Huazheng®

HZJY-25K
Insulation Resistance Tester

User Manual

Huazheng Electric Manufacturing (Baoding) Co., Ltd

Dear user:

Thank you for choosing HZJY-25K Insulation Resistance Tester.

We hope that this instrument can make your work easier and more enjoyable, so that you can get the feeling of office automation in the test and analysis work.

Before using the instrument, please read this manual, and operate and maintain the instrument according to the manual to prolong its service life. "Just a light press, the test will be completed automatically" is the operating characteristics of this instrument.

If you are satisfied with this instrument, please tell your colleagues; if you are not satisfied with this instrument, please call (0312) 6775656 to tell you to serve you at all times-Baoding Huazheng Electric Manufacturing Co., Ltd., our company will definitely make you satisfied !

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I.Safe use matters

The design, manufacture and testing of this instrument have reached the IEC61010 safety standard (safety requirements for electronic measurement products). This manual includes warnings and safety regulations that must be followed by the user to ensure the safe use of the instrument and the safe state of the instrument. Please read the following instructions before use.

⚠WARNING

1.The instrument outputs high voltage. Before use, read and understand the operating instructions in the manual.

2.Please keep the manual with you for reference at any time.

3.The instrument must be used as directed.

4.Understand and follow the safe operation instructions.

The above operating instructions must be strictly followed.

Failure to observe this may result in personal injury and instrument damage during measurement.

⚠Dangerous (means improper operation can cause serious or fatal injuries)

1. Please wear insulating gloves before use.

2. Do not measure in a circuit above AC/DC600V.

3. Do not test in flammable places, sparks may cause an explosion.

4. Do not operate when the surface of the instrument is wet or the operator's hands are wet.

5. Please do not connect the test line when powered on.

6. Do not touch the circuit under test immediately during or after the test, which may cause electric shock.

7. Stop the test if dirt or carbonized material is found on the test line or port which may damage the insulation property.

⚠Warning (means that improper operation may cause serious or fatal injury)

1. If the instrument is abnormal, stop using it. For example: the instrument is damaged or exposed metal parts.

2. Please do not install substitute parts or make any unauthorized modification to the instrument. Please contact our company for maintenance.

3. Make sure that all test leads are firmly connected to the test ports of the meter.

⚠Note (means improper operation may cause personal injury or damage to the instrument)

1. Before measuring, confirm that the voltage is selected at an appropriate value.

2. If the battery is not used for a long time, the battery should be stored after being fully charged and refilled within three months.

3. Do not place it for a long time in high temperature, humidity, places with the possibility of condensation and direct sunlight.

4. Please use a damp cloth or detergent to clean the case of the instrument, do not use abrasives or solvents.

5. When the instrument is wet, please dry it before storing.

II.Main functions and features

Intelligent high-voltage insulation resistance tester, with 8 ranges: 500V, 1000V, 2500V, 5000V, 10000V, 15000V, 20000V, 25000V, the maximum test can reach 25TΩ, and the manual voltage function.

1. Design in strict accordance with safety standards

2. 2. Insulation resistance range 25TΩ@25kV

3. 3.The short-circuit current can be adjusted, up to 5mA (up to 10mA short-circuit current products can be customized).

4. 4. Automatically display the test values of polarization index (PI) and dielectric absorption ratio (DAR), which can test leakage current and capacitance.

5. 5. Excellent anti-interference performance, when the interference current reaches 2mA, the instrument still guarantees the test accuracy.

6. 6. The capacitive test sample discharges quickly, and the instrument discharges quickly automatically.

7. 7. Two power supply methods: use lithium ion battery power supply, battery life can reach 4 hours (25000V no load). At the same time, it can be charged in use. In the event of a power failure, it can automatically switch from AC power to battery power. The charging power supply is built-in, that is, an integrated design.

8. 8. The instrument has an automatic shutdown function: when it is idle, the instrument automatically cuts off the power to prevent forgetting to shut down and cause the battery to run out.

9. 9. All Chinese display, Chinese prompt operation, simple and clear, and can display the insulation resistance simulation column.

10. 10. Digital filter function, use the filter function to reduce the influence when the display value is deviated due to external influence.

11. 11.Perfect protection function, built-in fuse protection, and has the function of fuse blowing prompt.

12. 12. The instrument has a Bluetooth communication function, and can develop user-specific application programs with the communication protocol.

13. 13. The instrument has built-in electronic contrast adjustment to meet the problem of temperature changes affecting the display gray scale.

