Huazheng®

HZ-3100A
Transformer DC resistance Tester

User Manual

Huazheng Electric Manufacturing (Baoding) Co., Ltd

Dear user:

Thank you for choosing HZ-3100A Transformer DC 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.Overview

Transformer DC resistance is a must-test item in transformer manufacturing for semi-finished products, finished products, factory test, installation, overhaul, after tap changer change, handover test, and preventive test in the power sector. You can check the welding quality of the winding joints and whether the windings have inter-turn short circuits. You can check whether the contact of each position of the voltage tap changer is good, whether the actual position of the tap changer matches the indicated position, whether the lead wire is broken, and multiple strands of wire are wound Whether there is any stock breakage, etc. In order to meet the needs of rapid measurement of transformer DC resistance, the HZ-3100A DC resistance tester developed by our company. The instrument adopts a brand-new power supply technology, which has the characteristics of small size, light weight, large output current, good repeatability, strong anti-interference ability, and complete protection functions. The whole machine is controlled by a high-speed single-chip microcomputer, with a high degree of automation, with automatic discharge and discharge alarm functions. The instrument has high test accuracy and simple operation, which can realize the rapid measurement of transformer direct resistance.

II.Main Technical index

Item	Technical indicators and parameters	Note
Test current	5A、10A、20A 、50A、100A	
Measuring range	50μΩ～100mΩ （100A） 100μΩ～400mΩ （50A） 200μΩ～1Ω （20A） 500μΩ～2Ω （10A） 1mΩ～4Ω （5A）	
Min resolution	0.1μΩ	
Accuracy	±(0.2%+2 reading)	
Display	LCD Monitor	Resistance display effective digits are 4 digits
Data storage	1000 sets	
Working environment	Ambient temperature:0℃～40℃ Relative humidity: <90%RH No condensation	
Power supply	AC 220V±10V，50Hz±1 Hz	Insurance tube 10A
Max power consumption	1000W	
Overall dimensions	440×245×395（mm）	
Weight	Instrument: 19.8Kg Wire box: 7.5Kg	

III.Main functions and features

1. The whole machine is controlled by high-speed single-chip microcomputer, with high degree of automation and easy operation.

2. The instrument adopts brand-new power supply technology, with multiple current gears and wide measurement range, suitable for DC resistance measurement of large and medium-sized transformers.

3. The protection function is perfect, which can reliably protect the impact of the back EMF to the instrument, and the performance is more reliable.

4. With sound discharge alarm, discharge indication is clear, reduce misoperation.

5. Fast response speed.

6. Intelligent power management technology, the instrument always works in the minimum power state, which effectively saves energy and reduces heat generation.

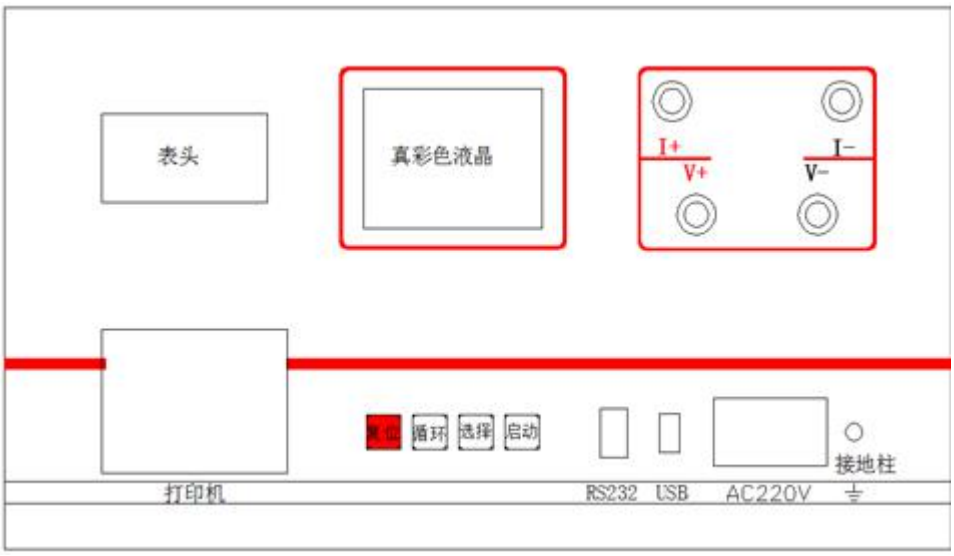
7. 320X240 dot matrix ultra-small pixels 65K true color LCD,

