Dual-Temperature Zones All-in-One Testing System

<table>
<tr><td colspan="2">1. Material code</td><td colspan="13">MHW-100-2-160CH</td></tr>
<tr><td rowspan="10">2. Model naming method</td><td>Model</td><td>MHW</td><td>-</td><td>100</td><td>-</td><td>2</td><td>S</td><td>-</td><td>160CH</td><td>-</td><td>220V</td><td>-</td><td>B</td></tr>
<tr><td>Characteristic</td><td>①</td><td></td><td>②</td><td></td><td>③</td><td>④</td><td></td><td>⑤</td><td></td><td>⑥</td><td></td><td>⑦</td></tr>
<tr><td rowspan="8">Symbol meaning</td><td>①</td><td colspan="11">Constant temperature test box series</td></tr>
<tr><td>②</td><td colspan="11">Nominal content product of single-temperature zone box: 100L (other digital analogy)</td></tr>
<tr><td>③</td><td colspan="11">2:2 temperature zone box type (1 temperature zone does not indicate, other numbers by analogy)</td></tr>
<tr><td>④</td><td colspan="11">Refrigeration mode: S represents the semiconductor refrigeration
(temperature range: 15℃~60℃)
Compressor refrigeration is not indicated (temperature range: 0℃~60℃)</td></tr>
<tr><td>⑤</td><td colspan="11">160CH: 160 channel (other digital analogy)</td></tr>
<tr><td>⑥</td><td colspan="11">220V: Equipment voltage 220V (default 220V omitted not indicated, other voltages by analogy)</td></tr>
<tr><td>⑦</td><td colspan="11">B: Product iteration update version number, then A, B, C....., Default A does not indicate</td></tr>
<tr><td colspan="2">3. Application</td><td>Product</td><td colspan="11">Constant temperature test of the buckle-type cell
Electronic, electrical, instrument, materials, semiconductor and other production enterprises to non-flammable, non-explosive items for constant temperature test

Environmental protection, agricultural and livestock, aquatic scientific research institutions and production of water analysis, bacteria, mold,microbial culture, preservation, plant cultivation, breeding test of constant temperature test</td></tr>
<tr><td colspan="3">4. Limit the sample</td><td colspan="11">This test equipment is prohibited by:
Test or storage of samples of inflammable, explosive and volatile substances
Test or storage of test samples of corrosive substances
Test or storage of samples of strong electromagnetic emission sources
Test and storage of test samples of radioactive substances Test and storage of test samples of highly toxic substances
Testing or storage of specimens of the such substances or objects that may be produced during testing or storage</td></tr>
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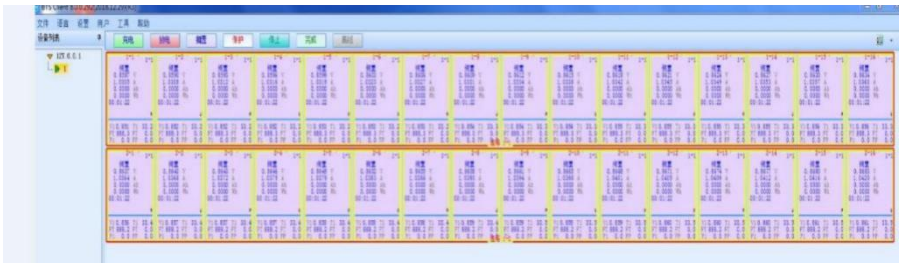
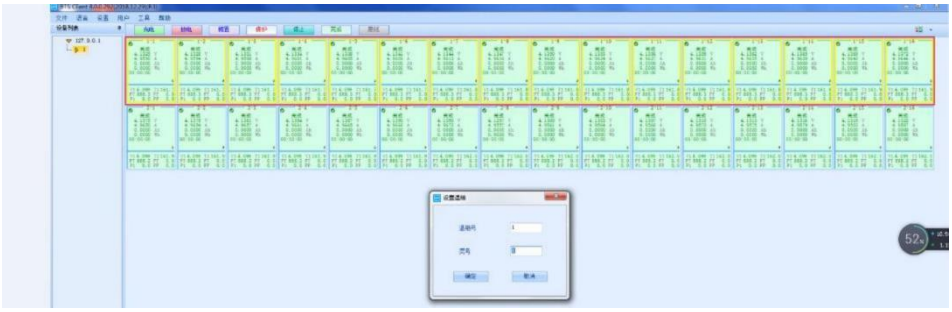
6. Volume, size and weight	
6.1 Nominal content product	200L (100L)
6.2 Inner box size	W500mm × D500mm × H400mm (single-temperature zone)
4.3 Overall dimensions	W600mm × D920mm × H1920mm
4.4 Net weight of the equipment	About 260kg
7. Performance	
7.1 Test the environmental conditions	Ambient temperature is + 25℃, relative humidity is 85%, with no sample in the test box (no load)
7.2 Temperature range	0~60℃
7.3 Temperature fluctuation degree	1℃ (equivalent to ± 0.5℃, with no load and stable temperature)
7.4 Temperature deviation	± 2.0℃ (when no load and temperature is stable)
7.5 Heat-up time	25℃~60℃ ≤30 min (no-load, average nonlinearity)
7.6 Cooling down time	25℃~0℃ ≤50 min (no load, average nonlinear)

