Kingrun Instrument Co.,Ltd.

JYR-10S

Transformer DC Winding Resistance Tester

Kingrun Transformer Instrument Co., Ltd
2024

Contents



Kingrun Instrument Co.,Ltd.

Overview

The JYR(10S) is a handheld three-phase DC resistance tester, developed using multiple patented technologies. It is a fully automatic, digital, portable measuring instrument.This instrument is not only suitable for measuring inductive samples such as distribution transformers, current transformers, reactors, and electromagnetic operating mechanisms, but also for measuring resistive samples like wires, switch contacts, and relay contacts.

For dry-type transformers and amorphous alloy transformers, due to the low resistance value of the low-voltage coils wound with copper foil, the instrument increases the current to 10A to solve the problem of measuring low resistance values. Additionally, for high resistance value samples such as current transformers, the instrument extends the range up to 100KΩ.The instrument is powered by a built-in rechargeable lithium-ion battery and employs advanced power management technology. A single charge can measure hundreds of transformers.

JYR-10S DC winding Resistance Tester Application Objects:

Transformer winding test

CT/PT/VT Winding test

Motor winding test

Cable resistance test

Kingrun Instrument Co.,Ltd.

Transformer Winding Resistance Tester JYR10S :

A **7 Output Current Settings (Max.10A)**

B **Test range 0 ~ 100kΩ, cover all type of transformers, motors, cables, switch contacts, PT's and CT's**

C **Accuracy can reach to ± 0.2%**

D **Features automatic temperature conversion (20℃/75℃/120℃)**

E **It can simultaneously test the three-phase resistance of windings with Yn, Y, and D connection types, automatically switch phases, and calculate the three-phase unbalance rate.**

JYR10S Technical Specification:

Tester type	KRI 10S						
Scope of application	10A	3A	1A	0.3A	0.1A	20mA	Auto
Test range	0~0.2Ω	0.01~2Ω	0.03~6Ω	0.1Ω~20Ω	0.3Ω~60Ω	30~100KΩ	0~100KΩ
Accuracy	0.2%±0.5μΩ						
Minimum resolution	0.1μΩ						
Built in battery	14.8V						
Standard conversion temperature	20℃/75℃/120℃						
Temperature test range	-99.9~199.9℃; Accuracy: ±0.5℃(option)						
Volume	Length 210mm Width 150mm Height 68mm						
Net weight	1.98KGS						

Kingrun Instrument Co.,Ltd.

JYR10S Operation Panel Instruction:

serial number	Description of the functions	serial number	Description of the functions
1	（IA）A Phase current Output port	8	（IO）O Phase current Output port
2	（VA）A Phase voltage is fed into the port	9	（VO）O Phase voltage input port
3	（IB）B Phase current Output port	10	LCD display
4	（VB）B Phase voltage input port	11	“U Disk”interface
5	Built-in battery charging port	12	Power switch
6	（IC）C Phase current Output port	13	“Test / Stop”key
7	（VC）C Phase voltage input port		

Security

- Be sure to read this manual carefully before using this instrument.
- The operator of the instrument should have general knowledge of the use of electrical equipment or instruments.
- This instrument can be used inside and outside, but should avoid rain, corrosive gas, dust too thick, high temperature, direct sunlight and other places to use. The meter should avoid severe vibration.
- Repairs, care and adjustments to the instrument should be carried out by a professional instruction.
- After the test is complete, be sure to wait for the discharge alarm to stop before turning off the power supply and removing the test line.
- When measure the non-load regulator transformer, be sure to wait for the discharge indication beep to stop or switch gears.

  During the test, do not move the test clip and power supply lines.
- The instrument's built-in rechargeable lithium battery,which should be regularly charged and maintained.During long-term storage it should be charged every 3 months.

  It is strictly forbidden to charge the battery with a charger that is not approved by the Company, as this may cause an explosion

This tester equipped with special lithium-ion polymer batteries. Changing other batteries may cause safety hazards.

