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**DC resistance tester**

**LNZZ-10A**

**Operation Instructions**

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## Manual Description

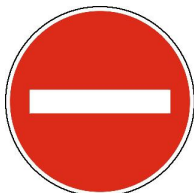
Dear customer, hello! First of all, I sincerely thank you for purchasing our company's DC resistance tester series products. In order to help you become proficient in using the instrument as soon as possible, please be sure to read this instruction manual in detail.

This manual mainly introduces the usage method of the DC resistance tester. Please follow and use this product according to regulations to ensure the safe and good operation of the instrument.



- Please abide by the national power industry's safety regulations for preventive testing of safety equipment, and do not operate in flammable, explosive, humid and other harsh environments;

- **This instrument is equipped with a large capacity lithium battery. When the instrument is not in use for a long time, it is recommended to charge and maintain it every other month to avoid battery self discharge and damage;**



- **Please do not disassemble the instrument without our company's permission. If the function of the instrument fails due to unauthorized disassembly of the instrument, warranty and return will not be provided. Our company will not be responsible for any personal or property injuries caused by this.**



- In order to ensure continuous improvement and perfection of product functions, the specifications of this instrument may be updated from time to time, so the instrument you use may be slightly different from the instructions without prior notice. If you have any questions, please call our after-sales service, or visit our website for more information.

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## Contents

1、 Overview .....	4
2、 Safety measures .....	5
3、 Functional characteristics .....	5
4、 Technical indicators .....	6
5、 Operating instructions .....	7
6、 NOTE .....	16
7、 Supporting List .....	17
8、 After-sale service .....	17

*Before using this instrument, please read the operating manual carefully, ensuring safety is the responsibility of the user.*

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## 1、 Overview

The LNZZ-10A DC Resistance Tester is a necessary test item for the manufacturing of inductive coils such as power transformers, transformers, reactors, and electromagnetic operating mechanisms, including semi-finished and finished products for factory testing, installation, major repairs, changes to tap changer, handover testing, and preventive testing by the power department. It can check the welding quality of the winding joints and whether there is any inter turn short circuit in the winding. It can also check whether the contact at various positions of the voltage tap changer is good, whether the actual position of the tap changer matches the indicated position, whether the outgoing wire is broken, and whether there are broken strands when multiple wires are wound together. This instrument has the characteristics of small size, light weight, large output current, good repeatability, strong anti-interference ability, and complete protection functions. The entire machine adopts an ARM high integration core with automatic discharge and discharge alarm functions. The instrument has high testing accuracy, simple operation, and can achieve rapid measurement of transformer direct resistance.

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## **2、 Safety measures**

**1 、 Be sure to read this manual carefully before using this instrument.**

**2、 This instrument can be used both indoors and outdoors, but it should be avoided in places such as rain and corrosive gases.**

**3、 The instrument should avoid severe vibration.**

**4、 The maintenance, care, and adjustment of instruments should be carried out by professional personnel.**

**5 、 After the test is completed, it is necessary to reset the instrument and turn off the power before removing the test wire.**

**6 、 During the testing process, it is prohibited to move the test clamp and turn off the power supply line.**

## **3、 Functional characteristics**

**1 、 The entire machine is controlled by a high-speed microcontroller, with a high degree of automation and easy operation.**

**2、 The instrument adopts new power supply technology, with a wide measurement range.**

**3、 The protection function is complete, which can reliably protect the impact of back electromotive force on the instrument, and**

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the performance is more reliable.

4、Fast response speed, stable instrument measurement data, and automatic data refresh during the instrument testing process.

5、Intelligent power management technology ensures that the instrument always operates at the minimum power state, effectively reducing internal heating and saving energy.

6、The instrument has an internal power on clock.

7、The instrument has an internal power on memory that can permanently store data.

#### 4、Technical indicators

1、measuring range:

current range	measuring range
<5mA	30 $\Omega$ –50K $\Omega$
100mA	500m $\Omega$ –80 $\Omega$
300mA	100m $\Omega$ –25 $\Omega$
1A	50m $\Omega$ –8 $\Omega$
5A	1m $\Omega$ –0.4 $\Omega$
10A	0.5 m $\Omega$ –200 m $\Omega$

2、output current: automatic、10A、5A、1A、300mA、100mA、

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<5mA

3、 resolution ratio:  $0.1 \mu \Omega$

4、 accuracy: 0.2%

5、 Opening voltage: 5A、 10A: 2.5V; Other gears: battery  
voltage;

6、 output power: 25W

7、 operation temperature:  $0^{\circ}\sim 40^{\circ}\text{C}$

8、 Working humidity: <90%RH

9、 Overall dimensions: length230mmX width 155mmX high60mm

10、 weight: 1.2kg

## **5、 Operating instructions**

1、 Function Introduction

1) Panel Introduction:





- a. **LCD display window:**; Using a 7-inch industrial grade LCD display screen to display relevant information and button operations;
- b. **Switch button:** The round button on the right side is the on/off button;
- c. **(I+):** Connect the red positive current output line (crude);
- d. **(I-):** Connect the black negative current output line (crude)
- e. **(U+):** Connect the red voltage sampling line (thin);
- f. **(U-):** Connect the black voltage sampling line (thin);
- g. **charging port:** Use a compatible 12.6V2A charger;
- h. **USB drive socket:** Using a large capacity USB drive;
- i. **Display Area Eyebrow:** Real time clock display, USB drive
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connection status, Bluetooth connection status, and remaining battery display.

j. **Left menu bar:** Click on "Measurement Page", "Record Page", and "Settings Page" to switch pages.

