



*Know your transformers more accurately.*

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JYR-10C +

Transformer DC Winding Resistance Tester



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*Ensure to carefully read the operation manual prior to use the instrument, it is sole responsibility of customer to secure safety.*

*Version of the manual: 2.18-2009*

*The manual is subject to change without notice.*



**8 Output Current Settings (Max.20A), suitable for large capacity and low impedance at LV side**



**Test range 0 ~ 20kΩ, cover all type of transformers, motors, cables, switch contacts, PT's and CT's**



**Accuracy can reach to ± 0.2%**



**Features automatic temperature conversion (20°C/75°C/120°C)**



**One charge can test hundreds of transformers**



**Features discharge warning and overheating warning protection**

### JYR10-C+ Technical Specification:

Tester type		JYR-10C+							
Scope of application		20A	10A	3A	1A	300mA	100mA	20mA	Auto
Test range	AC(220V)	0.2Ω	1Ω	3Ω	10Ω	30Ω	100Ω	20KΩ	0Ω~20KΩ
	DC (battery)	0.5Ω	1Ω	3Ω	10Ω	30Ω	100Ω	20KΩ	0Ω~20KΩ
Accuracy		0.2%±1μΩ							
Minimum resolution		0.1μΩ							
Built in battery		DC18V ; 10A							
Standard conversion temperature		20°C/75°C/120°C							
Working Power (AC)		AC220V ±10% 50HZ±1HZ							
Volume		Length 155mm Width 210mm Height 68mm							
Net weight		8KGS							

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## **I. General**

DC resistance of transformer is one testing item which must be tested during ex-work test of semi-finished products and final products, installation, acceptance test and preventive test of electric power department, which can effectively find out material selection of transformer coil, welding, looseness of connection part, missing strand, broken wire etc manufacturing defect and existing hidden problems after operation. In order to meet rapid measurement demand of transformer DC resistance, our company has researched and developed new generation DC resistance testing meter on basis of its own technology advantage. The instrument applies new brand power technology, which is characterized with small volume, light weight, big output current etc. The whole machine is controlled by single chip microcomputer, which has automatic self-inspection, data treatment, display, automatic discharge and discharge indication etc functions. Testing accuracy of instrument is high, operation is easy and simple, and it can realize rapid measurement of transformer DC resistance.

## **II. Safety measures**

1. Ensure to carefully read the manual prior to use the instrument.
2. The instrument operator shall have general application knowledge about electric equipments or instruments.
3. The instrument can used indoor and outdoor, it shall avoid application location with rain, corrosive gas, heavy dust, high temperature, direct sun shining etc.
4. The instrument is high precision instrument, it shall avoid violent vibration.
5. Only professional personnel are allowed to carry out repair, maintenance and commissioning of the instrument.
6. When testing is complete, ensure to switch off power supply and disconnect testing line after discharging alarm is stop.
7. Switch shift of transformer only after discharge alarm sound is stop during measurement of no-load voltage regulating transformer.
8. Prohibit disconnect and move testing clip and power supply line during testing.

## **III. Performance characteristic**

1. Output current of the instrument (maximum output can reach 20A) is large, weight is light and carrying is convenient.
2. Measurement scope is wide (  $0\Omega$ - $20k\Omega$  ), measure all inductive DC resistance below 132kV class.
3. With perfect protection circuit, reliability is strong, humanism operation interface can facilitate operation.
4. The instrument has perpetual calendar, 100 groups of data storage, temperature automatic conversion etc functions, data will not be lost after shutdown, which facilitate review.
5. Vertical machine box structure, integrated design of testing wire and instrument facilitates field operation.

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6. Have audible discharging alarm, discharging indication is clear and misoperation is reduced.
  7. The machine has protection and alarm function to protect input against misconnection with AC 380v power supply, reduce damage on the instruction caused by misoperation.

#### **IV. Technical index**

1. **Output current:** 20A, 10A, 3A, 1A, 300mA, 100mA, 20mA, Auto
2. **Measurement scope (battery):** 0~20k $\Omega$
3. **Accuracy:** 0.2% $\pm$ 1 $\mu\Omega$
4. **Minimum resolution:** 0.1 $\mu\Omega$
5. **Working temperature:** -20~40 $^{\circ}$ C
6. **Ambient humidity:**  $\leq$ 80%RH, no dewing
7. **Working power supply:** AC: AC220V $\pm$ 10%, 50Hz $\pm$ 1Hz
8. **Volume:** 335mm length  $\times$  235mm width  $\times$  260mm height
9. **Net weight:** 8 kg

#### **V. System description**

Refer to figure one for instrument panel.

