Huazheng®

HZBB-10A
Transformer Turns Ratio Tester

Huazheng Electric Manufacturing (Baoding) Co., Ltd

Dear user:

Thank you for choosing HZBB-10A Transformer Turns Ratio Tester.

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HZBB-10A-I Hand-Held Transformer Turns Ratio Tester

Huazheng Electric Manufacturing (Baoding) Co., Ltd

HUAZHENG ELECTRIC MANUFACTURING(BAODING)CO.,LTD. Huazheng

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 !

Contents

I.Preface

During the processing of the semi-finished products and the finished products in transformer production, the transformer newly installation before using, or according to IEC and national standard, the turns ratio or voltage ratio should be tested in the circle rate. Traditional bridge method is complicated, and can't read the data directly, and you have to make conversion, the testing results are data of one phase. Turns ratio tester of HZBB-10A overcomes the shortcomings of traditional bridge method. The monitor adopts big screen with lattice liquid crystal, which has the function of indicating by menu, operating easily and directly. It finishes test of three-phase voltage ratio or turns ratio once, fast testing and high precise.

II. Functions And Characters

1. The three-phase precision inverter power supply is used inside the instrument, which eliminates the influence of harmonics of the mains voltage during measurement, and the measurement is more accurate. When the working power source is a generator, there is no impact.

2. Three-phase output voltage is adopted to improve the test speed. The angle between phases can be measured, and the wiring group 0-11 can be automatically identified. For low-voltage rectifier transformers with multiple windings, the low-voltage side does not need to be disconnected to measure the transformation ratio and 7.5° Angle deviation.

3. It is suitable for a wide variety of transformers, especially suitable for the measurement of Z-type transformers, rectifier transformers, grounding transformers, electric furnace transformers, phase shifting transformers, balance transformers, etc.

4. It has high and low voltage reverse connection protection, transformer turn short circuit protection, tap switch failure protection, output full short circuit protection, and increased instrument stability.

5. After inputting the rated parameter, it can automatically measure the transformer ratio value, error value and on-load tap-changer position.

6. Adopt 7-inch high-definition color touch-screen LCD, modular display, clear display even under strong light.

7. The device can be equipped with both print output, USB port and RS232 port, which is convenient for paperless office.

8. The use of cold and heat resistant, sealed, waterproof, anti shock and multi-function engineering plastic box, easy field test.

III. Technical Index

1.Rating: Variable Ratio - 0.9～10000 Angle - 0-360°

2.Angle measurement: 0-360°

3..Accuracy: ±0.1%(below500) 0.2%(501-2000) 0.5%(2001-10000)