Instructions for operation

1 Power on and off

On/off

Press ⏻ and hold for more than two seconds to turn the power on or off.

Automatic shutdown

If no action is performed within 5 minutes, the instrument will automatically shut down to save power.

2 Resistance measurement Wiring

- **Wiring for three-phase test**

The yellow, green, red and black test pliers of the test line are connected to the A, B, C and O casings of the tested products respectively

(If there is no O casing, black test clamps can be suspended). The other end plug of the test line is inserted

into the port hole by color corresponding to the instrument.

● **Wiring for a single-phase test**.

The red and black test pliers of the test line are connected to the ends of the test product, and the other end plug of the test line is inserted into the instrument's red and black port holes **(single-channel** port) by color.

The correct wiring method of the test object terminal:

The special red and black test pliers are clamped to the e-output end of the tested product. Check if there's oxidation layer on the test object lead-out surface. If yes, the oxide layer should be cleaned before clamping. Ensure that the connection is secure and reliable to prevent the test process from falling off the clip.

3 Prepare for the test

●Power on

First, press ⏻ and hold for more than two seconds to turn on the power, LCD screen lit the display will show the company LOGO interface, stay for about 1 second, the display shows the Figure 2 interface.

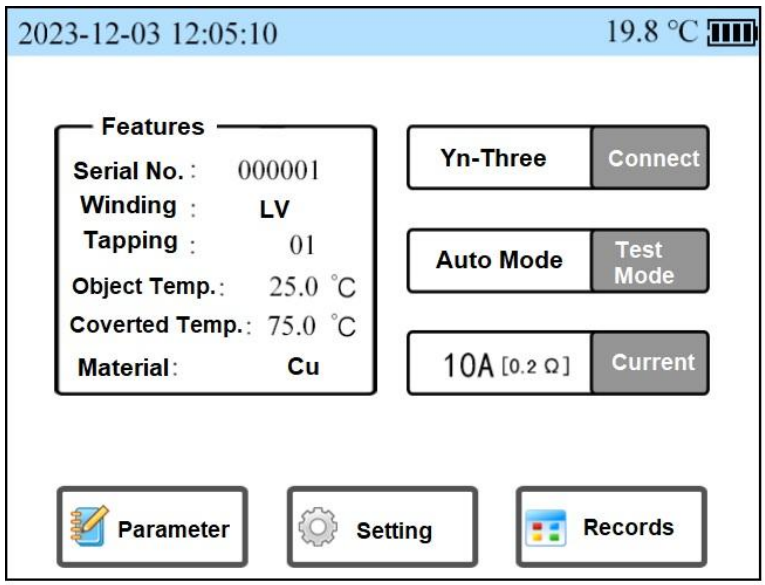

fig2

● Check the battery level

A battery level indicator is shown on the upper right corner of the display. The electrical power must be guaranteed during the normal testing process.(See Battery Maintenance Notes).

● The parameter settings

Touch Parameter Settings to enter the parameter settings interface in Figure 3.

Set the appropriate parameters for completing the test. Touch Back key to exit.

If you do not need any information, you can empty the corresponding position parameters.

