



8/20 μ S
Portable lightning generator

Instructions

Precautions for use

The 8/20 μ S Portable lightning generator generates high voltage and current during operation. For safety, please carefully read this manual and its relevant materials before using this device and paying attention to safety.

Carefully keep this manual in a place that is easy for operators to access and distribute it to end users.

〔Design Description〕

! Danger

When the device is in use, both the internal and output test ports are under high voltage. At this time, it is prohibited to touch the test port and open the chassis to avoid electric shock, but it will not cause personal safety accidents. If wiring replacement is necessary, it is necessary to confirm that the power supply is disconnected before proceeding.

! Carefully

After thoroughly reading this manual, if you encounter any problems during the testing process or if the machine malfunctions, please turn off the power supply of the equipment before conducting the inspection. Professionals can disassemble the machine for inspection.

Other precautions:

- To ensure the service life of the equipment, please cut off the power supply when the equipment is not undergoing testing.

- Equipment should be protected from dampness, rain, exposure to sunlight,

and falling.

- Equipment storage conditions: The relative humidity should not exceed 75% RH, and there should be no acidic, alkaline, or other corrosive gases in the environment or indoors

- The equipment is firmly in contact to prevent sparks between the product and the testing end.

- The equipment must be reliably grounded.

- When using the device, if a test is not completed and the work is interrupted, a lot of electricity is stored in the device. Please be sure to discharge it before using it.

- High voltage inside, please do not disassemble or open the casing for work without permission.



FATECH LIGHTNING PROTECTION

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Preface

Thank you for using the product developed by our company. This testing system adopts a unique appearance design and undergoes various strict safety tests before leaving the factory. It has been adjusted to the optimal system testing parameters, allowing you to obtain accurate testing results during use.

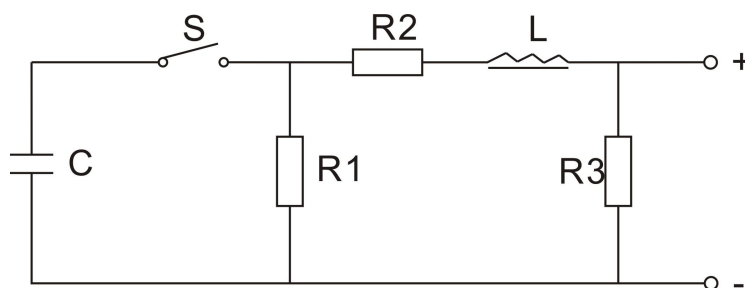
If you find any quality issues with this testing system during use, please contact our technical department. Our company will provide you with the best service and a satisfactory response. Before using this testing system, please read this manual carefully.

1 Technical Indicators

1-1. Parameters

Current waveform	8/20 μ S \pm 20% (GB/T17626.5)
Output voltage	50V-1200V \pm 5%
Voltage polarity	Positive
Output impedance	0.2 Ω (\pm 0.05 Ω)
Output short current	100A-3KA
Interval time	10-999
Number of discharge cycles	1-999
Working power supply	AC220V \pm 10%,50/60HZ

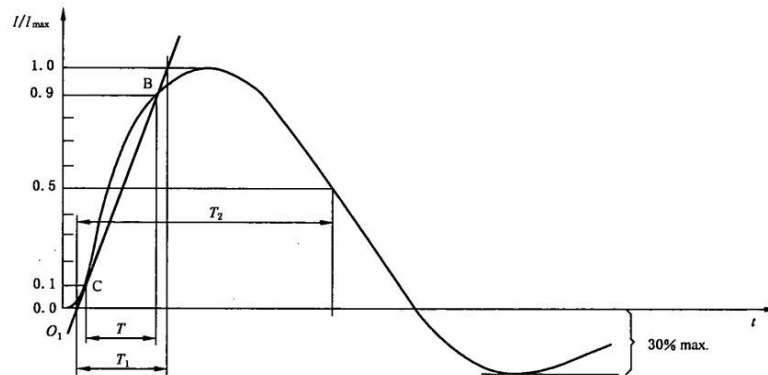
1-2 Equivalent circuit



1-3 Output waveform definition

Current wave:

