

**Dear Client,**

Thank you for purchasing our HTZZ-10A Transformer Winding Resistance Tester. Please read the manual in detail prior to first use, which will help you use the equipment skillfully.



Our aim is to improve and perfect the company's products continually, so there may be slight differences between your purchase equipment and its instruction manual. You can find the changes in the appendix. Sorry for the inconvenience. If you have further questions, welcome to contact with our service department.



The input/output terminals and the test column may bring voltage, when you plug/draw the test wire or power outlet, they will cause electric spark. PLEASE

**CAUTION RISK OF ELECTRICAL SHOCK!**

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## ◆ **SERIOUS COMMITMENT**

All products of our company carry one year limited warranty from the date of shipment. If any such product proves defective during this warranty period we will maintain it for free. Meanwhile we implement lifetime service. Except otherwise agreed by contract.

## ◆ **SAFETY REQUIREMENTS**

Please read the following safety precautions carefully to avoid body injury and prevent the product or other relevant subassembly to damage. In order to avoid possible danger, this product can only be used within the prescribed scope.

*Only qualified technician can carry out maintenance or repair work.*

--To avoid fire and personal injury:

### **Use Proper Power Cord**

Only use the power wire supplied by the product or meet the specification of this produce.

### **Connect and Disconnect Correctly**

When the test wire is connected to the live terminal, please do not connect or disconnect the test wire.

### **Grounding**

The product is grounded through the power wire; besides, the ground pole of the shell must be grounded. To prevent electric

shock, the grounding conductor must be connected to the ground.

Make sure the product has been grounded correctly before connecting with the input/output port.

### **Pay Attention to the Ratings of All Terminals**

To prevent the fire hazard or electric shock, please be care of all ratings and labels/marks of this product. Before connecting, please read the instruction manual to acquire information about the ratings.

### **Do Not Operate without Covers**

Do not operate this product when covers or panels removed.

### **Use Proper Fuse**

Only use the fuse with type and rating specified for the product.

### **Avoid Touching Bare Circuit and Charged Metal**

Do not touch the bare connection points and parts of energized equipment.

### **Do Not Operate with Suspicious Failures**

If you encounter operating failure, do not continue. Please contact with our maintenance staff.

### **Do Not Operate in Wet/Damp Conditions.**

### **Do Not Operate in Explosive Atmospheres.**

### **Ensure Product Surfaces Clean and Dry.**

## — **Security Terms**

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Warning: indicates that death or severe personal injury may result if proper precautions are not taken

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Caution: indicates that property damage may result if proper precautions are not taken.

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**Please carefully read the instructions and precautions,  
detailed understanding of the main performance and use.**

**Notes :**



- ① Wiring the measurement process does not allow removal and Direct power off.
- ② For no-load voltage regulating transformer , measurement process is not allowed to switch the tap.
- ③ Measurement process if the power suddenly loses power, the opportunity to start automatically discharge, do not immediately remove wiring, wait at least 30 seconds before Demolition wiring.
- ④ When you measuring, Other untested windings, please do not short-circuit grounding, Otherwise, the time required to stabilize the data will be extended.

## **I. General Introduction**

When the transformer is cross-connected, overhauled or some of its switches are changed, direct current resistance testing of the transformer winding is a must. In general, to measure the transformer winding or large power output inductor equipment, the traditional electrical bridge method and pressure drop method require much time and energy .Thus, to Shorten the measurement time and reducing the workload of testers , our company developed rapid direct current resistance tester . Which is designed with new power supply technology and stable performance, fast measurement, compact, easy to use, high accuracy, good data

reproducibility. It is an ideal piece of equipment for measuring transformer windings and large power output inductor equipment.

