GDZRC-20U

DC Winding Resistance Tester

User's Guide

Warning

- Do not disconnect the wires directly after finishing measurement of inductive loads, to avoid the discharge of inductors endanger the safety of test personnel and equipment. The output of this device is equipped with a discharge circuit. When the output is turned off, the inductor discharges energy through the instrument. Please remove the test line after the discharging instruction is completed.
- When measuring no-load regulating transformers, it is forbidden to shift tap changers during measurement.
- If power failure occurs during measurement, the instrument will discharge automatically. Please wait until at least for 30 seconds, before disconnecting the wires.
- Windings that are not under measurement, should not be short-circuited, otherwise it will cause the transformer magnetization process to slow down, and the data stability time will be extended.
- Make sure that the test object is power off and disconnected with other live apparatus.
- The transformer shell must be grounded securely.
- Please remove irrelevant stuffs around the instrument.
- Please replace the fuse or other accessories with same model of this instrument.
- The instrument should be protected against moisture and grease.

Warranty

The warranty period for this series is one year from the date of shipment. Please refer to your invoice or shipping documents to determine appropriate warranty dates. HV Hipot corporation warrants to the original purchaser that this product will be free from defects in material and workmanship under normal use. Throughout the warranty period, provide that such defects are not determined by HV Hipot to have been caused by abuse, misuse, alteration, improper installation, neglect, or adverse environmental condition, HV Hipot is limited solely to repair or replacement of this instrument during the warranty period.

Packing List

Main Unit	1 set
Test Lead	2 pcs
Power cord	1piece
Fuse	2 pcs
Print paper	2 rolls
Ground cable	1piece
Standard resistor	1piece
Communication cable	1piece
Accessory case	1piece
User's guide	1copy
Factory test report	1copy

HV Hipot Electric Co., Ltd. has strictly and carefully proofread the manual, but we cannot guarantee that there are no errors and omissions completely in the manual.

HV Hipot Electric Co., Ltd. is committed to making continuous improvement in product functions, and improving service quality, so the company remains the right to change any products and software programs described in this manual as well as the content of this manual without prior notice.

I. General Information

GDZRC-20U DC Winding Resistance Measuring Device is designed to measure DC resistance of inductive devices, such as transformers and power inductors. Adopts new power supply technology, it has the characteristics of small size, light weight, large output current, good repeatability, strong anti-interference ability and perfect protection function. The whole machine is controlled by high-speed single-chip microcomputer, with high degree of automation and automatic discharge and discharge alarm function. The instrument has high precision and easy operation, and it can realize rapid measurement of transformer DC resistance.

II. Features

- The whole machine is controlled by high-speed single-chip microcomputer, with high automation and easy operation.
- Using new power supply technology, with multiple current gears and wide measuring range, it is suitable for DC resistance measurement of large and medium-sized transformers.
- Perfect protection function, which can reliably protect the impact of back EMF on the instrument, and the performance is more reliable.
- Audible discharge alarm and clear discharge indication, to avoid error and ensure safety.
- Fast response speed, the on-load tap changer can be directly converted in the measurement state, and the instrument automatically refreshes the data.
- Intelligent power management technology, the instrument works in the minimum power state, effectively saving energy and reducing heat.
- 7inch high-brightness touch color LCD, clear display under strong light, full touch screen operation, free switching between Chinese and English.
- With calendar clock and power-down storage, 1000 sets of test data can be stored

and accessed at any time.

- It is equipped with RS232 (reserved interface) and USB interface (U disk storage).
- Comes with a panel-type micro printer, which can print the measurement results in English.

III. Specifications

- Output current: <20mA, 1A, 2.5A, 5A,10A, 20A.
- Resolution: 0.1μΩ.
- Measurement range:

100μΩ-1Ω (20A)
500μΩ-2Ω (10A)
1mΩ-4Ω (5A)
2mΩ-8Ω (2.5A)
5mΩ-20Ω (1A)
10Ω-20Ω (<20mA)

- Accuracy:

100μΩ-20Ω: ±(0.2%+2digit)
10Ω-20KΩ: ±(0.5%+2digit)

- Working temperature: 0℃～40℃
- Working humidity: <90%RH, no condensation
- Display: LCD (resistance display effective digits are 4 digits)
- Power: AC 220V±10V, 50Hz±1 Hz(Insurance tube 5A)
- Maximum power consumption: 500W
- Dimension: 400*225*350mm
- Weight: Host 15.1kg, Wire box: 5.75KG

