MTS100 Module Test System

MTS100

Module Test System

Safe and Trustworthy

Energy-saving and Effective

Product Introduction

MTS100 is a professional charge/discharge test equipment developed for high current/high power performance testing. It is suitable for performance testing and evaluation of high-capacity Li-ion cells and Li-ion capacitors, cycle life verification, and product model selection.

Adopted with the latest technique, MTS 100 features high energy conversion efficiency, high voltage and current accuracy, fast current dynamic response, multi-current range automatic staging, high power density, and high safety factor in actual use. The MTS100 is characterized by high energy conversion efficiency, high voltage and current accuracy, fast current dynamic response, automatic multi-current range current staging, high power density, and high safety factor.

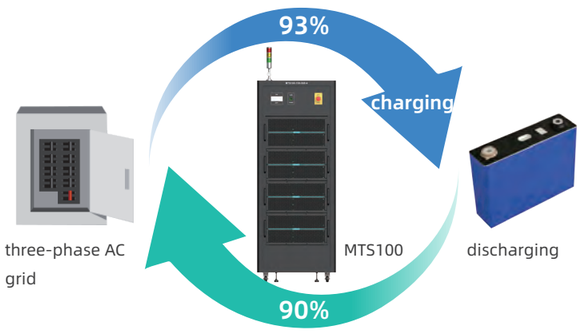
High current cycle life test requires high energy conversion efficiency of the test equipment, thus MTS100 series products are designed with lower energy cost and at the same time less heat generation so that the internal system including the elements for accuracy control can work under a relatively low temperature to effectively avoid temperature excursion of key elements' parameters and short-ened service life caused by temperature variation.

- high voltage accuracy ±0.05% of F.S.
- high current accuracy ±0.05% of F.S.
- discharge energy feedback
- fast current response <5ms
- discharge energy recovery efficiency reaching 90%
- high-speed data recording time 10ms
- channel parallel up to 2400A
- multiple safety protection for module
- integrated multifunction logger with thermostat/ humidity chamber
- qualified for IEC & GB/T standards

Product Features

High Efficiency of Energy Recovery

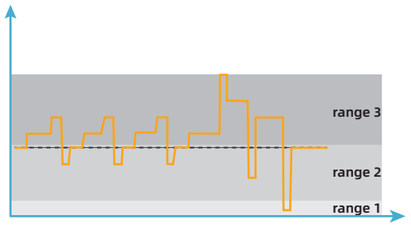
MTS100 feeds battery discharge power back to the AC grid instead of high energy consumption to reduce a large amount of waste heat generation and realize green energy manufacturing with low carbon emission. Reduced demand for power distribution leads to reduced operating electricity and air conditioning cost. Battery cell discharge is recycled to the regional grid, and the recycling efficiency can reach up to 90%. High efficiency brings higher power density, and thus the same laboratory configuration occupies less space and lower operating costs.



Multi-current gear 300A/200A/50A or 100A/50A/30A

Automatically select appropriate current level in constant current mode

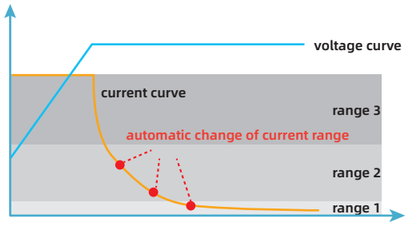
Multiple current output and measurement levels are available to cover high and low current test processes.



Constant current mode

Automatically select the appropriate current level in constant voltage mode

Automatically switch current level in constant voltage mode without interrupting output to improve the current resolution and increase consistency of the cut-off judgment condition.

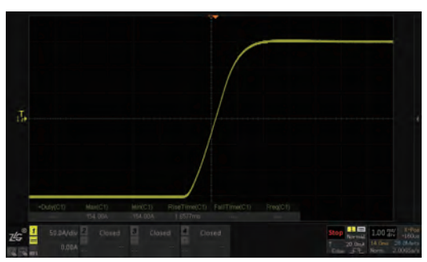


constant voltage mode

Quick dynamic response time

High-speed current response time <5ms

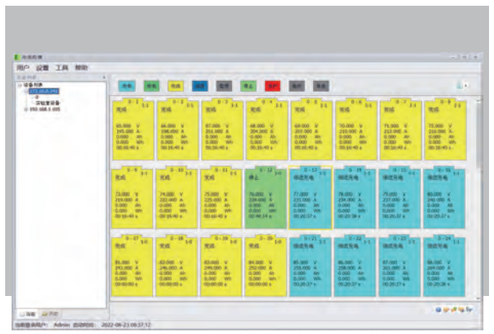
Fast current response to provide more ideal experimental conditions, reducing cumulative capacitance error and obtaining lower distorted data in rapidly changing dynamic tests.



Software Functions

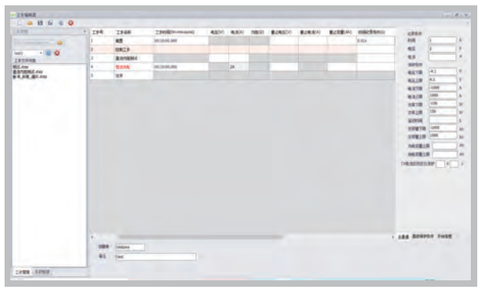
Convenient human-machine interface

Centralized management of testing equipment and battery test data with real-time display of battery status (voltage, current, power, capacity, energy, etc.).



