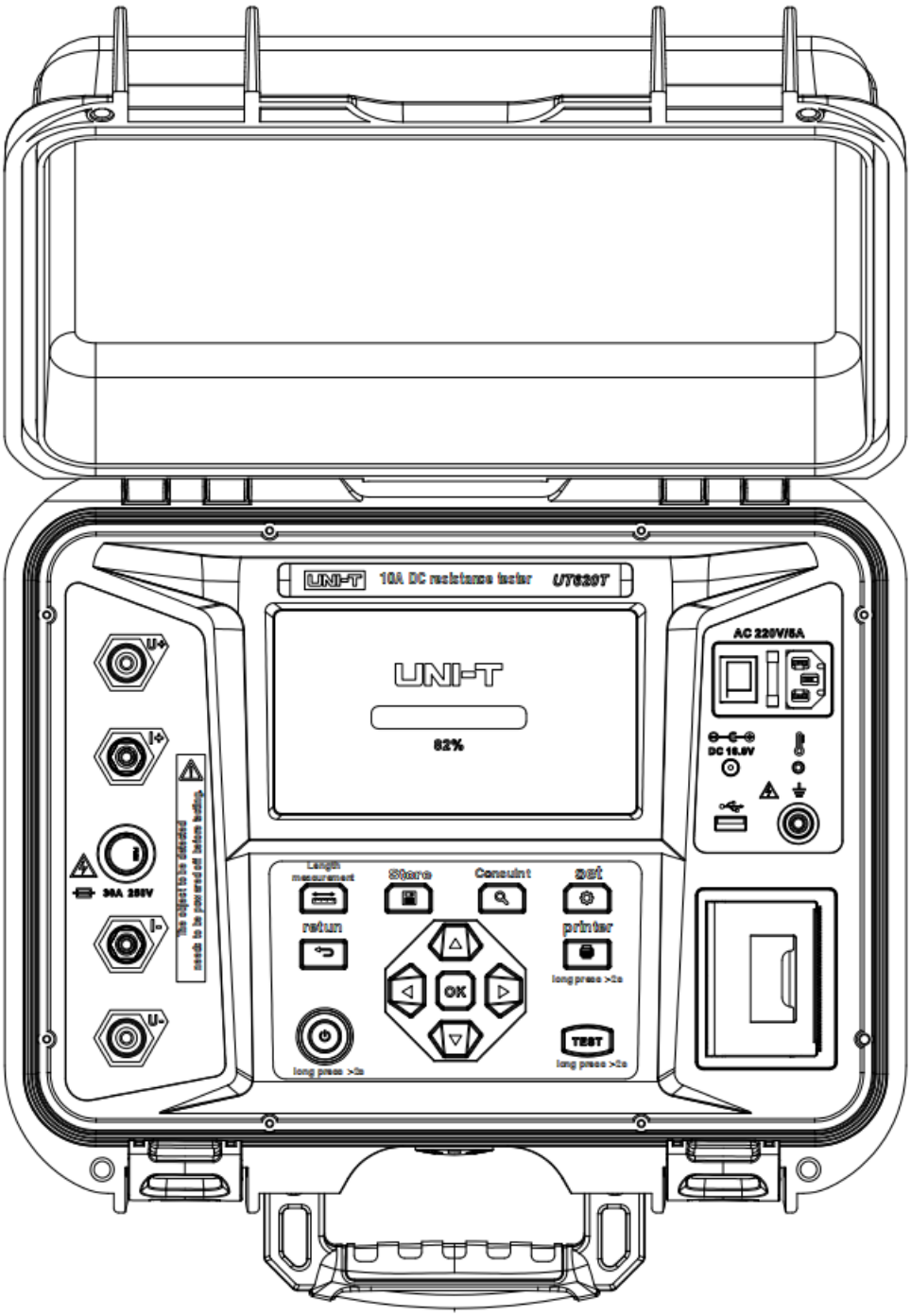
UT620T 10A DC Resistance Tester

User Manual



Preface

Thank you for purchasing a new Uni-

Trend instrument, in order to use this instrument correctly, please read the full text of this manual carefully before using this instrument, especially the part about "safety precautions".

If you have read the full text of this manual, it is recommended that you keep it in a safe place, with the instrument or in a place where you can consult it at any time, so that you can consult it in future use.

Limited warranties and liabilities

The Company warrants that this product will be free from defects in materials and workmanship for a period of one year from the date of purchase. This warranty does not apply to damage caused by accident, negligence, misuse, modification, contamination and abnormal operation or handling. The Distributor is not entitled to any other warranties in the name of the Company. If warranty service is required during the warranty period, please contact your nearest authorized service center to obtain the product return authorization information, then send the product to the service center with a description of the problem.

This guarantee is your sole remedy. Otherwise, the Company disclaims any express or implied warranties, such as those implied for a particular purpose. The Company shall not be liable for any special, indirect, incidental or consequential damages or losses arising from any cause or consummation, and the above limitations and provisions of liability may not apply to you because some states or countries do not allow limitations on implied warranties and incidental or consequential damages.

Content

1. Overview

UT620T DC Resistance Tester, also known as Transformer DC Resistance Tester, DC Resistance Fast Tester, Grounding Continuity Tester, adopts microprocessor technology, four-wire method test, safe, precise and reliable. It is mainly used to measure the resistance of transformer winding, transformer winding resistance, grounding down conductor conduction test, cable wire resistance, switch connector, relay contact resistance, coil, motor, and equipment shell, lightning belt, ground beam, structural cabinet, steel bar, water pipe, window, guardrail, radiator, assembly line and other objects between the connection resistance test. It is widely used in telecommunications, electric power, meteorology, computer rooms, oil fields, power distribution lines, tower transmission lines, gas stations, factory grounding networks, lightning rods, etc.

The test data of this instrument is stable, high precision, fast speed and good repeatability, which is the best choice for measuring the DC resistance of transformers in the field.

The instruction manual of this product includes relevant safety information and warning tips, etc., please read the relevant content carefully and strictly follow all warnings and precautions.

1.1 Model

Model	Constant-current mode	Constant-voltage mode	Range
UT620T	40mA-10A（Capable of stepping）	12V/<5mA（Fixed）	100.0μΩ ~ 1MΩ

1.2 Features

1. DC resistance test modes: There are 8 positions including 12V< 5mA, 40mA, 200mA, 400mA, 1A, 5A, 10A, and AUTO, of which the optimal current can be set automatically for the AUTO anchor according to resistance value of the sample.
2. Conductor length test mode: There are 7 positions including 40mA, 200mA, 400mA, 1A, 5A, 10A, and AUTO, of which the optimal current can be set automatically for AUTO anchor according to the resistance value of the sample.
3. Step adjustment: A step of 1A for 1-10A, and a step of 40mA for 40-400mA. Step adjustment can be performed for 20 positions in total.
4. Wide measurement range (100.0μΩ ~ 1.0000MΩ). Able to measure inductive DC resistance of transformers, transducer, and others with capacity of ≤1000KVA.
5. According to the temperature conversion function of the sample material (copper, aluminum), it is convenient to compare with the test data.
6. With 9999 sets of data storage, Chinese and English interface selection and other functions, no data is lost when shut down.
7. It is equipped with micro printer and "U disk" interface.
8. Built-in Bluetooth module to achieve Bluetooth wireless communication (The built in Bluetooth function is reserved for customer 2nd own develop use).
9. The display screen adopts 7 inch LCD color screen.
10. It has the function of discharge sound reminder, and the discharge indication is clear, which reduces

misoperation.

11. With back electromotive force protection, discharge protection, overheat protection, etc.
12. When using battery power, the Tester will automatically power off after about 10 minutes without operation.
13. Built-in electric lithium battery pack (14.8V/5000mAh). The maximum output measurement power is 20W.
14. Support AC 180-240V/50HZ power supply. The maximum output measurement power of AC power supply is 150W.

2. Unpack and check

Open the box, take out the meter, and double-check if the following items are missing or damaged:

1) Tester：1 pc
2) Quick start guide： 1 pc
3) Warranty Certificate/Certificate of Conformity： 1 pc
4) Operating guide for downloading general files：1 pc
5) Test leads（Red and black test leads: 1 pair; Black grounding wire: 1 pc）：3 pcs
6) Standard resistor：1 pc
7) Dedicated lithium battery charger: 1 pc (Model: LY036SPS-168200W2)
8) Power cord: 2 pc
9) Temperature and environment measurement cable (with NTC): 1 pc
10) USB cable：1 pc
11) Carrying bag：1 pc
12) Fuse： 2 pcs for 30A/250V; 2 pcs for 5A/250V
13) Thermal papers：2 rolls

If you find that any item is missing or damaged, please contact your supplier immediately to confirm.

3. Guidelines for safe operations

Thank you for purchasing our company's DC resistance tester, which is designed, manufactured and tested in accordance with JJG 166-2022 "DC Standard Resistance Verification Regulations" and JJG 1052-2009 "Loop Resistance Tester and Direct Resistance Meter Verification Regulations". Before you use the device for the first time, in order to avoid possible electric shock or personal injury, please read carefully and strictly follow the safety rules and precautions listed in this manual.

⚠ Warning

To prevent possible electric shock, fire, or personal injury, please read all instructions carefully.

- If you have read this "Product Safety Instructions", it is recommended that you keep it properly together with the manual, and place it with the instrument or in a place where you can consult it at any time, so that you can consult it in the process of future use.
- To ensure the safe use of the product, the user must follow the safety instructions and warnings provided with the

product. Failure to use the meter in accordance with the instructions may weaken or lose the protection afforded to you.

