USER MANUAL

JK2516B

Precision Resistance Tester

Note: The information described in this instruction may not be all of the contents of the instrument. It has been corrected before printing. However, due to the continuous improvement of the product, the company reserves the right to modify the product specifications, characteristics, internal structure, appearance, accessories, packaging and maintenance procedures in the future. Therefore, the contents may change without prior notice. The confusion caused by the inconsistency between the instructions and the instruments can be contacted by our company. The latest news and contents can also be found on the company website.

Changzhou Jinailian Electronic Technology Co., Ltd
No.C3,Building 22,New Impetus Pioneering Center, No.1,Qingyang North Road,Tianning District,Changzhou,Jiangsu,CN
TEL: 0086-519-85563477 FAX: 0086-519-85565067
https://jinailian.en.alibaba.com www.jk17.com www.jaldz.com

Contents

Declaration

The descriptions contained in this manual may not cover all information about this instrument.Introductions to the improvements of the instrument in performance, function, internal structure,outer appearance, accessories, packing material, etc. are subject to change without notice. If youfind any inconformity of this manual with our instruments, please contact us for further consultation by the address listed on the cover.

1)Introduction to Instrument, Unpacking and Installing

Thank you for your purchase and use of our products! This chapter will introduce the basic instrument performance, which is followed by notes of unpacking and installing.

1.1 Introduction to Instrument

JK2516B is a DC Resistance Meter with color LCD display and touch function. Its accuracy of 0.01% is able to meet general resistance test requirements. Better measurement result is obtained for temperature - sensitive resistors by the adoption of temperature compensation function. Statistic function has the capacity to make statistic analysis of massive test data.

JK2516B is a powerful test tool for all kinds of resistor design, detection, quality control and production. Its high test speed is applicable to the spot - check machines on production lines. With multiple output data and comparison mode, JK2516B can meet different test requirements ofdifferent resistor manufacturers. The prominent performance makes the test results come up to IEC and MIL standard.

1.2Unpacking

Inspect the shipping container for damage after unpacking it. It is not recommended to power on
the instrument in the case of a damage container.
If the contents in the container do not conform to the packing list, notify us or your dealer.

1.3Power Connection

1) Power supply: 90V~125V,190~250V
2)Power supply frequencies: 50Hz and 60Hz
3)Power supply power range: ≤30VA
4)L (line wire), N (neutral wire) and E (earth ground wire) of the power supply input socket should correspond to the power plug of the instrument.
6) The instrument has been specially designed for decreasing noise jamming caused by the input in AC power terminal, but it is also recommended to use it in the environment of low noise. If noises cannot be avoided, install a power source filter please.

WARNING: To avoid injury to personnel and damage to the instrument resulting from electric shock, do sure that the earth ground wire is safely grounded.

1.4Fuse

The fuse is a standard configuration, so use the included custom fuse please.

1.5Environment

1)Do not store or use the instrument where it could be exposed to many dusts, great vibration,

direct sunshine and corrosive gas.
2)The instrument should operate under the temperature ranging from 0℃ to 40℃, relative
humidity of no greater than 75%. For high accuracy, use the instrument in the environment above mentioned.
3)For high accuracy, do not block the left air vent so as to ensure good ventilation.
4)The instrument has been specially designed for decreasing noise jamming caused by the AC
power input, but it is also recommended to use it in the environment of low noise. If noise cannot be avoided, install a power filter please.
5)If the instrument will not be used for a long time, please place it in the original or a similar
packing box. The environment temperature should be kept in the range of 5℃ to 40℃, and
the relative humidity should not be greater than 85%. The box should be located in an airy room where it could be exposed corrosive impurities and direct sunlight.
7) Test leads on the instrument that are connected to DUTs should be kept away from strong
electromagnetic fields to avoid interference.

1.6Use of Test Fixture

Only use the test fixture or cable made by our company, because the use of other test fixtures or cables may result in incorrect measurement results. In addition, for good contact of DUT and fixture, keep the test fixture or cable and pins of DUT clean.
Connect the test fixture or cable to HI and LO terminals on the instrument front panel. Ensure the color and arrow conformity of the test fixture with that of sockets on panels, thus to avoid abnormal measurement.

1.7Warm‐up

1)For accurate measurement, the warm‐up time should not be less than 30 minutes.
2)Do not turn on or off the instrument frequently. This may cause internal data confusion.

1.8Other Features

1)Consumption: ≤30VA
2)Dimensions (W*H*D): 235mm*105mm*360mm; this dimension is the final packaging size.
3)Weight: Approx. 3.6kg

2)Introduction to Front and Rear Panels

This chapter will describe the basic operation of JK2516B. Before using the instrument,

please read this chapter carefully.

