Temperature-Controlled Battery Short-Circuit Tester 6003C

1. Product description

1.1 Temperature-controlled battery short circuit test machine is designed with various battery short circuit test standard requirements, short according to the standard requirements internal resistance of the road device to obtain the maximum short circuit current; in addition, the short circuit device must be able to withstand the impact of large current, so we choose industrial DC magnetic contactor and all copper terminal and internal copper plate diversion, broad copper plate effectively improve the heat dissipation effect, make the large current short circuit device safer, effectively reduce the loss of test equipment, to ensure the accuracy of test data.

1.2 The short circuit test machine adopts PLC automatic control to simulate the external short circuit of UL1642, UN38.3，IEC62133, GB / T18287, GB / T 31241-2014 and other standards. Record the battery voltage, current, and surface temperature changes. The short circuit test machine must have the entire circuit (including circuit breaker, wire and connection device) resistance of 80 ± 20m Ω, each circuit can withstand the short circuit current at a peak of 1000A. Short circuit stop mode can be selected: 1. Short circuit time; 2. Battery surface temperature.

2. Implementation standards

2.1 GB 31241-2014 Safety Requirements for Lithium-Ion Batteries and Battery Packs for Portable Electronic Products.

2.2 MT / T 1051-2007 Lithium Ion Battery for Lamlamp.

2.3 SJ / T 11169-1998 (UL1642:1995) Safety Standard for Domestic and Commercial batteries.

2.4 YD 1268-2003 Safety Requirements and Test Methods for lithium Battery and Charger for Mobile Communication.

2.5 GB / T 19521.11-2005 Safety Code for Inspection of Lithium Battery Pack.

2.6 GB / T 18287-2013 General Specification for Lithium-ion Batteries for Cellular Telephone Use.

2.7 SJ / T 11170-1998 (UL2054:1997) Safety Standards for Domestic and Commercial batteries.

2.8 UN 38.3 Proposals on the Transport of Dangerous Goods-Testing and Standards Manual Part III Section 38.3.

2.9 UL 1642 Lithium Battery Standard 2054 Domestic and Commercial Battery Set.

2.10 IEC62133-2012 Safety requirements for batteries and battery packs containing alkaline or non-acidic electrolyte-Safety batteries for sealed batteries for portable equipment.

2.11 GB / T 8897.4-2008 (IEC 60086-4:2007) Primary Battery-Part 4 Safety Requirements for Lithium Battery.

2.12 YDB 032- -2009 Backup Lithium-ion Battery Pack for Communications.

2.13 YD / T 2344.1- -2011 Lithium Iron Phosphate battery pack for communication-Part 1: Integrated battery pack.

2.14 GB / T 21966-2008 (IEC 62281:2004) Safety Requirements for Lithium Original Battery and Battery in Transportation

2.15 GB38031-2020 Safety Requirements for Power Batteries used for Electric Vehicles.

Test standard requirements:

(1) External short circuit at normal temperature: (control ambient temperature reaches 20℃± 5℃)

After fully charging the battery according to the specified test method, place it in an environment of 20℃ + 5℃. After the battery surface temperature reaches 20℃ + 5℃, place it for another 30min. Then connect the battery to the positive and negative extremes and ensure that all external resistance is 80m Ω ST 20m Ω. Battery temperature changes is monitored during the test and the test is terminated when one of the following two situations occurs:

① The battery temperature drops to a 20% lower than the peak temperature;

② Short contact time reached 24h.

The battery shall not catch fire or explode, and the maximum temperature shall not exceed 150℃.

(2) High-temperature external short-circuit:

After fully charging the battery according to the specified test method, place it in a 55℃± 5℃ environment and let the battery temperature reaches 55℃± 5℃ for another 30min. Then connect the battery to the positive and negative extremes with wires and ensure that all external resistance is 80m Ω ± 20m Ω. The battery temperature change is monitored during the test, and the test is terminated when one of the following two situations occurs.

① The battery temperature drops to a factor of 20% below the peak temperature;

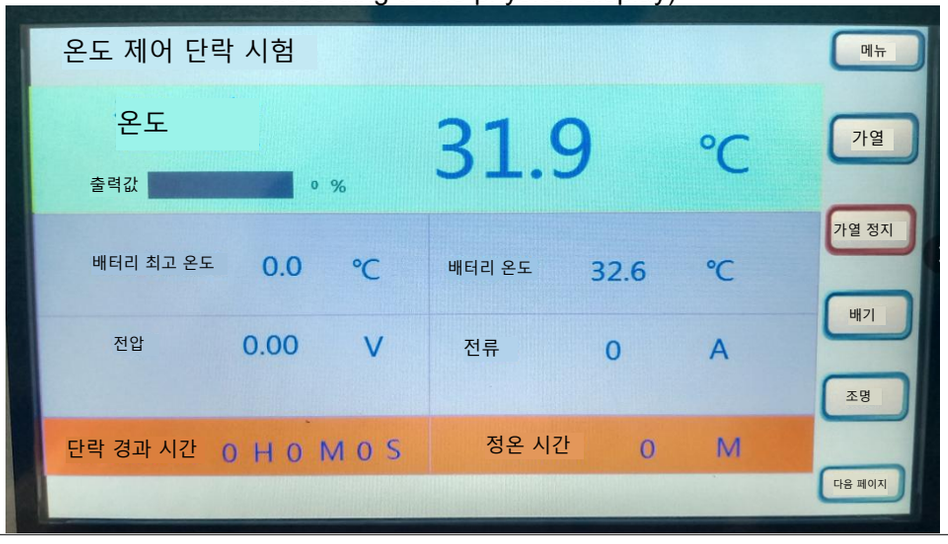
② Short contact time reached 24h.