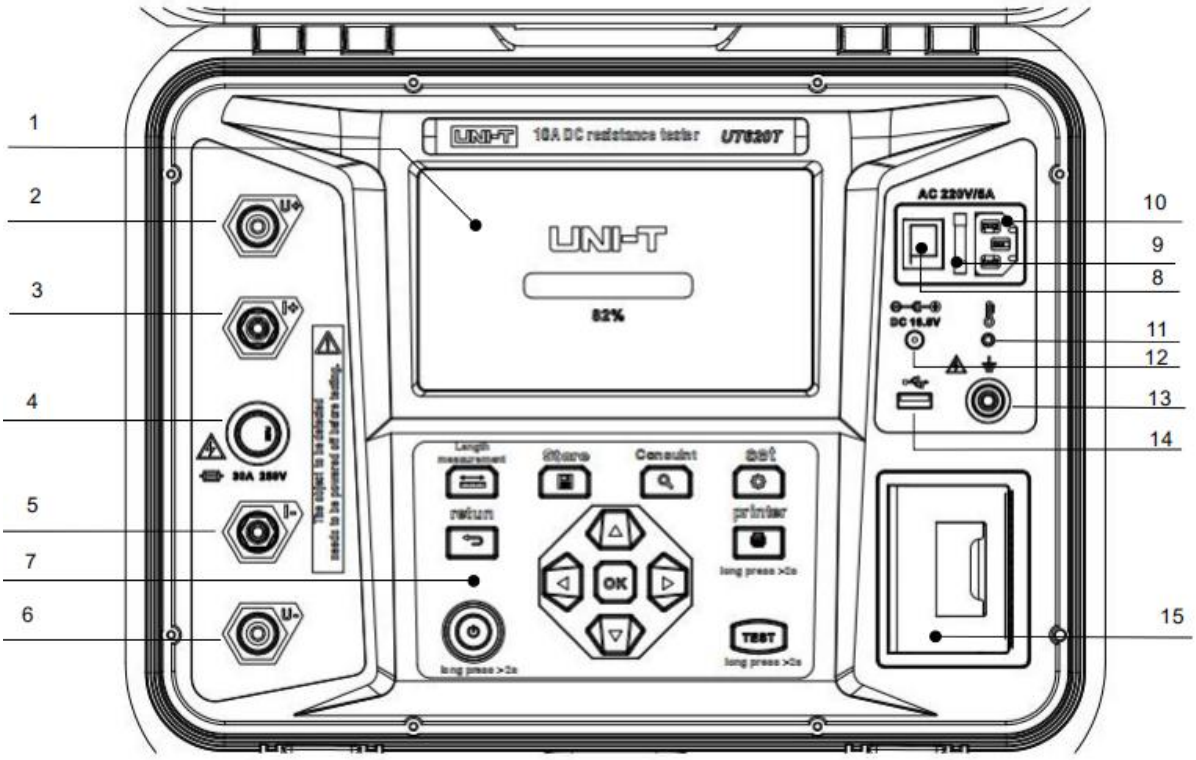
- Check the meter and test leads before use. The insulation layer of the test lead should be intact, without damage and disconnection. The test lead must be replaced if it is damaged. Only the test lead with the same rated voltage, frequency, type and current rating as the meter and the test lead approved by the safety certification body can be used.
- Beware of any damage or abnormal phenomena. If you find any abnormalities: the test lead is exposed, the case is damaged, the LCD monitor displays abnormally, etc., please do not use it. If any accessory is damaged, please discontinue use and prevent unintentional use.
- This instrument can be used indoors and outdoors, but it should be avoided in rain, corrosive gas, excessive dust, high temperature, direct sunlight and other places.
- This instrument is a high-precision instrument, which should avoid violent vibration, and certain shock absorption measures should be taken during transportation.
- The repair, maintenance and calibration of this instrument should be carried out by professionals.
- In order to ensure personal safety, a reliable ground wire should be connected before the power is turned on, and the removal of the ground wire should be carried out after the power supply is removed.
- During the test, it is necessary to ensure that the measured object can be measured only under the premise of not being charged.
- During the test, it is forbidden to disassemble and move the test clip and power supply line. After the test is completed, be sure to wait for the discharge alarm sound to end before dismantling the test leads.
- For the no-load voltage-regulating winding, it is not allowed to switch the no-load tap changer during the test or when the power is not discharged.
- In the event of a sudden power failure during the test, the instrument will start to automatically discharge, and it is not allowed to dismantle the test line immediately. Be sure to wait until the discharge is complete before removing the test lead
- When the meter is measuring, do not touch exposed wires, connectors, unused inputs, or circuits being measured.
- During the test, pay attention to avoid short circuit between the metal part and the test wire, which may lead to personal injury accidents.
- Do not touch the circuit under test immediately during or after the transformer measurement, as this may lead to electric shock accidents.
- When dirt or carbonization is found on the test lead or port of the instrument, please stop the test.
- Do not exceed the maximum scope allowed by the measuring range when measuring.
- For safety reasons, please do not change the internal wiring of the instrument at will, so as not to damage the instrument and endanger safety.
- Do not use in high temperature and high humidity environments, especially do not store in humid environments, the performance of the instrument may deteriorate after it is moist.
- Do not use in flammable, explosive or strong magnetic field environments, as sparks may cause explosions.
- Make sure your hands, shoes, clothes, floors, circuits and circuit parts are dry.
- When the test lead is not connected, please do not press the test button to test.
- When the display shows the low battery symbol, the battery should be charged in time to ensure the measurement accuracy.
- If the product is used in a manner not specified by the manufacturer, the protection provided by the product may be compromised.
- The power supply should be turned off in time after the measurement is completed to avoid leakage and damage.

- The instrument should not be disassembled or thrown into the fire, as there is a risk of explosion.
- Please turn off the product before cleaning/repairing. Connected measuring cables or other accessories must be disconnected from the product and all objects to be measured.
- Do not soak this product in water or other liquids. Do not allow any liquid to enter the product.
- For maintenance, please use a damp cloth and mild detergent to clean the instrument housing, and do not use abrasives or solvents.
- If the instrument needs to be calibrated or repaired, please have a qualified professional maintenance personnel or designated maintenance department for maintenance.
- If the product is configured with a replaceable fuse, please ensure that you obey the following safety operating instructions.
  -Turn off the product and disconnect the connected measurement cable before replacing the fuse.
  -Only fuses of the specified type and rated current can be used. It is not allowed to use faulty or repaired fuses or connect fuse holders, as this may result in a fire.
- When using this instrument, be sure to use the test line specified by our company. If a non-specified test lead is used, it is not possible to take measurements safely.
- To prevent electrical accidents, please connect the test lead after disconnecting the power supply to the measurement circuit.

4. Electrical symbols

	High voltage warning, there may be a risk of electric shock
	Indicates the grounding symbol
	Attention or warning reminder symbols
	Battery level symbol
	Do not put the device and its accessories in the trash. Please dispose of it appropriately in accordance with local regulations

5.Meter structure



1	Display screen	9	5A Fuse (Mains Input Protection)
2	U+ binding post	10	220V mains input interface
3	I+ binding post	11	Ambient temperature input
4	30A Fuse (Output Circuit Protection)	12	Charging port
5	I- binding post	13	Ground terminal
6	U- binding post	14	USB interface
7	Button area	15	Printer
8	220V mains input switch		

6. Button function and display page description

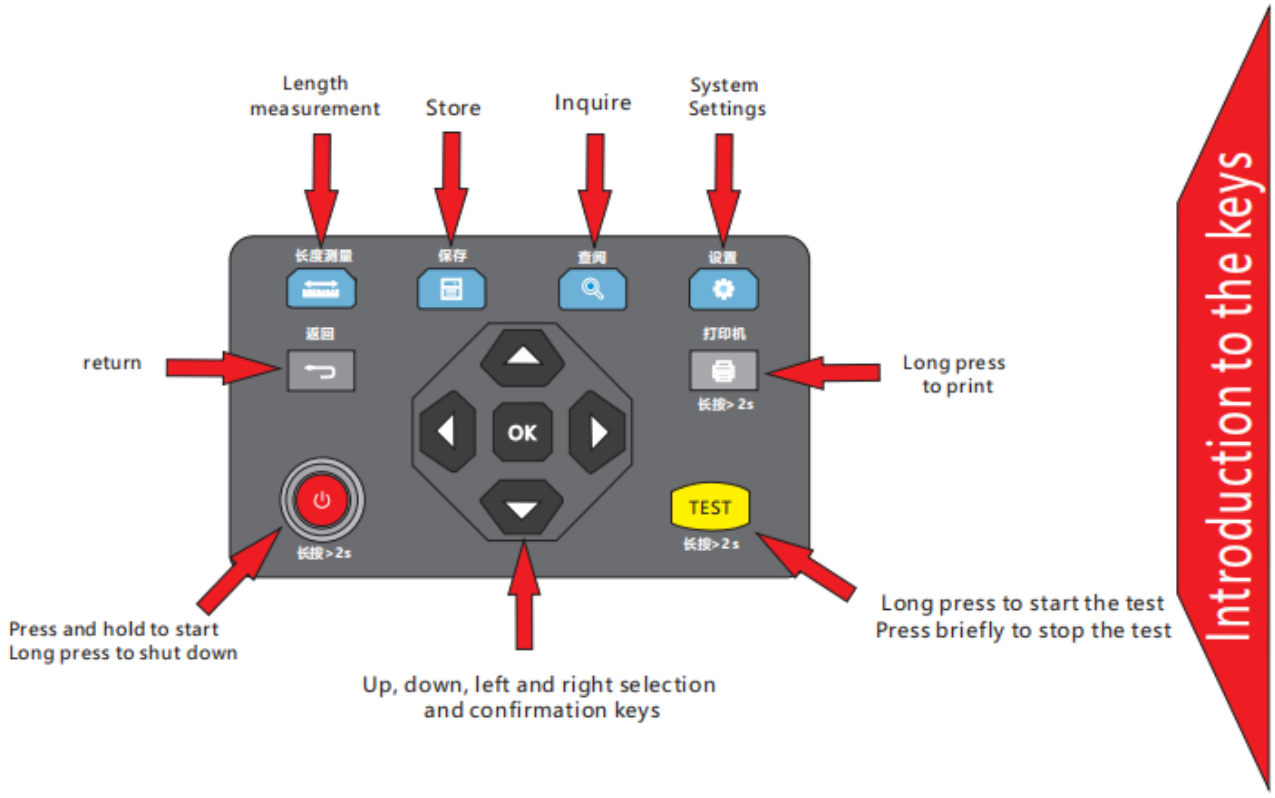


Figure 6.1 Button introduction

6.1 Button function

● Power on and off button 

Press and hold the power on/off button for more than 2 seconds to enter the power on page, then enter the DC resistance test page (Figure 6.1.1 DC resistance test page), and press and hold again to the power off.