## II. Main Specifications

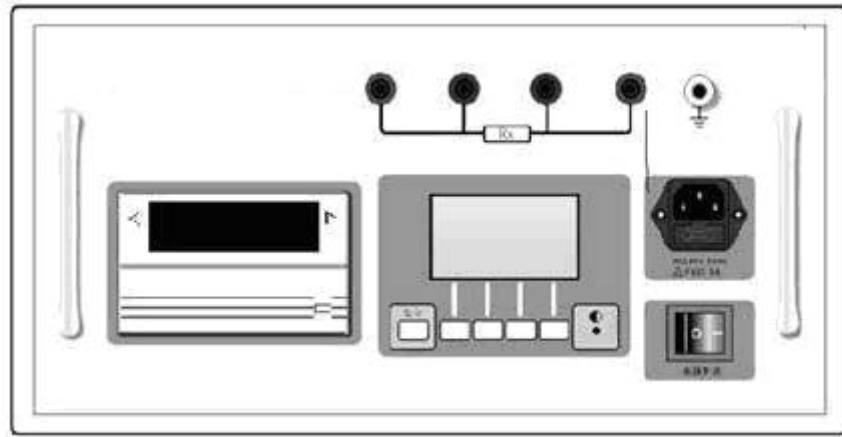
items	Technical indicators and parameters	notes
Testing current	1mA 10mA 1A 5A 10A	
Testing range	1mA: $10\ \Omega \sim 20K\ \Omega$ 10mA: $1\ \Omega \sim 2K\ \Omega$ 1A: $10m\ \Omega \sim 20\ \Omega$ 5A: $1m\ \Omega \sim 4\ \Omega$ 10A: $1m\ \Omega \sim 2\ \Omega$	
Testing precision	$\pm (0.2\% \text{full-scale} \pm 2 \text{ digital})$	
Data Storage	255 data	
Display	LCD Monitor	Resistance is displayed by 4 1/2 bit
Highest Resolution ratio	$0.1\ \mu\Omega$	
Power supply	AC 220V $\pm$ 23V, 50Hz $\pm$ 2Hz	Fuse 5A
Maximum power dissipation	200W	When the test current of 10A
Working environment	Temperature: 0 $^{\circ}$ ~40 $^{\circ}$ Relative humidity: $\leq$ 80%	
Volume	200 $\times$ 400 $\times$ 280(mm)	
weight	8kg	with accessories

## III. Features

Small size, light weight. Full Chinese menu, simple operation. Testing fastly, accurate and stable data. Automatic discharge and discharge indicator that reduce operational errors , ensure safety of

equipment and personnel.

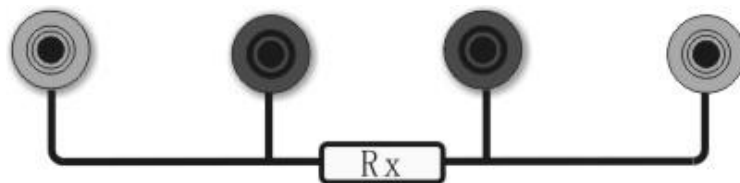
#### IV. Front and back of the introduction and description



##### Panel as shown below:

The instrument panel layout as shown above , including printers, LCD monitors, keyboards, power outlet and power switch and the terminal, ground terminal.

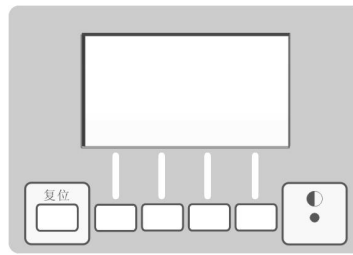
##### Output section:



Input and output terminals as shown above , A total of four terminal, The two red terminals in the lateral for current output, The two terminals in the medial for measuring the voltage sampling input.

##### Display and keyboard control section:





10A			
1.0 0 0 0Ω			
Reset	Exit	Save	Print

The picture above shows the LCD monitor and keyboard components of the display control section, is a dot -matrix LCD display, tips for displaying operation and measurement results, and indicates the use of four multi-function buttons which is located below the display. The left side of the "reset" button can make the equipment return to the initial state when it is deadlock or interfered seriously. Hole in the far right hole for the display contrast adjustment, contrast in the displays, display graphics too deep or too shallow, affect the reading results, you can use the small screwdriver appropriate adjustments.