III.Technical specifications

1. Safety specifications

IEC 61010-1 CAT.IV 600V Pollution degree 2

IEC 61326 EMC specification: electrical equipment for testing, control and inspection

IEC60529 IP64 (outer box closed state)

2. AC power supply: 220V±10%, 50/60 HZ, 25 VA

3. Battery power supply: 16.8V lithium ion battery

4. Battery life time: 25000V@no-load, about 4 hours

5. Dimensions (length x width x height): 37cm x 27cm x 17cm

6. Weight: 3.5kg

7. Test voltage accuracy: 100% to 110% of the nominal value

8. Voltage measurement accuracy: 5%+10V

9. Current test range: 10mA

10. Current measurement accuracy: 5%+0.2nA

11. Short-circuit current: 2 to 7mA, adjustable output (10mA short-circuit current can be customized)

12. Capacitance test range: 20uF

13. Capacitance test accuracy: 15%+0.03uF

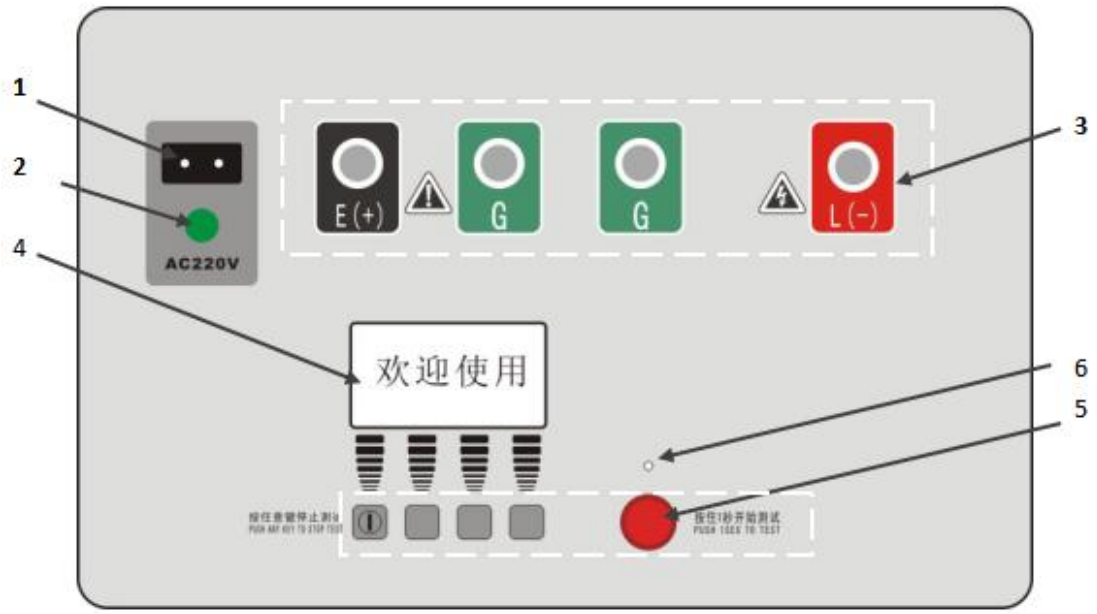
14. Insulation resistance test range and accuracy (temperature: 23±5ºC, relative temperature: 45-75%RH)

Range / Accuracy	500V	1000V	2500V	5000V	10000V	Manual pressure regulation
Unspecified	<1M	<1M	<1M	<1M	<1M	Range: 1G/V, 100G at 100V. When the voltage is less than 300V, the resistance error increases by 10%
5%	<1M-10G	<1M-20G	<1M-100G	<1M-100G	<1M-200G	
20%	10G -100G	20G-200G	100G-1T	100G-1T	200G-2T	
Unspecified	> 100G	> 200G	> 1T	> 1T	> 2T	

Range / Accuracy	15000V	20000V	25000V		
Unspecified	<1M	<1M	<1M		
5%	<1M-300G	<1M-400G	<1M-500G		
20%	300G -3T	400G-4T	500G-5T		
Unspecified	>3T	>4T	>5T		