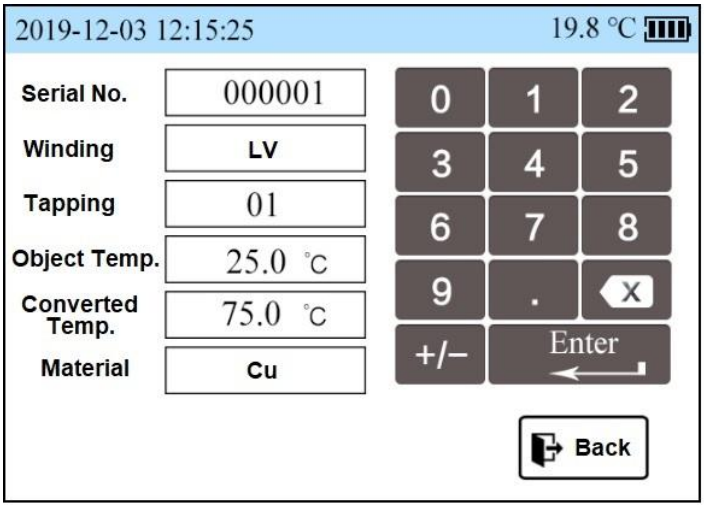

Fig 3

● **Choose the connection method**

Touch the "connection mode" to select. The instrument offers four connection options: Single Channel,Yn Three Phases,Y Three Phases,and △ Three Phases. Depending on the test object and test requirements, the test cable should be properly connected.

●The choice of phase change

The instrument provides two phase-changing modes when conducting three-phase tests: manual phase change and automatic phase change. The default is "CO phase"when test with single phase mode.

● **Select the output current**

This tester offers 6 options for output current, select "auto ",the tester will determine the optimal output current based on the test resistance value.The maximum output current can be up to 10A. Fixed currents are: 10A, 3A, 1A, 0.3A, 0.1A, 20mA.

The output current should be based on the test resistance value (refer to the **Resistance Measurement Range and Accuracy).** Where the resistance test requirements are met, the larger current should be selected as far as possible for testing. At the same time, the test object power should also be considered to prevent damage to the test object and influence of heat on resistance datas.

4 Start testing

Confirm that the wiring is correct and setting correctly before testing.

●Single phase

Press the RUN/STOP button to start the test. The instrument starts the test with the set output current and show the current. The system stopwatch starts from zero timing, "▸ "green cursor flashes, the instrument automatically determines the current stability, and after reaches the rated current then carry out resistance measurement.The screen shows the test current and resistance data,(Figure IV). Once the resistance data is stable, the resistance data can be recorded.

If there are no test results for a long time, the test current circuit is open or the output current range is selected too largely.

Press the"**RUN/STOP**" button, the instrument prompts "Test Stop" to disconnect the test current and discharge automatically, and the audio alarm indicates that "discharge is in the process". The test data is locked.

Touch the '**Save'** button to save test data.100 sets of data stores available.

Touch the "**Convert**" button, The resistance value will be converted according to the set parameters of the test temperature, conversion temperature, test material.Touching the Convert button again will exit the conversion function.

Touch the **Tap-** key or **tap+** button to change the tapping position number of the winding.

Touch the **Back** button and exit the test interface to return to the selection interface.

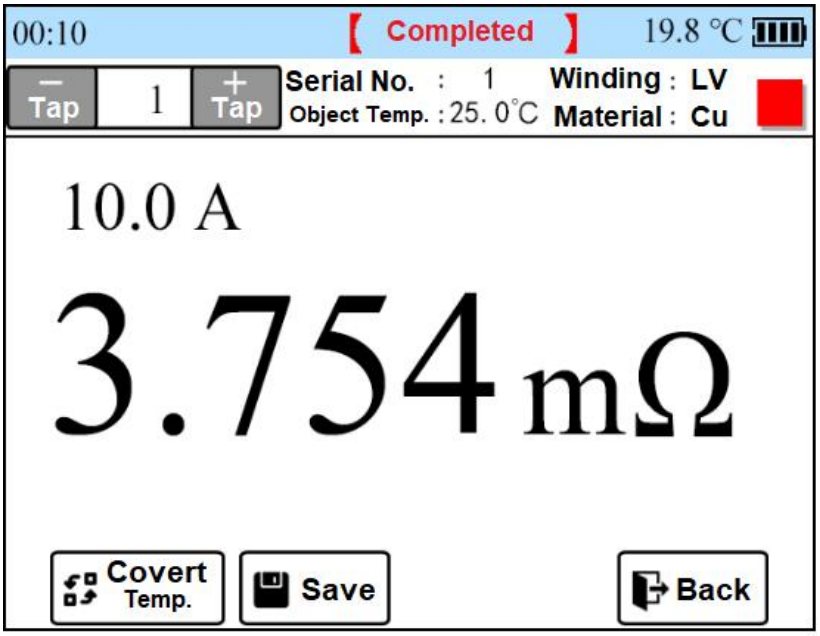

Fig 4

Three-phase test mode (manual phase change).

