

**HZJY-10K-IA
Insulation Resistance Tester**

User Manual

Dear user:

Thank you for choosing HZJY-10K-IA 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.

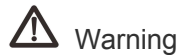
If you are satisfied with this instrument, please tell your colleagues; if you are not satisfied with this instrument, please call (0312) 6775656 to tell you to serve you at all times-Baoding Huazheng Electric Manufacturing Co., Ltd., our company will definitely make you satisfied !

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I. Safe Use Items

Design and manufacture of the instrument and testing achieves IEC61010 safety standards (electronic measuring product safety requirements), this manual including the safety of the instrument use and ensure the safety of equipment state, users must follow the warnings and safety regulations Please read the following instructions before use.



Instrument output voltage, before use, read and understand the instructions of operational guidelines.

Please take manual save you to check at any time.

Must be instructed to use the instrument.

Understand and comply with the safety operating instructions.

Must strictly abide by the above instructions.

If you don't comply, measurement may cause personal injury and equipment damage.

 Dangerous (for improper operation can lead to serious or fatal damage)

Before use, please wear insulated gloves.

Please do not over AC/DC600V measurement circuit.


Please do not test in flammable places, spark could cause an explosion.

please do not hand wet or damp operators in instrument surface operation.

Please don't charged the connection test line low.

Low in the measurement, or do not touch the circuit being measured immediately after the test, may result in electric shock accidents.


Low test line or port found easy to damage the insulation properties of dirt or carbon please stop test.

 Warning (for improper operation exists the possibility of a severe or fatal damage)

If the instrument is abnormal, please stop using it. For example: instrument damage or bare metal parts.

Please do not install in the device replacement parts or any unauthorized modification, maintenance, please contact with me.

Make sure all wires and instrument testing port connection is firm.

 Note (for improper operation may cause personal injury or equipment damage)

Squared before measurement, confirm the voltage selection in the appropriate value.

If long time not to use, the battery should be fully charge, and recharge in 3 months.

Squared do not in high temperature, damp, places and condensation may be placed under direct sunlight for a long time.

Please use a damp cloth or cleaner to clean the equipment enclosure, do not use abrasives or solvents.

Instrument wet, please dry storage first.

II.Features

It has 5 ranges: 500V, 1000V, 2500V, 5000V, 10000V, the maximum test can reach 20TΩ, and the manual boost function.

- Designed in strict accordance with safety standards
- Insulation resistance range 20TΩ@10kV
- The short-circuit current can be adjusted up to 3mA.
- Automatically display the test values of polarization index (PI) and absorption ratio (DAR), which can test leakage current and capacitance, as well as dielectric discharge test (DD), step voltage test (SV), ramp test: the instrument automatically boosts, Until the set value, it is qualified. If it is not reached, there is a breakdown in the middle or the current is too large, it is unqualified.
- Excellent anti-interference performance, when the interference current reaches 2mA, the instrument still guarantees the test accuracy.
- The AC and DC voltage test function of the tested circuit can automatically identify AC or DC.
- The capacitive test product is discharged quickly. When the cable is tested, manual discharge is not required, and the instrument automatically discharges quickly.
- 2 power modes: use lithium battery for power supply, battery life can reach 6 hours.

At the same time, it can be charged in use. In the event of a power failure, it can automatically switch from AC power supply to battery power supply.

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

- Digital filter function, use the filter function to reduce the influence when the display value is deviated due to external influence.
- Complete protection function, and equipped with fuse blowing prompt function.
- Data saving function, and data can be exported.

