



Kingrun Instrument Co.,Ltd.

JYT

Transformer Turn Ratio Tester



Kingrun Transformer Instrument Co., Ltd
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Overview

The JYT Handheld Transformer Turns Ratio Tester is a new generation of ratio testing instruments developed based on modern industrial design concepts. It offers a wide measurement range (0.9~10000) and high accuracy (0.0001), making it suitable for measuring the turns ratio of distribution transformers up to 1000KV transformers, current transformers (CT), potential transformers (PT), and Z-type connected transformers. Equipped with a built-in lithium battery, it does not require AC power and can perform over 500 measurements on a single charge, making it highly suitable for field use without a power source.

The JYT Handheld Transformer Turns Ratio Tester features a high-brightness 5.6-inch color LCD screen with clear and bright characters, suitable for both indoor and outdoor use. Designed according to ergonomic principles, it offers a comfortable grip. The instrument's structure is insulated and sealed, providing leak-proof, dustproof, and sandproof protection, with soft rubber shockproof guards on all four corners. The high-precision sensitive circuitry inside the instrument is encapsulated in epoxy resin, enhancing its shock resistance and moisture protection.

The JYT Handheld Transformer Turns Ratio Tester is lightweight, efficient, accurate, and quick, making it the ideal instrument for ratio measurements in power generation, transmission, transformation, and industrial and mining enterprises.





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Transformer Turns Ratio Tester **JYT** :



Only 1.6kgs with high testing accuracy, reaching up to 0.0001



Test range 0.9 ~ 10000, cover from distribution transformers to 1000kV transformers, PT's and CT's



Accuracy can reach to $\pm 0.1\%$



High-capacity lithium battery lasts 48 testing hours



One charge can test 500 transformers

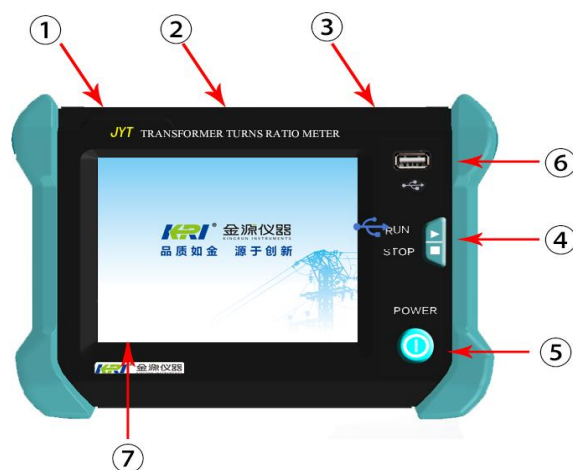


Features reverse polarity, transformer short-circuit, and inter-turn short-circuit protection

JYT Technical Specification:

Number of displayed bit	5 digits			
Output voltage	35V (Automatic adjustment)			
Measurement scope	0.9~10000			
Accuracy	<0.9~500	$\pm 0.1\%$	<2000~10000	$\pm 0.3\%$
	<500~2000	$\pm 0.2\%$		
Minimum resolution	0.0001			
Working power supply	AC220V $\pm 10\%$, 50/60HZ $\pm 1\text{HZ}$			
Memory of testing data	500groups			
Working temperature	$-20^{\circ}\text{C} \sim 40^{\circ}\text{C}$			
Volume	Length 210mm \times width 150mm \times height 70mm			
Net weight	1.6kg			

JYT Operation Panel Instruction:



Item	Function
1	Low-voltage Side Ports (a, b, c, o)
2	Charging Port
3	High-voltage Side Ports (A, B, C, O)
4	Test/Stop key
5	Power Switch
6	USB Port / RS485
7	LCD Display Screen
Optional	Blue-teeth

Operating instructions

1.Power on and off

- Power on

Press ① and hold for more than two seconds to turn the power on or off.

No action is taken for 5 minutes and the instrument will automatically shut down to conserve power.