***Measurement page:** A page for conducting sample testing, displaying measured values and setting relevant measurement parameters;*

***Record page:** View saved measurement information and view corresponding records based on time;*

***settings page:** Mainly used for viewing user settings such as time, language, backlight, and version information.*

2) display Descriptions:

➤ Measurement interface



a. **Test Current:** Click on the current drop-down box and select the measurement current to be set based on the measured

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object range;

**b. compensation temperature:** Click on the temperature drop-down box and select the compensation temperature to be set based on the working temperature of the measured object;

**c. ambient temperature:** Click on the white display box to pop up the input keyboard and input the current ambient temperature;

**d. Test resistor box:** The resistance value of the tested object;

**e. Measured current:** The current value of the tested object;

**f. Compensation resistance value:** The resistance value of the measured object converted to the compensation temperature;

**g. number:** The current number value to be saved will be automatically added after saving the data;

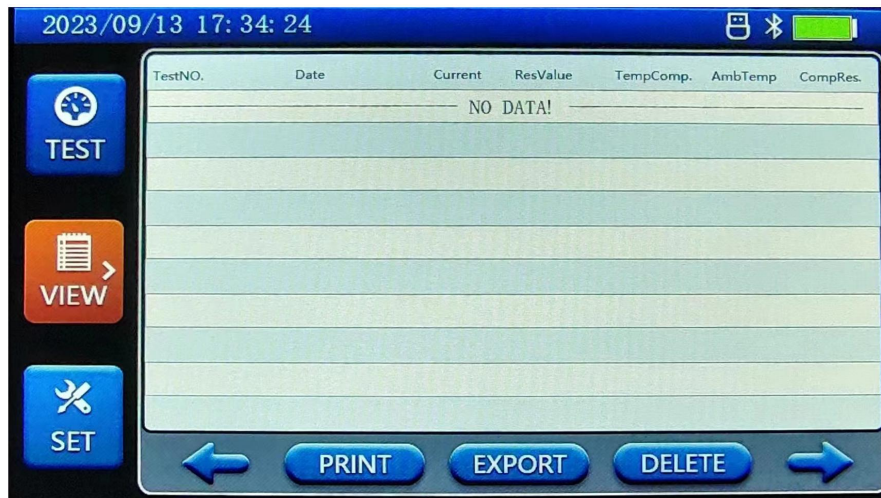
**h. Print this item:** After connecting to the Bluetooth printer, the Bluetooth icon on the brow changes from white to blue, and you can click to print the measurement data for this time;

**i. Save Data:** After the test is completed, you can click this button to save the new measurement data;

**j. Start Measurement:** Click this button to measure, then press ' Cancel Measurement ' ;

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## Recording interface



- a. **Data Frame:** Display 10 pieces of data per page, with records arranged from new to old Column, the first item with number 003 represents the most recent measurement data, each containing information such as "number", "time", "test current", "resistance value", "compensation", "ambient temperature", and "compensation resistance value".
- b. **left arrow:** Click to page forward;
- c. **right arrow:** Click to page back;
- d. **delete:** Click to pop up the delete pop-up window, which includes the following buttons:

*Delete this clause:* After selecting a data entry, click this button to delete the selected data entry;

*delete all:* Clicking this button will delete all saved data;

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***return:*** Clicking this button will cancel the deletion pop-up window;

**e. print:** After connecting to the printer through Bluetooth, the Bluetooth icon on the eyebrows changes from white to blue. Clicking this button will print the recorded data of the selected bar;

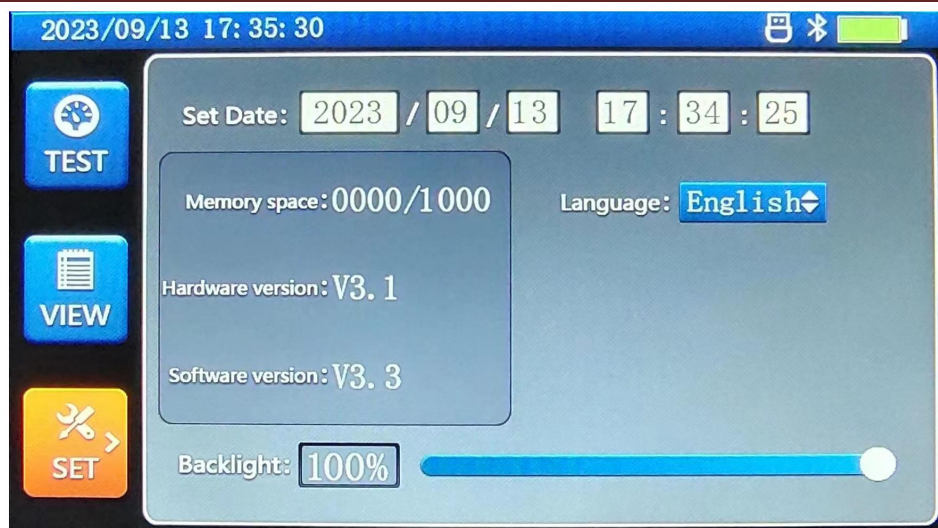
**f. export:** After inserting the USB drive, the icon on the brow of the USB drive changes from white to blue. Click to pop up the export pop-up window, which includes the following buttons:

***Export this item:*** After selecting the data entry, click this button to export the selected data entry to the USB drive;

***Export All:*** Click this button to export all data entries to the USB drive;

***return:*** Clicking this button will cancel the export pop-up window;

➤ Setting interface



a. **Time setting:** The white display boxes are year, month, day, hour, minute, and second. Clicking on the white display box will pop up the input keyboard

b. **Language settings:** Click on the pop-up dropdown box to set the switch between Chinese and English;

c. **Backlight adjustment:** Drag the slider to adjust the backlight brightness;

d. **Memory space:** Memory space occupied by saving records;

e. **Hardware version:** The hardware version number of this instrument;

f. **Software version:** The software version number of this instrument;

## 2、Instructions for use

1 ) **Instrument wiring :** Insert the specialized testing line into the

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corresponding I+and I - terminals according to the color, thick current lines, and thin voltage sampling lines into the U+and U - sockets. Clamp both ends of the tested object with two clamps.

2) Start measuring resistance:

a. Select 'Test Page';

b. Select the test current to be set based on the measured object range (AUTO、5mA、100mA、300mA、1A、5A、10A);

c. Select the compensation temperature to be set based on the actual temperature of the measured object (Copper and aluminum compensation without compensation, 20 °C, 75 °C, 120 °C);

d. Click on the white display box to pop up the input keyboard and enter the current ambient temperature;

e. Press the "Start Measurement" button to enter the measurement;

f. After the measurement is completed, the instrument displays the resistance value, measured current value, and compensation resistance value of the measured object (recorded when saving). During the measurement process, the "Cancel Measurement" button can be pressed to cancel the measurement;

g. After the measurement is completed, you can press the "Save Data" button to save the data;

h. After connecting to the Bluetooth printer, the white Bluetooth icon

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on the eyebrows will turn blue, and clicking the "Print this item" button will print the measurement data for this time.

3) Record Query:

- a. Select 'Record Page';
- b. Click the "left and right" button to flip the record page, with each page providing a display of 10 records;
- c. Click on "Data Entry" to display an orange background check box;
- d. When performing the "delete" operation, a pop-up box will be prompted to delete the data. Then, press "delete this item" or "delete all" to delete the data. Press the "return" button to cancel the deletion operation.
- e. After inserting the USB flash drive, the white icon on the brow of the USB flash drive will turn blue, and then executing the "Export" operation will prompt an export pop-up box. Press "Export this item" or "Export all" to export the data, and press the "Return" button to cancel the export operation.
- f. After connecting to the printer through Bluetooth, the white Bluetooth icon on the eyebrows will turn blue. Clicking the "Print" button will print the record data of the selected bar.

4) Time setting: Click on the white display boxes for year, month, day, hour, minute, and second, and the corresponding input keyboard will pop



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up. Enter the corresponding time value, and finally press the keyboard confirm button to set the time and update the eyebrow time.

5) Language settings: Click on the pop-up dropdown box to switch between the Chinese and English interfaces.

6) Backlight adjustment: Drag the white slider to adjust the brightness of the screen backlight. The corresponding brightness percentage is displayed in the left display box.

## **6、 NOTE**

1、 Connect the test clamp. After connecting the test clamp to the lead out end, forcefully twist the test clamp several times to scratch the oxide film to ensure good connection. If the contact end is exposed to air for a long time, the surface will be covered with an oxide film, which may cause unstable or inaccurate measurement results.

2、 Before disconnecting, be sure to wait for the instrument to reset and there is no current output. After discharging, turn off the power before disconnecting.

3、 When selecting the current, please refer to the range in the technical indicators column, and do not use it beyond the range or under range.

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## 7、 Supporting List

ITEM NAME	number
DC resistance tester host	1
10A type test line	1
Charger DC12.6V2A	1
Standard resistance	1
Protective backpack	1
operation instructions	1
Certificate of conformity	1
Factory calibration table	1

## 8、 After-sale service

1、 Within one month from the date of sale, if there are any quality issues with the instrument, it will be replaced with a new one free of charge;

2、 Any quality issues with the instrument within one year will be repaired free of charge by our company;

3、 If the instrument exceeds one year, our company is responsible for long-term maintenance and charges appropriate material fees;

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4、The instrument has malfunctioned, please send it back to our company for repair. Do not disassemble the instrument by yourself, otherwise our company will not be responsible for any self damage caused.