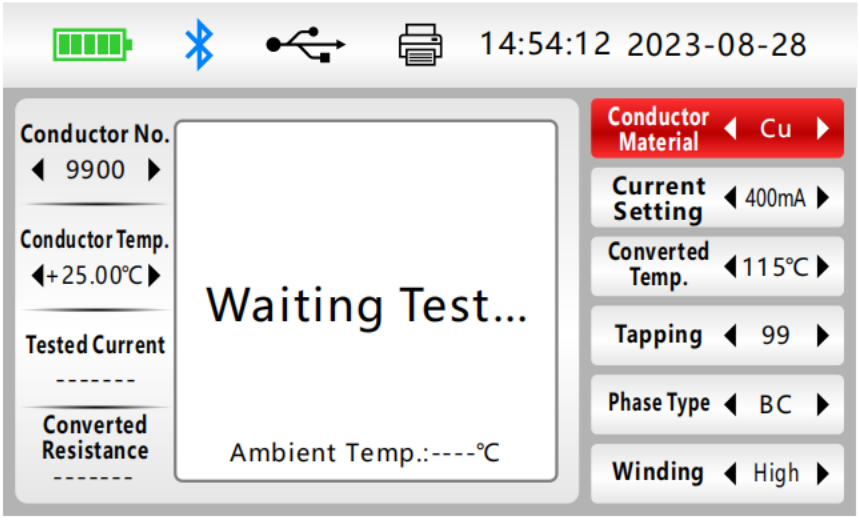


Figure 6.1.1 DC Resistance Test page

● Up and down buttons： 

Press the up and down buttons to move the cursor to select.

● Left and Right buttons： 

Setting can be performed at the cursor rest position.

● OK button： 

Confirm the items you select or edit.

● Print button： 

Press and hold the print button for 2s to print the data on the page, which is only valid on the test page and the record query page.

● Return button： 

Short press the back button to return to the resistance test page (the date setting page returns to the settings page), and during the upgrade and data export, pressing the back button is invalid.

● Test button： 

Long press the test button for 2s to start the test, and short press to stop the test.

● ： Length button 

Press the length button to enter the conductor length measurement page.

● Storage button： 

Short press the save button to save the current data (short press will work only in manual save mode.)

On any page (outside the measuring state), press and hold the Save button to pop up the Save Page dialog box.

● Query button： 

Press the query button to enter the history query page.

● Setting button： 

Press the setting button to enter the system setting page.

6.2 Test page description

Enter the test page by default when booting (6.1.1 DC resistance test page)

Sample material: copper and aluminum, short press the left and right buttons to cycle through.

Sample number: short press the left button to subtract the sample number, short press the right button to add the sample number, and long press to quickly subtract or add.

Current setting: short press the left and right buttons to set 10A, 5A, 1A, 400mA, 200mA, 40mA, 12V<5mA, and AUTO; Long press to adjust the step.

Winding: Short press the left and right buttons to set the high voltage and low voltage cyclically.

Phase type: Short press the left and right buttons to set A0, B0, C0, AB, BC, and AC cyclically.

Tap: Short press the left button to set the tap subtraction, short press the right button to set the tap addition for the sample, and long press to quickly subtract or add.

Converted temperature: short press the left and right buttons to set 75°C and 115°C.

Sample temperature: short press the left button to subtract the sample temperature, short press the right button to add the sample temperature, and long press to quickly subtract or add. The setting range is -40°C~100°C.

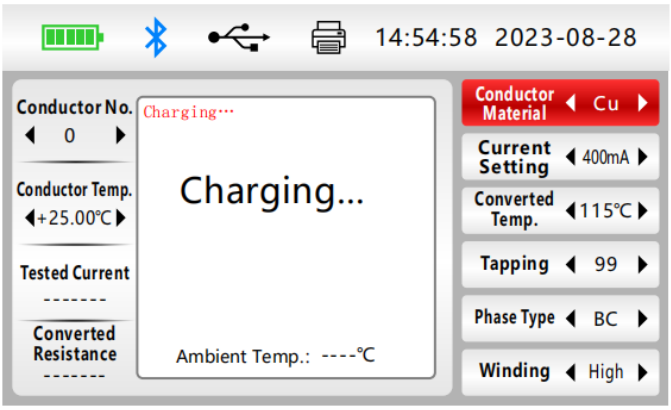
Test current: During the test, the test current is displayed in real time.

Converted resistance: During the test, the converted resistance value is automatically calculated, which is convenient for comparison with the test value.

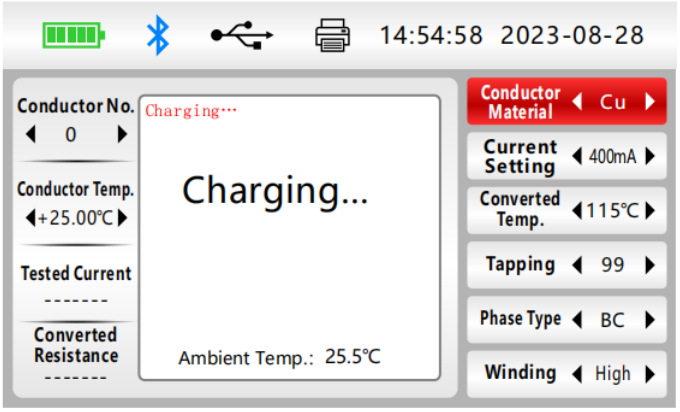
Converted resistance = test resistance * (resistance temperature constant + converted temperature) / (resistance constant + sample temperature).

Resistance temperature constant: Copper:235; Aluminum: 225.

Ambient temperature: Insert a special ambient temperature measurement line at the position of the instrument cover, and the ambient temperature value (such as 25.5°C) will be displayed on the test page, otherwise "------°C" will be displayed, as shown in the figure below.



The temperature measurement line is not inserted



The temperature measurement line is inserted

6.3 Description of the symbols on the LCD screen

Bluetooth symbol: . When Bluetooth is turned on, the icon is displayed; when Bluetooth is turned off, the icon is not displayed. When Bluetooth is not connected, the icon flashes. When the connection is successful, the icon is always displayed. (The built in Bluetooth function is reserved for customer 2nd own develop use)

USB symbol: . When opening USB, the icon is displayed; When USB is turned off, the icon is not displayed.

The USB icon with X indicates that the connection is not successful, and the USB icon without X indicates that the connection is successful.

Battery symbol：

Note: When the built-in lithium battery is working, when the battery has two levels left, it cannot output a position greater than 2A. When there is one level of electricity left, it cannot output a position greater than 400mA.

Battery symbol while charging： , the battery levels are displayed cyclically.

Mains AC power supply： . The battery symbol changes to the AC input symbol.

Printer symbols：. The printer icon appears on the display and flashes when printing.

6.4 Description of conductor length measurement page

Press the length button to enter the page of measuring conductor length (Figure 6.4.1)

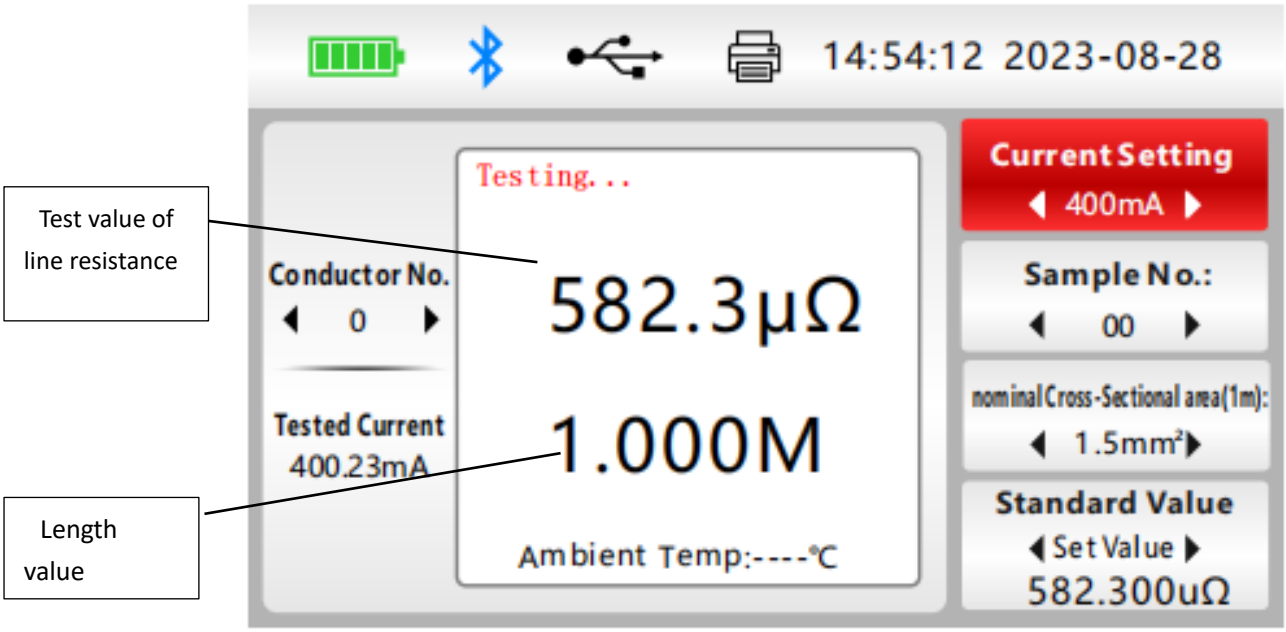


Figure 6.4.1

Sample number: short press the left button to subtract the sample number, short press the right button to add the sample number, and long press to quickly subtract or add.