8. The instrument comes with a perpetual calendar clock and power-down storage, which can store 1000 sets of test data, which can be consulted at any time

9. The instrument is equipped with RS232 and USB interfaces, which can communicate with computers and store in U disk

10.Comes with a panel-type micro printer, which can print the measurement results in Chinese

IV. Panel structure



AC220 switch: the working power of the instrument, AC 220V.

Grounding post: grounding point of the whole instrument for safety protection

Reset button: press this button, the machine is in the initial state, and the output current can be preset.

Cycle key: press this key to scroll the cursor in the main menu

Selection key: After the unit is reset, press this key to perform current preset.

Start key: Press this key after the output current is selected, and the microcomputer control realizes the whole test process.

I+, I-: output current binding posts, I+ is the output current is positive, I- is the output current is negative.

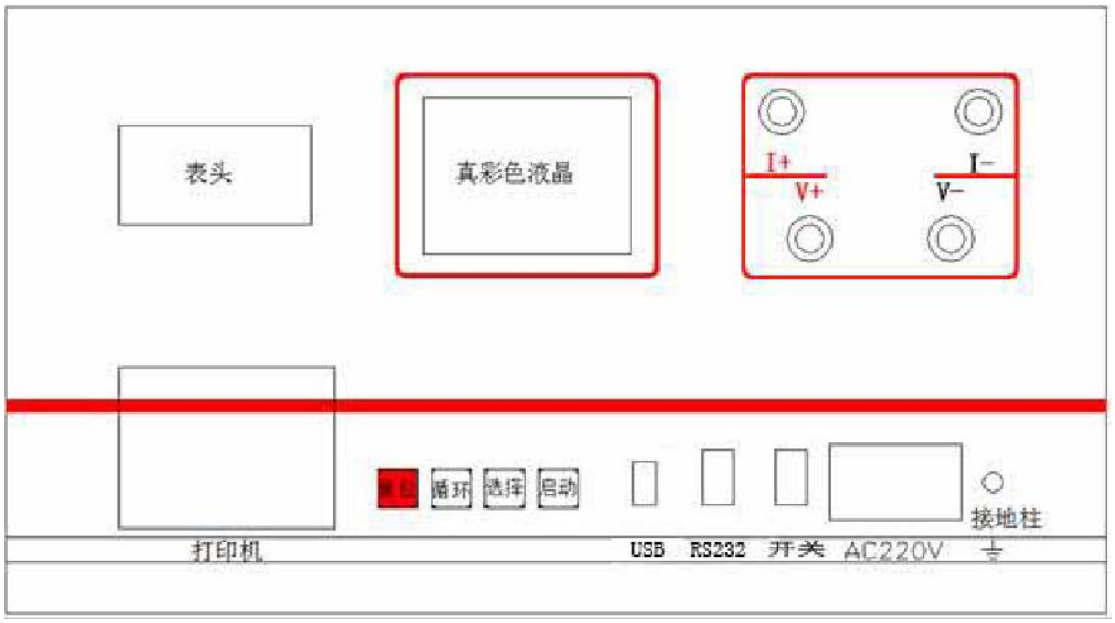
V+, V-: Voltage sampling terminal, V+ is the positive terminal of the voltage line, and V- is the negative terminal of the voltage line.

RS232: Universal serial interface, the instrument can be controlled by a computer.

USB: can output test results to U disk.

