ZXCT-H Current Transformer Field Calibrator

Dear customer,

Thank you for choosing ZXCT-H Current Transformer Field Tester. Before using the machine, please read the manual carefully. It will guide you to use the machine easily and skillfully.

Our aim is to improve the products with constant efforts, so there might be a little discrepancy exist between the real objects and the manual descriptions. We are really sorry for all the inconvenience it might cause and we'll inform you in the attached pages if any change is made. Please call our After-sale Service Department if you have any questions. It's our honor to be at your service.

Considering that the input/output terminals and the test column might be electrically charged, you should pay extra attention when you plug the wire and socket, for sparks may appear in the process. Please take care of personal safety in case of electric shock.

We provide free repair service if there is any quality defect within one year, dating from the day it is delivered. And we provide charged lifelong service after one year.

◆Safety Requirements

Please read the following Safety Precautions carefully to avoid personal injury or damages to the machine itself and devices connecting to it. To avoid potential danger, this machine can only be used in specified regions.

Only qualified technicians are allowed to perform the repair.

To avoid fires or personal injury, please.

Use proper power cord: Only power cord that is special for the machine or of the right gauge can be used.

Connect and disconnect correctly: Please don't connect or disconnect the test wire if it is linked with charged terminals.

Ground the machine. The grounding column of the machine shell must be earthed, except when the product is earthed through the power ground wire. To avoid electric shock, grounding conductor must be connected to earth. You must make sure that the machine is correctly earthed before connecting the input or output terminals.

Pay attention to the rated values of all the terminals. To avoid fire and electric shock, please pay attention to all the rated values and marks. Before connecting, please read the User Manual for detailed information about the rated values.

Don't operate without the cover. If the cover is removed, please don't operate the machine.

Use proper fuse. Only fuse that is of the right gauge and right rated value can be used.

Avoid contact with exposed circuit or charged metal. If the machine is charged, please don't touch the exposed parts.

If there are potential bugs, stop the operation. If you suspect there is any damage, please call our staff for examination. And stop operating the machine right away.

Please don't operate the machine in humid and explosive environment.

Make sure that the machine surface is clean and dry.

Safety Terms

Warnings: *Warnings point out dangerous practice or situations which might cause death and injuries.*

Caution: *Cautions point out practice or situations that might cause damage to the machine or other property.*

Chapter 1 Product Introduction

High-voltage electric energy metering device of power plant, substation, and a large number of users, related to various interest of power generation, power transmission, power supply and users. In order to ensure accurate measurement, the inspection must be in accordance with the SD109 "electric energy metering device test procedures" and DL / T448-2000 "technical management of electric energy metering rules".

My company's ZXCT-H Current Transformer Field Tester is developed based on high-end test technology, large scale electronic circuit design and meet the relevant state regulations. It solves the problems that the field test current transformer, voltage transformer working intensity, complicated operation, at the same time, performance of the product is reliable and powerful.

Chapter 2 Characteristics

1. ZXCT-H Current Transformer Field Tester with recursive method to measure current transformer error function, convenient for carrying out calibration work of field metering device.
2. ZXCT-H Current Transformer Field Tester without using Standard Current Transformer, Current Source, Load Box, Double Adjustable Control Box and Primary cable, using extremely simple test connection and operation to realize the current transformer test, greatly reduce work intensity and improve the work efficiency, convenient to carry out current transformer field test work.
3. The interior of ZXCT-H Current Transformer Field Tester is equivalent to the measured current transformer with the same ratio of the standard current transformer, the accuracy can reach 0.05S, measure accurately the ratio of measured current transformer and load error. Then combined with the impedance and admittance test results to deduce the transformer error.
4. It adopts variable frequency power supply test which close to the power frequency, preventing the field power frequency electromagnetic radiation and series interference.
5. Measurement range is wide, can reach to 5A/5A~25000A/5A or 5A/1A~6300A/1A.
6. It has the function of current transformer ratio, secondary winding resistance test.
7. It adopts 800×600 high resolution and large screen liquid crystal display, has humanization interface and operation design, uses touch screen for auxiliary operation, make the operation more convenient and swift.

8. It adopts precise software algorithms, make the accuracy of measurement data improve further.
9. It has intelligent judgment external connection state, tips for wiring error, ratio, polarity error and so on.
10. It breaks up the whole of test data automatically, and judges whether ultra difference, ultra difference data appears orange, and shows ultra difference in the lower right corner of the window, the transformer data characteristics is intuitive and clear.
11. Issue directly field verification conclusion, qualified or ultra difference.
12. Large memory can store up to 1000 field test data.
13. It adopts RS232 or USB interface to connect computer and print data certificate.
14. It adopts engineer plastic mold box to avoid shock and pressure, secure the safety of field operators and equipment.