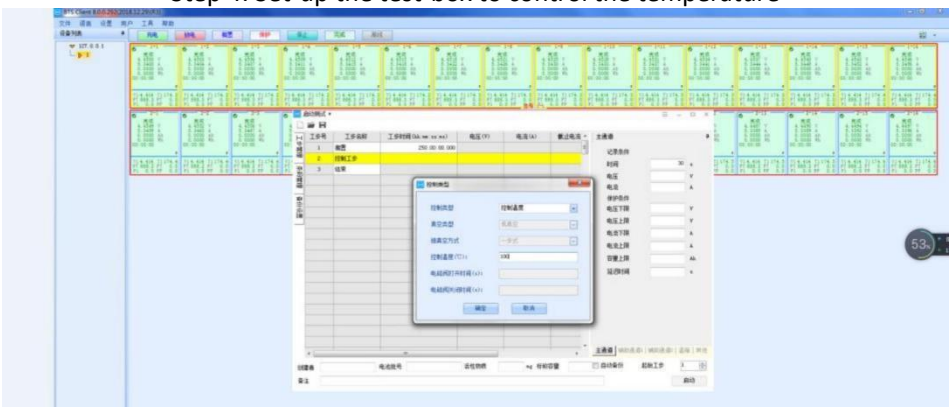
8. Structural characteristics	
8.1 Thermal insulation and envelope structure	● Outer wall material: high quality cold-rolled steel plate, surface plastic spraying and paint treatment ● Inner wall material: stainless steel plate SUS304 ● Box insulation material: polyurethane foam (insulation thickness of 50mm)
8.2 Air conditioning channel	Axial flow fan, heater, and evaporator
8.3 Standard configuration of test box (single temperature zone)	Observation window: multi-layer insulating electric heating film heating anti-fog observation window (located on the door) Lead hole (with soft glue plug): ϕ 50mm / 2 (located at the back of the box) Caster: 4 pcs (with brakes) Cell tray: electric insulation, cell tray 2 layers, load-bearing (all cloth): 10kg / layer Lighting: LED lighting lamp 
8.4 The control panel	Touch-type control button
8.5 Heater	Stainless steel, a heating pipe Heater control mode: no contact and other periodic pulse widening, SSR (solid state relay)
9. Refrigeration system	
9.1 Refrigeration compressor	Fully enclosed piston compressor 
9.2 Cooling mode	Air-cooled
9.3 The throttle device	Capillary
9.4 The refrigerant	R134a
9.5 Welding process	Nitrogen-filled protective welding

10. Electrical control system	
10.1 controller	LED digital display + touch key type controller
10.2 Setting mode	Touch key type
10.3 Control mode	Forced circulating ventilation and balancing temperature regulation method. The control system controls the output of the heater through the PID automatic operation output result according to the set temperature value, so as to achieve a dynamic balance
10.4 Communication mode	The Ethernet standard interface
10.5 Temperature control module	Independent research and development (high and low temperature shock, vibration and EMC)
11. Cell testing equipment and test interconnection	
11.1 Testing equipment	Up to 20 units total 160 CH (mA equipment)
11.2 The median machine	Up to 2
11.3 The Network Switch	1
11.4 Upper computer programming control interface (see equipment random data for details)	Step 1: Open the software interface  Step 2: Select to set up the test box