4.Output voltage: automatically adjusted according to load

5.Resolution: Minimum is 0.0001，Angle - 0.01°

6.Working power supply: AC 220V±10% 50Hz

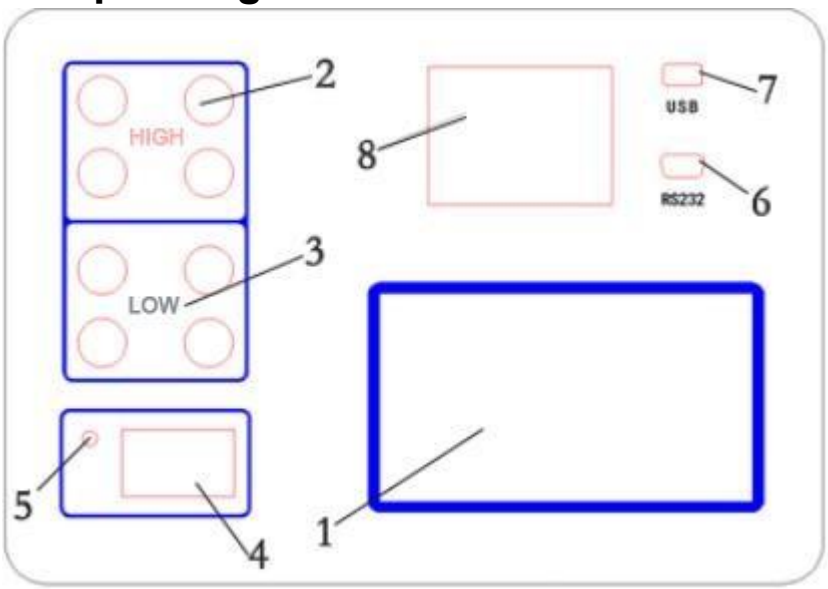
7. Applied temperature: -10℃～40℃

8. Relative humidity: ≤85%, non-condensing

9. Dimension；tester：360*290*170(mm) Wire box：360*290*170(mm)

10.Weight：tester 5.9KG Wire box：5.65KG

IV. Operating Panel Instructions



1. Screen: HD color array LCD, digital adjustment backlight, display operation menu and test results.
2. High voltage side: Connect with instrument terminal. The yellow, green, red and black on the other end that correspond with A, B, C, O three bushings.
3. Low voltage side: Connect with instrument terminal. The yellow, green, red and black on the other end that correspond with a, b, c,o three bushings.
4. AC 220V: the whole power input, then AC 220V frequency power supply.
5. ⏚ : Protective grounding column
6. Communication: serial communication
7. USB: U disk storage
8. Printer: Print the testing results after tested.

V.Instructions

（一）Menu description

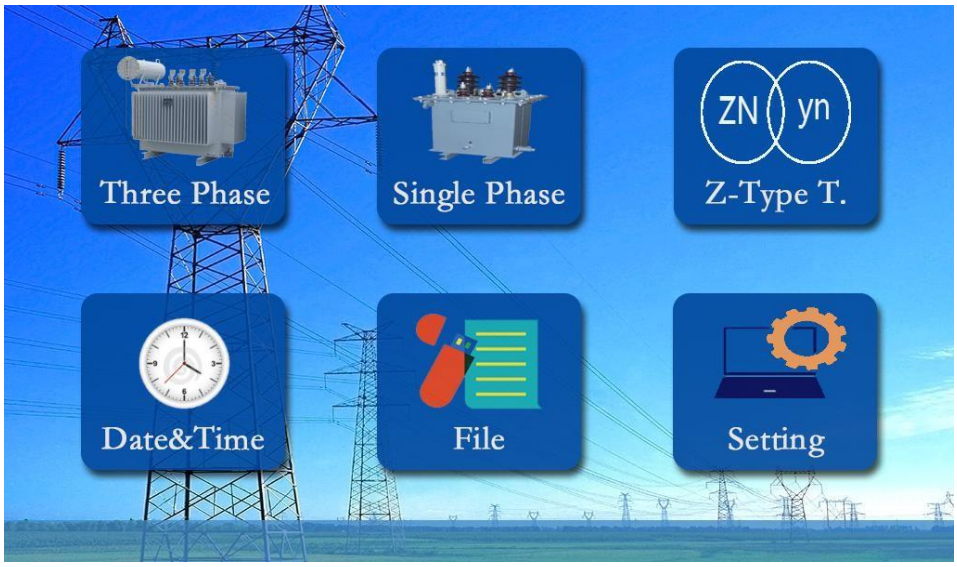


Figure 1

After starting up the instrument, the startup interface is shown as figure 3. There are six functional options in the startup interface, including: [three-phase measurement], [single-phase measurement], [z-type transformer], [Scott transformer], [file recording] and [system setting]. Click any function button to enter the setting.