Chapter 3 Main Technical Parameters

1: Current Transformer Error Test Parts:

①Instrument Accuracy：measured current transformer error limit of 1 / 3

②Test Range：5A/5A~25000A/5A or 5A/1A~6300A/1A

Rated primary current range of secondary current is 5A transformer							
5	7.5	10	15	20	25	30	40
50	60	75	80	100	120	150	160
200	250	300	315	400	500	600	630
750	800	1000	1200	1250	1500	1600	2000
2500	3000	3150	3200	4000	5000	6000	6300

Rated primary current range of secondary current is 1A transformer							
5	7.5	10	15	20	25	30	40
50	60	75	80	100	120	150	160
200	250	300	315	400	500	600	630
750	800	1000	1200	1250	1500	1600	2000
2500	3000	3150	3200	4000	5000	6000	6300

Note：Current transformer of secondary current is 1A,though equal ampere-turns measurement method to 31500A / 1A ratio. Other test methods that did not appear in the table of the current transformer ratio as bellow:

Using equal ampere-turns to test current transformer, for example, test 1000A/5A transformer, please feed-through the measured current transformer for two turns with the ancillary test line, then make the first current of current transformer test interface be 500A. The test method doesn't affect the validity of transformer test data.

Similarly to other ratio using the following methods:

Rated First（A）	Feed-through Turns	First Current of the Instrument（A）
80	**2**	**40**
120	**2**	**60**
8000	**2**	**4000**
12000	**2**	**6000**

③The measured current transformer working range: 1％～120％

④Secondary load：2.5VA～300VA 、COS φ＝0.1～1.0

⑤The measured current transformer accuracy range: 1.0、0.5、0.5S、0.2 and 0.2S

⑥Resistance and admittance measurement error≤5.0％

Measurement range：R: 0.00Ω～20.0Ω

Y: 0.000mS～100.0mS

2：Voltage transformer calibrator parts:

Basic error：

In-phase component：ΔX=±（X×2%+Y×2%±2 words）

ΔY=±（X×2%+Y×2%±5 words）

"X"、"Y"—— indicating value of apparatus

"5 words"——quantizing error of apparatus

Dial indicator：1 Class

Measurement range：f: 0.0000%～200.0%

δ: 0.000′～999.9′

3：Instrument power consumption: 20VA

4：Apparatus accuracy class：0.05S

5：Maximum dimension（cm）：L460×W375×H183

6：Weight（kg):10.0

Chapter 4 Operation Introduction

Interface introduction, as shown in Figure 1:

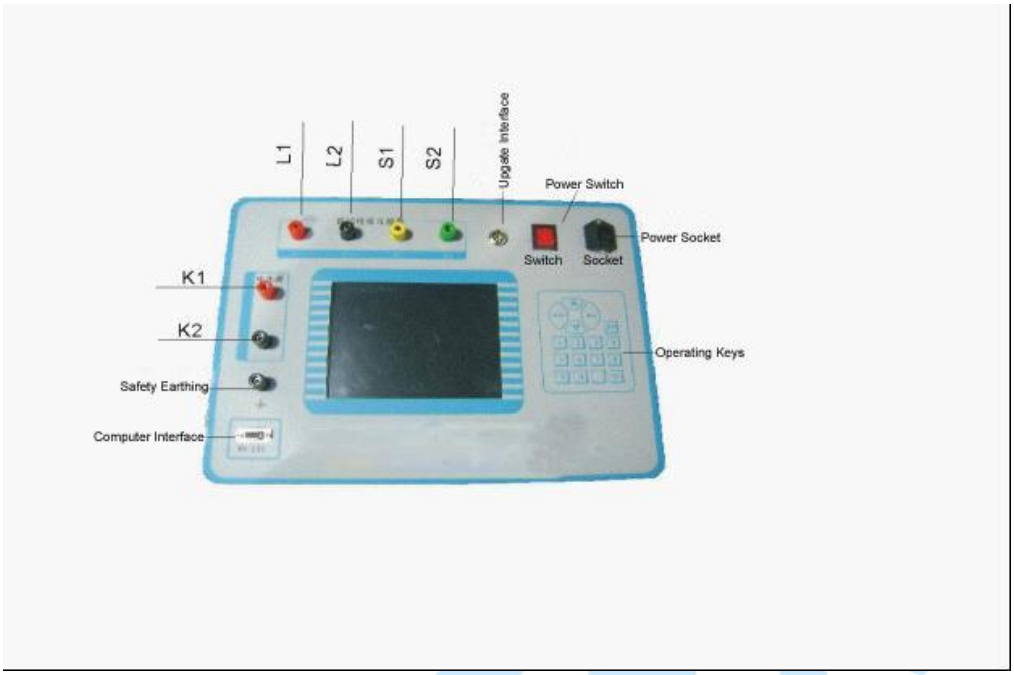


Figure 1

Chapter 5 Main Interface Introduction

Main interface is displayed as shown in Figure 2:

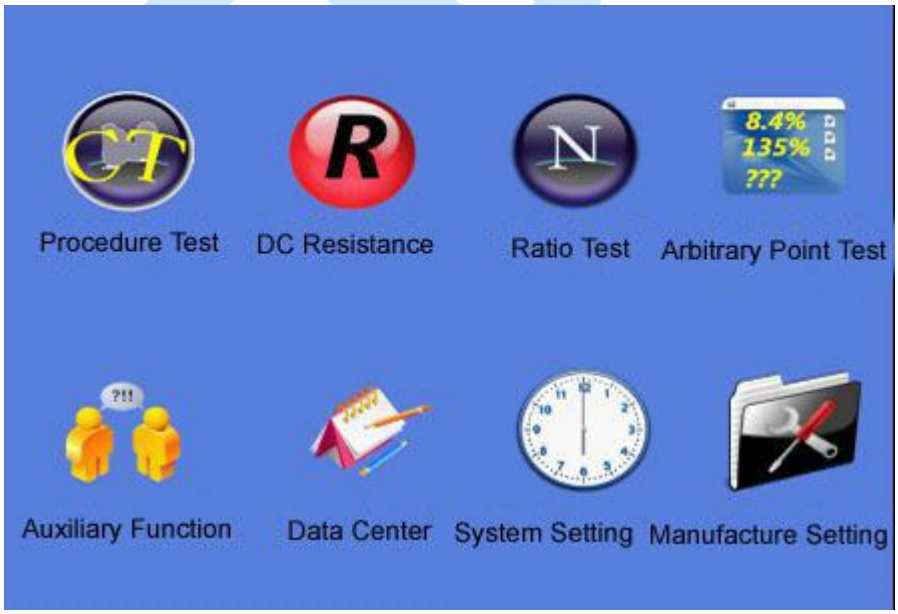


Figure 2

①Procedure Test: Clicking on this icon will enter the current transformer error code test;

②DC Resistance: Clicking on this icon will enter offline state of current transformer secondary winding resistance measurement;

③Ratio Test: Clicking on this icon will enter current transformer ratio test;

④Arbitrary Point Test: Clicking on this icon will enter current transformer arbitrary point error test;

⑤Auxiliary Function: Clicking on this icon will display the common testing circuit diagram, treatment methods of common problems and diagnosis method;

⑥Data Center: Clicking on this icon will display each test record of browsing apparatus internal memory, data can be read, delete, communications and other operations;

⑦System Setting: Clicking on this icon can set system time and LCD contrast;

⑧ Manufacture Setting: Clicking on this icon, input password and manufacturers, can set internal parameters of the instrument.

Note 1：Display system time and date actually!

Chapter 6 Main Interface Operation Introduction

1、Error Test Function Select Interface

Select procedure test interface to enter Figure 3, it is parameters setting before current transformer error testing;

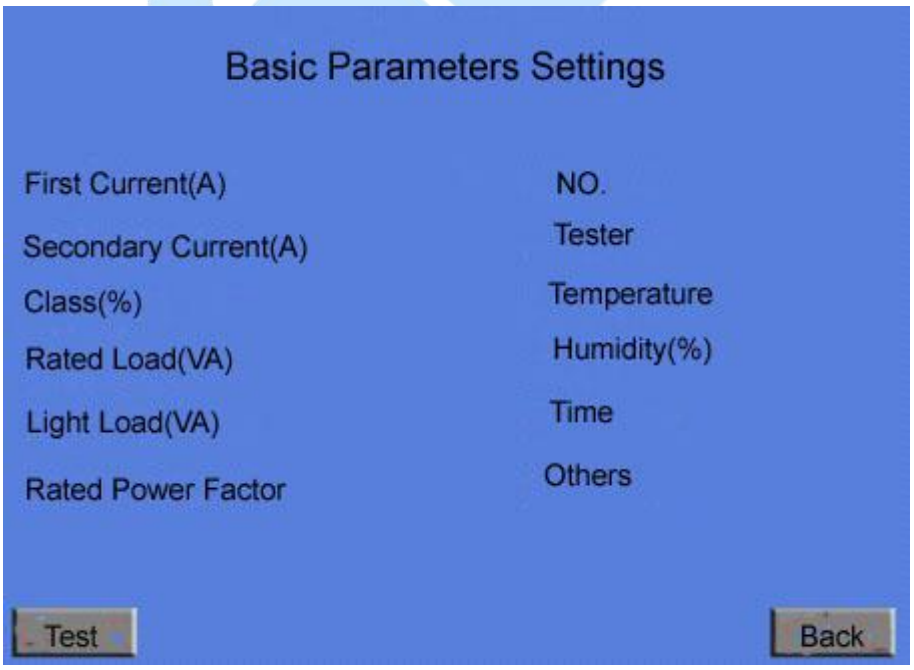


Figure 3

①First Current(A)： There will be another willow as shown in Figure 4 when select first current, select corresponding transformer rated first current;