Current setting: short press the left or right button to set 10A, 5A, 1A, 400mA, 200mA, 40mA, and AUTO. Long press to adjust the step.

Sample number: short press the left button to subtract the sample number, short press the right button to add the sample number, and long press to quickly subtract or add.

Nominal cross-sectional area of 1 meter wire: short press the left or right button to set 1 square ~ 10 squares (step: 0.5 square).

Standard value: Press the left or right button to select the set value or test value, and press the OK button to confirm the selection.

（Note: When the line resistance of the standard line is known, you can select the setting value to enter the line resistance; When the line resistance of the standard line is not known, the test value can be selected.）

Set value: When the set value is selected, the set value setting ------μΩ will be automatically entered, and the bits can be selected by pressing the left and right buttons.

When the selected number of digits turns yellow, you can press the up or down button to set the digits from 0 to 9 or select the units (μΩ, mΩ, Ω). Press the OK button to confirm the setting value.

Test Value: When a test value is selected, press OK to confirm. Press the test button to perform the test, and after the test is completed, press the OK button to import the actual test value into the test value.

Note: The nominal cross-sectional area and standard value of the 1 meter wire are saved in the sample number. By recalling different sample numbers, the nominal cross-sectional area and standard value of the corresponding 1 meter wire can be recalled.

Test Current: The test current displayed in real time during the test.

Test value of line resistance: This position displays the resistance value of the tested object.

Length value: Length value = test value of line resistance/ standard value / length setting value.

6.5 Descriptions of storage page

On any page (except the testing state), press and hold the save button to pop up the save page dialog box (as shown in figure 6.5.1).

Press the left and right buttons to select the corresponding storage option, and press the OK button to confirm the selection.

Auto-save: If the data exceeds 9999 sets, test once to remind the user of data overflow (auto-save by default).

Circular storage: If there are more than 9999 sets of data, the data will be saved again from the first set and the previous data will be overwritten.

Manual saving: If there are more than 9999 sets of data, the user will be alerted to data overflow every time you press the storage button.

Data overflow: Making a short sound four times.

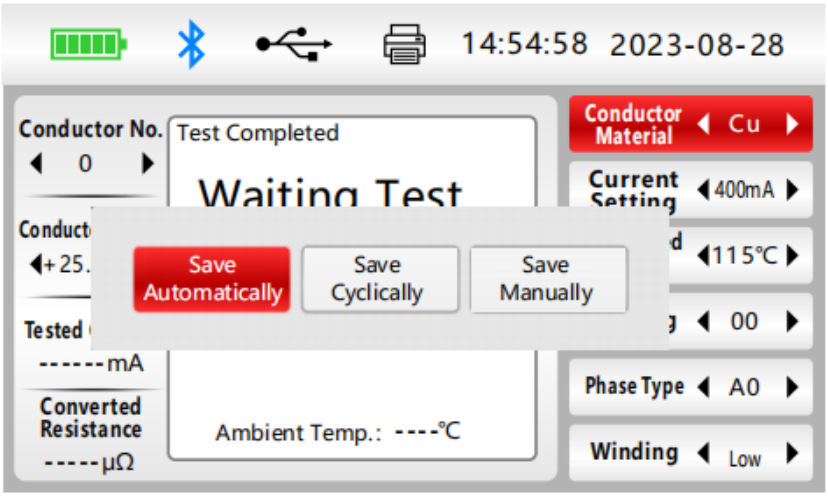


Figure 6.5.1

Note: Short press the save button to save the current data (only in manual save mode, short press will work only in manual save mode)

6.6 Descriptions of query page

Short press the query button to enter the history query page (as shown in Figure 6.6.1)

Press the left and right buttons to query the previous and next data.

Press the up and down buttons to cycle through the selection, delete the current, delete all, export the record, and press OK to confirm the selection.

Short press the up and down buttons to select delete/cancel, and press the OK button to confirm the selection (as shown in Figure 6.6.2-6.6.4).

Delete Current: Deletes the current data.

Delete All: Deletes all data.

Record export: export all data, and the page prompts the export process and the export success or failure (as shown in Figure 6.6.5-6.6.7)

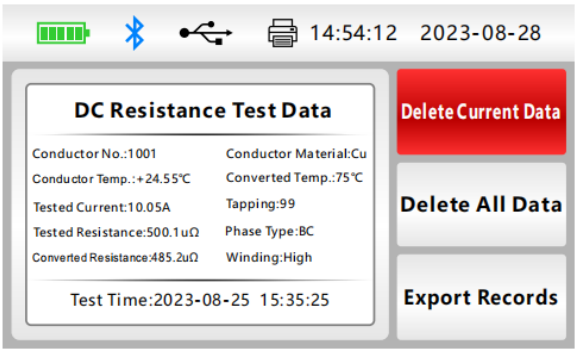


Figure 6.6.1

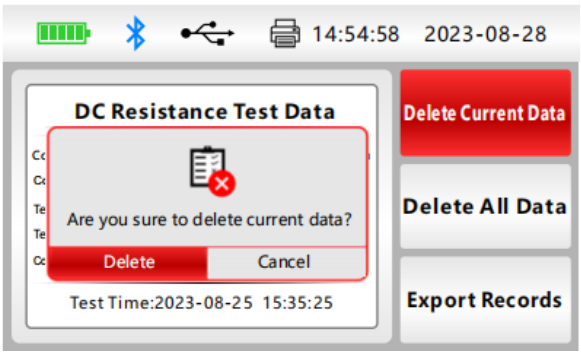


Figure 6.6.2

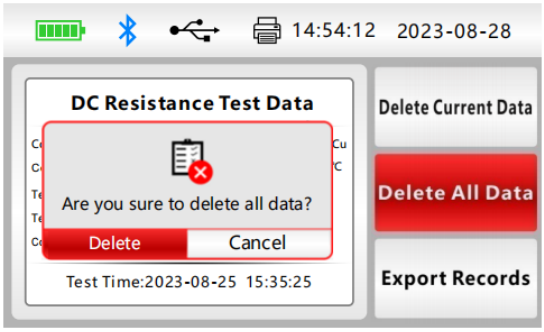


Figure 6.6.3

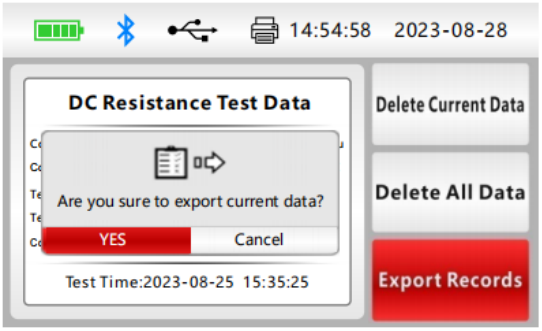


Figure 6.6.4

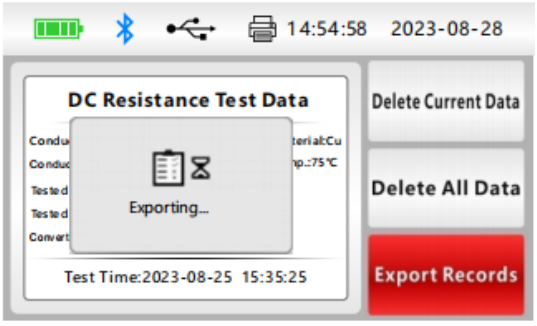


Figure 6.6.5

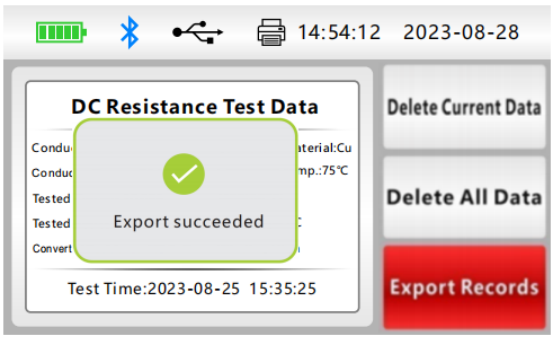


Figure 6.6.6

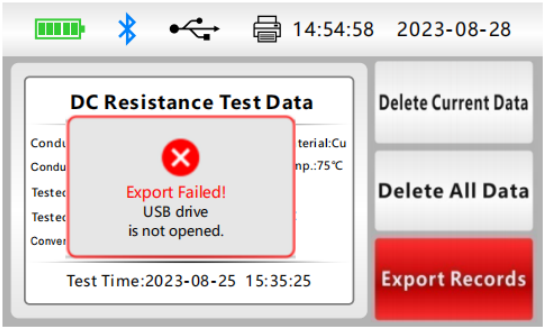


Figure 6.6.7

6.7 Descriptions of setting page

Short press the setting button to enter the system setting page (as shown in Figure 6.7.1), and press the up and down buttons to select the corresponding options.

Chinese-English switching: Press the left and right buttons to switch to Chinese/English (can be set cyclically).

Brightness adjustment: Press the left and right buttons for brightness + or - for a total of 5 levels (can be set cyclically).

USB flash disk: Press the left and right buttons to turn on or off the USB flash disk (can be set cyclically).

Bluetooth switch: Press the left and right buttons to turn Bluetooth on or off (can be set cyclically).

Date and time setting: Select the date and time setting option, press the right button to enter (as shown in Figure 6.7.2), press the up and down buttons to carry out + or -, and the left and right keys to enter the year, month, day, hour, minute and second selections.

Help: Select the help option, press the right button to enter (as shown in Figure 6.7.3), and press the left and right buttons to switch pages.