- Leading edge time: $T_1 = 1.25T = 8\mu\text{S} \pm 20\%$
- Half peak time: $T_2 = 20\mu\text{S} \pm 20\%$



2 Operating instructions

2-1 Equipment appearance description



Profile:

Size	185*480*420
Weight	About 10KG

Introduction of Operation Control Surface:

No.	Name	Description
1	Touch Screen	Display various operation information
2	EMERGENCY(急停)	Failure during use
3	START (启动)	Test initiation
4	Output terminal	Connect the test probe

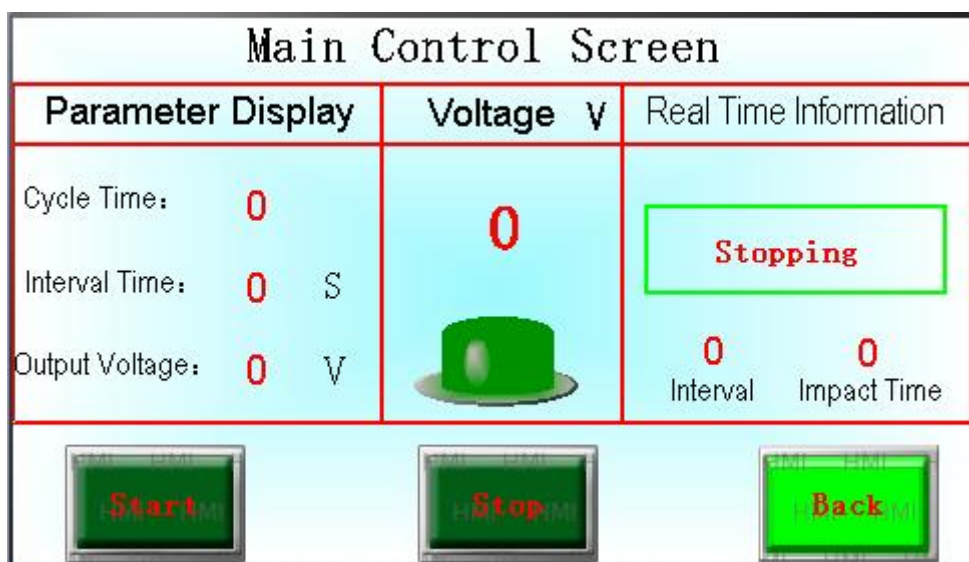
Start Interface:

Turn on the power switch on the back of the instrument to enter the start interface:



Test parameter settings:

Click anywhere on the start interface to enter the main control interface:



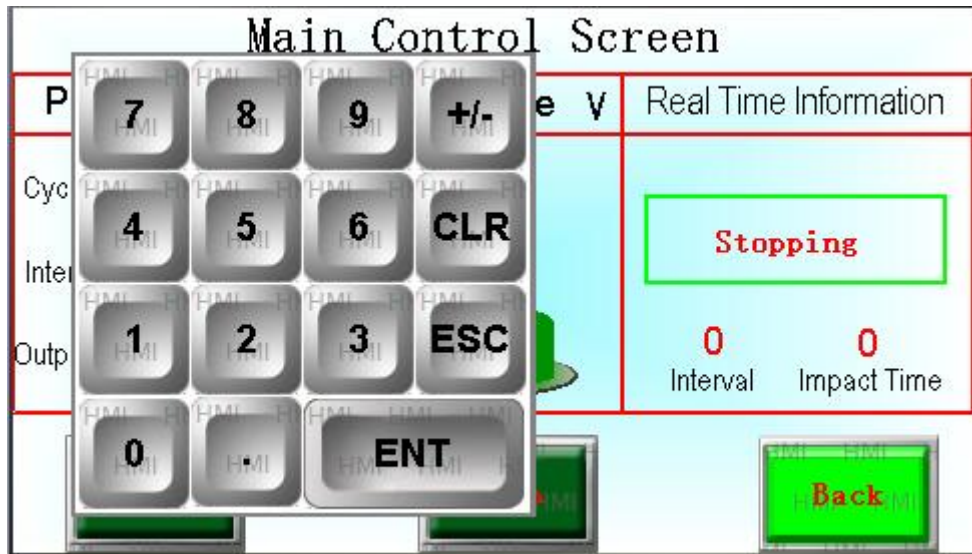
	Name	Description
Parameter display	Interval time	This column sets the time from the completion of the current test discharge to the next charge (0~99S)
	Number of cycles	This column sets the number of product impact tests (1~999)
	output voltage	This column sets the impulse test voltage (0~1200V cannot be higher than the protection voltage)
Real time voltage	Real time voltage	This column displays the real-time charging voltage value
Real time parameter information	running state	This column displays the status of the instrument operation
	Interval time	This column displays the cycle impact countdown
	Number of impacts	This column displays the number of impacts that have been made