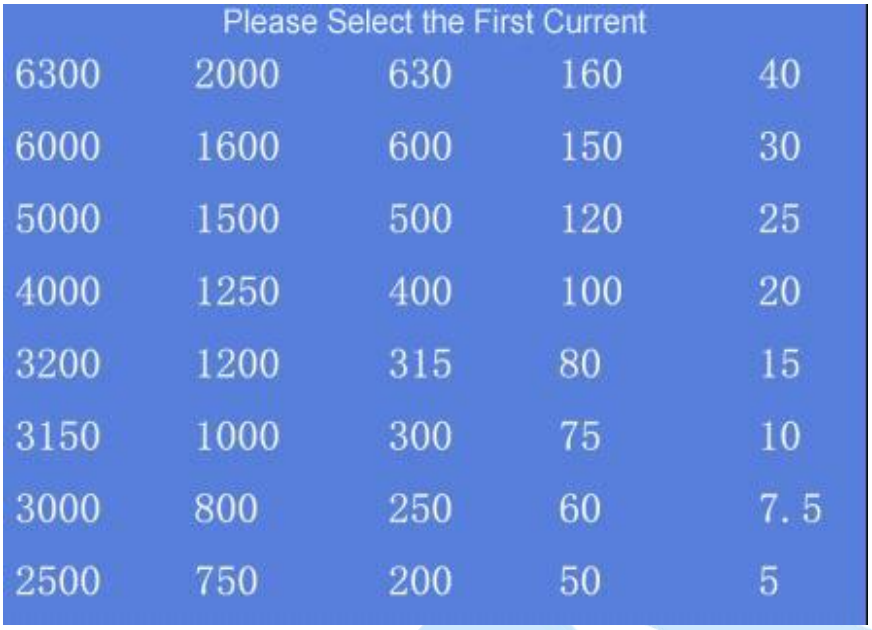


Figure 4

②NO. input number;

③Secondary Current（A）：User can select current transformer secondary current is 5A or 1A;

④Tester：input number code;

⑤Class (%)：can select 0.5、0.2、0.5S、0.2S 、0.1 class and 5P、10P class;

⑥Temperature(℃): can input number;

⑦Rated load（VA）: input the measured current transformer rated secondary load through the keyboard;

⑧Humidity（%）：can input number;

⑨Light load （VA）：input the measured current transformer lower limit secondary load through the keyboard;

Figure 5 is current transformer error test wiring diagram:

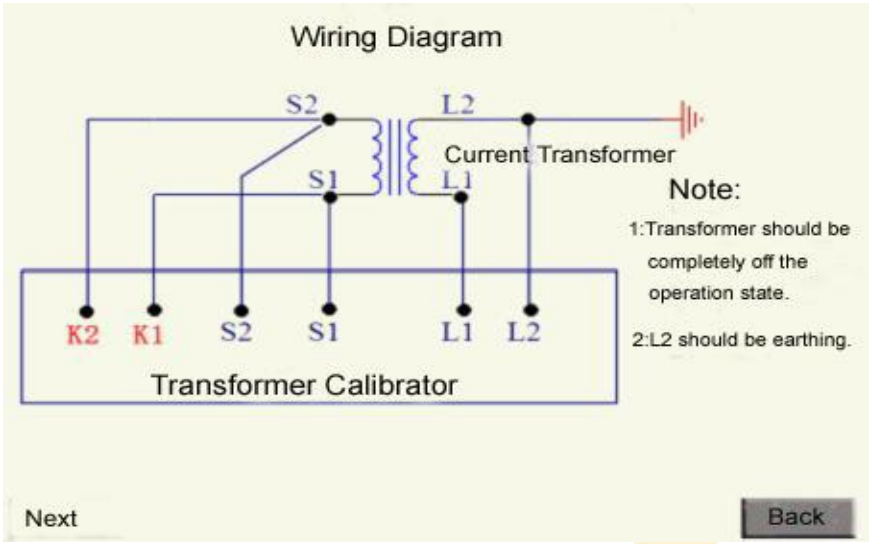


Figure 5

First connect the test circuit referencing interface connection diagram, test wire please using the equipped with dedicated test line. According to the test need, can select current transformer range test, arbitrary point test or ratio test.

User can operate through keyboard operation or using touch screen directly.

Enter Figure 6 interface can make transformer range test.

Figure 6

① Test data diagram: The data in the diagram is test data of transformer each rule point and

for the whole data, orange displayed data is the ultra difference data.

② If it is qualified: It is the transformer test results. Judging the test data on current transformer test rule, drawing the conclusion whether transformer is qualified or ultra difference.