- Instrument Self Test

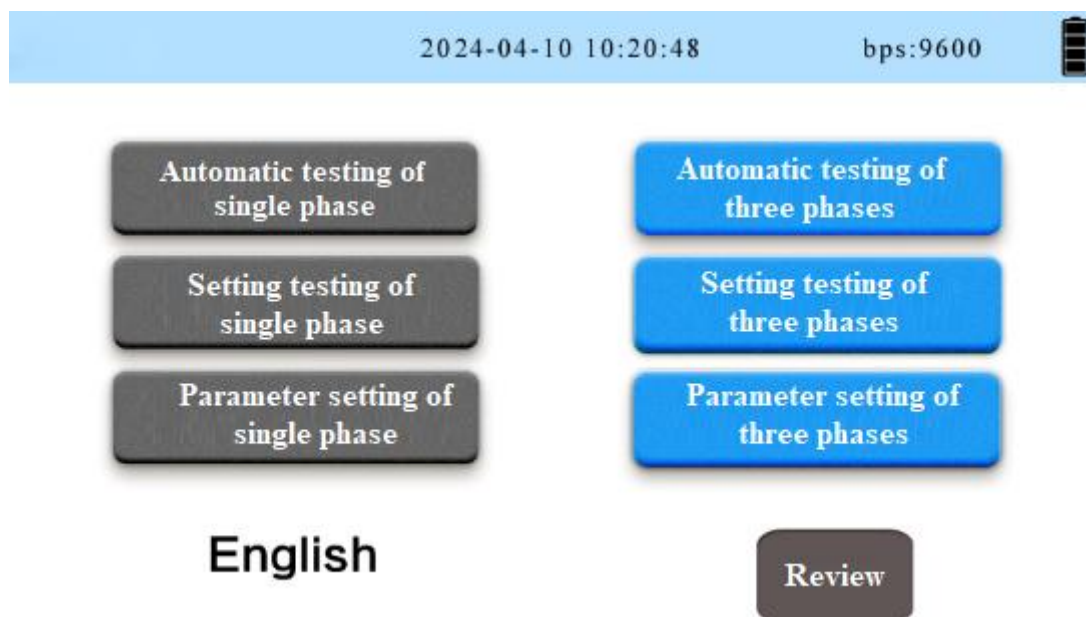
When the instrument-related initialization is complete, a self-test of the internal circuit is performed as shown in below:



SELF-TEST IN PROGRESS....

2. Main Menu:

When the instrument self-test is complete, it automatically enters the main menu, as shown in below:



The main menu mainly consists of option area of testing operation, time display area, parameter information display area, language change button, recalling history record button five parts.

Option area of testing operation:

Automatic testing of single phase: the instrument carries out testing of single phase automatically, it is not necessary to input parameters.

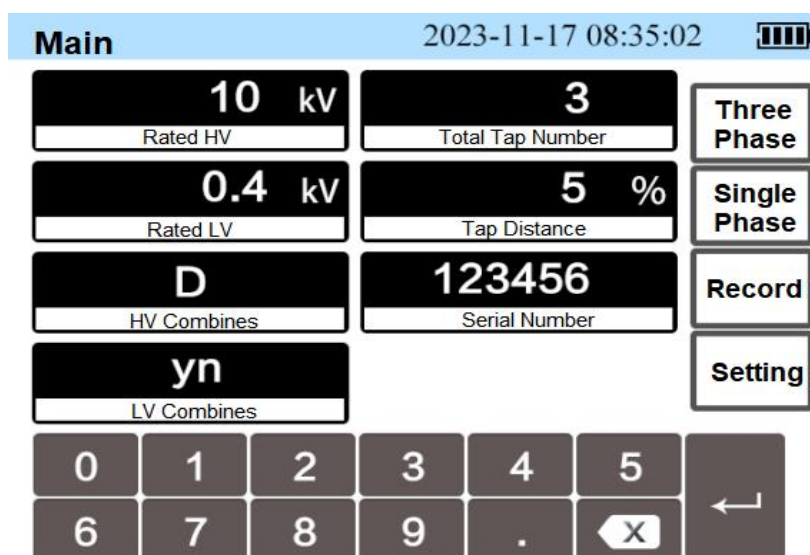
Setting testing of single phase : carry out testing according to parameters set in <parameter setting of single phase>.

Parameter setting of single phase :test the input menu of the relevant parameters according to <setting testing of single phase>.

Automatic testing of three phases : the instrument carries out testing of three phases automatically, it is not necessary to input parameters.