2.1Introduction to Front Panel

Figure 2 - 1 shows the front panel of JK2516B

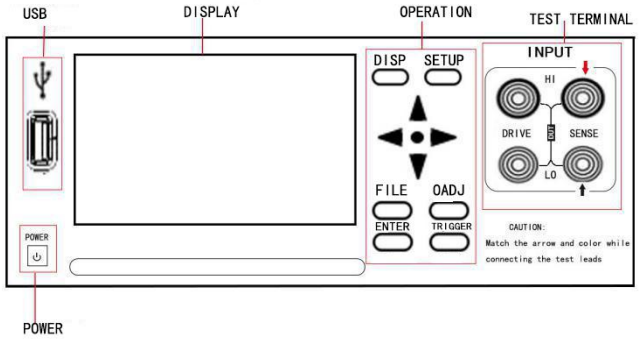


Figure 2 - 1

Serial number	Name	Explain
01	USB interface	HOST interface of USB
02	Power	It is the power switch.
03	Color LCD display	480*272 dot - matrix, 24 - bit, 4.3 - inch TFT is used for measurement setup and result display.
04	[FILE]	Press [FILE] to enter into the page of internal and external File Manage.
05	[ENTER]	Press this key to terminate and store input data.
06	[TRIGGER]	When the trigger mode is set as MANU (manual), pressing this key can trigger the instrument manually.
07	[DISP]	Return measurement display interface
08	[SETUP]	Setup data
09	[OADJ]	Press [0 ADJ] to execute correction function.
010	Test terminal	4 - terminal test terminal is used to measure DUT by a 4 - terminal test cable.The color and arrow of the test cable should correspond to that of socket on panel, thus to avoid abnormal measurement.
011	Universal Arrow Keys	There are four arrow keys: up, down, left and right arrow keys.
012	0 KEY	Function for confirming software area options
013	Trademark and Model	Show instrument trademark and model.

2.2Introduction to Rear Panel

Figure 2 - 2 shows the rear panel of JK2516B

Figure 2 - 2

(1)RS232C serial interface

Realize the serial communication with the computer.

(2) fuse and power outlet

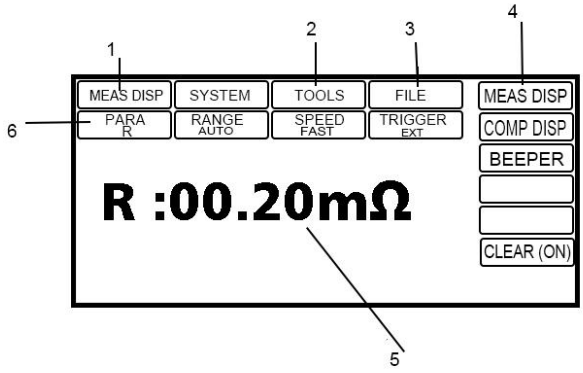
It is used to install power fuse, protect instrument, and input AC power.

(3) nameplate

A specific type used to indicate an instrument.

2.3Display Zone

JK2516B adopts 24 - bit 4.3 - inch LCD touch screen with a resolution of 480*272. The display screen is divided into the following zones, as shown in figure 2 - 3.



1.Page name

This zone shows the current page name.

2.TOOLS

Some short - cut functions can be set: DISP ON/OFF, 0 ADJ ON/OFF, 0 ADJ, OVC ON/OFF, SelfCalib

AUTO/MANU, Save Data.

3.FILE

In this zone, file manage can be executed such as File Manage, Screen Copy.

4.Soft keys

This zone displays the function menu corresponding to the cursor - located zone.

5.Result display

This zone displays the measurement result such as resistance .
6.Function zone
This zone is used to change the measurement parameters.

2.4 Introduction to Buttons on Front Panel

2.4.1 [MEAS DISP]

Press <MEAS DISP> to enter into display homepage. Selectable functions in this page are shown as follows:
<MEAS DISP>
<SORTING DISP>

2.5 Simple Operation

Simple operation steps for JK2516B:
The corresponding menu function at the current cursor will be displayed in the "Soft Key Area". Pressing the SETUP key will select the first softkey in the softkey area, then use the up and down keys to select and press the [O] key to confirm.
When the area where you want to enter a number or file name is selected, press the [O] key to display the numeric keypad. You can use the up, down, left and right keys to select a number or letter and press the [ENTER] key to confirm your entry.

3)Basic Operation

3.1<MEAS DISP>

Touch the screen or press down [MEAS], the <MEAS DISP> page will be displayed in the screen
shown as figure 3 - 1.