③ Storage： After testing, displaying storage measurement data under the window, preservation after cutting electric.

④ Back：Back to the last display interface(current transformer test function selection interface).

2、DC Resistance Interface Introduction

Select DC resistance icon into Figure 7 interface, click test can test resistance;

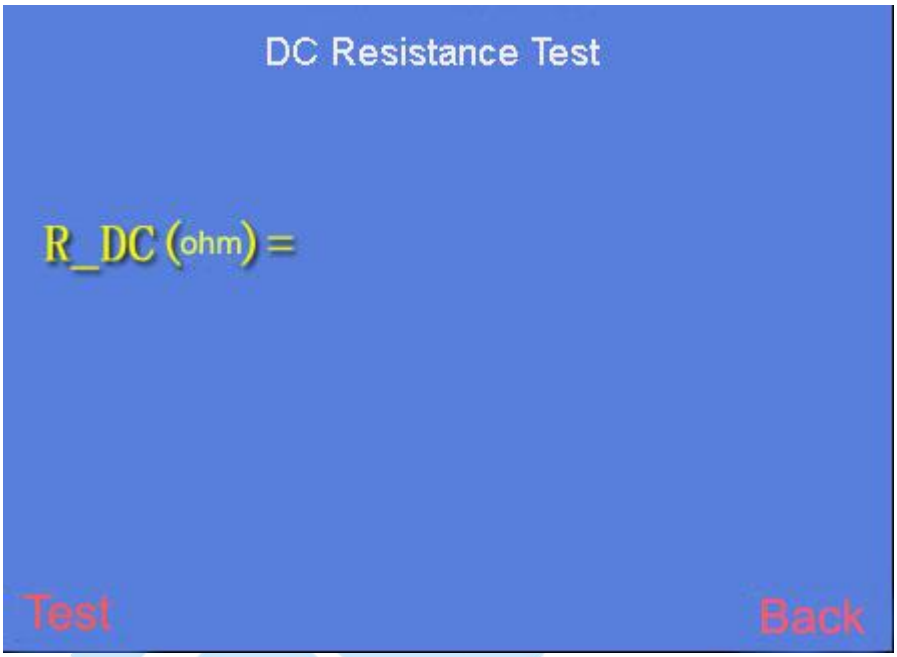


Figure 7

This method is passing 0.125A DC constant current source in the test object, then measuring test object ends DC voltage, drawing the test object resistance value.

Resistance: Test object resistance value, unit is ohm（Ω）. Click this button to return the last level interface (main interface).

3、Ratio Test Interface Introduction

Select ratio test icon into Figure 8 interface, have to set first current and secondary current parameters before ratio.

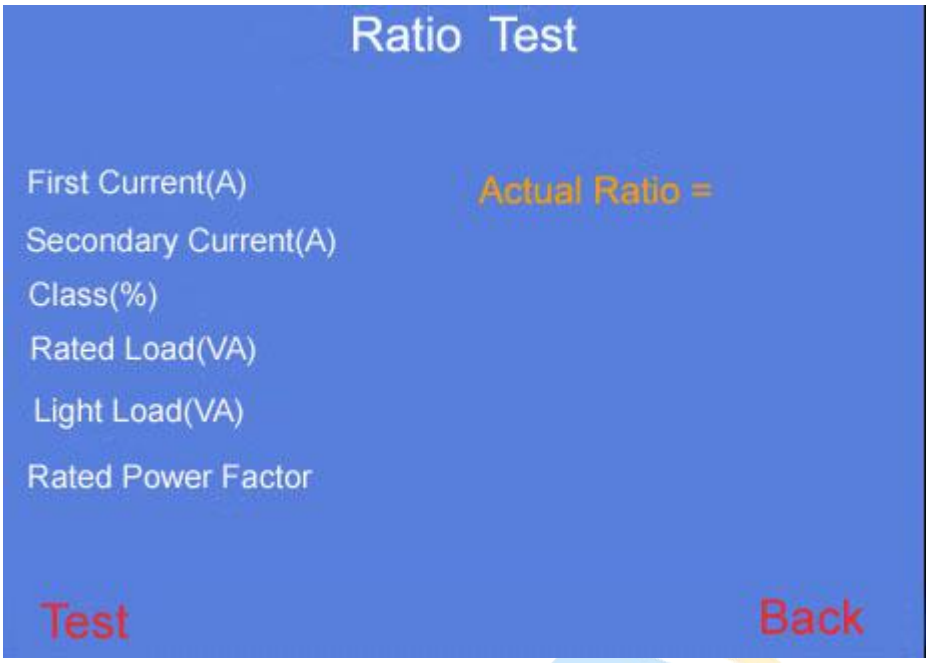


Figure 8

① First Current（A）：Display the first current of measured current transformer;

② Secondary Current （ A ）： Display the secondary current of measured current transformer;

③ Class：Can select 0.5、0.2、0.5S、0.2S 、0.1 class and 5P、10P class, without setting the parameters when make ratio test;

④ Rated Load （ VA ）： Input the measured current transformer rated secondary load through keyboard, without setting the parameters when make ratio test;

⑤ Light Load（VA）：Input the measured current transformer lower limit secondary load through keyboard, without setting the parameters when make ratio test;

⑥ Rated Power Factor： Input the measured current transformer rated power factor through keyboard, without setting the parameters when make ratio test;

⑦ Test：Click test, the apparatus tests ratio automatically on the measured transformer;

⑧ Back：After testing, click the button back to the last interface（main interface）.