IV. Front Panel

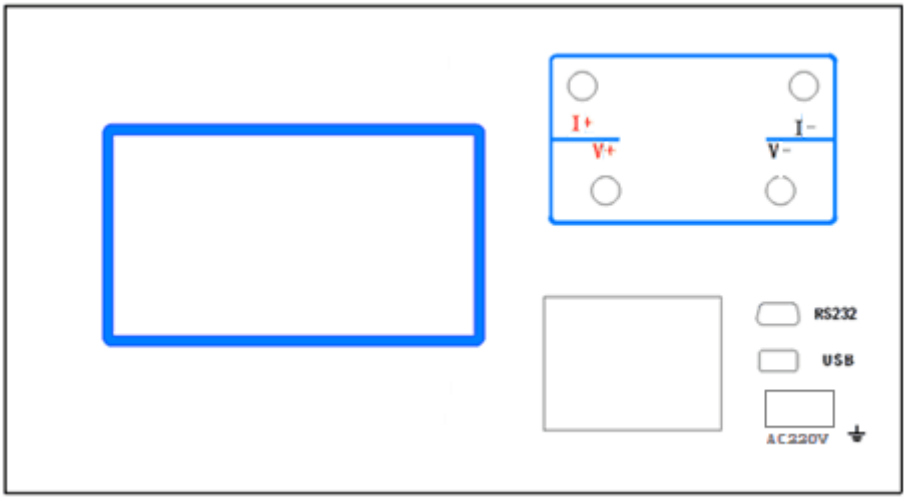

Figure 1

AC220V Switch: Power supply of instrument, AC220V.

Grounding terminal: Grounding point of instrument, safety protection

I+, I-: Output current terminal, I+ positive output current, I- negative output current

V+, V-: Voltage sampling terminal, V+ is the positive end of the voltage cable, V- is the negative end of the voltage cable.

Printer: Print the testing data.

RS232: Universal serial interface can be used to control instruments by computer. (Reserved interface)

USB: The test results can be output to the U disk.

V. Operation

A. Single phase measurement method, see as below figure:

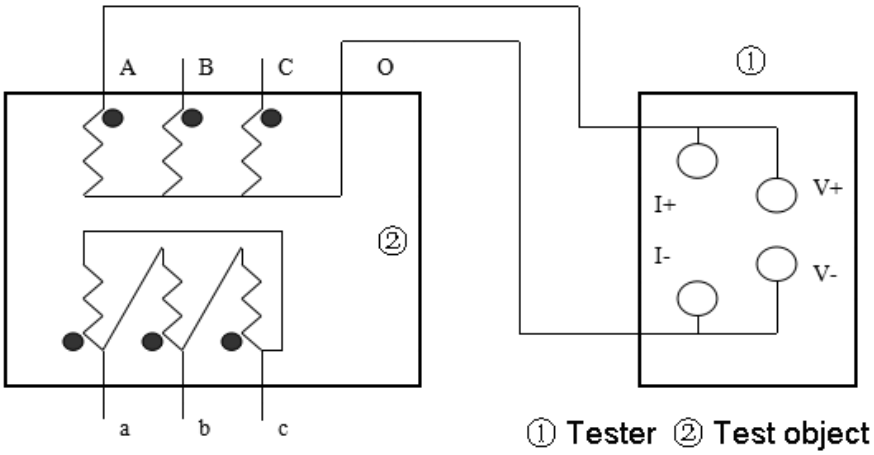

Figure 2

B. The wiring of saturable magnetic circuit method is shown in below Figure 3~5: (suitable for Y(N)-d-11 connection group)

For the low-voltage side measurement of a large-capacity transformer, if the maximum current of the DC resistance tester is small in the existing case, or to speed up the measurement speed, the saturable magnetic circuit method can be selected. In the figure below, Figure 3, Figure 4, and Figure 5 are the wiring methods for measuring the low voltage Rac, Rba, and Rbc respectively.