（二）Three-phase test interface：

Figure 2

1.Press the text box to pop up the input keyboard, you can enter a special value, the standard value can be changed by pressing the button on the right ;

Single-phase measurement, z-type transformer, Scott transformer setting method are basically the same, no longer repeat；

Test completion interface as shown below：

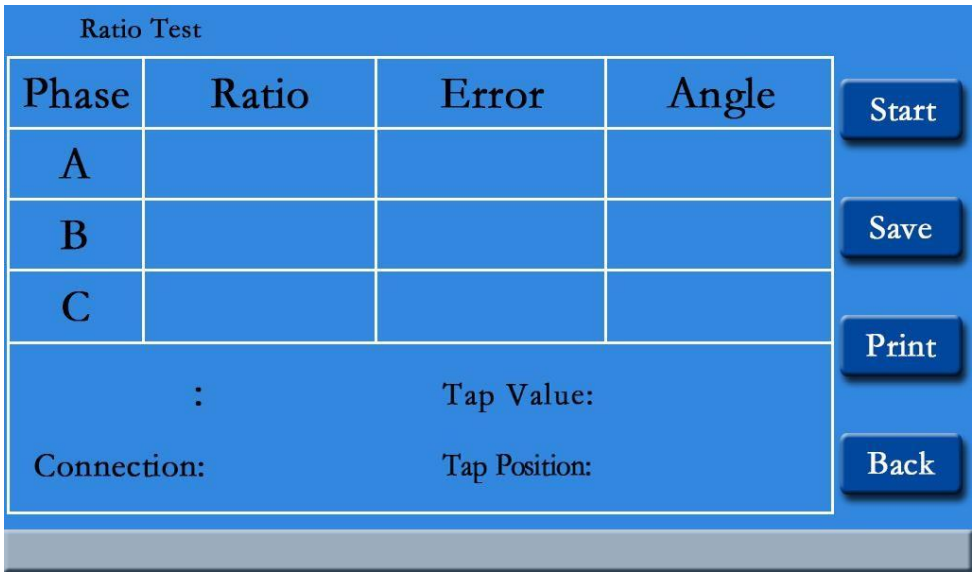


Figure 3 (test completion interface)

2.After the test is completed, press the “Back” button to return to the boot interface, press “Test” to re-test, press the “Save” button to store the data in the instrument and U disk, and press “Print” to print the data;

Turns ratio test: In Figure 3 of the completed test interface, click [Transformation Ratio] to freely switch to [Turns Ratio], and the turns ratio data will be updated immediately, as shown in Figure 4

Figure 4

Click [Time Setting] to enter the time setting interface as shown in Figure 5:

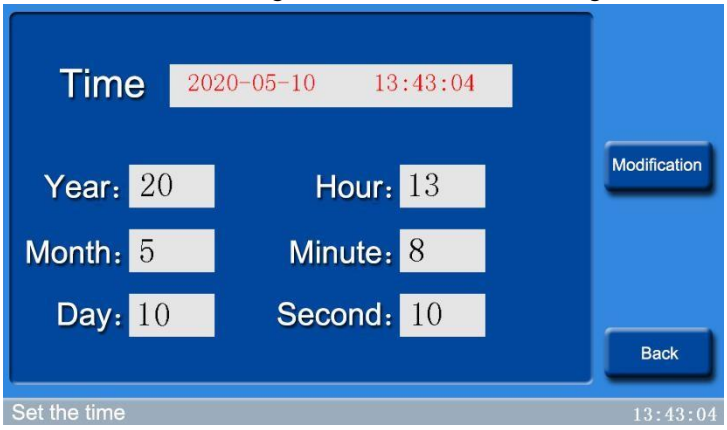


Figure 5

Click [Year] [Month] [Day] [Hour] [Minute] [Second], and the keyboard will pop up to set the time. After entering the value, click "Del" (you can delete the entered value), and click "Esc" (do not save) Enter the value and exit the keyboard), click "OK" (save the entered value and exit the keyboard), and then click [Modify] to update the modification time. As shown in Figure 6,