Factory reset: Factory reset: Select the factory reset option, press the right button to pop up the factory reset dialog box (as shown in Figure 6.6.4), press the left and right buttons to select confirm/cancel, and press the OK button to confirm the selection.

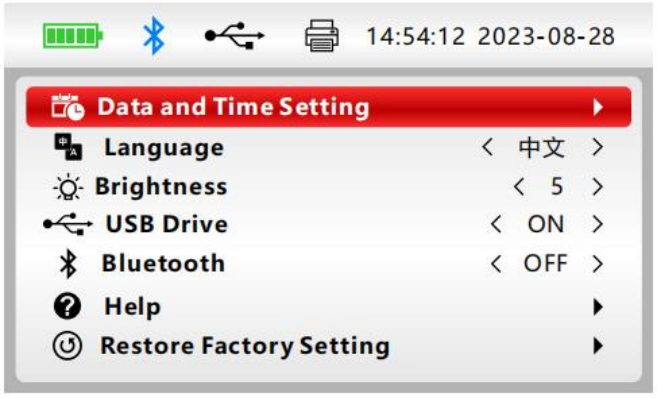


Figure 6.7.1

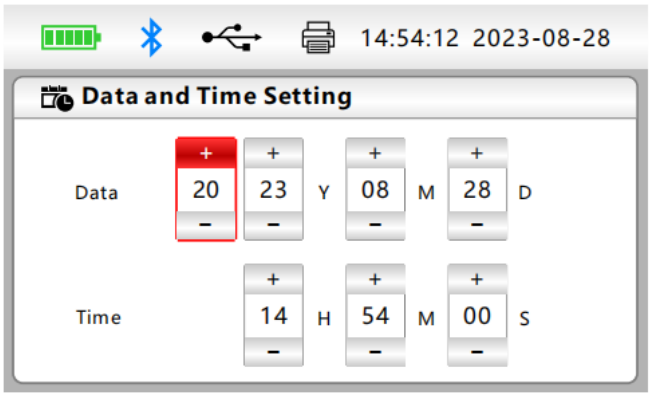


Figure 6.7.2

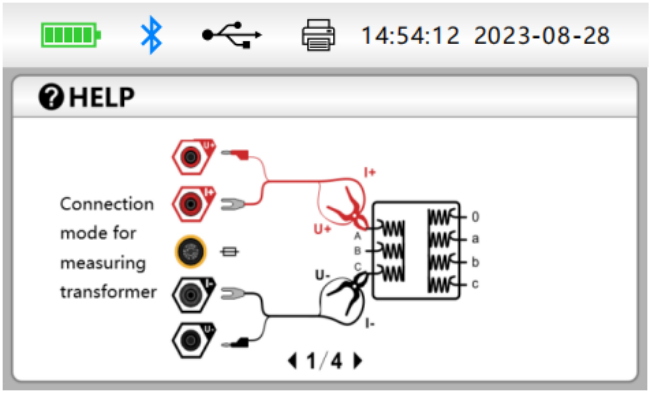


Figure 6.7.3

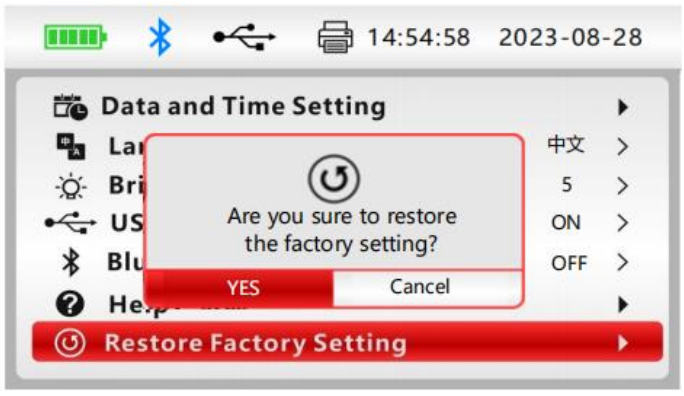


Figure 6.7.4

7.Meter operation

7.1 Preparation before testing

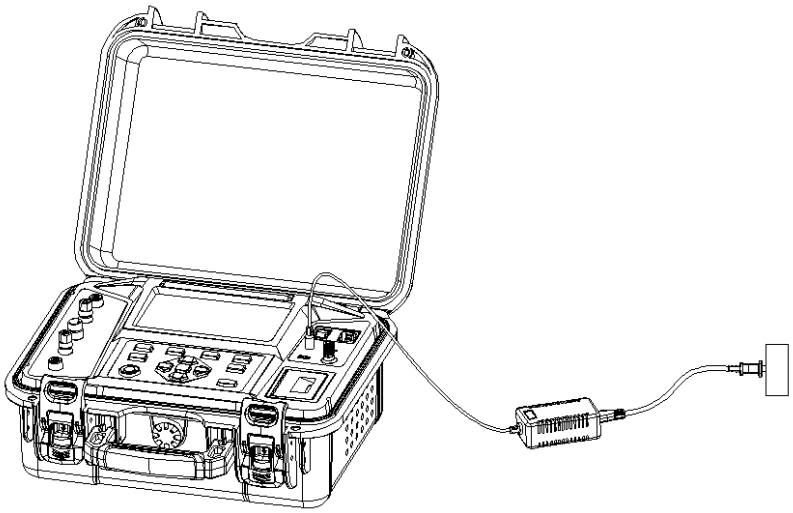
(1) Open the upper cover of the meter box, press and hold the power on and off button > 2s to turn on the device, and check whether the device is turned on normally. If there is a device failure, please do a troubleshooting and consult technical support.

(2) When there is only one level of battery power left (shown in the upper left corner of the display screen), it means that the battery is almost exhausted and needs to be charged or replaced with AC power supply. When the battery symbol indicates zero level of battery power, it means that the battery cannot power the product, and it must be charged or replaced with AC power supply.

(3) Check whether there are traces of appearance damage to the test leads, such as broken skin, whitening, broken joints, etc., if similar situations occur, please do not use it again, contact the manufacturer for maintenance.

7.2 Battery charging

This product has a built-in rechargeable lithium battery pack (14.8V/5000mAh), please use the dedicated lithium battery charger (16.8V, 2A) that comes standard with the product to charge (Figure 7.2.1).



（Figure 7.2.1）

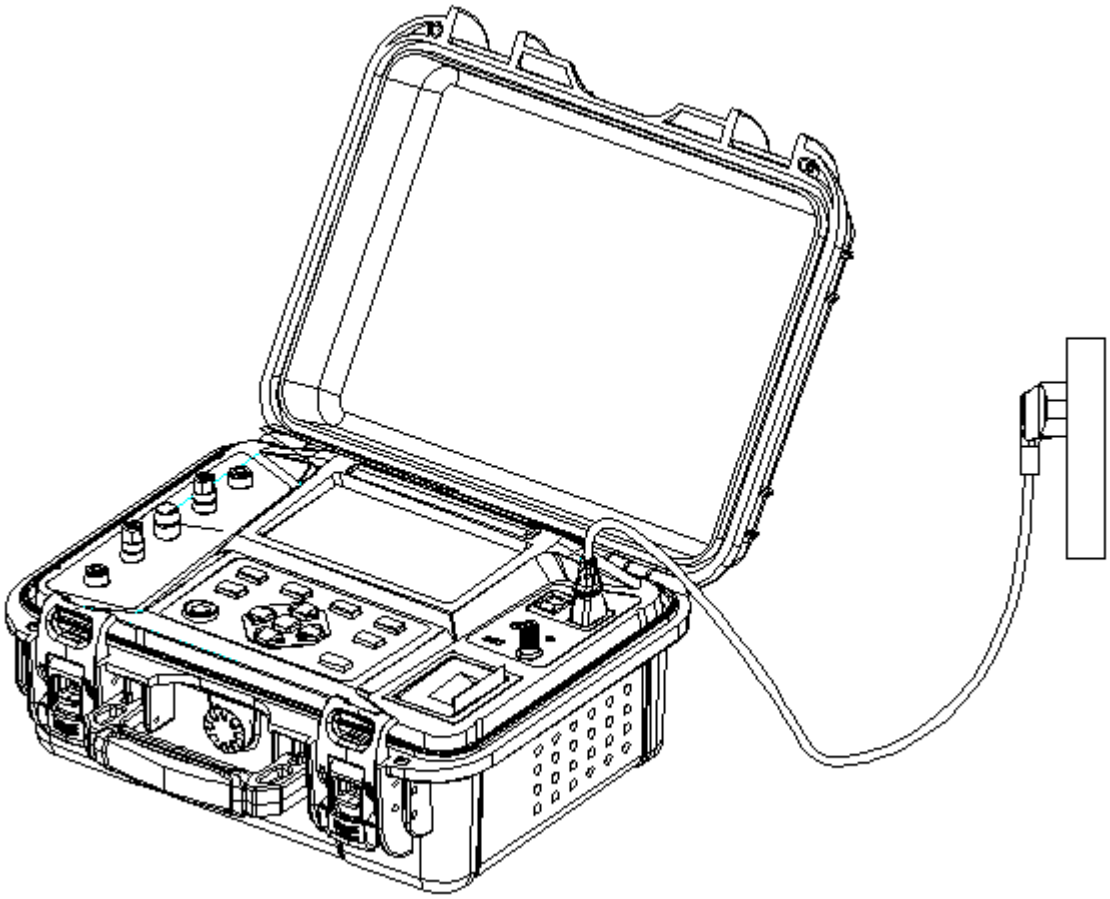
When charging directly on the product, the battery level icon in the upper left corner of the LCD will be displayed from 1 level to 5 levels until the 5-level full charge status is displayed (the charging indicator symbol will always be displayed when the product is fully charged).

Note: When charging in the shutdown state, the LCD screen does not have any charging information. To check whether the battery is fully charged, please turn on the computer and observe the battery charging symbol on the LCD.

The red indicator on the battery charger is only used as a basis for judging whether the mains power is well connected, not as a basis for judging whether the battery is fully charged.