After setting the displayed parameters, click the "Start" button on the touch screen or the "START" button on the instrument panel to start charging and running the instrument.

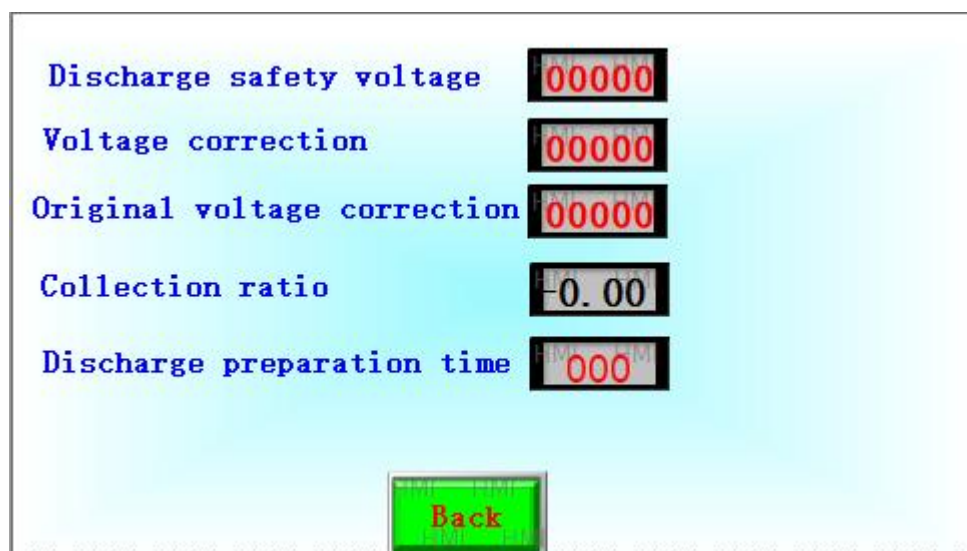
The parameters cannot be modified during instrument operation!

Parameter settings:

There is a hidden button in the upper left corner of the main control screen, which pops up the input keyboard when clicked:



Enter "1111" to enter the parameter setting screen. The parameters on this page have been adjusted at the factory and cannot be modified unless necessary.



Name	Description
Discharge safety voltage	The voltage is safe within the set range
Voltage correction	Used during instrument debugging
Original voltage correction	Used during instrument debugging
Collection ratio	Used during instrument debugging
Discharge preparation time	Countdown time after charging and before discharging

Pop up prompt:

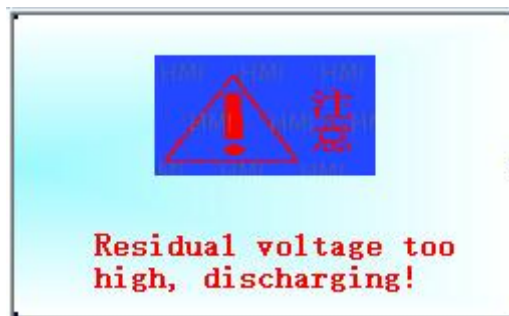
- After the test is completed, a window will pop up to prompt, as shown in the following figure:



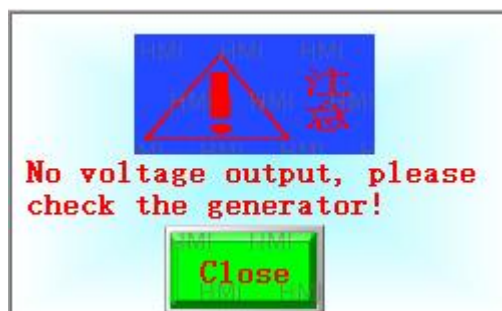
- Pressing the emergency stop button will pop up a window prompt, as shown in the following figure:



- When the residual voltage is too high, a window prompt will pop up, as shown in the following figure:



- When the instrument cannot be charged, a window will pop up to prompt, as shown in the following figure:



3 Normal working environment

3-1 Working power supply: AC220V±10% 50/60HZ

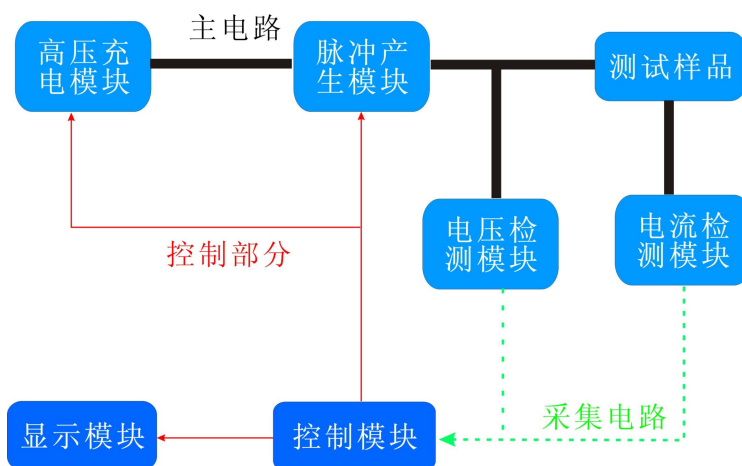
3-2 Environmental temperature: 0-35°C

3-3 Humidity of the environment: 25%-75%

3-4 Withstand voltage: AC1.5KV 50HZ 1min

4 Maintenance Operation Manual

System composition diagram:



Main internal panels:

No.	Name	Description
1	Touch sreen	Display the operation interface of the device
2	Acquisition board	Collect Real time voltage of the device
3	PLC	Control and operation processing system of equipment
4	Charging and discharging modules	Current waveform generation circuit
5	Capacitance	Carrier for storing charge quantity
6	Transformer	A device that uses the principle of electromagnetic induction to change AC voltage

Troubleshooting

4-2-1、Fault diagnosis and handling

When there is an abnormal situation with your generator, please check and troubleshoot according to the table below. If the problem persists, please contact us.

NO.	Phenomenon description	Cause analysis	Handling methods
1	Emergency stop	Press the emergency stop button when abnormal faults occur during work	Release the emergency stop button
2	Protection voltage value setting error	The protection voltage value is less than the output voltage value	Modify the protection voltage value to be greater than the output voltage value
3	Output voltage value error	The protection voltage value is set too low	Set the protection voltage value to 6600
4	Unable to charge	1. The main circuit AC contactor is not working 2. The PLC output point is damaged, or the relay is damaged	1. Check if the main circuit AC contactor and relay are damaged 2. Check if the PLC output point is working

4-2-2、Maintenance method

Work items before equipment startup

- Clean the equipment and remove debris unrelated to production.
- Check whether the operation buttons and emergency stop buttons are normal.
- Check for leakage in all parts

Inspection during equipment operation

- Pay attention to any abnormal sounds in various parts.
- Pay attention to whether the safety components are normal during operation.
- Report any abnormal situations to the relevant person in charge in a timely manner.