V. system introduction

The panel of the instrument is shown below



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VI.Method of operation

1. The boot interface is shown in Figure 1:

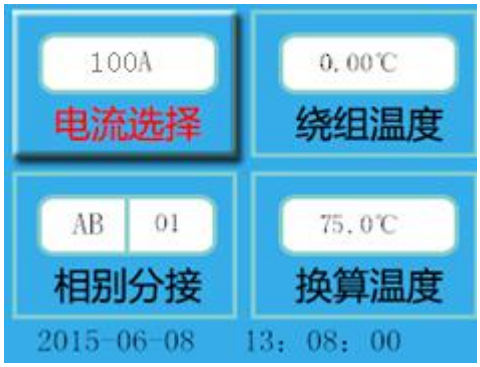

Figure 1

Figure 2

Press the cycle key and the cursor can move among the options included in current selection, phase tapping, winding temperature, conversion temperature, data query, host

parameters, clock modification, etc., press the selection key to cycle through the options included in the above seven main menus select.

(1) When the cursor is in the current selection, press the selection key to select the current.

(2) When the cursor is on the phase tap, when the cursor is on the phase tap, press the select key, and the phase can be selected from AB, BC, CA, AO, BO, CO, ab, bc, ca, ao, bo, co Cycle display between. Press the start key to move the cursor to tap, press the select key to change the number between 0-9 (ten's place), press the start key to move the cursor to the ones place, press the select key to change the number between 0-9.

(3) When the cursor is at the winding temperature, press the start key to scroll the cursor among the three data bits, and the select key can make the data of each data bit cyclically display between 0-9.

(4) When the cursor is at the conversion temperature, press the select key, and the conversion temperature can be displayed cyclically among 75℃, 85℃, 115℃, 125℃ and 145℃.

(5) When the current option is any option except winding temperature, press the start key to start the measurement.

2. After the current is selected, press the start button to start charging. After the LCD displays "Charging" for a few seconds, it displays "Testing" at this time, indicating that the charging is completed and the test state is entered. After a few seconds, the test result will be displayed, as shown in Figure 3:

Figure 3

According to the prompt, press the select key for about two seconds to print the current data, and press the cycle key for about two seconds to store the current data to the U disk.

3. Move the cursor to the data query menu in the boot interface, and then press the select

key to enter the data query, as shown in Figure 4:

Figure 4

In Figure 4, when the cursor is in the data query, press the select key to scroll up the data, and press the start key to scroll down the data. Move the cursor to print, press the select key to print the current display data according to the prompts, move the cursor to the U disk for storage, and press the select key to store the current display data to the U disk according to the prompts.

4. In Figure 2, press the cycle key to move the cursor to the clock modification, press the select key to enter the clock modification interface,

Figure 5

Press the cycle key to move the cursor between each date data, press the select key to decrease the data, and press the start key to increase the data.

5. Move the cursor to the host parameter in Figure 2 and press the select key to enter the interface as shown in Figure 6:

Figure 6

Press the cycle key to move the cursor. When the cursor increases on the screen brightness, press the select key to increase the screen brightness. When the cursor is on the screen brightness reduction, press the select key to decrease the screen brightness. When the cursor is releasing the storage space, press the select key to clear the storage data.

6.Test and operation method

A: Single-phase measurement method, see Figure 7 below:

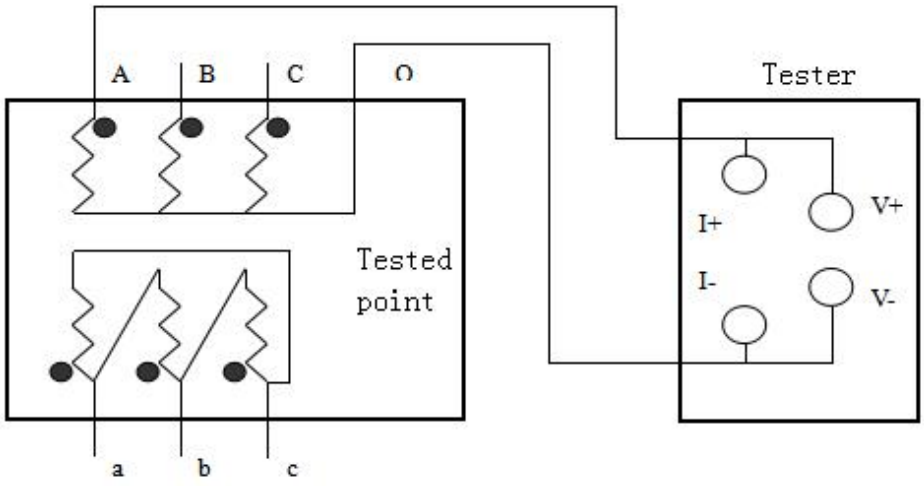

Figure 7

B. The wiring of the assisted magnetic method is shown in Figure 8~10 (applicable to Y(N)-d-11 connection group).When measuring the low-voltage side of a large-capacity transformer, if the maximum current of the DC resistance tester is relatively small under existing conditions, or in order to speed up the measurement, you can choose the magnetic method to measure. In the figure below, Figure 8, Figure 9, and Figure 10 are