III. Technical specifications

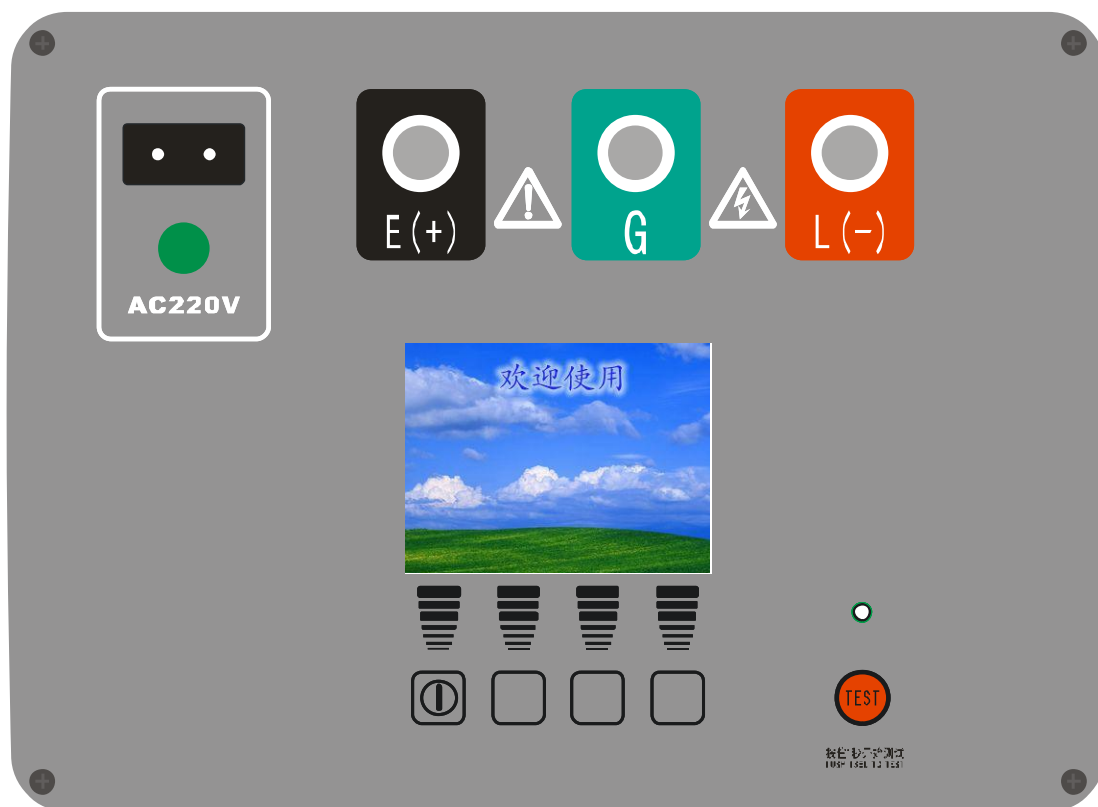
- Safety specifications
IEC 61010-1 CAT.IV 600V Pollution degree 2
IEC 61326 EMC specification: electrical equipment for testing, control and inspection
IEC60529 IP64 (outer box closed state)
- AC power supply: 220V±10%, 50/60 HZ, 20 VA
- Battery power supply: 16.8V lithium ion battery
- Battery life time: 5000V@100M, about 6 hours
- Dimensions (length x width x height): 27cm x 23cm x 16cm
- Weight: 3.8kg
- Output voltage accuracy: 100% to 110% of the nominal value
- Output voltage monitoring accuracy: ±5%±10V
- Voltage measurement range: AC: 30-600V (50HZ/60HZ), DC: 30-600V
- Voltage measurement accuracy: ±2%±3dgt
- Current test range: 10mA
- Current measurement accuracy: 5%+0.2nA
- Short circuit current: 2 to 5mA, adjustable output
- Capacitance test range: 25uF
- Capacitance test accuracy: ±10%±0.03uF
- Discharge rate of capacitor sample: from 5000V to 10V, 1S/μF
- Protection: 2% error, shielding 500kΩ leakage resistance under 100MΩ load
- Analog display range: 100kΩ to 10TΩ
- Digital display range: 10kΩ to 20TΩ
- Insulation alarm: 0.01MΩ to 9999.99MΩ
- Insulation resistance test range and accuracy (temperature: 23±5°C, relative temperature: 45 – 75%RH)