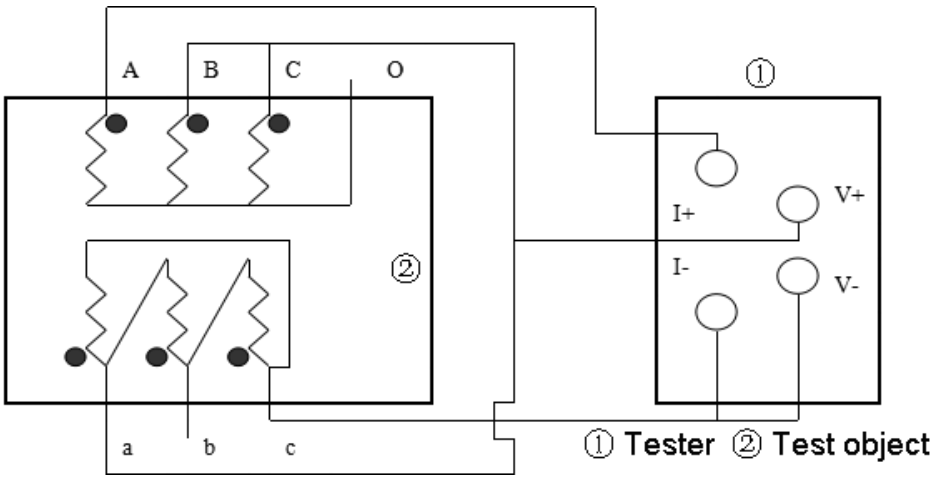

Figure 3

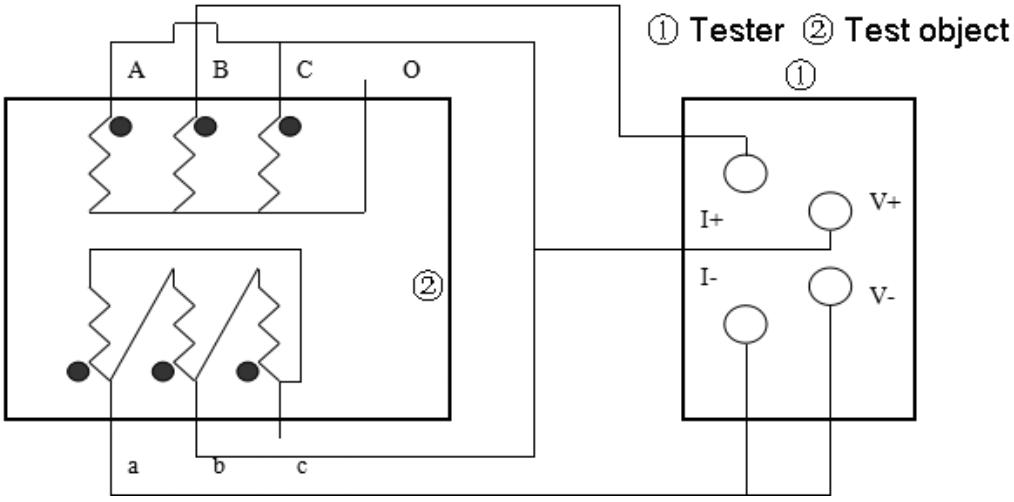

Figure 4

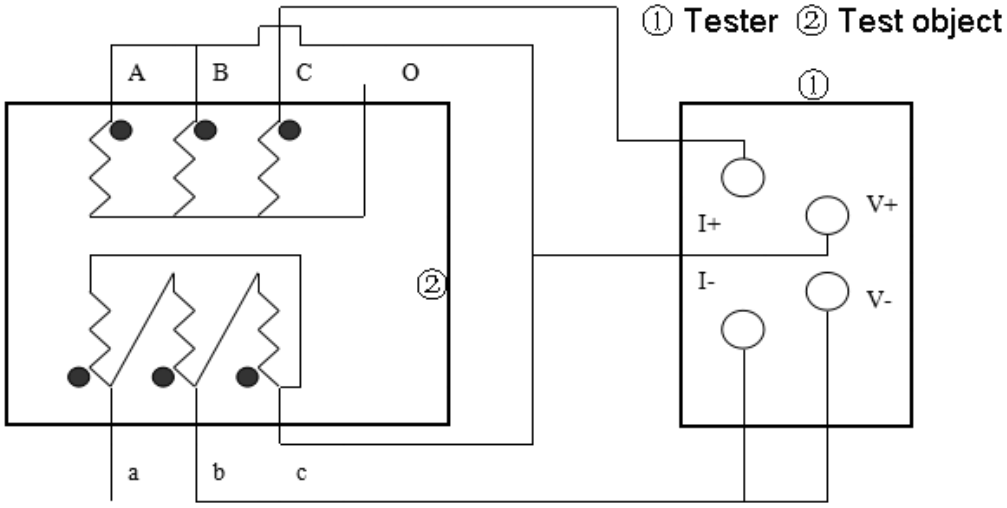

Figure 5

1.The startup page is shown as below:

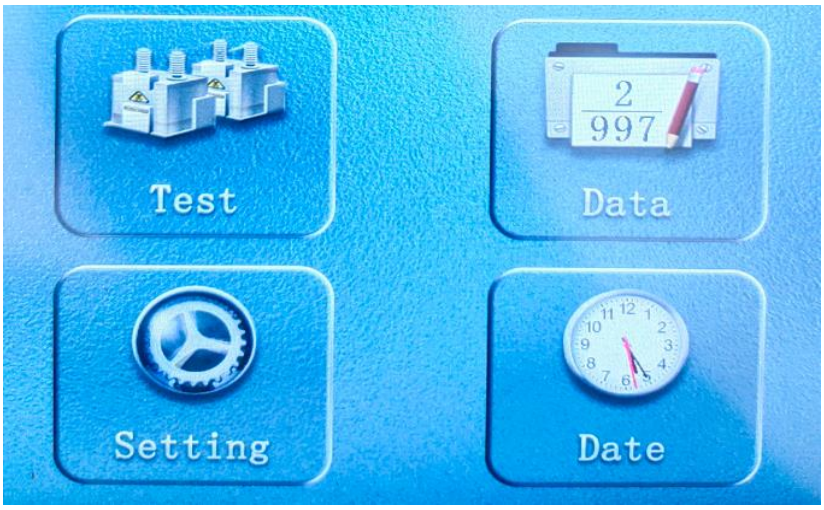

Figure 6

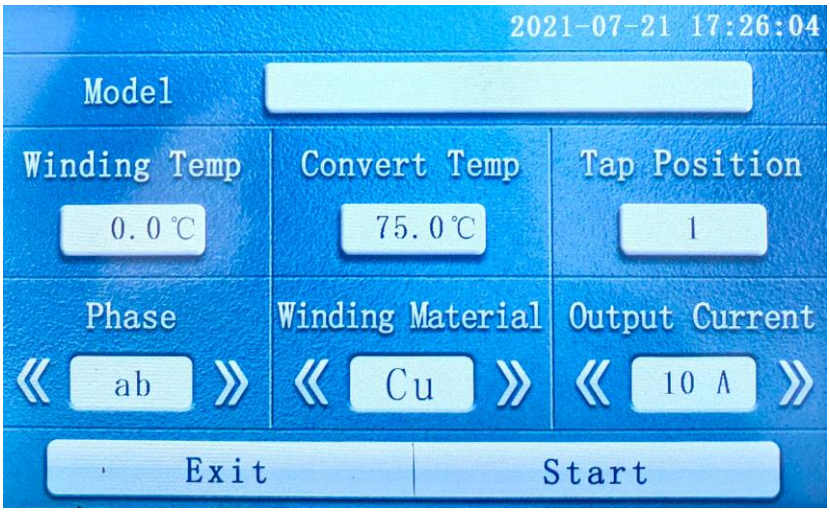

Figure 7

Model: Click  to edit the test product name. (Such as 001 in Figure 7);

Winding Temp: Click  to pop up  , temperature can be set, click  to delete, click  to confirm, and click  to return.

Convert Temp: Click  to pop up  , temperature can be set, click  to delete, click  to confirm, and click  to return.

Tap Position: Click  to pop up  , temperature can be set, click  to delete, click  to confirm, and click  to return.

Phase: click  to cycle between AB, BC, CA, AO, BO, CO, AmBm, BmCm, CmAm, AmOm, BmOm, CmOm, ab, bc, ca, ao, bo, co.

Winding Material: click  to select winding material.

Output Current: Click  the current to cycle between AUTO, <20mA, 1A, 2.5A, 5A, 10A and 20A.

2. When the current is selected, click to start the measurement, it will display "charging please wait" to enter the test state, a few seconds later, the test result will be displayed, as shown in Figure 8.