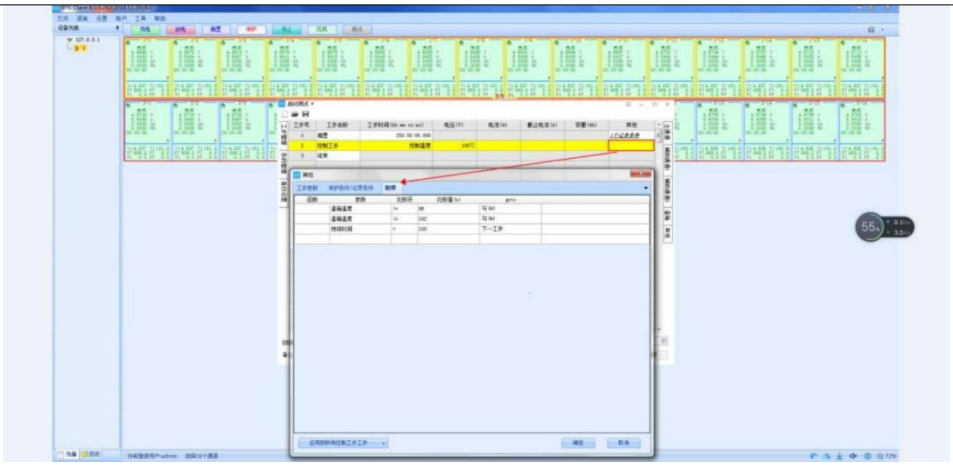
Step 3: Find the test box to be set up

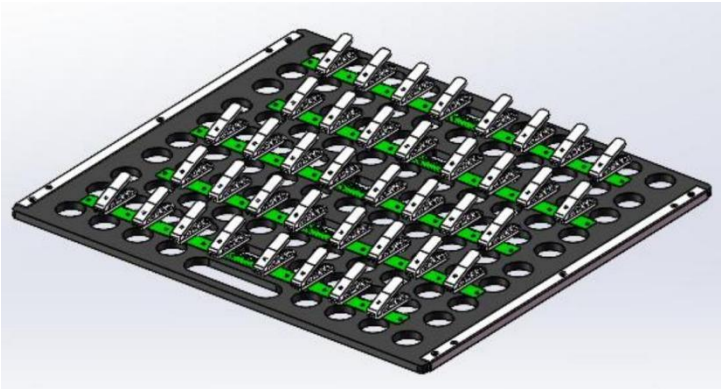


Step 4: Set up the test box to control the temperature



Step 5: Set the working step control conditions

	
12. Safety protection device	
Test box	Leakage protection, short circuit protection and circulation fan operation
13. Other configurations	
13.1 Power supply cable	(Single-phase + protected ground wire) 1 cable (the specific specifications are selected according to the contract requirements)
13.2 Main power supply leakage circuit breaker	Single-phase + protective ground line
14. Transportation test box is integral, overall transportation	
Size	Maximum shipping size (excluding packaging): "See 4.3 Outline dimensions"
15. The following conditions are guaranteed by the user(the user is responsible for the installation of the power supply line of the equipment)	
15.1 Installation site	● The ground is level off with a flatness of 5mm / 2m well-ventilated ● No strong vibration around the equipment ● There is no strong electromagnetic field influence around the equipment ● There is no flammable, explosive, corrosive substances and dust around the equipment ● There is appropriate space for use and maintenance around the equipment ● There should be room for the opening door of the equipment, and there should be no other objects in front of the equipment door

15.2 The environmental conditions	Temperature: 5℃ ~35℃; relative humidity: 85%; air pressure: 86 kPa ~ 106 kPa
15.3 Power supply Conditions source & Power capacity maximum current	AC (220 ± 22) V (50 ± 0.5) Hz single-phase + protected ground wire The protective ground ground resistance is less than 4 Ω The user is required to configure an air or power switch for the equipment at the installation site, and the switch must be independent for the equipment 3kW ； 16A
15.4 Others	Opening the door of the test box will cause the temperature fluctuation in the box If opening the door several times or opening the door for a long time or the test sample emits wet steam, the heat exchanger of the refrigeration system may cause frost or freeze and fail to work normally
15. Specification and placement mode of the battery cell (single temperature zone)	
15.1 Cell specifications	Button cell
15.2 Cell placement mode	Second floor placement (up to 40 buckle cells can be placed on each layer)
15.3 Cell tray form and cell fixing mode (cell tray can be customized as needed) Cell tray using electric, insulated electric wood quality	 Note: The picture is for reference only, subject to the real thing
16. Simulation diagram during stable temperature operation in the test box (schematic diagram only)	

No-load run