4、Arbitrary Point Function Interface Introduction

Click arbitrary point test to enter Figure 9, it's the parameters setting before arbitrary dial indicator test of transformer.

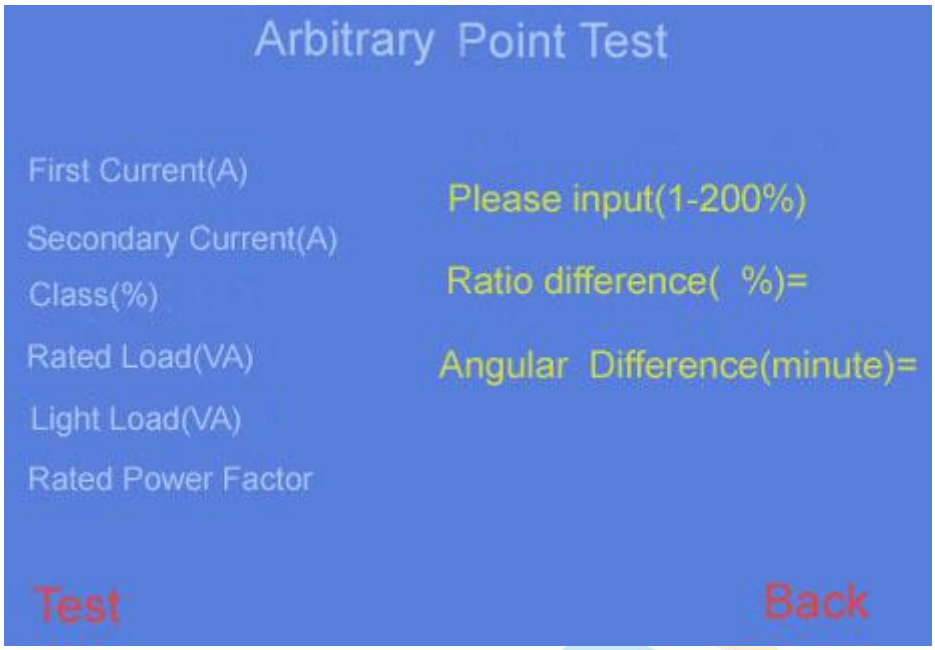


Figure 9

The instrument supplies auxiliary percent point of current transformer test function, operation is similar to range test, need to note that user inputs the wanted test percent point, the instrument can start to measure automatically after selecting test.

5、Auxiliary Function Interface Introduction

Click auxiliary function to enter Figure 10, this function mainly introduces some common test line to user, conclusion is the basis for judgment and other common information, facilitate users to quickly use the apparatus.