For "Yn three-phase" connection: test the AO, BO, and CO phase resistance values respectively.

For "Y three-phase" connection: test AB, BC, and CA phase resistance values respectively.

For "△three-phase" connection: test AB, BC, and CA phase resistance values respectively.

The three-phase testing process of the three connection methods is the same, but the test phases are different.

Here describe the testing process in a "Yn three-phase" connection mode:

Change the phase manually

Press the RUN/STOP button to start the test. By default,the test starts from AO phase. Start the test at the set current. The system stopwatch starts from zero timing, "▸ "green cursor flashing, the instrument automatically determines the current stability.After reaches the rated current the tester carries out resistance measurement, displays the output current data and test resistance data. After observing that the resistance data is stable, then touch "BO"button starts the BO phase test, which process is the same as the AO phase test.Then touch the "CO"button to start the CO phase test, the same process as the BO phase test. The imbalance rate of the three-phase resistance data is calculated automatically.

Press the"RUN/STOP" button, the instrument prompts "Test Stop".Disconnects the test current to discharge automatically, and the audio alarm indicates that "discharge is in the process". The test data is locked.

If there are no test results for a long time, the test current circuit is open or the current range is selected too large.

Touch the **Save** button to save test datas. 100 sets of data storage available.

Touch the "**Convert**" button, the resistance value will be converted accroding to the set test temperature, conversion temperature, test material.Touching the Convert button again will exit the conversion function.

Touch the **Tap-** or **tap+** button to change the tapping number of the winding.

Touch the **Back** button to exit the test interface to return to the selection interface.

Automatic phase change

Press the RUN/STOP button to start the test. By default the test is started from AO phase. starting the test at the set output current. The system stopwatch starts from zero timing, "▸ "green cursor flashing, the instrument automatically determines the current stability.After reaches the rated current,the tester carries out resistance measurement, displays test current data and test resistance data. After the instrument automatically determines that the resistance data is stable, the BO phase test is started automatically, and the process is the same as that of the AO phase test. The CO phase test is then started, and the process is the same as the BO phase test. The imbalance rate of the three-phase resistance data is calculated automatically. After the three-phase test is complete, the instrument prompts "Test Stop".Disconnect the test current to discharge automatically, and the audio alarm indicates that "discharge is in the process". The test data is locked. (Figure 6).

If there are no test results for a long time, the test current circuit is open or the current range is selected too large.

Touch the **Save** button to save test data . 100 sets of data storage available.

Touch the "**Convert**" button, the resistance value will be converted according to the set test temperature, conversion temperature, test material.Touching the Convert button again will exit the

conversion function.

Touch the **Tap-** or **tap+** button to change the tapping number of the winding.

Touch the **Back** button to exit the test interface to return to the selection interface.