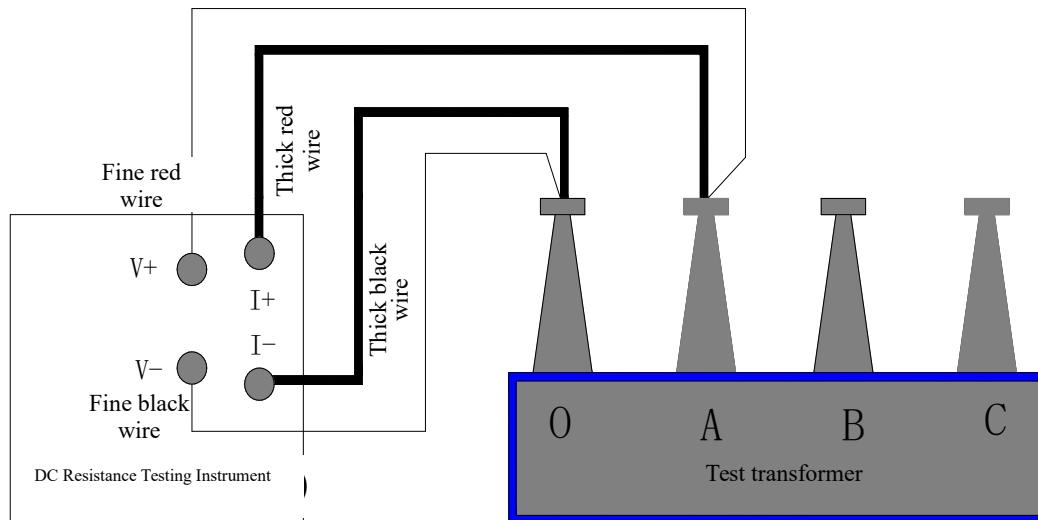
1. AC power supply input: AC power supply input port for whole machine, with fuse bin, fuse is 3A.
2.  $\text{⏏}$ : Earthing terminal serves as enclosure earthing of whole machine, which belongs to protective earthing.
3. RS485 standard communication interface.
4. Power supply switch: Switch on and switch off power supply of whole machine.
5. V+, V-: Voltage measurement input terminal,
6. I+, I-: Current output terminal.
7. Printer: Print test data and edit information.
8. USB stick interface: Export memory data.
9. LCD: Touchable color LCD display, touch operation display menu, current value and resistance value, etc.



Figure 1

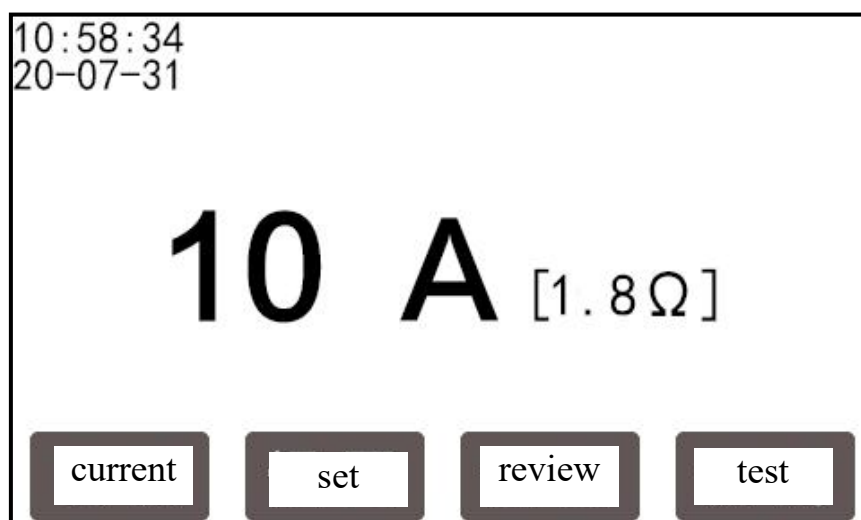
## VI. Testing and operation methods

1. **Connection:** Connect tested product with testing terminal of the machine with special cable, connection is firm, connect earthing wire well at same time. **Single channel direct measurement connection:** Refer to figure two.