Test results: the battery should not catch fire or explode, and the maximum temperature should not exceed 150℃

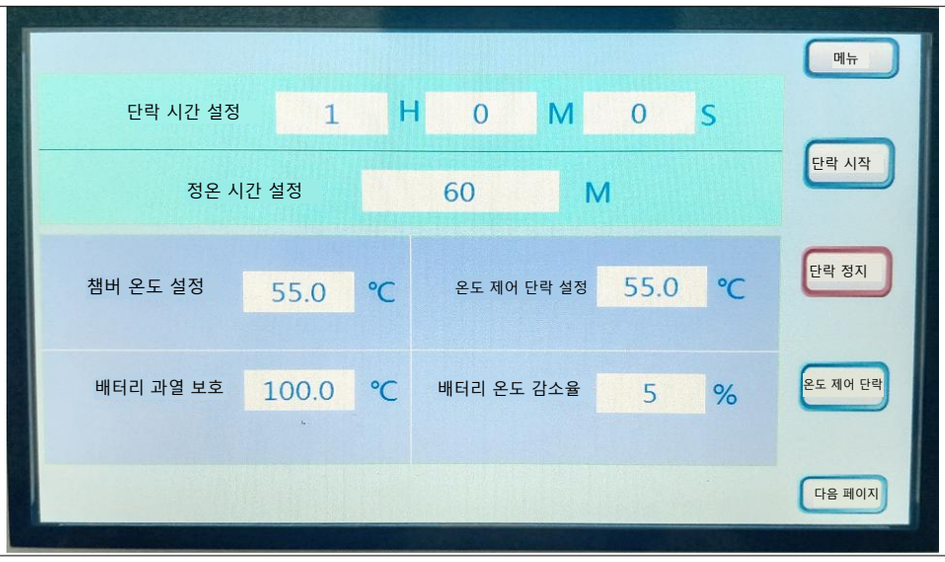
Note: The temperature coefficient of the resistivity of the wire is less than 5x10℃, such as kang copper wire, etc.

3. Technical parameter

Internal box size	500×500×600×mm (W×D×H)
Control method	PLC touch screen control + wireless remote control short-circuit action command
Temperature range	RT + 10℃ ~85℃ (adjustable)
Temperature fluctuation	±0.5℃
Temperature deviation	±2℃
Working voltage	The AC is 220V 50Hz~ 60Hz
Impulse voltage	AC 1kv/1.2-50μ s (peak) 1min
Maximum short circuit current	1000A (Maximum current can be specified and customized)
DC response time	≤5μs
Internal resistance of the device	80mΩ ±20mΩ
Actuation time	Absorption time / release time> 30ms
Performance characteristic	Cold-state suction voltage> 66%Us
Release voltage in cold state	≯30%Us， ≮5%Us
Internal box material	The thickness of stainless steel plate is 1.2mm and affixed with iron fluoron, corrosion resistance and flame retardant performance
External box material	A3 Cold plate baking paint treatment is 1.5 mm thick
Observation window	250x 200mm two-layer vacuum tempered glass observation window, and install the explosion-proof net
Pressure discharge	The rear side of the box is equipped with pressure relief device and exhaust exhaust outlet
Box door	Single door, left open
Box door switch	Open the threshold switch with power off to ensure that there is no misoperation and ensure the safety of personnel
Instrument connection	A φ 50 mm test hole is located on the left or right side of the machine Easy to put in all kinds of temperature, voltage, current collection lines

Trundle	There are four universal direction casters under the device, which can move freely
Voltage collection	Voltage range: 0-100 V Acquisition rate: 100ms Number of channels: 1 channel Accuracy:±0.8%F.S（0~100V）
Current collection	Current range: 0 to 1000 ADCA Acquisition rate: 100ms Number of channels: 1 channel Accuracy:±0.5%F.S
Battery temperature collection	Temperature range: 0℃ to 1,000℃ Acquisition rate: 100ms Number of channels: 1 channel Accuracy:±2℃
Short-circuit contactor service life	300 Thousand times
Controller interface	Weilong 7-inch touch screen (the following interface is for reference only, according to the physical display) 

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Data export	USB data export port, can export report, view test data and curves
Power	3KW
Use the power supply	220V 50HZ
Carton size	About 750 * 800 * 1800mm (width * depth * height) according to the actual size
Weight	About 200kg
Apolegamy	Manual and automatic fire-extinguishing functions

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4. Main configuration list

Order number	Main accessories	Origin brand	Quantity
01	any power-generating or power-driven machine	Dongguan rain field	1
02	calorifere	Dongguan dongda	1
03	Man-machine touch screen	Taiwan Weilun Tong	1
04	crowbar	Shanghai People's Electric Appliance	1
05	transducer	Jiangsu Taihua	1
06	AC contactor	Zhejiang zhengtai	1

5. List of vulnerability and consumables

Order number	Name of a part	Main accessories	Origin brand
01	Short circuit fixture	Cylinder clamp + polymer clamp	Custom made

6. Equipment delivery list

6.1 Instructions;

6.2 Delivery order;

6.3 Temperature-controlled battery short-circuit tester and fixture;

6.4 Qualification certificate, warranty certificate.

7. Requirements for equipment use environment

Specifications	Index requirements
Equipment use environment requirements	Temperature below 45 degrees, humidity below 80%
Source	AC220V，50/60Hz
Headwaters	/

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Vacuum	/
Compressed air	/
Ground requirements and load-bearing requirements	Concrete ground is 300kg
Network requirements	/
Smoke, dust, exhaust gas, Construction requirements for wastewater treatment plant	Waste gas exhaust interface exhaust gas exhaust interface φ 75mm

8. Product appearance



Pictures are for reference only, please refer to the actual product.

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