IV.Instrument introduction

1.Panel introduction



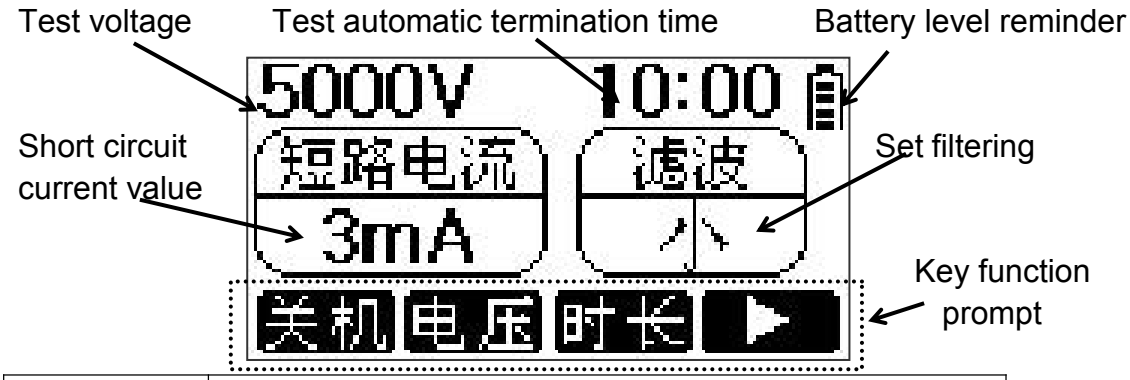
No.	Description	No.	Description
1	AC plug	2	AC indicator
3	Test terminals (E, G, G, L)	4	LCD
5	Button	6	High voltage output warning light

2.Button and function description

There are 5 buttons in total from left to right. The first is the power-on button in the shutdown state.

Button No.	Description
1	Power on button, press to power on when off
2、3、4	Function keys
5	TEST key, press and hold 1S to test, then press to stop. (Invalid when entering the setting menu)

3.Test setting interface



Soft keys	Description
Turn off	Cut off the power. The instrument will automatically shut down in 3 minutes when there is no operation.
Voltage	Select the test voltage, manually adjust the voltage, 500V, 1000V, 2500V, 5000V, 10000V, 15000V, 20000V, 25000V
Time	Test time for automatic stop, 01:00 10:00 30:00
	Switch the software button to a new function, or return from another function
Current	Select short circuit current, 1mA step selection. Normally, the maximum value is sufficient, or the short-circuit current value specified in the regulations can be selected.
Filtering	Select filter parameters. Off: no filtering; (recommended under no interference conditions) Small: hardware low-pass filtering; (suitable for most situations) Middle: software low-pass filter; (recommended when higher than 100G high impedance) Large: software + hardware low-pass filtering; (recommended for high impedance greater than 1T)
Setting	Enter the system Settings menu

4.Battery level indicator:

When the battery voltage display shows only one bar left, it should be charged in time.

When the battery display flashes, the power supply will be automatically cut off at any time and the battery should be charged immediately.

5.Charging: Provide AC power to the panel AC socket to charge the instrument. When charging, the power indicator light is on, and the battery indicator on the display screen displays from (0 grid) to (full grid). When it is full, it displays (full grid).

6.Contrast setting interface: The gray scale of LCD display changes due to temperature changes, which may affect the use. This instrument is equipped with electronic contrast adjustment. Set up as follows:

In the shutdown state, press and hold the 2 button (the second button)

Press the 1 button (power button) to turn on, until you enter the contrast adjustment menu

Press the 1 key or the 2 key to adjust the contrast until the right time

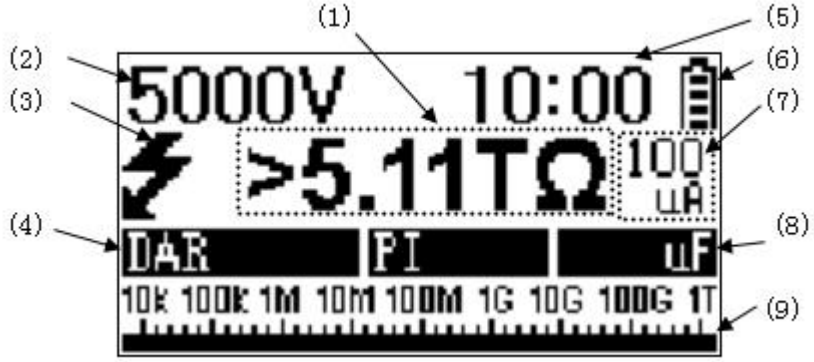
Press the 4 key to save and exit, if you do not need to adjust, press the 3 key to exit

Soft keys	Description
	Move the cursor, also used to increase or decrease the contrast
	Move the cursor, also used to increase or decrease the contrast
Back	Invalid under this interface
OK	Confirm to enter the current menu function or confirm the current setting and exit

7.System help menu description

Help: Record the product number, production date, and version information.