the wiring methods for measuring low voltage Rac, Rba, and Rbc respectively

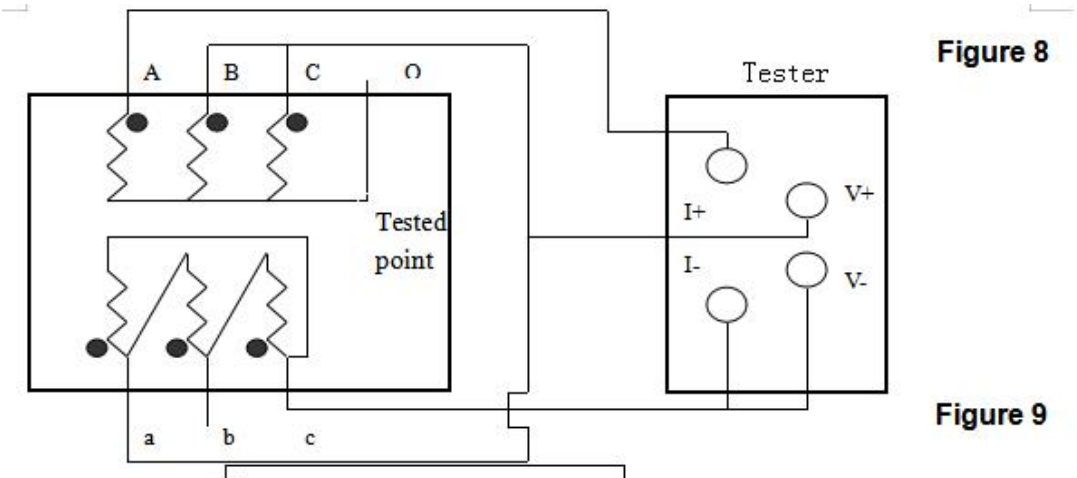

Figure 8

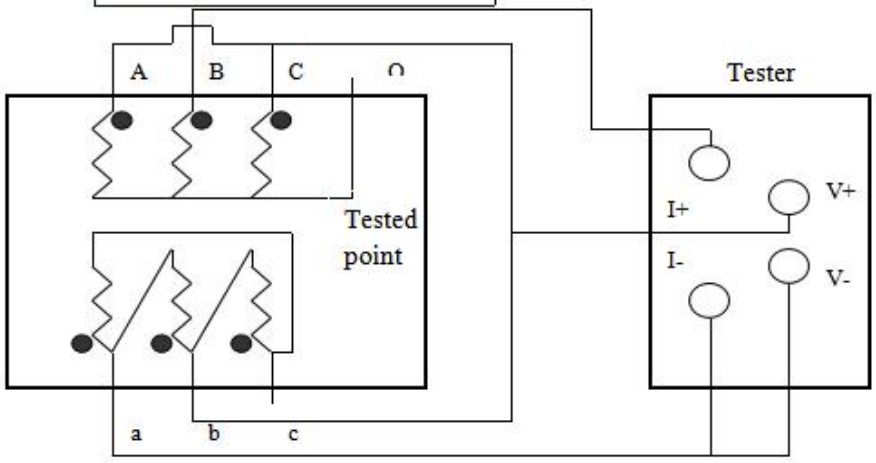

Figure 9

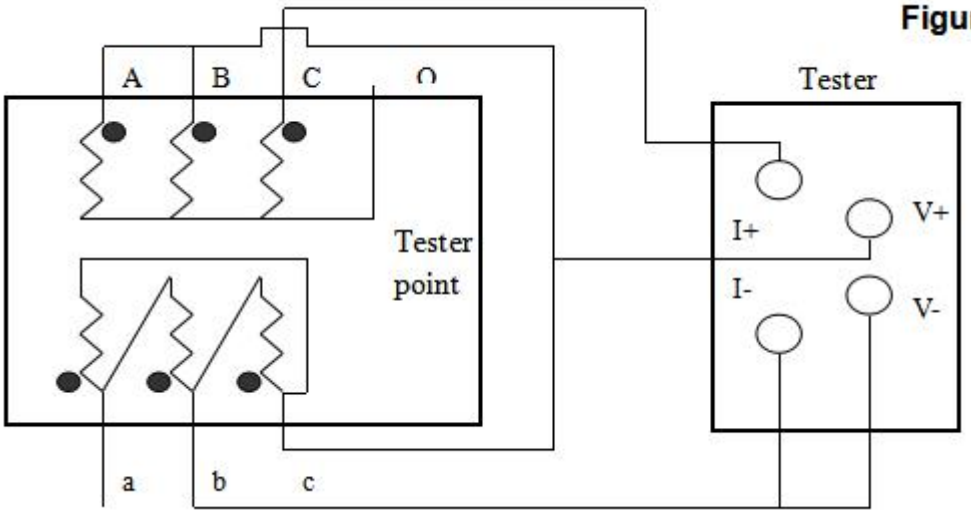

Figure 10

Figures 8, 9, and 10 are the wiring methods for measuring low voltage Rac, Rba, and Rbc respectively

VII.Matters needing attention

1. After measuring the inductive load, the test line cannot be directly removed, so as not to endanger the safety of testers and equipment due to inductive discharge. The output terminal of this machine is equipped with a discharge circuit. After the instrument is reset, the inductance will discharge energy through the instrument. The test wire must be removed after the discharge instruction is completed.

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

3. If the power supply is suddenly cut off during the measurement process, the machine will automatically start to discharge. Please do not disassemble the wiring immediately. Wait at least 30 seconds before disassembling the wiring.

4. During measurement, do not short-circuit the grounding of other untested windings, otherwise it will slow down the magnetization process of the transformer, prolong the data stabilization time or the value is incorrect.

5. Please check the power supply voltage before starting up: AC 220V±10%, 50Hz.

6. During the test, please confirm that the device under test has been powered off and disconnected from other live devices.

7. The case must be grounded reliably during the test.

8. Irrelevant items are not allowed to be stacked on and around the equipment panel during the test.

9. When replacing the fuse and accessories, please use the same model as this instrument (see technical specifications for details)

10. Pay attention to moisture and oil pollution for this instrument.

11. When selecting the current, please refer to the range in the technical index column. When the range is exceeded, the instrument is always in the "charging" state because the current does not reach the preset value. At this time, press the reset button to reset the instrument and select a smaller value. The current gear.

VIII. Packing List

No.	Name	Qty
1	main engine	1
2	Test line	1
3	Power line	1
4	Power line	2
5	Print paper	1
6	Ground lead	1
7	Data line	1
8	Test product	1