Setting testing of three phases : carry out testing according to parameters set in <parameter setting of three phases>.

Parameter setting of three phases: test input parameters of the relevant parameters according to <setting testing of three phases>.



The screenshot shows the 'Main' menu of the instrument. At the top, it displays the date and time '2023-11-17 08:35:02' and a battery level icon. The menu is organized into several sections:

- Rated HV**: 10 kV
- Rated LV**: 0.4 kV
- HV Combines**: D
- LV Combines**: yn
- Total Tap Number**: 3
- Tap Distance**: 5 %
- Serial Number**: 123456
- Three Phase**: Button
- Single Phase**: Button
- Record**: Button
- Setting**: Button

At the bottom, there is a numeric keypad with digits 0-9, a decimal point, and a backspace key (X).

Rated HV: The rated voltage on the high voltage side of the tested transformer.

Rated LV: The rated voltage on the low voltage side of the tested transformer.

Total Tap Number: The number of high voltage taps on the tested transformer.

Tap Distance: The equal spacing between taps on the tested transformer.

HV Combines: The coupling method on the high voltage side of the tested transformer.

LV Combines: The connection method on the low voltage side of the tested transformer.

Three-Phase: Perform a three-phase ratio test.

Single-Phase: Perform a single-phase ratio test.

Record: Enter the data reading menu.

Settings: Enter the instrument system settings menu.

3.Three-phase test


In the main menu, press <**Three Phase**> or the "Test/Stop" key.

The instrument enters the three-phase test, during the process, during the test, the upper left corner will indicate [Testing in progress]. When the test is complete, you are prompted to complete the test, as shown below:

Touch the <**Save**> button to save the data, and press the "Test/Stop" button to retest.

Note: 1. Before starting the test, please confirm that the transformer parameters are entered correctly. Otherwise, it will lead to errors in error, group and tap position determination. But it does not affect the test of the transformation ratio value.

2. During the test, if there is an emergency. Please press the "Test/Stop" button to terminate

Three 【 Completed 】 2023-11-17 08:36:10 					
	A	B	C		
Voltage Ratio	1.0000	1.0001	1.0000	<div>Save</div> <div></div> <div></div> <div>Exit</div>	
Turn Ratio	1.0000	1.0001	1.0000		
Error	0.01%	0.01%	0.01%		
Group	Y - y- 00		Tap Position		
Calculated Ratio	1.0000	Total Tap	3	Tap Distance	5 %

4.Single-phase test

Press <**Single Phase**> in the main menu. The instrument enters the single-phase test. During the test, the upper left corner will prompt [Testing], and after the test is completed, it will prompt [Test Completed], as shown below:



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Single		【 Completed 】		2023-11-17 08:38:18			
Voltage Ratio		1.0000					
Error		0.01%					
Polarity		+					
Tap Positation		01					
Calculated Ratio		1.0000	Total Tap	3	Tap Distance	5 %	

Save

Exit

Touch the <Save> button to save the data, and press the "Test/Stop" button to retest.

Note: 1. Before starting the test, please confirm that the transformer parameters are entered correctly. Otherwise, it will lead to errors in error, group and tap position determination. But it does not affect the test of the transformation ratio value.

2. During the test, if there is an emergency. Please press the "Test/Stop" button to terminate

5.Record Reading

Press the <Record> button in the main menu. The instrument enters the data storage record menu, as shown below:

Record		2023-11-17 08:35:02			
001	Three	2023-11-17 08:33:01			
002	One	2023-11-17 08:37:08			