Work items after equipment stops working

- Clean the remaining materials inside the machine and clean the outside of the equipment.
- Turn off the power and air valve.

First level maintenance

First level maintenance is the foundation of technical maintenance, and great importance must be attached to the quality of first level maintenance work, which is carried out by operators. The main tasks include cleaning, lubrication, and fastening, as well as checking the operation buttons, safety parts, valves, and lubricating oil levels.

Second level maintenance

The secondary maintenance of equipment focuses on cleaning, inspection, and adjustment. Performed by professional maintenance personnel. In addition to performing first level maintenance tasks and checking the lubricating oil condition of moving parts, checking the reliability of safety components, eliminating hidden dangers, adjusting the coordination of vulnerable components, extending service life, and maintaining the technical performance of the equipment.

Third level maintenance

The three-level maintenance of devices that use the principle of electromagnetic induction to change AC voltage focuses on cleaning and inspection. Clean the dirt on the moving parts, remove hidden dangers, and eliminate defects,

- Conduct a comprehensive inspection of the equipment.
- Clean the discharge copper ball with alcohol once a month
- Clean the dust inside the cabinet once every three months
- Test the grounding terminal once every six months
- Test the insulation level of wires, once every six months
- Test the insulation level of the motor once a year
- Tighten all connecting bolts in the cabinet once a year
- Add lubricating oil to all electrical transmission parts

5 after-sale service

The 8/20 μ S Portable lightning generator provides a one-year warranty service from the date of purchase, and the starting date of the warranty period is based on the invoice date of the purchased product.

Under normal use, if the damage is not caused by human factors, the buyer can bring a warranty card and invoice to the company for repair. One of the following situations is not within the scope of free maintenance:

- Malfunctions caused by not following the instructions in the manual
- Faults caused by falls, collisions, and other actions
- Due to actions such as self assembly, disassembly, collision, etc
- Faults caused by accidents, misuse, applicability, or intentional damage
- Lifetime maintenance beyond warranty period
- The manufacturing unit has the right to modify without prior notice
- All contents in this manual have been carefully verified, and if there is any printing
- The company reserves the final right to interpret errors and misunderstandings in the content

order to provide you with maintenance, consulting and other services in a more timely manner, and help you solve problems encountered during use, please fill out the feedback card and return it to our company's customer service department to establish a product service record.

6 Attachment

附件

6-1、1 power cord

6-2、User Manual

6-3、Warranty Card

6-4、One customer feedback card

6-5、One maintenance manual

Product Name: _____

Product model: _____

Date of production: _____

Product serial number: _____

Purchase date: _____

Buyer's Name: _____

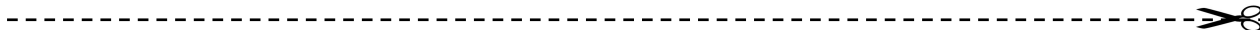
Address: _____

Telephone: _____

Agent Name: _____

Address: _____

Telephone: _____



Product feedback card

Product Name: _____

Product model: _____

Date of production: _____

Product serial number: _____

Purchase date: _____

Buyer's Name: _____

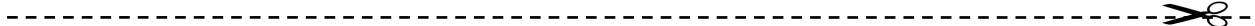
Address: _____

Telephone: _____

Agent Name: _____

Address: _____

Telephone: _____



Customer feedback column·

Customer Signature:

Please fill out this card carefully when purchasing, stamp it with the agent, and send it back to our customer service department within 30 days. Our company will establish a user profile for you and provide tracking services for your products.

Please send the feedback card receipt to our company:

·Maintenance status registration column·

Repair date			
Maintenance status			
Handled by			
Repair date			
Maintenance status			
Handled by			