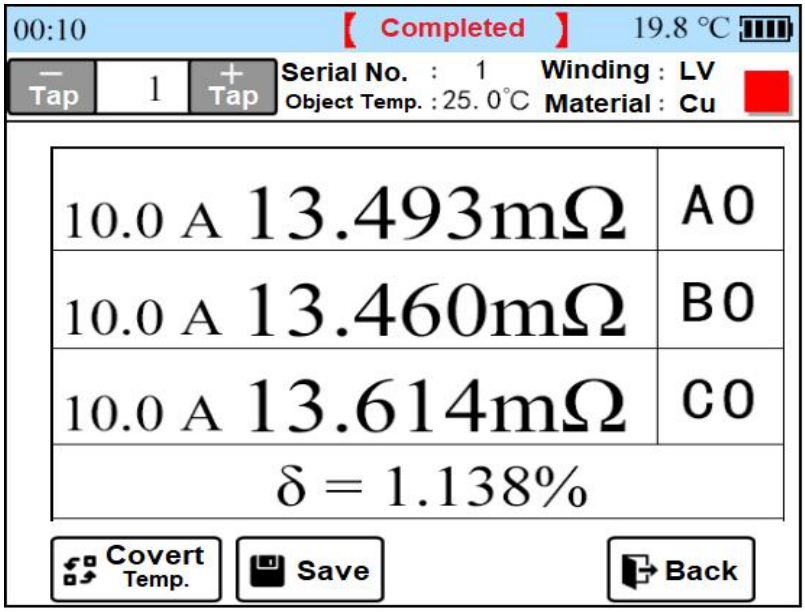

Fig 6

5 View memory data and import to USB sticks

In the main interface (Figure 2)touch the "Record" button to view the records as shown in Figure 7, 100 sets of data storage can be viewed. You can turn the page by click " up" or " down" button,with five record directories shown on one page. The Touch Data Catalog display box selects the Data Catalog, and then touches the Data Catalog display box to view the datas of this catalog.Touch the Delete button to delete records one by one. The number of the record group represents only the sequential number, so view the record data by the time it was saved.

Import to USB stick

First plug the USB stick into the USB stick interface, and there will be a U disk insertion flag prompt above the screen.

Touch the **USB stick** button to import all the memory data into the USB stick.

The file name of the datas imported to USB stick is defined as follows:

First, create folders in years and days, such as DT180208

Among them, "DT" is a fixed format for the beginning of the file; "18" is the next two digits in 2018; "02 is February; and "08" is number 8. Then build the file in minutes and seconds such as SJ092458

Where "SJ" is a fixed format at the beginning of the file;

"58" is 58 seconds. The file is established by export time. (System default)

The file format is .csv format you can use the Microsoft Excel software to open and generate a list of data.

Do not unplug the USB stick or power off when the export is not complete. This can damage the USB stick or lead to file errors.

Touching the **Back** button returns to the previous interface.

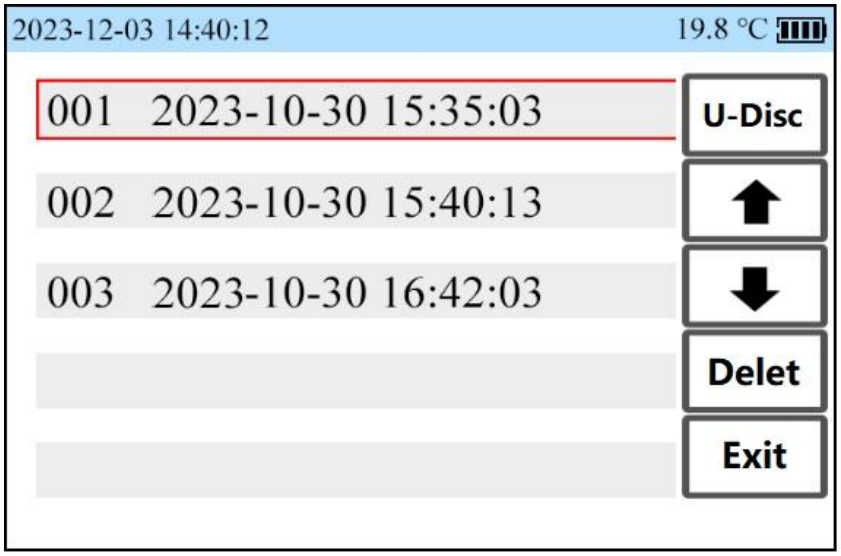

Fig 7

6 System settings

In the main interface (Figure 2) touch the "System Settings" button to enter the system settings interface as shown in Figure 8

In this interface, you can set the system time, interface language, printer switch, etc.