## The printer



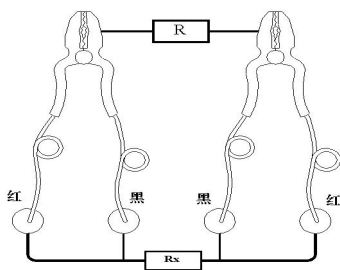
It is a printer of 16 lines with mini panel, which is durable, quick-reacted, whic is easy to change printing paper and ink ribbon

and without a need of extra maintenance. When there is power supplied for the equipment, the indicator light is on, which means the printer is standby. The data will be printed if the button of print is pressed either during the testing process or after the testing.

**V. Description of usage**

**(1) Preparations before testing:**

First, a reliable power supply line and ground wire connected to the tester, then came the test line with the instrument connected to the input and output terminals on the panel that corresponds with the color of the tester, the test clamp to both ends of transformer winding ready to be measured , and the force of friction contact points to ensure good contact. Connect the cords as follows.



Turn on the power switch , the display shows the following interface

10A			
select current			
Run	View	▲	▼

Tester offers several different measuring current, you can shift testing current according to the “▼” “▲” buttons, please pay attention to the maximum measuring range of each testing current, avoid winding DC resistance value that you measured is greater than the maximum measurement range of the current that you selected, Current can not reach the predetermined value when the test begins, lead instrument for a long time in a wait state (see the detailed technical parameters of technical indicators section).

"View" button for viewing and printing of measurement data is stored. (see “View and handling of the data”) .

Choose a good measurement, and measuring current, press "Measure" button to start the measurement process.

## (2) start the testing:

Instruments in the press "Measure" key to start charging winding under test and displays the following interface

<b>10A</b>			
<b>Charging... 00.0A</b>			
<div style="border: 1px solid black; height: 20px; width: 100%;"></div>			
<b>Retest</b>	<b>Exit</b>	<b>Save</b>	<b>Print</b>

Central display area displays a charging progress bar will appear, the upper part of the progress bar's current value for the current, generally in the measurement of large inductive load, the current will take some time to stabilize, the current value from zero

up to the ratings.

NOTE: If the charging progress bar for a long time stuck in a current value ,not rising, maybe the current value of winding resistance exceeds the selected current measurement range, so that current can not reach a predetermined value, press the "Exit" to exit the testing, and select a gear lower than the previous current.

When the current reaches the rated value, the charging ends, instruments began sampling the data and calculations.. Display prompt "is measured, please wait", after calculation, the measured resistance value will be displayed on the display. Data to be stable, that is, you can press the "Save" to store or press the "print" button to print the data.

Tip: When print data in the test mode, after finished printing the current results of testing ,it may not immediately end the print, but in a wait state, so you can print the next data continuously in the print report. Therefore, On-load Tap Transformer in the measurement of resistance of the tap, when measured after the end of a tap, do not exit the testing, a direct switch to the next tap, and then press the "Retest" button to refresh the data, data is stable, you can press "Save" button to save continuously or press "Print" button to print data continuously, and so in turn until the test finished measuring all of the tap winding.

Measuring no-load tap, the tap does not allow direct switch, you must exit the test mode, to switch the tap after the completion

of the discharge.

### **(3)After the testing:**

When the measure is finished, ( please refer to the chapters concerning “ data storing and printing” if data storing or printing is needed ) , press the “exit” key. The machine will close the input and return to the beginning state waiting for the next measure. It will come to the discharge condition if the load is inductive, and the screen will display the discharge information. Return to the measure menu, waiting for the next measure. The discharge time is determined by the inductances of the articles tested.



Notice: Do not dismantle the testing wires directly after measuring the inductive load, or the inductive discharge may endanger the security of the testing workers and the equipments. There are discharge circuits at the output terminal of this machine. The inductance will release its energy through it if the output is closed. Make sure the testing wires can only be dismantled after the completion of the discharge indication.

## **VI. View and handling of the data**

### **(1)view data:**

In the initial screen, press the "View" button to enter the data view interface, as shown

001/050			
10.000mΩ			
Print	Delete	▲	▼

The upper part of the status bar shows the current data, the total number and amount of stored data, you can choose "▲" and "▼" button and then click view all stored data.