**Figure 2**

2. **Start interface:** Turn on the power switch and the Kingrun LOGO will appear on the display, stopping for about 2 seconds and automatically skipping into the selection settings main interface as shown in Figure 3.
3. **Current selection:** The display shows the three interfaces shown in Figure 3, where the current and range of the tested product can be selected by touching the "current" key. Please refer to the appropriate range to select the appropriate current. The resistance value after the current is displayed is the maximum resistance measured at the selected current gear. The automatic gear current will be determined to be tested at the appropriate fixed gear based on the test resistance value. .



**Figure 3**

4. **Test:** When the current and range are selected, touch the "Test" key, the test begins, and the

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display indicates the charging current value while prompting "Charging ... The system clock starts timing to show when the test starts with charging. When the current is stabilized, the display shows the test current used and prompts "Testing ... ", then shown in the figure 5 interface, observe the test current value and resistance value stability, the instrument continue the test.

When the selected current is too small during the test, a "change of current" is prompted because the resistance is too small for instrument measurement to meet the requirements, and the high current should be replaced and retested.

When the selected current is too large during the test, a "small current change" is prompted because when testing too much resistance, it can't reach the select current, and the small current should be replaced to retest.

(1) The Print function, shown in Figure 4, now touches the Print function key to print the current dynamic test current and resistance data.

(2) "Fast / Stable" function, shown in Figure 4, at this point touch the "Fast" function key, "Fast" to "Stabilize" at this time the instrument automatically adjusts the system's internal digital filter to achieve data stability, but the stabilization time is correspondingly extended. If you touch the "stabilization" function key, the instrument automatically adjusts the internal digital filter, restores the fast test function, the general test selects the fast mode. Transformer windings Difficult to stabilize, can also be tested in a "stable" manner in order to make the data readable.

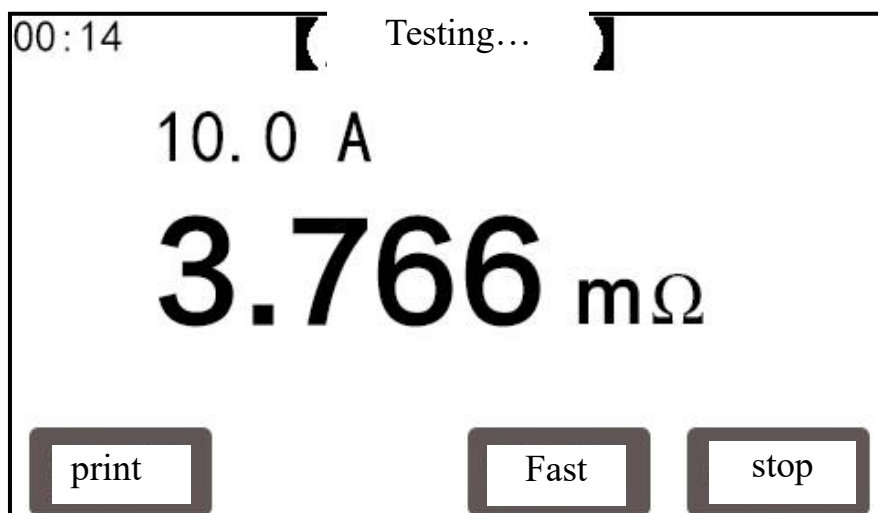


Figure 4

(3) "Stop" function, shown in Figure 4, observe data stability, at this time touch "Stop" function key, showing Figure 5, prompt "Test Stop", the instrument output current will be



disconnected from the winding, then discharge with audio alarm, screen latch test data. Touch Back exits the select settings main interface.