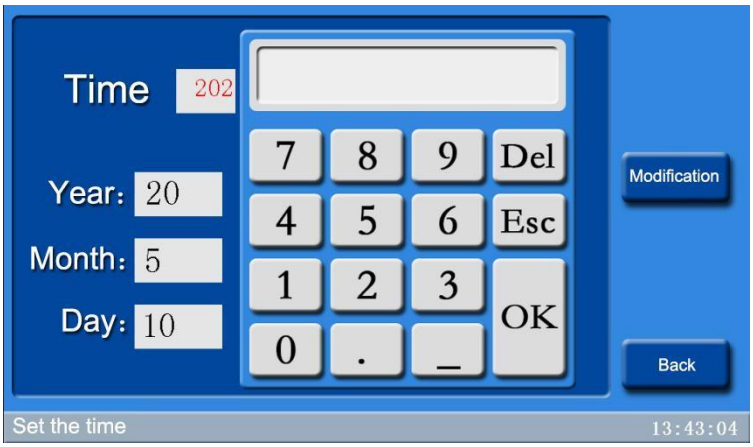


Figure 6

Click [Data Query] to enter the query interface as shown in Figure 7:

Figure 7

[Transformation ratio] Click the transformation ratio button to switch to turns ratio data

[Previous][Next]You can view and print historical data;

[Dump] is to store the current data to the U disk;

[Print]Print current measurement data

1、[System Settings] interface as shown below:

Figure 8

Figure 9

The system settings are shown in Figure 8:

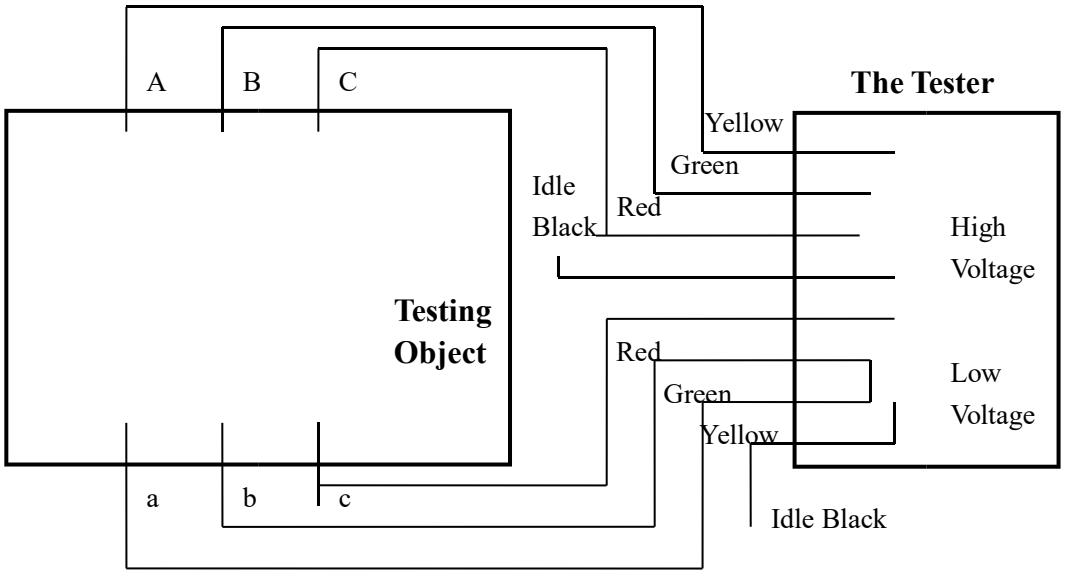
Memory management: Click "Memory Management" to display "Empty Data" and "Cancel".

Factory setting: The internal parameter setting of the instrument requires password input, and the user does not need to modify it.

Bluetooth: Click "Bluetooth" to pop up the QR code (as shown in Figure 9), scan the QR code with the corresponding software downloaded in the mobile phone to realize the full control of the instrument by the mobile phone.