## (2)print data:

If you want to print the stored data, press the "Print" button to enter the printing interface, as shown

001/050			
Start: 001			
OK	Exit	◀▶	◆

Before printing you need to set the starting and ending serial number of the data that you need to print,, use the “◀▶” button in the serial number to switch between each position, use the “◆” button to change the size of the number of each position , after setting press "OK" button to confirm.

Note : The number of the data has been printed and the total number stored is different, when printing, always start to number With the first data to be printed, nothing to do with the total number.This is for you to store all the different tap winding resistance, you can easily generate an independent test reports of each winding.

## (3)delete data:

When you want to delete the stored data, in the view interface, press the "delete" button to enter delete interface, as shown below

001/050			
Select Delete range			
All	Current	Exit	

Instrument will ask what data you want to delete, click "All" button will delete all data stored, press the "current" key will only delete the data you see the current, press "Exit" button will return to the interface of view.

## VII. Points for attention

The operator should read the following content carefully for the security of myself and the equipment:

①Do not dismantle the testing wires directly after the measuring of inductive load or the inductive discharge may endanger the security of the testing workers and the equipments. There are discharge circuits at the output terminal of this computer. The inductance will release its energy through the apparatus if the output is closed. Make sure the testing wires can only be dismantled after the completion of the discharge indication.

②For no-load regulating transformers, the measurement process is not allowed to switch tap.

③Measurement process if the power suddenly loses power, the instrument will automatically discharge, please do not immediately remove wiring, wait at least 30

seconds before you start to remove wiring..

④ Measurement, Other untested windings do not short-circuit ground , otherwise it will result in the transformer magnetizing process of slow , extend the time to wait for data stability.

⑤ Please check the voltage of the power supply before starting the machine: alternating current 220V±10% 50Hz.

⑥ Make sure the tested equipment is power-off and disconnected with other live equipments.

⑦ The machine shell should be steadily grounding when testing.

⑧ No irrelevant goods are allowed to stack on the faceplate of the equipment or around it when testing.

⑨ Use the products of the same types used in this apparatus when replacing insurance pipes or other fittings.

⑩ Pay attention to the moisture proof and oil contamination proof of this apparatus.

## VIII. Transport、Reservation

### ■Transport

If the equipments need to be transported, it is suggested to use the apparatus packing cases of this company and some damping goods, in order not to bring some unwanted damage which may cause you much loss.

Do not stack or pile the equipments if wood cases are not used in the transportation. The utmost stacking layer is two when using the apparatus packing cases of this company.

The faceplate of the apparatus should be upward during



transportation.

#### ■Reservation

The equipment should be laid indoors in a room which is dry, dustless, ventilating and with no corrosive gas. Do not stack or pile the equipment if wood cases are not used in the transportation.

The faceplate of the equipment should be upward when reserving. Put some moisture proof goods under the equipment to prevent the equipment from wetting.

## **IX. Unpacking and Checking**

#### ■Attentions of unpacking

Make sure the arrow sign of the outer pack is upwards before unpacking. Do not beat forcibly when unpacking in order not to damage the equipment. Unpack the case and take out the equipment, keeping the outer pack and the damping goods, which is not only convenient for your future transportation and reservation but also can protect the environment.

#### ■The content of checking

Take out the equipment after unpacking, check and count the equipments and sittings according to the packing list. Please contact with our company if the number is not correct, and we will reply to you as soon as possible.

## **X. After-sales service**

This product has an overall warranty of one year with three guarantees and a lifelong maintenance, if there is any quality problem of the equipment under warranty, our company will provide free maintenance. If the damage is caused by the improper manipulation or carelessness of the user, we provide preferential services.

We expect that you can give us some valuable advice for our products, so please fill out the “User feedback card” carefully after receiving the equipment and send it to our company in time. We will set up the user record for the equipment you have purchased so as to offer you quicker and better service.

If the address of your company or contacting method is changed, please inform us as soon as possible, so that we can offer you timely follow-up service.