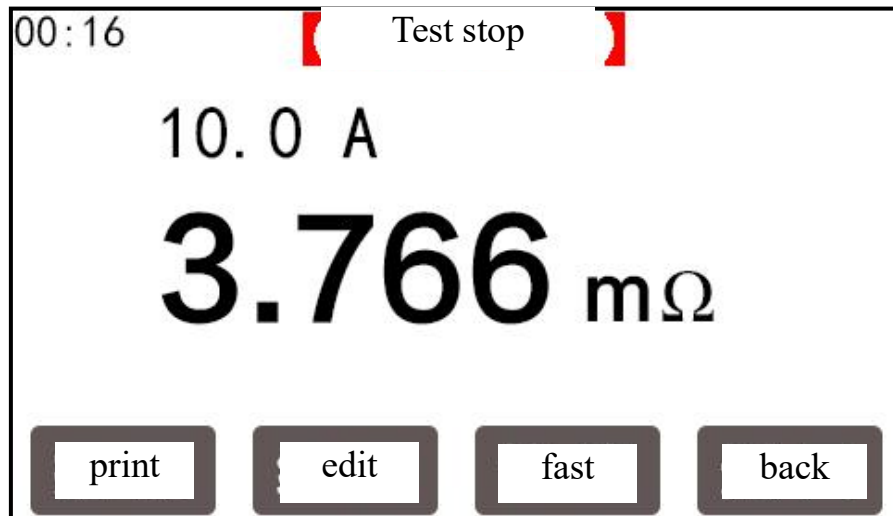


Figure 5

- (4) "Edit" function, displayed in Figure 5, at this time touch "Edit" function key, enter the editing interface as Figure 6, touch the corresponding display position, correctly enter the number, winding, phase, tap, winding temperature, conversion temperature and other parameters, touch "save" can save data information, touch "print" can print data information, touch "return" exit to stop test interface.

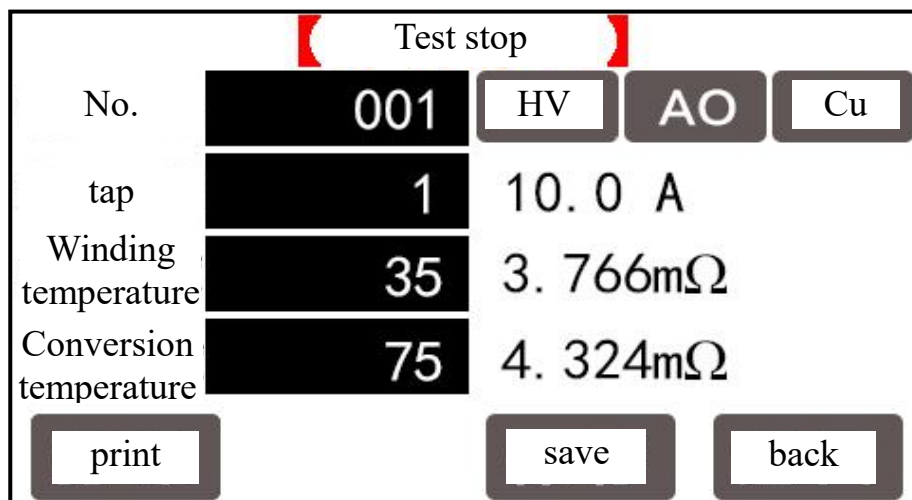
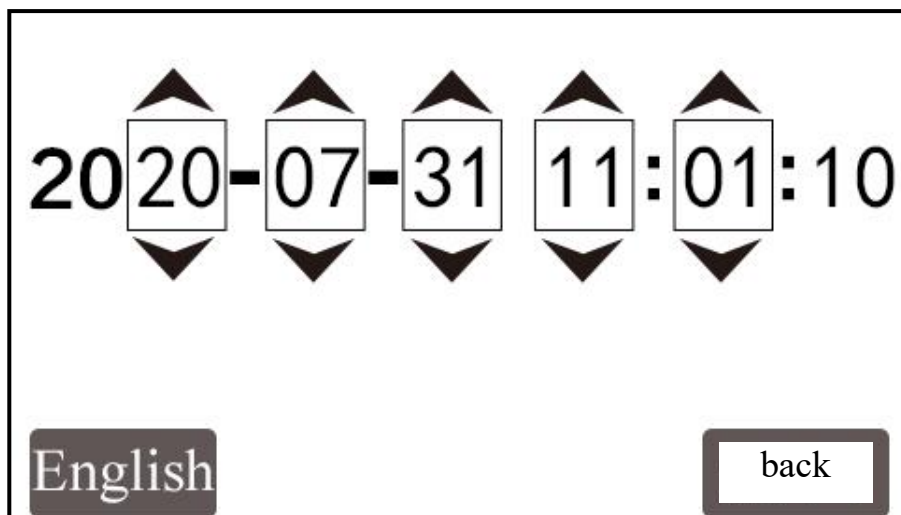


Figure 6 edit

5. After the test is complete, the discharge sound stops, rewired for the next test or remove the test line and power cord to stop testing.
6. Time adjustment: in the selection of the main interface, touch "settings" function key, enter the settings interface as figure 7, touch the corresponding up and down arrow adjustment time, touch "English" switch to the English interface, touch "back" key back to the selection settings

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main interface.