VI. Connecting Method

1.Three-phase transformer Y-d-11, 525/√3±4×2.50%/20, Transformer and High Voltage connecting is according to the Diagram 1 as follows:



2. 525/√3±4×2.50%/20, Single Phase Transformer and High Voltage connecting is according to the Diagram 2 as follows:

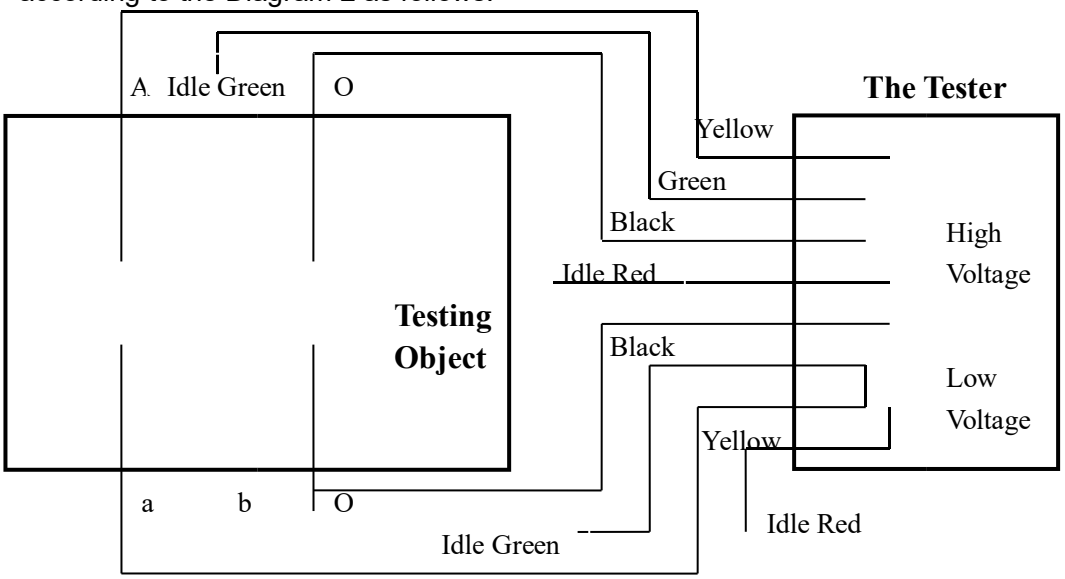
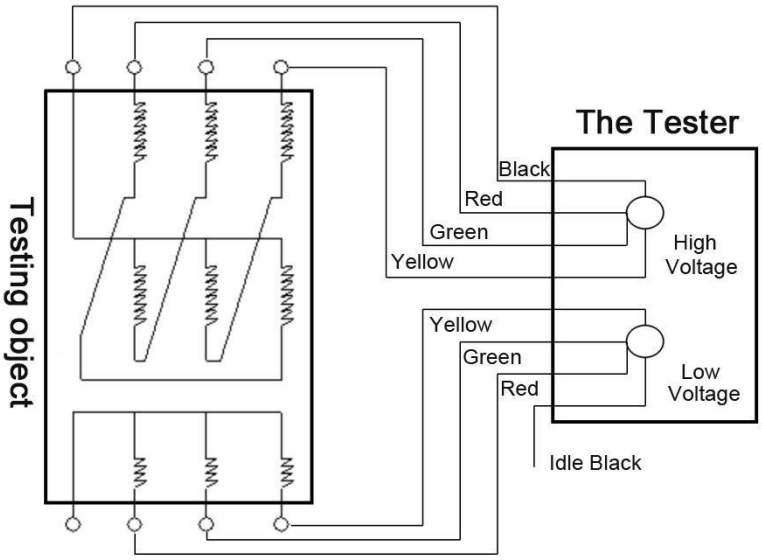


Diagram 2

3、Z type transformer wiring



VII. Notice

1.For having a plurality of contact points of the transformer, so then, tap type, rated high and low voltage input, in order to make the test results can automatically calculate the error, and , once rated input data, the test can automatically calculate the error of the point and the point is which one tap each tap point (i.e. tap a few), do not have to change the data.