Range \ Accuracy	500V	1000V	2500V	5000V	10000V	Manual voltage regulation
n.s.	<100K	<100K	<100K	<100K	<100K	Range: 1G/V, 100G at 100V. When the voltage is less than 200V, the resistance
±5%rdg±3dgt	100K -100G	100K-200G	100K-500G	100K-1T	100K-2T	
±20%rdg	100G-1T	200G-2T	500G-5T	1T-10T	2T-20T	

						error increases by 10%
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IV. Instrument introduction

● Panel introduction



No.	Instruction	No.	Instruction
1	AC plug	2	AC indicator
3	Test terminal (E、G、L)	4	LCD
5	Button	6	High voltage indicator

●Keys and function description

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

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

- Test setting interface

- Battery power 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.

- Charging: Provide the AC power source that meets the requirements for 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).

- System help menu description

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

- Insulation test interface



V.Instrument use

- Voltage measurement:

1. The L end of the test line of the instrument is connected to the tested product, and the E end is grounded.

2. Turn on the instrument to check the actual measured voltage, and the instrument can automatically distinguish between DC and AC.

3. Regardless of whether it is DC or AC, if it exceeds 10V, check again whether the circuit breaker under test is disconnected.

- Measure the absorption ratio DAR:

4. Choose a measurement time longer than 1 minute

5. Select the appropriate voltage and start.

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

Absorption ratio calculation method: $DAR = R_{60}/R_{15}$;

- 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: $PI = R_{600}/R_{60}$;

- DD test

This test is suitable for the diagnosis of multilayer insulation. It is a good way to judge the defects in multilayer insulated objects by measuring the discharge current value and the capacitance value of the measured object 1 minute after the completion of the test.

DD value = current value (mA) 1 minute after the test is completed / voltage value (V) when the test is completed / capacitance value (F)

DD值	2.0以下	2.0 ~ 4.0	4.0 ~ 7.0	7.0以上
判定	良好	警告	差	最差

This criterion is the target value, and may require users to adjust or change the test method developed for testing the high-voltage generators of European power stations.

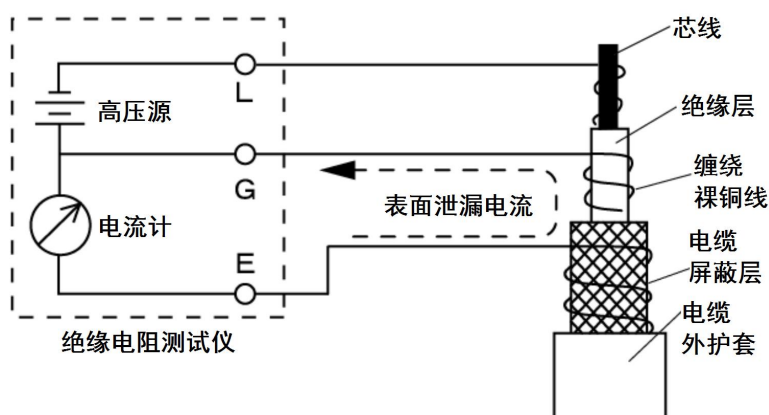
- Precautions for test wiring

1. Confirm that the tested product is safely grounded, and the tested product is not live.

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

3. Use of G end (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 verifying the instrument, the G terminal should be connected to the G terminal of the resistance box to ensure normal verification.



G-side usage diagram

VI. Appendix

Resistance dimension: $1000\text{k}\Omega=1\text{M}\Omega$, $1000\text{M}\Omega=1\text{G}\Omega$, $1000\text{G}\Omega=1\text{T}\Omega$;

Current capacity: $1\text{A}=1000\text{mA}$, $1\text{mA}=1000\mu\text{A}$, $1\mu\text{A}=1000\text{nA}$;