U-Disc

↑

↓

Delet

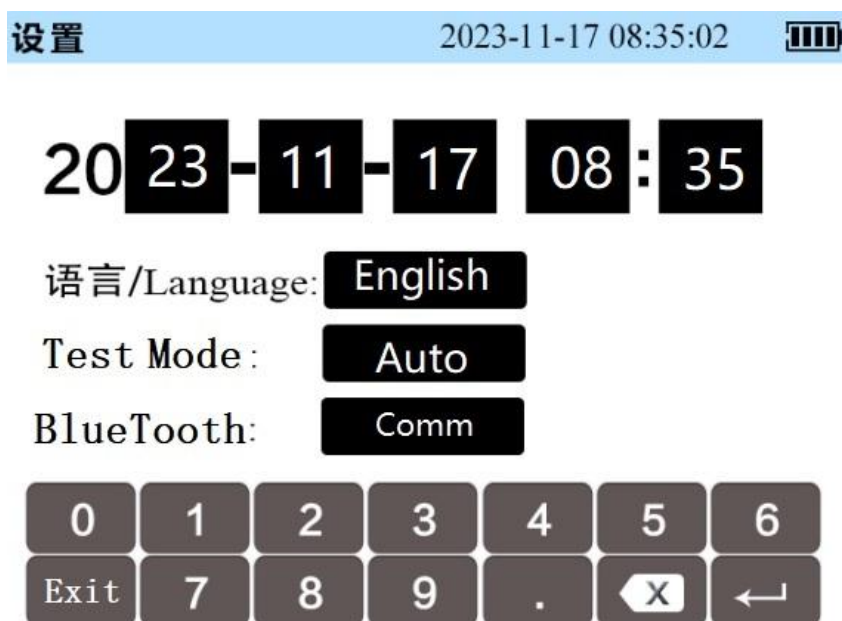
Exit

The instrument can store 100 sets of data in total, and each screen displays 5 sets of data directories. Users can scroll the screen by pressing "↑" and "↓", and the red progress bar on the right indicates the current scroll position. When 100 sets of data are stored, the latest data will overwrite the oldest data. Each set of data can be deleted and exported to a USB device separately.

The directory consists of data type and data test time, for example: S 2023-11-17 10:20:38, where <S> indicates that this set of test data is single-phase test data, and if the test data is three-phase test data, it is <T>. The time behind indicates the time when the data was tested. Click the data on the directory to enter the specific data display page.

6.Instrument Settings

Press the <Set> key in the main menu. The instrument enters the instrument settings menu, as shown in the figure



<Language>: This option is used to switch the menu display language.

<Test Mode>: This option is generally set to "Automatic" mode by default. When there is a small amount of residual magnetism in the transformer that affects the test data, please try to use the "Manual" speed test mode data test (see the figure below). The tester manually controls the test time. When the data of one phase is stable, press the "Phase Change" button to test the data of the next phase. If accurate data is still not obtained, demagnetize the transformer before performing the ratio test.



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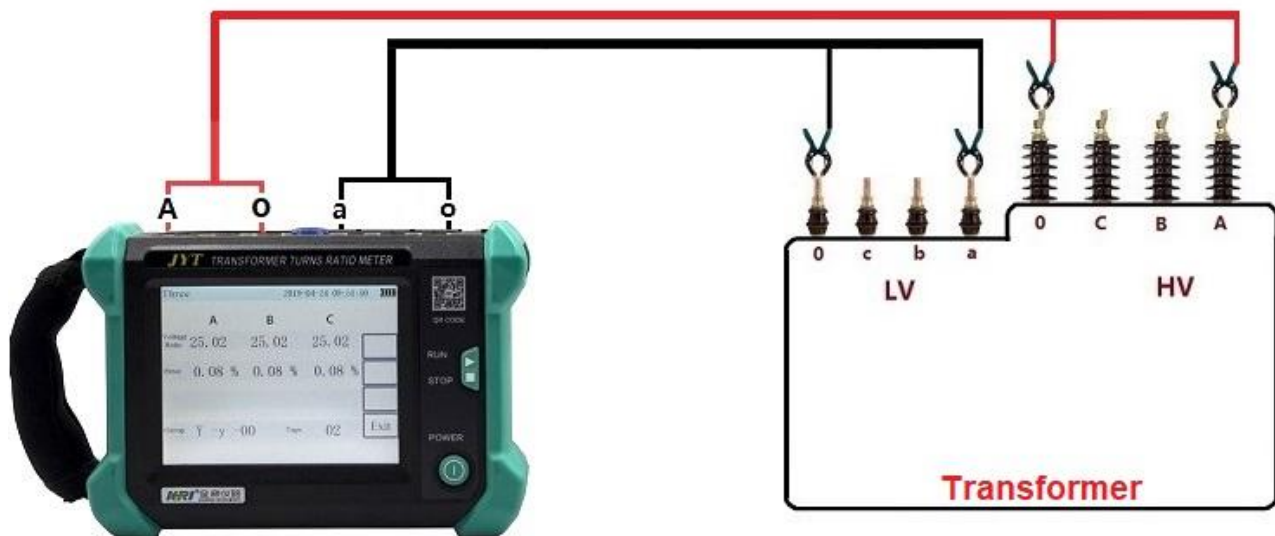
Three		【 Testing 】	2023-11-17 08:38:18	
Voltage Ratio	1.0000			Save
Turn Ratio				
Error				Phase Change
Group	Tap Positation			Exit