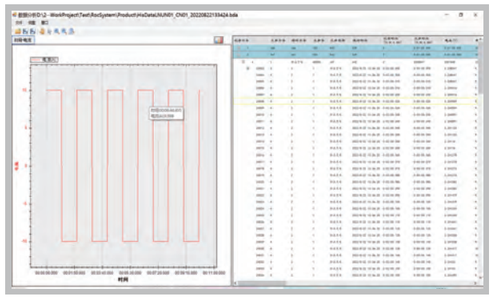
Testing plan edit

Various phases conbined (constant current charge/discharge, constant voltage charge/discharge, constant power charge/discharge, pulse, work condition simulation, DCIR, etc.) to set overall/single phase recording conditions and protection conditions for battery charge/discharge tests.



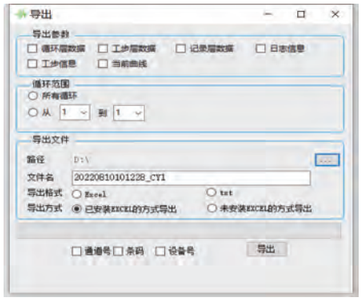
Data analysis

Various customized curves and curve comparison for users to analyze battery test data professionally.



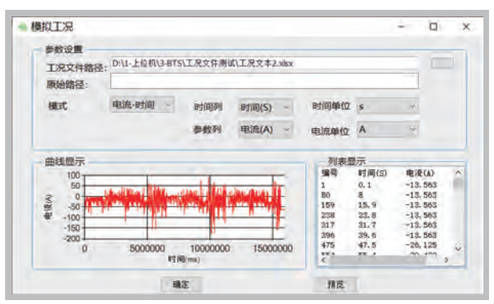
Report export

Battery test data exported in various forms of reports.



Simulation of working conditions

Able to convert the actual electric vehicle operating conditions data into battery testing process to simulate operating conditions on the battery.



Coordination with surrounding decices

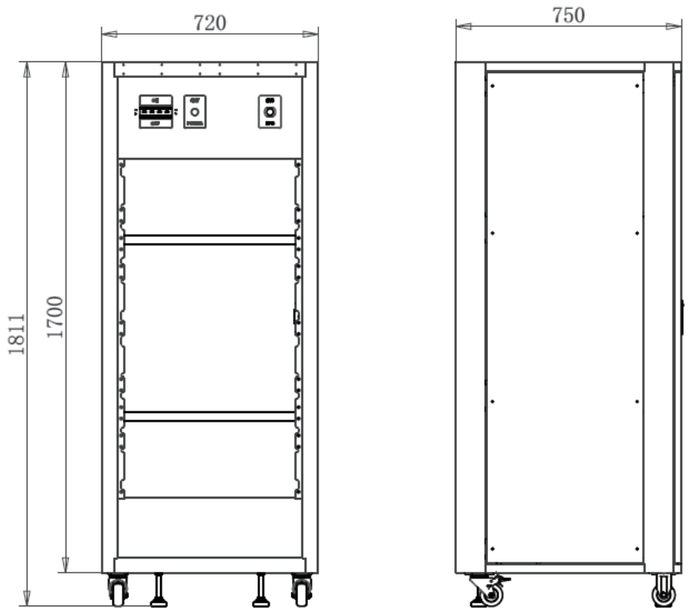
Peripheral devices (thermostat, water chiller, etc.) controlled in many forms through a gigabit switch based on TCP/IP network communication.

Parameter Specification

Specifications				
Cabinet model	MTS100-120-300-6	MTS100-150-500-4	MTS100-200-200-4	PTS100-800-500-2
Voltage range	Charge 0V ~ 120V Discharge 5V ~ 120V	Charge 0V ~ 150V Discharge 5V ~ 150V	Charge 0V ~ 200V Discharge 20V ~ 200V	Charge 0V ~ 800V Discharge 20V ~ 800V
Voltage resolution	0.1mV			
Voltage accuracy	±0.05%F.S. @25℃±10℃			
Current range	-300A~300A	-500A~500A	-500A~500A	-500A~500A
Current resolution	0.1mA			
Current accuracy	±0.05%F.S. @25℃±10℃			
Fastest sampling time of main channel	10ms			
Current rise time	< 5ms	< 5ms	< 10ms	< 10ms
Charge efficiency	93% (max)	93% (max)	93% (max)	96% (max)
Discharge efficiency	90% (max)	90% (max)	90% (max)	93% (max)
Auxiliary voltage protection channel	Accuracy ±1.5mV （25℃±10℃）， sampling rate 10ms, -8V ~ 8V, leakage current < 0.1uA, input impedance > 200MΩ, one for each main channel			
BMS connect	Load *.dbc config file into the software			
Auxiliary temperature protection channel (NTC or thermocouple two options)	Accuracy ±0.5（25℃±20℃）, -40℃ ~ 125℃, sampling rate 500ms, 4NTC temperature detection at most for each main channel			
	Accuracy ±1（25℃±20℃）, -70℃ ~ 250℃, sampling rate 500ms,3K-type or T-type thermocouples for each main channel at most			
Mechanical dimensions (W*H*D)mm	720*1900*750	720*1900*750	1600*1900*850	2400*1900*850
Mechanical weight	< 500Kg	< 500Kg	< 1000Kg	< 2400Kg

Mechanical Dimensions of the Cabinet

Model 1



Model 2