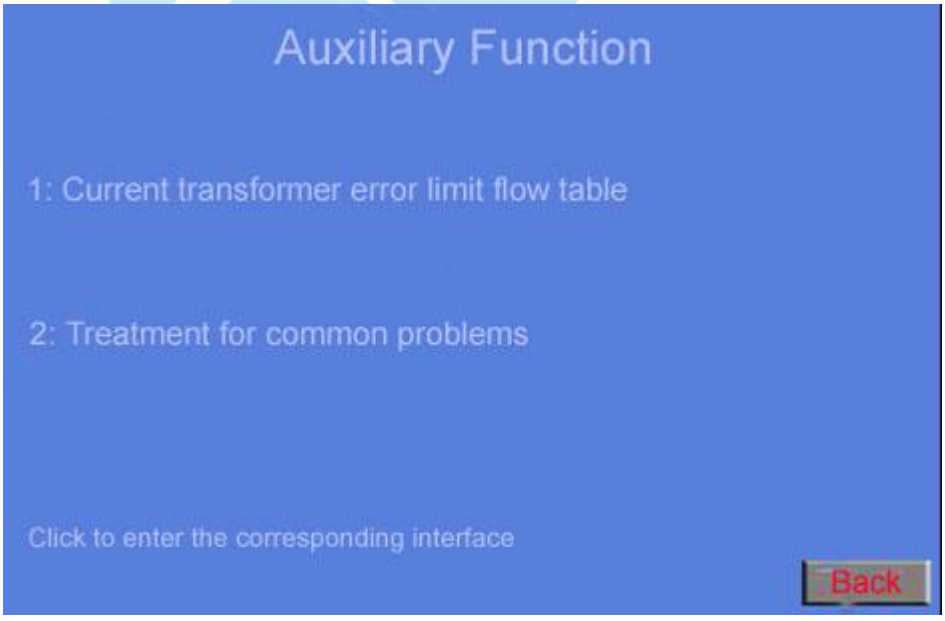
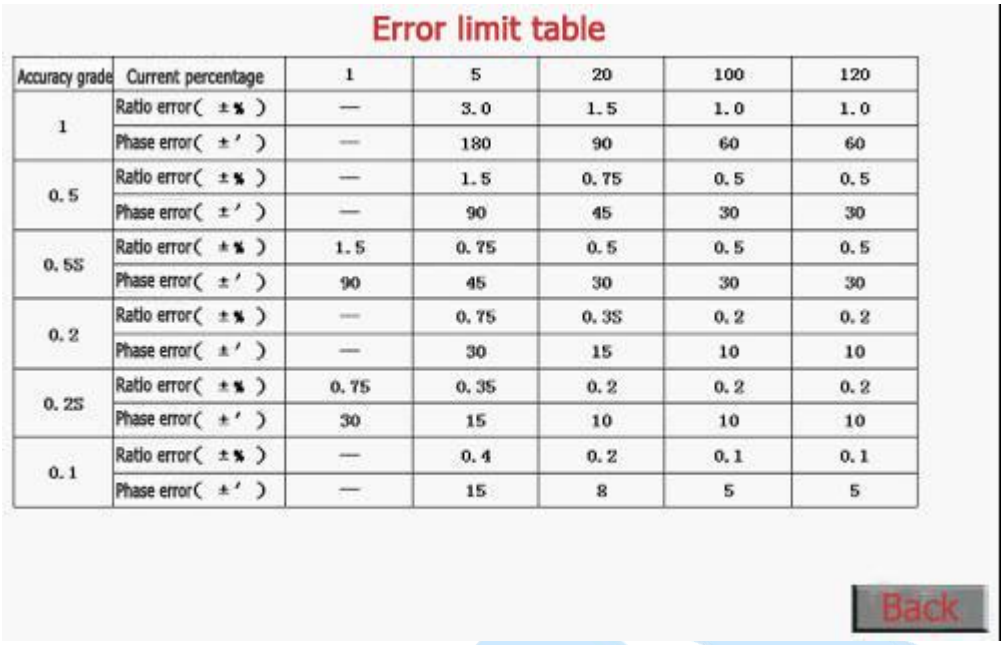


Figure 10

① Current transformer error limit value diagram: Click “1” to enter Figure 11, the interface is

basic error limit value diagram of current transformer range.



Error limit table

Accuracy grade	Current percentage	1	5	20	100	120
1	Ratio error(±%)	—	3.0	1.5	1.0	1.0
	Phase error(±′)	—	180	90	60	60
0.5	Ratio error(±%)	—	1.5	0.75	0.5	0.5
	Phase error(±′)	—	90	45	30	30
0.5S	Ratio error(±%)	1.5	0.75	0.5	0.5	0.5
	Phase error(±′)	90	45	30	30	30
0.2	Ratio error(±%)	—	0.75	0.35	0.2	0.2
	Phase error(±′)	—	30	15	10	10
0.2S	Ratio error(±%)	0.75	0.35	0.2	0.2	0.2
	Phase error(±′)	30	15	10	10	10
0.1	Ratio error(±%)	—	0.4	0.2	0.1	0.1
	Phase error(±′)	—	15	8	5	5

Back

Figure 11

②Treatment for common problems : Click “2” to enter Figure 12, the interface is attention matters in using the instrument, please make sure to read carefully, please contact our company when there is unusual phenomenon.