<Bluetooth Link>:

This option is used to set the Bluetooth device function. Select "Communication" when the instrument Bluetooth device is used to link with the host computer. Select "Printer" when linking with a printer to print test and stored data (Bluetooth printer SP-T12BTDM is optional item).

Test Cable Connection

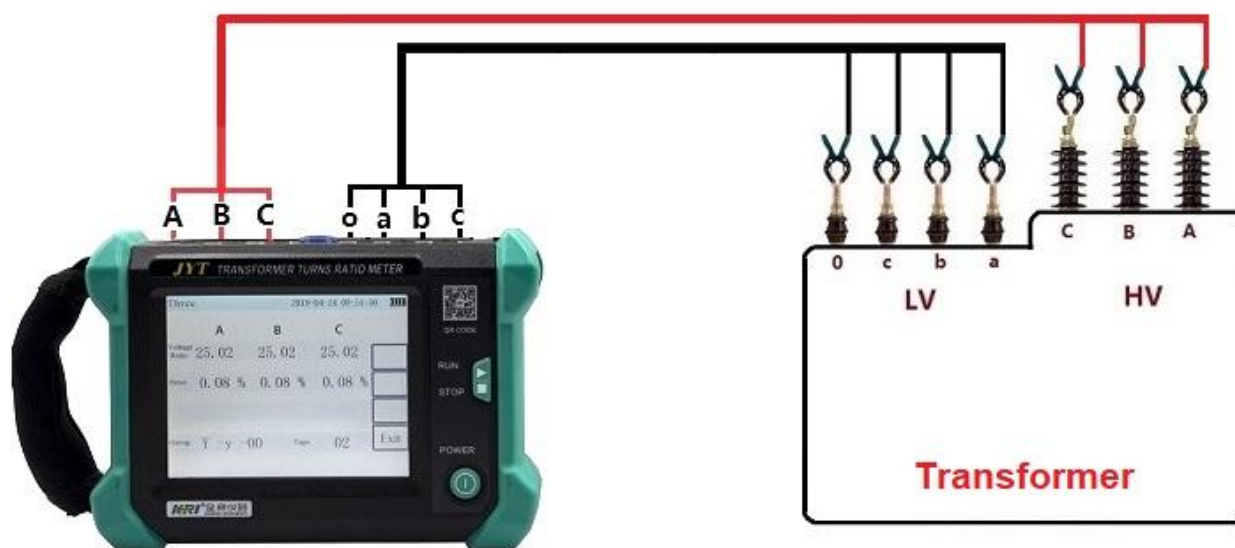
Single-phase test





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Three-phase test



Warning message

- Low battery

If the battery has no bar indication, it means that the battery is almost exhausted. At this time, please use the charger to charge as soon as possible to maintain the battery. Overdischarging the battery may cause permanent damage to the battery.

- Voltage protection

The low voltage is too high. Please check the wiring to confirm whether the high and low voltage test cables are reversed.

- Current protection






The output current is too large. Please check the wiring and the tested product to confirm whether the high voltage test cable is short-circuited.

- Test error

If the test data is abnormal, please check the wiring to confirm whether the test cable has poor contact or open circuit.

Battery maintenance

This instrument is equipped with a special rechargeable battery (model: JY186X2). When the battery is low, the battery should be charged in time, please refer to the table below.

Display	Battery voltage	Battery estimation
	14.6V or less	The battery is almost empty
	14.7 V to 15.1V	20% charge remaining
	15.2V~15.5V	50% charge remaining
	15.6V~15.8V	70% charge remaining
	16V or greater	The battery is full

● Battery Charging

The instrument is equipped with a charging port and a matching dedicated charger.

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.

***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.



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