8.Insulation test interface



(1) Digital display of insulation resistance value (> means greater than the current value; <means less than the current value)

(2) Actual test voltage

(3) High voltage hazard reminder

(4) Absorption ratio DAR and Polarization index PI

(5) Measured time

(6) Battery power

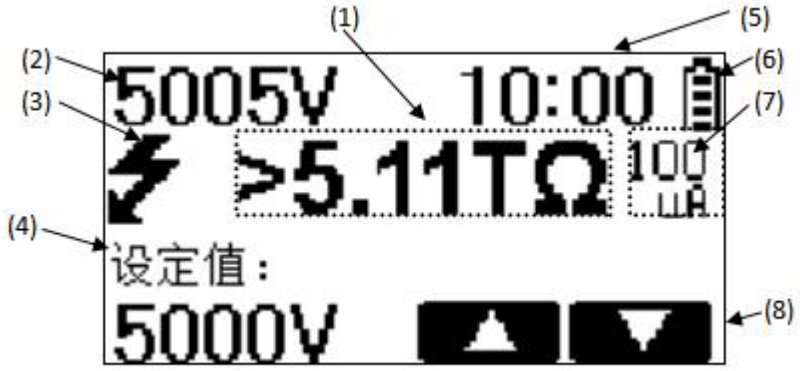
(7) Leakage current

(8) 1mA=1000uA 1uA =1000nA

(9) Test product capacity(Displayed after the test is stopped)

(10) Insulation resistance simulation column

9.Manual pressure regulation test interface



(1) Digital display of insulation resistance value (> means greater than the current value; <means less than the current value)

(2) Actual test voltage

(3) High voltage hazard reminder

(4) Set voltage value

(5) Measured time

(6) Battery power

(7) Leakage current

1mA=1000uA 1uA =1000nA

(8) Manual pressure adjustment key

Soft keys	Description
	Manually adjust the voltage, press once to increase the voltage by 10V, and when long press, the voltage increase will speed up, the fastest can reach 600V per second.
	Step-by-step voltage regulation, once the voltage drops 10V, the voltage drops faster when long-press, the fastest can reach 600V per second.
Stop measurement	When manually adjusting the pressure, due to the occupation of the 3 and 4 keys, only the 1, 2 keys and the start and stop keys can be used to stop the measurement.

When the test time is reached or manually stopped, the display shows the soft keys as shown in the table.

Soft keys	Description
Turn off	Cut off the power. The instrument will automatically shut down in 3 minutes when there is no operation.
Back	Return to the previous menu
Voltage	Select the test voltage, manually adjust the voltage, 500V, 1000V, 2500V, 5000V, 10000V, 15000V, 20000V, 25000V
Rt	View the resistance value at 15S, 30S, 60S, 600S

V.Instrument use

1. Measure the absorption ratio DAR:

(1) Choose a measurement time longer than 1 minute

(2) Select the appropriate voltage and start.

(3) The instrument automatically records the resistance values of 15S and 60S, and calculates the absorption ratio after 60 seconds.

Absorption ratio calculation method: DAR= R60/R15;

2. Measure polarization index PI:

(1) Choose a measurement time longer than 10 minutes

(2) Select the appropriate voltage and start.

(3) The instrument automatically records the resistance values of 15S, 60S, and 600S, and calculates the polarization index after 600 seconds. Polarization index calculation method: PI= R600/R60;

3. Precautions for test wiring

(1) Confirm that the tested product is safely grounded and the test product is not live.

(2) Confirm that the E terminal (grounding terminal) of the meter is grounded.

(3) Use of G terminal (protection ring) (this machine is shielded on the low voltage side) When measuring high insulation resistance, a conductor protection ring should be put on the surface between the two measurement terminals of the test product, and the conductor protection ring should be connected to the G terminal of the meter with a test wire to eliminate the leakage current caused by the surface of the test product. The measurement error ensures the accuracy of the test. Especially when checking the instrument, the G terminal should be connected to the G terminal of the resistance box to ensure normal verification.

VI.Packing list

No.	Name	Qty
1	High pressure silica gel test line	1
2	AC 220V power line	1

Appendix

1. Resistance dimension: 1000kΩ=1MΩ, 1000MΩ=1GΩ, 1000GΩ=1TΩ;

2. Current capacity: 1A=1000mA, 1mA=1000uA, 1uA=1000nA.