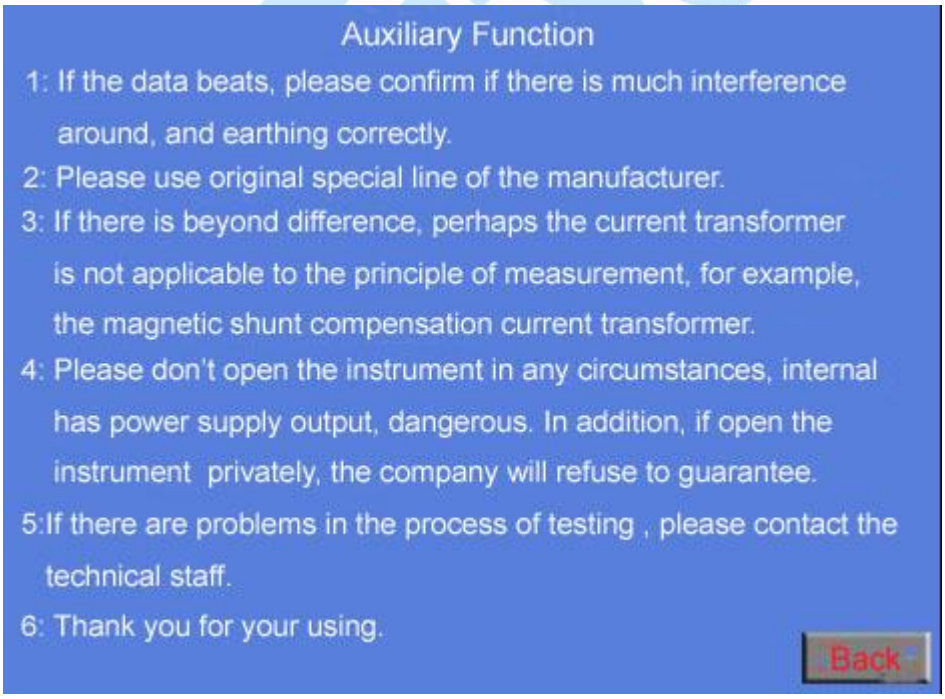


Figure 12

6、Data Center Interface Introduction

Click data center to enter Figure13, it's the whole test data.

Figure 13

The instrument can store 1000 transformer test data, pressure drop test data and load test data, user can browse these test data.

① Storage No. 56：It means the records are stored in the physical address of instrument, the user can directly input the stored numbers to find the corresponding stored test data.

② Last records：Browse last test records of current storage number.

③ Next records：Browse next test records of current storage number.

④ Delete：Delete current test records.

⑤ Delete all： Delete all data in the instrument, please confirm whether to delete before operation, the data won't be recovered after deleting.

⑥ Back：Click reset button back to the last interface（main interface).

⑦ Display time：The time displaying on the LCD is the time of record store moment, is also the test time.

Note 1：Please press "back" key if you want to exit the browsing interface.

Note 2：If the browsing data does not exist, the instrument will display" No Test Data!"

7、System Setting Interface Introduction

Click system setting to enter Figure 14, in this function, user can set system time, LCD contrast.

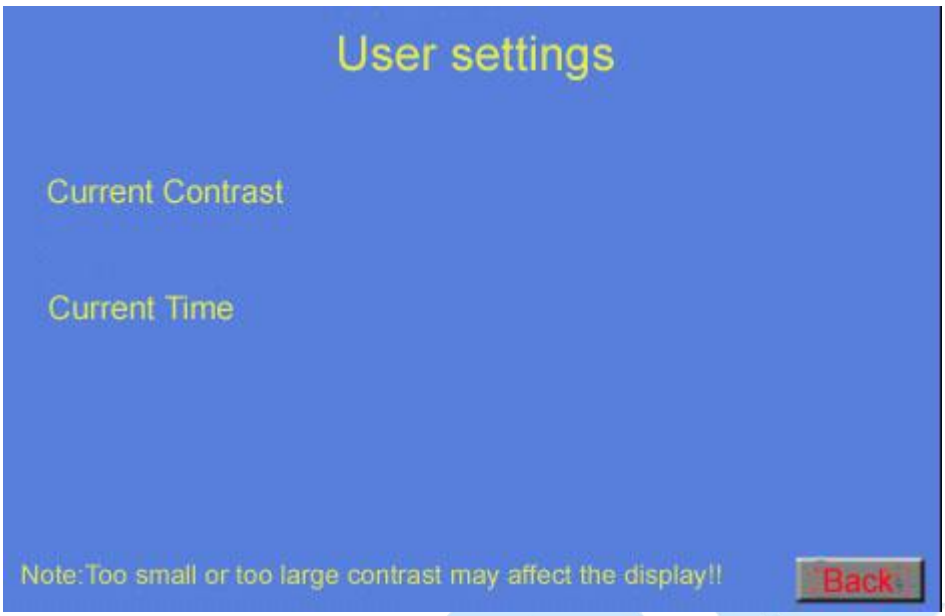


Figure 14

Attention： Manufacturer parameters settings and password： manufacturer sets instrument parameters and enters setting interface, inputs the password. Click reset button back to the last interface（main interface）.

Chapter 7 Attention Matters

1. When there is any unusual phenomenon during using the instrument, please shut power supply and restart it.
2. When use the instrument to test current transformer and voltage transformer, please follow the instruction provided test circuit for testing.
3. If the machine breaks down please call for qualified technicians or sending back to us , you are not supposed to disassemble the machine by yourself, or we won't be responsible for the damage.

Chapter 8 Standard Configuration List

1、ZXCT-H Current Transformer Field Tester one set

2、Test Line one package

3、Power Line one root

4、Management software CD one piece

5、Technical Information one set

It includes：one copy of user manual, user service card, product warranty card, certificate