7.3 Mains power supply

This product supports AC mains power supply. When turning on the mains power and the power switch, the meter will automatically switch to the mains power supply.



（Figure 7.3.1）

7.4 Basic measurement operations

7.4.1 Testing considerations

Warning：

⚠Before testing, please wear the corresponding level of high-voltage insulating gloves, take personal protective measures, and then carry out wiring and measurement operations.

⚠The meter shall be grounded well in order to ensure the safety of the user and equipment, please ground the meter well.

⚠It is strictly forbidden to disassemble the test cable during the measurement process. Be sure to stop the test first, wait for the discharge alarm sound to end, and then disassemble and replace the wire to prevent the back EMF from harming people and equipment.

⚠Before measuring the reverse tapping of the no-load voltage regulating transformer, the test must be stopped, and

the tap can be switched only after the discharge is over and the alarm sound stops.

⚠ Make sure that there is no oil stain and oxide layer at winding terminal, otherwise it may affect the stability of the data, especially the small resistance below the milliohm resistance.

⚠Except for the transformer test wiring winding, the winding lead end needs to be kept open, otherwise the accuracy of the data may be affected.

⚠When changing gears manually, test with the correct current with reference to the range in the specifications.

⚠In order to ensure the battery life, it is recommended to charge the meter once every 6 months without using it for a long time.

⚠When the battery voltage is insufficient, please charge it in time.

⚠Before testing, please make sure that no voltage is present on the measured object and do not measure the DC resistance of live equipment or live lines.

⚠Because when this instrument tests the inductive test subject, there will be reverse high pressure, please be careful, please make sure that the test object is in good contact with the test lead, and the hand has left the test clip, and then press the TEST button on the instrument to test.

⚠Do not turn off the power of the instrument until the test is complete to avoid damaging the instrument itself.

7.5 DC resistance measurement

Press and hold the TEST button for 2s to start the test (as shown in figures 7.5.1 and 7.5.2), and short press the TEST button to stop the test.

When it is detected that the test subject is charged, an electric danger sign appears in the middle of the screen and flashes all the time, and the buzzer sounds for a long time (as shown in Figure 7.5.3), and the test is completed (as shown in Figure 7.5.4).

Formula：$R=\frac{U}{I}$ （Ohm's Law）

R：Value of measured insulation；U：Output voltage value of the meter；I：Current value of measured loop

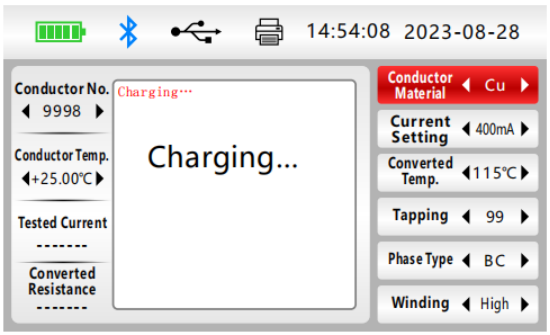


Figure 7.5.1

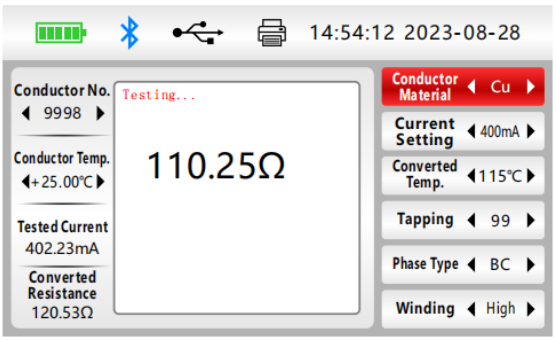


Figure 7.5.2

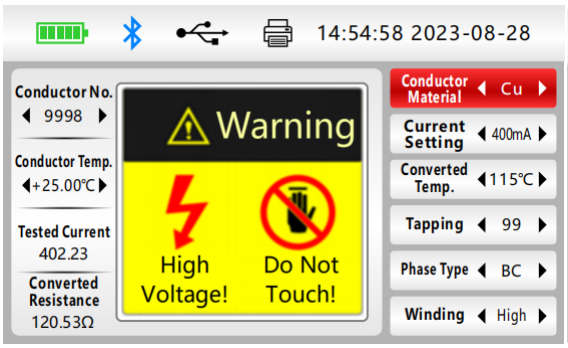


Figure 7.5.3

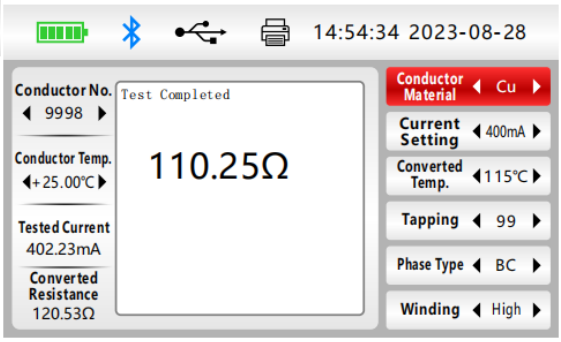


Figure 7.5.4

7.6 Conductor length measurement

Press the length button to enter the page of measuring the length of the conductor, and set the length and standard value (Figure 7.6.1)

Long press the TEST button for 2s to start the test (as shown in figures 7.6.2 and 7.6.3), and short press to stop the test. When it is detected that the test subject is charged, an electric danger sign appears in the middle of the screen and flashes all the time, and the buzzer sounds for a long time (as shown in Figure 7.6.4), and the test is completed (as shown in Figure 7.6.5).