Touching the Back button returns to the next level of the interface.

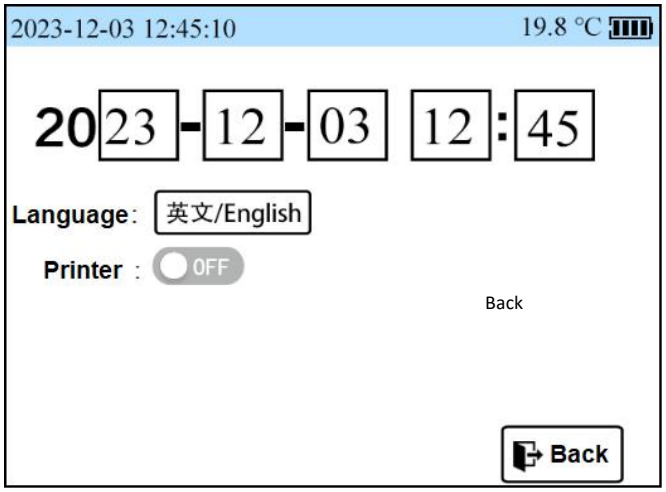

Fig 8

Warning information

- **【Discharge in the process】**

  Discharge prompt information indicates that the instrument is in a discharge state, at which point the buzzer chirps.

  After the discharge is complete, the indication then disappears.

- **【Temperature protection】**

  In-machine overheating prompt information, which indicates that the internal temperature of the instrument is too high. This may be caused by a long period of high current testing. The instrument will not be able to perform the test operation if it overheats. At this point, you can shut down and wait for the temperature to drop and then power on again for measurement.

- **【Change the big current】or【Change the small current】**

  Represents that the test data exceeds the range of gear selected.At which point the test datas are also available but only as a reference for shifting. Because the over range test error is large.

- **Battery Power Is Out of Grid Indication**

  An out-of-order battery indicates that the battery is almost empty, so charge it with the charger as soon as possible to maintain the battery. Over-discharge of the battery may cause permanent damage to the battery.

Battery maintenance

This instrument is equipped with a special rechargeable battery.When the battery is low, the battery should be charged in time, please refer to the table below.

Display	Battery voltage	Battery estimation
	10.1V or less	The battery is almost empty
	10.2 V to 11.0V	20% charge remaining
	10.7V~11.1V	50% charge remaining
	11.2V or greater	The battery is full

● Battery Charging

The instrument is equipped with a charging port and a matching dedicated charger (JS-126300).

When the charger indicator lights up red to indicate charging, lit green to indicate charging is complete. When the battery is low and an emergency test is required. The charger can be plugged in for emergency testing.

● Replace the battery

Step 1: Shut down and remove the charger.

Step 2: Unscrew the battery cover screw at the back of the instrument and remove the battery cover Replace the special rechargeable battery of the model JY186X2. Secure the connector and secure the battery.

Step 3. Replace the back cover, replace the battery cover, and make sure to tighten the screws.

***Do not replace rechargeable batteries other than those approved by the company, as this may cause safety hazard ***

Tester Maintenance

Cleaning the canopy: Wipe the surface with clean water and a soft cloth or sponge.

To avoid damaging the instrument, never immerse the instrument in water. When the tester is wet, dry it before storing it.

When it is necessary to verify or repair the instrument, refer the instrument to a qualified service professional or a designated service department for service.

The instrument should charge the batteries regularly and generally at least once a month.

Kingrun Transformer Instrument Co.,Ltd.

Address: Building2# torch high-tech park baoding city,China

Post code: 071000

Website:www.kritester.com

Tel: 0086-312-5959618. Fax:0086-312-5926968

Mobile: +86-18631228466

Inquiry Mail: info@kritester.com

Technical Support :support@kritester.com