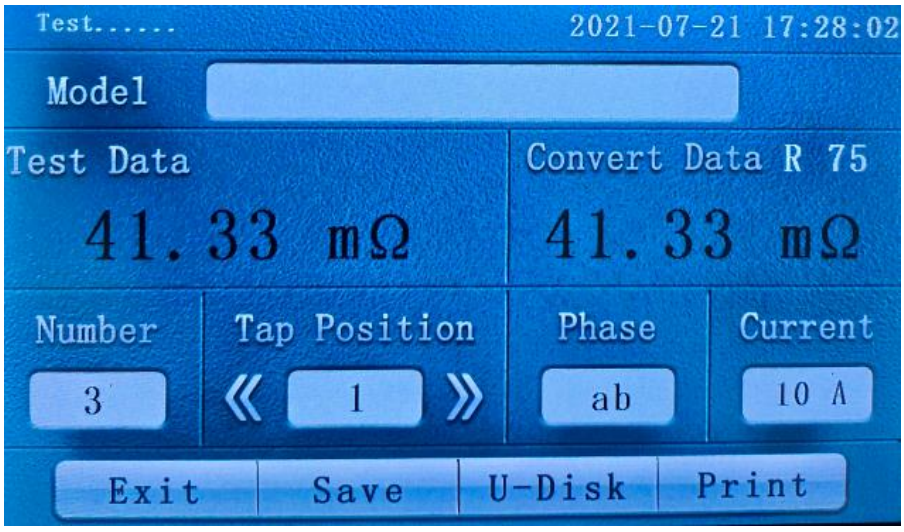

Figure 8

3. **After the test data is displayed,** click  to switch the **tap position** directly without returning to the main interface. After the tap position is switched, wait patiently for a few seconds before the test result is displayed. Click **Save** button to store,

and the **U-Disk** to store to U Disk, click **Print** to print the test data. Click **Exit** to exit the test interface.

4. Click **Data** in Figure 6 to enter the data view interface, as shown in Figure 9:

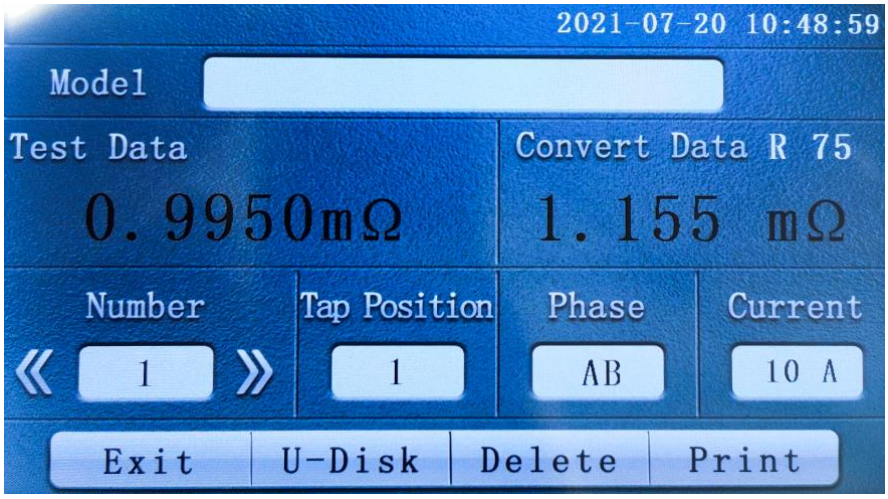

Figure 9

Click  to check historical data, delete data, save, and print data in U disk, click **Exit**, return to the main interface.

5. Click **Setting** in Figure 1 to enter the data view interface, as shown in Figure 10:

Figure 10

Figure 11

Backlight adjustment: according to the scene environment, move the button to adjust the screen brightness.

Bluetooth connection: Click "Bluetooth connection" to pop up a QR code (as shown in Figure 11), scan the **QR code** with the corresponding software downloaded in the phone to control the instrument in the entire process.

Factory Setup: only the manufacturer can set.

After setting, click Exit to return to the homepage and return to the main interface.

VI. Attention

1. Please remove the wires until the discharge is over and the alarm is stopped, otherwise it is dangerous.

2. When measuring no-load regulating transformer, reset discharge must be done before reverse tapping, and the tap-changer can be switched only after the alarm stop.

3. If the power supply is suddenly cut off during the measurement, 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 the 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 (please contact us for replace fuse and accessories).

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 current gear.