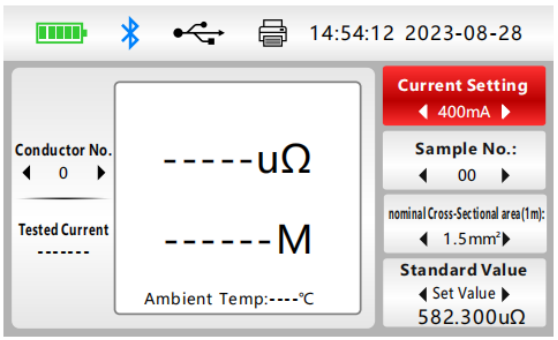


Figure 7.6.1

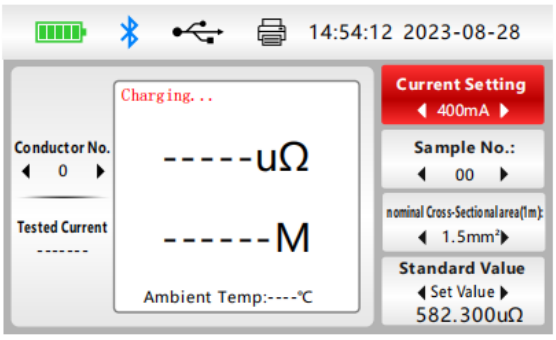


Figure 7.6.2

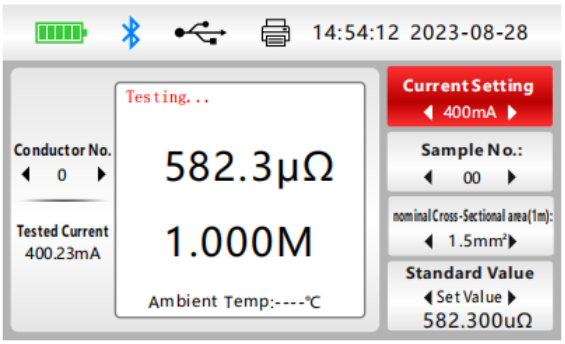


Figure 7.6.3

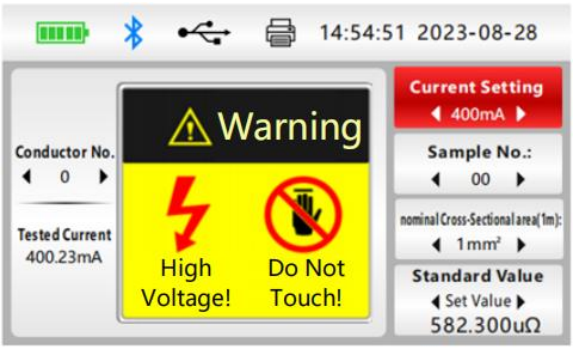


Figure 7.6.4

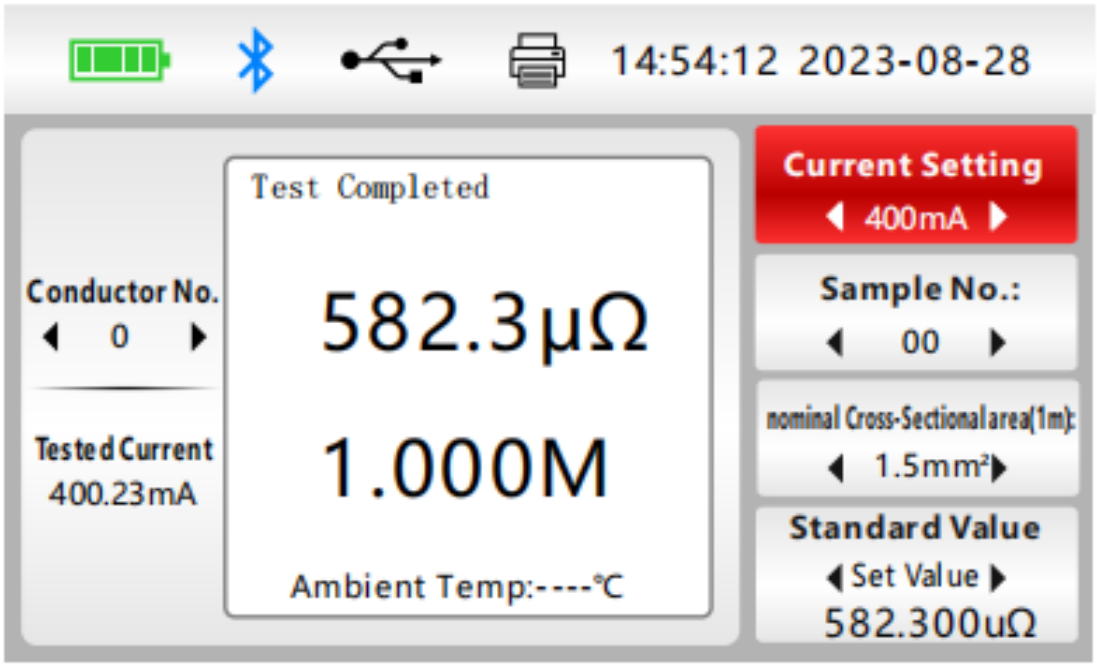
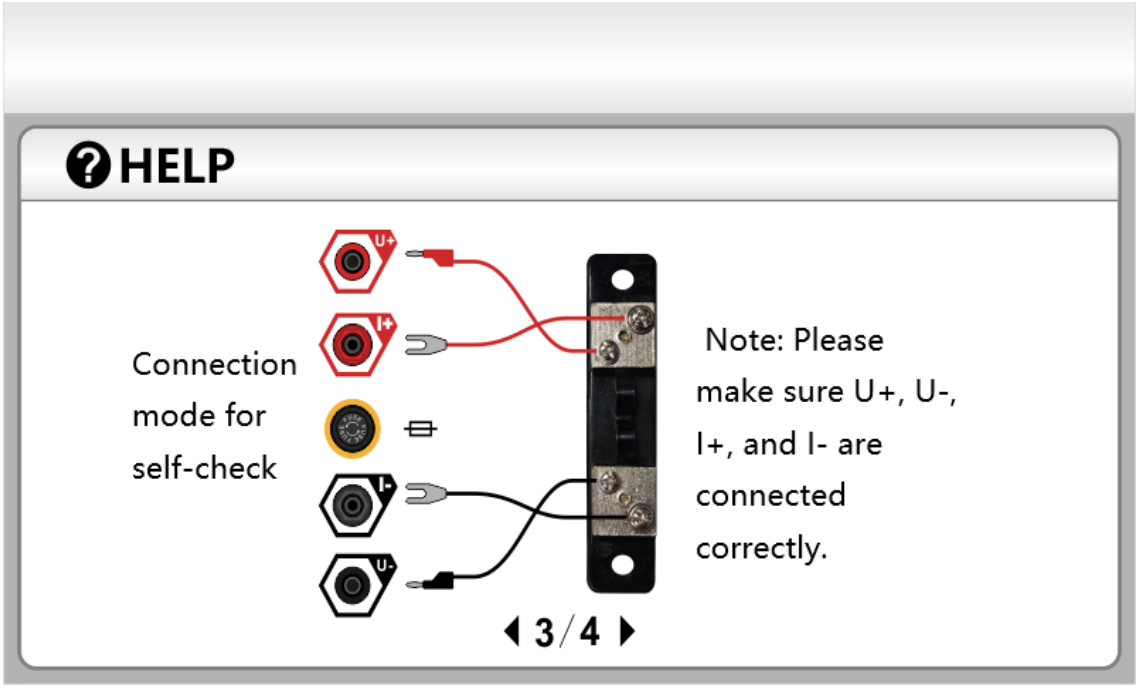


Figure 7.6.5

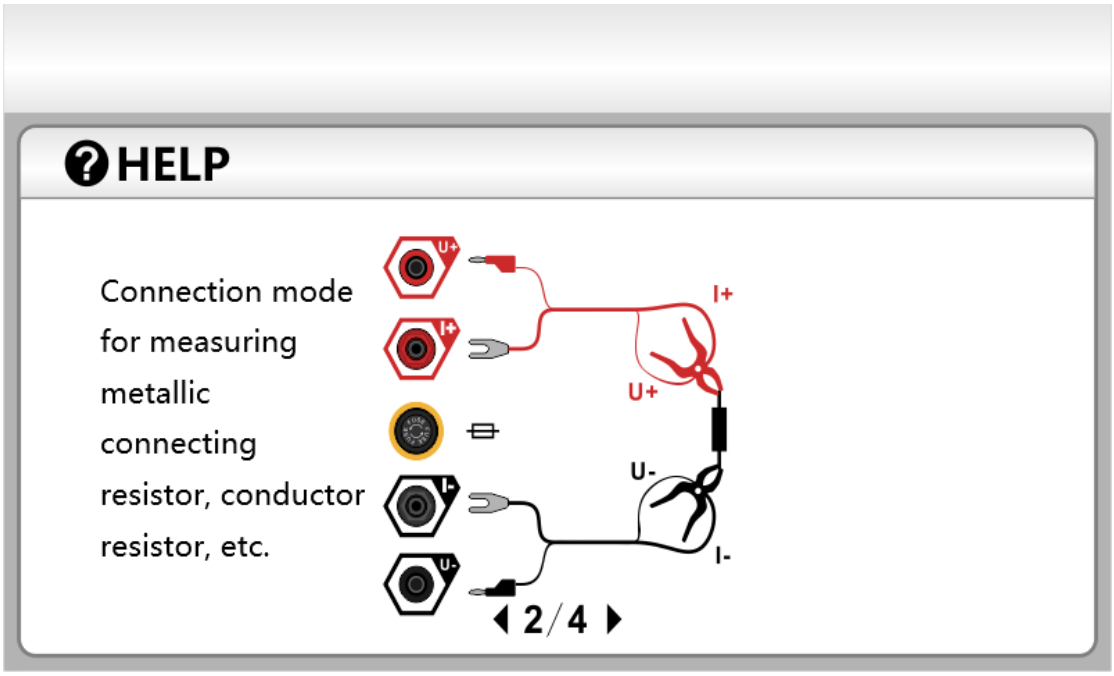
8. Conventional wiring methods

8.1 Self-test wiring method

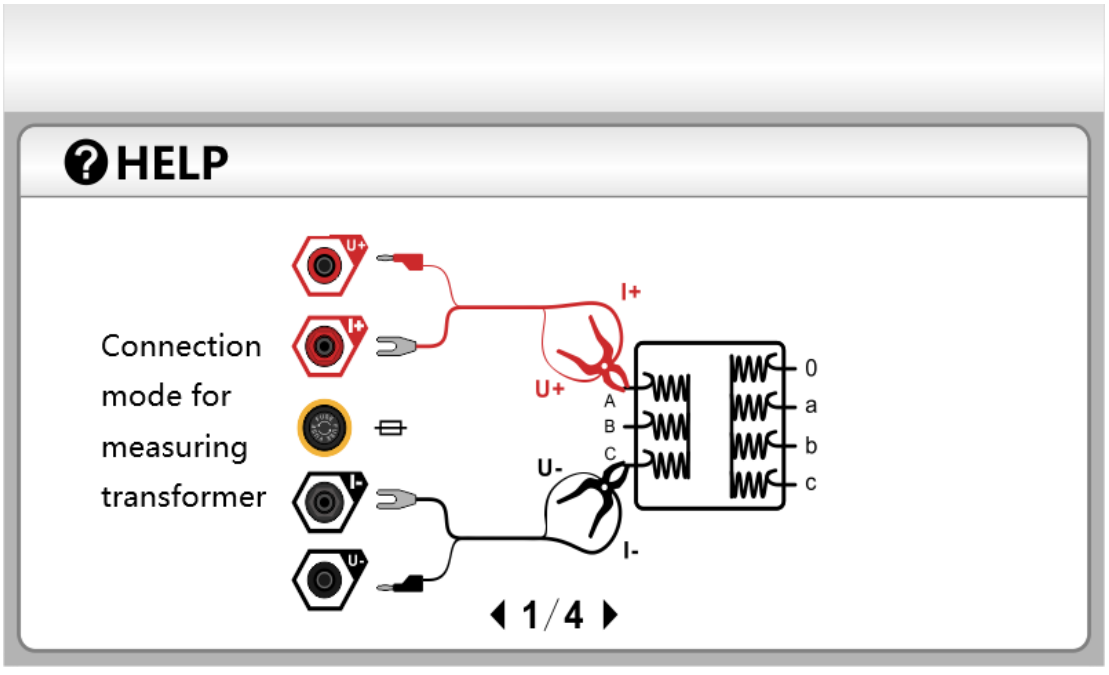


Note: Please confirm whether U+, U-, 1+, and 1- are wired correctly.

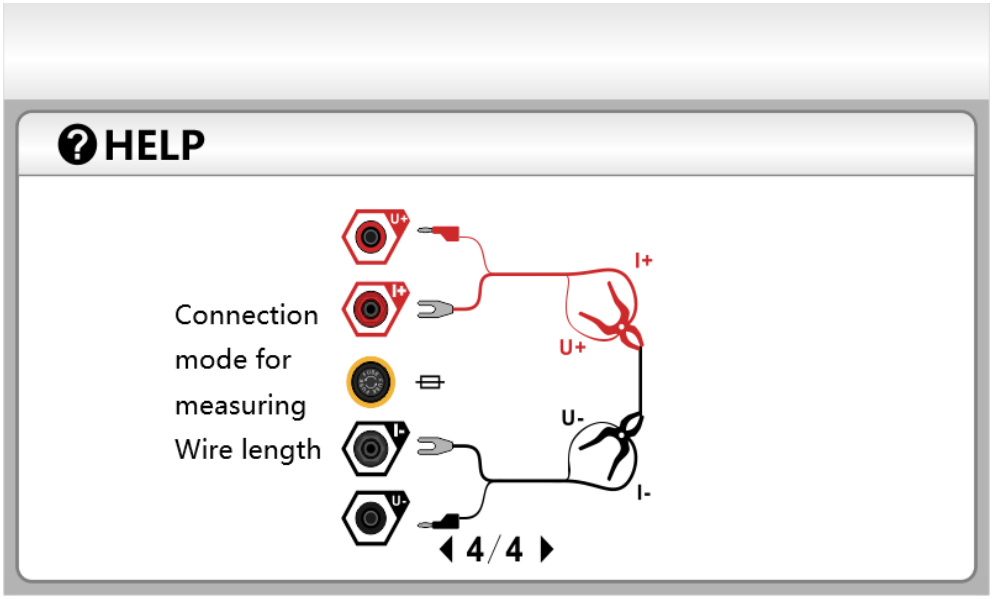
8.2 Wiring method for measuring metal connection resistance, conductor resistance, and others



8.3 Wiring method for measuring transformer



8.4 Wiring method for measuring conductor length



8. Technical Specifications

Resistance accuracy: constant current ± 0.1% rdg ± 0.1% fs, constant voltage ±2% rdg ± 0.5% fs, the warranty period is 1 year

Conductor length accuracy: constant current ±0.5%.

