal Reference Voltage)
On-board inputs:	3 Temperature sensor inputs (NTC, PTC & Thermocouple) & 1 analog voltage input
Charge / Discharge Modes:	Constant Current, Voltage, Power, Resistance
End Conditions:	Time, Voltage, Current, Temperature (+ derivatives), Ch. & Disch. Capacity, Timers, Self-Created Variables, ...
Internal Resistance Measurement:	DC method with programmable current & AC method (1kHz)
Climate Chamber Control:	ModBus, …
Auxiliary IO:	Analog and Digital In- and Outputs (e.g. Analog Voltage In- and Output, Digital In- and Output, Temperature Input)

Other Specifications

Dimensions:	1620 mm Width x 1920 mm Height x 800 mm Depth/ 63.78” Width x 75.59” Height x 31.50” Depth
Electrical:	3x185…260VAC (Δ) + PE / 3x320…450VAC (Y) + N(Y) + PE 50/60 Hz
Max. Power Consumption:	60 kW
Weight:	760 kg/1610 lbs

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