**Figure 7 setting**

7. Review datas: in the selection of settings main interface, touch "review" function key, enter the record directory interface as figure 7, touch "up" or "down" function key can review the datas from the time directory, up to 100 sets of data can be stored for reviewing. Touch "delete" function key can delete records one by one. To import memory data into the USB stick, first insert the USB stick into the USB stick interface, and there will be a USB stick insertion flag prompt at the top of the screen. Touch the "U disk" function key to import memory data into the usb drive.

The file name for importing the USB stick is defined as follows:

First, create folders such as DT180208 in year-to-day units, where "DT" is a fixed format at the beginning of the file, "18" is the second digit after 2018, "02" is February, and "08" is number 8. The file is then created in minutes and seconds such as SJ092458, where "SJ" is a fixed format at the beginning of the file; The file is set up for export at the build time. (System default)

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

**Do not unplug the USB drive or turn off the power when the export is not complete. This could damage the USB stick or lead to file error.**

Touch the 'Back' key back to select settings for the main interface. Double-touch corresponding record catalog, first selected and then enter, Figure 8 shows the record viewing interface, touch "print" can print data information, touch "back" exit to the record directory interface.

006 2020-07-21 14:22:55

U disk

Del

up

down

back

**Fig 7**

006

No.	001	HV	CA	Cu
tap	1	10. 0A		
temperature	35	163. 05mΩ		
temperature	75	187. 21mΩ		

Print

2020-07-21 14:22:55

back

**Figure 8**

## VII、Precautions

1. Before measuring the load-free regulator reverse tap, be sure to stop the current output, and after the discharge and the alarm sound ends,can we switch the tapping point.
2. For transformers with load-regulated voltage,measure the resistance on the high-voltage side starting at 1 or 17 maximum resistance gear.
3. Before removing the lines, be sure to wait until the discharge is over, the discharge alarm sound is over.
4. When selecting current, refer to the range within the specification bar and do not select the current overrange or underrange.

Select the current as large as possible in the current range to enhance the stability performance, at the same time should consider the test current tolerance of the test object, The resistance value will be impacted if the best object is heat.

5. To test Large three-core five-pillar YND11 transformer low-voltage side winding, can use

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high-voltage magnetization method to save measurement time.

6. There will be residual magnetic in the transformer after testing the winding resistance, residual magnetic may affect other tests.

### **VIII、 Common problems and solutions**

1. Don't start and buzzer always buzzes

Firstly check whether power supply is connected to AC380V power or input voltage is too low at such case.

2. Liquid crystal display can't be lit during starting

Firstly check whether power supply is normal at such case, then check whether fuse is broken, then replace fuse if it is broken.

3. Starting liquid crystal display is lit but display is abnormal or not display

Firstly start again at such case, press reset key one time, adjust luminance adjustment key. When contrast is big, adjust luminance adjustment key downward; on the contrary, adjust upward.

4. Not use DC power supply.

Firstly start again at such case. In case it still not work, check whether AC power supply is connected, the system will use AC power supply in priority; it will be ok after AC power supply is disconnected.

5. Always display "Charging ..." during testing

Firstly exclude magnetic path problem of transformer at such case. In case current doesn't change and is near to zero for long time, please check whether line is broken. If there is current and it can't charge, please change to small current and start measurement again.

\*\*\*\*In case above problem can't be solved by yourself, please contact us in time\*\*\*\*

### **IX. Completeness of instrument**

Main machine	One unit
10A type testing line	One set
Three cores power supply line	One piece
Fuse 3A (AC)	Two pieces
Certificate/Guarantee card	One piece
Packing list	One piece
Operation manual	One book

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## **X. After sale service**

Repair and replace free of charge for quality problem of product in 24 months from procurement date of the instrument, provide repair and technical service for whole life. In case abnormality or fault is found in the instrument, please contact our company in time, so we can organize the most convenient solution plan for you.