Ambient temperature: 23±5°C (73.4°F±9°F).

Ambient humidity: 45~80%RH.

Temperature Coefficient: Out-of-temperature range (i.e. above 28°C or below 18°C); increases by ±.01% per degree Celsius in constant current mode; increases by ±.03% per degree Celsius in constant voltage mode.

9.1 Technical Indicators

Item	Range		Minimum Resolution	Accuracy	Overrange display
	AC power supply	Built-in battery			
Constant-current 10A position	100.0 μ Ω - 1.5000 Ω	100.0 μ Ω - 200.00m Ω	0.1 μ Ω	Constant-current: ±0.1% rdg ± 0.1% fs	>Maximum range
Constant-current 9A position	300.0 μ Ω - 1.6000 Ω	300.0 μ Ω - 320.00m Ω	0.1 μ Ω		
Constant-current 8A position	600.0 μ Ω - 1.8000 Ω	600.0 μ Ω - 440.00m Ω	0.1 μ Ω		
Constant-current 7A position	900.0 μ Ω - 2.0000 Ω	900.0 μ Ω - 560.00m Ω	0.1 μ Ω		
Constant-current 6A position	1.2000m Ω - 3.0000 Ω	1.2000m Ω - 680.00m Ω	0.0001m Ω		
Constant-current 5A position	1.5000m Ω - 4.0000 Ω	1.5000m Ω - 800.00m Ω	0.0001m Ω		

Constant-current 4A position	2.0000mΩ - 4.0000Ω	2.0000mΩ - 1.5000Ω	0.0001mΩ		
Constant-current 3A position	2.5000mΩ - 6.0000Ω	2.5000mΩ - 3.0000Ω	0.0001mΩ		
Constant-current 2A position	5.0000mΩ - 10.000Ω	5.0000mΩ - 6.0000Ω	0.0001mΩ		
Constant-current 1A position	10.000mΩ - 20.000Ω	10.000mΩ - 12.000Ω	0.001mΩ		
Constant-current 400mA position	50.000mΩ - 50.000Ω	50.000mΩ - 30.000Ω	0.001mΩ		
Constant-current 360mA position	60.000mΩ - 50.000Ω	60.000mΩ - 36.000Ω	0.001mΩ		
Constant-current 320mA position	70.000mΩ - 60.000Ω	70.000mΩ - 42.000Ω	0.001mΩ		
Constant-current 280mA position	80.000mΩ - 70.000Ω	80.000mΩ - 48.000Ω	0.001mΩ		
Constant-current 240mA position	90.000mΩ - 80.000Ω	90.000mΩ - 54.000Ω	0.001mΩ		
Constant-current 200mA position	100.00mΩ - 100.00Ω	100.00mΩ - 60.000Ω	0.01mΩ		
Constant-current 160mA position	200.00mΩ - 125.00Ω	200.00mΩ - 80.000Ω	0.01mΩ		
Constant-current 120mA position	300.00mΩ - 160.00Ω	300.00mΩ - 100.00Ω	0.01mΩ		
Constant-current 80mA position	400.00mΩ - 250.00Ω	400.00mΩ - 120.00Ω	0.01mΩ		
Constant-current 40mA position	500.00mΩ - 500.00Ω	500.00mΩ - 300.00Ω	0.01mΩ		
AUTO position	100.0μΩ - 1.0000MΩ	100.0μΩ - 1.0000MΩ	0.1μΩ		
Constant-voltage 12V/＜5mA	1.0000Ω - 1.0000MΩ	1.0000Ω - 1.0000MΩ	0.0001Ω	Constant-voltage:±2% rdg ± 0.5% fs	
AUTO position	100.0μΩ - 1.0000MΩ	100.0μΩ - 1.0000MΩ	0.1μΩ		
Length display range	0.0001 M-999.99 km		0.0001M	± 0.5%	
The resistance value of the 1m wire	0.100μΩ~500.00Ω		0.100μΩ	± 0.5%	
DC Resistance test Position	Support fixed gear and step adjustment				
Ambient temperature display	Insert the standard temperature line to display the ambient temperature normally (accuracy +/-2°C)				
Data storage	After the test is completed, the data can be saved automatically, cyclically, and manually. A maximum of 9999 sets of data can be stored.				
Discharge alert	After the test is over, the buzzer sounds to indicate that it is discharging, and the buzzer stops sounding after the discharge is completed				

Printer	A printer is embedded in the instrument panel, and the test results are printed by pressing the print button
Test method	Four-wire test, tap test lead + test clamp at both ends
Display mode	7-inch LCD color screen

9.2 General technical indicators

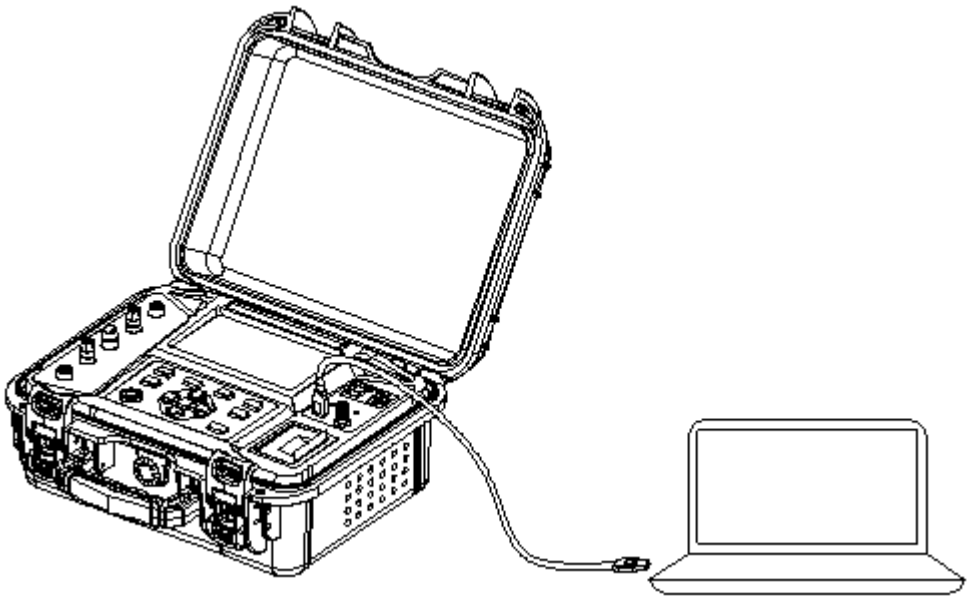
Power supply	Rechargeable lithium battery 14.8V 5000mAh or AC power supply
Rated current	40mA-10A
Resistance test range	100μΩ～1MΩ
High Voltage Warning	When a reverse voltage is detected, a hazard warning symbol flashes to warn
Automatic discharge	√
Backlight function	Adjustable backlight brightness (1-5 brightness levels in total)
Storage function	Store test data, a total of 9999 groups
Communication function	Data can be transferred by USB flash disk, etc., Bluetooth function (optional)
Battery level display	√
Low battery and position selection	When there are 2 levels of power left in the battery, it cannot output a position greater than 2A. When there is 1 level of power left, it cannot output a position greater than 400mA.
Auto-shutdown function	When using battery power, it will automatically shut down after about 10 minutes of no operation when powered on
Power switching	By default, it is battery-powered, and when it is switched to mains power, the battery symbol changes to AC plug symbol
Ambient temperature display	Insert the standard temperature line to display the ambient temperature normally (accuracy +/-2°C)
Testing transformers	It can test the internal resistance of transformers below 1000kVA normally
Meter dimension	Approx. 386mm (length), × 318mm (width), × 159m (height)
Meter weight	7.1kg
Altitude	≦2000m
Working environment	0°C~40°C Relative humidity below 80% (no condensation)
	40°C~50°C relative humidity below 70%.
	-20°C~60°C, relative humidity below 75% (no condensation)
Reference standards	JJG 166-2022 "DC Standard Resistor Verification Regulations" JJG 1052-2009 “Verification Regulations for Loop Resistance Tester and Direct Resistance Meter"

10. Descriptions of Communication

This instrument supports USB PC communication function and Bluetooth communication function.

10.1 USB PC operating instructions

This instrument can be connected to the PC computer through USB double male data cable, and the connection method and steps are shown in the figure below.



- Go to the official website to obtain the corresponding PC software, and follow the instructions to complete the installation of the PC software on the PC computer.
- The PC software supports Windows 10 and above operating systems.
- Use the included USB cable to connect the meter to the computer.
- Short press the instrument setting button, select the USB flash disk switch in the menu, and set it to ON state.
- Run the PC software, and click connect, at this time, the PC can also carry out USB communication. The data of the instrument will be displayed in real time on the PC software.

11. Maintenance

To clean the enclosure:

1. Wipe the surface with a soft cloth or sponge moistened with water.
2. To avoid damaging the instrument, never immerse the instrument in water.
3. When the instrument is wet, please dry it first before storing.
4. When there is a need to inspect or repair the instrument, please hand over the instrument to a qualified professional maintenance personnel or designated maintenance department for maintenance.

The contents of this manual are subject to change without notice

UNIT

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