2. Equal division, there is also called the division of distance, voltage combination is 110±8×1.25%/10.0 of the transformer, the 1.25% is equal to the sub level.

3. Rated tapping, the voltage combination of 110±8×1.25%/10.0 transformers, the rated tapping is 8+1, means 9. Enter the rated bit. This gives an accurate measurement of the tapping position of the transformer whose rated tapping position is not at the intermediate point.

4. Turn ratio tester,Applied to three-phase power samples, measured by the ratio between the high and low voltage, turn ratio is the ratio between high and low voltage winding circle number.For high pressure is the star (whether or not having a neutral point), Low voltage transformer delta connection,Variable ratio is the ratio of root turn 3 times. For the low pressure is the star (whether or not having a neutral point), high voltage transformer is delta connection, turn ratio is 3 times the root variable ratio.

5. For the transformer with neutral point, such as YN-d-11 transformer, according to YN-d-11 measurement and Y-d-11 measurement, the results have deviation, theoretical analysis by Y-d-11 better.

6.On load tap changer 19 files of the transformer, if 9, 10, 11 is the same value, the instrument input and sub type should be input 9.

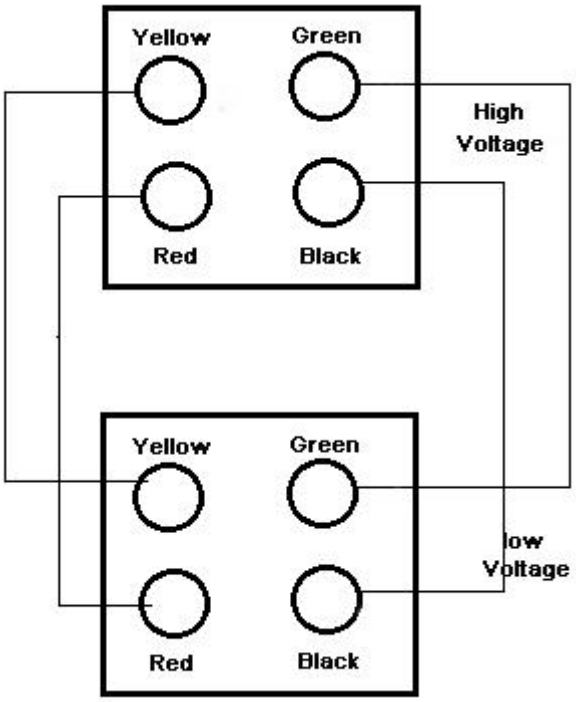
7.The tap changer is in the low voltage side of the transformer,which display split position and actual position inversion.

8.Low voltage level of the transformer, when the input voltage value is not enough, the high and low voltage can be multiplied by 10 or 100, and so on.

9.To test the Single phase transformer,Simply select the measurement option "Single".

VIII: Instrument Common Problems And Inspection Methods

When the test is abnormal, the following methods can be used for self-test, and the wiring is shown in the figure below:



After connecting the wire, select y-y-0 or d-d-0 as the connection mode, and press ok to start the measurement. The measurement value is 1.0000. The above display indicates that the instrument is normal; otherwise, there is something wrong with the instrument.

If there is no short connection, the yellow, green, red and black connecting pliers on the high-voltage side of the test line can also be connected together with the yellow, green, red and black connecting pliers on the low-voltage side.

VIII.After-sale Service

The product can be repaired free of charge or changed by a new one if it has quality problem for one year from sale. We can provide reparation and technical services for the whole life of the products. Please contact with us if there is any trouble and abnormal situation so that we can arrange the best solution for you.

IX.Packing List

No.	Item	Qty
1	Main engine	1
2	Power line	1
3	Red test line	1
4	Black test line	1
5	Fuse pipe	2
6	Print paper	1
7	Ground lead	1
8	Serial port line	1