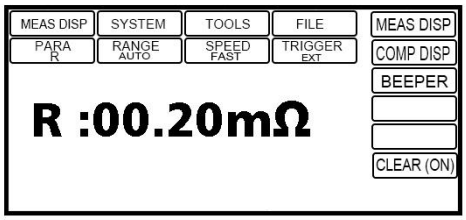


figure 3 - 1.

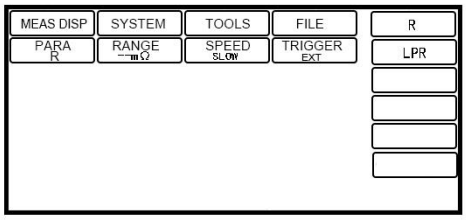
The following measurement parameters can be set on this page.
*Measurement function (FUNC R - T)
*Resistance range (RANGE AUTO)
*Measurement speed (FAST SLOW2)
*File manage (FILE)
*Other tools (TOOLS)
*Soft keys (used to enter into operation pages)

The test results / condition display area on this page shows the following test condition information. These conditions can be set in the tool settings page of the < measurement Settings > page or the tool function page of < measurement display > page is set up.

3.1.1 Measurement Functions

Measurable parameters on JK2516B are as follows:
R (Resistance)
LPR (Resistance tested at low voltage)
Note: All functions can be set and modified by: setting and modifying the function by using the arrow keys and the O button.

Measurement function setting steps:
Use the up and down buttons to select the parameter area, then the right side of the screen will display.
as the picture shows:



R
LPR LPR-T

3.1.2 Measurement Range

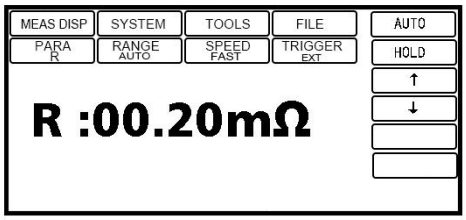
There are two resistance modes: resistance measurement mode and resistance measurement mode at low voltage.
Measure and display two types of parameters: resistance parameters and temperature parameters.

The range of instruments 2MΩ,200kΩ,20kΩ,2kΩ,200Ω,20Ω,2Ω,200mΩ,20mΩ
JK2516 has 9 DC resistance measuring ranges:20mΩ,200mΩ,2Ω,20Ω,200Ω,2kΩ,20kΩ,200kΩ,2MΩ
JK2516A has 7 DC resistance measuring ranges:200mΩ,2Ω,20Ω,200Ω,2kΩ,20kΩ,200kΩ
JK2516B has 7 DC resistance measuring ranges:20mΩ,200mΩ,2Ω,20Ω,200Ω,2kΩ,20kΩ

JK2516B temperature test range (PT500): -10 °C - -99.9 °C
Temperature test range (Analog): 0~2V

Operation steps for setting measurement ranges:

1) Touch the range zone, the following soft keys will be displayed.



1)Touch the range zone, the following soft keys will be displayed.

●AUTO Set the range mode as AUTO.

●HOLD Switch the range mode from AUTO to HOLD. When the range mode is set as HOLD,

the range will be locked at the current measurement range which is displayed in the RANG

zone.

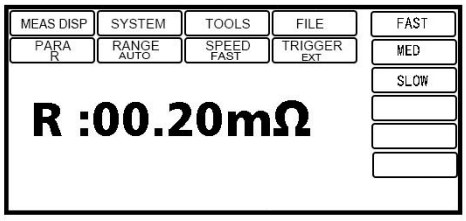
●↑ (+) Increase the range.

●↓ (-) Decrease the range.

3.1.3 Test speed

JK2516B displays the measurement result as a 5‐digit number in the decimal point floating mode.In FAST mode, the result is shown as a 4‐digit number while in MED and SLOW, as a 6‐digit number and temperature as 4‐digit.

1)Touch the speed zone, the following soft keys will be displayed.



FAST

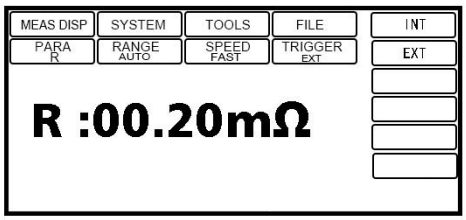
MED

SLOW

2) Use above soft keys to modify the speed.

3.1.4 trigger settings

1)Touch the trigger zone, the following soft keys will be displayed.



■INT

■EXT

3.2< sorting display >

Enter the measurement display interface, press the set key to select the sorting display, press the confirmation key < sorting > enter the interface.

As figure 3-2:

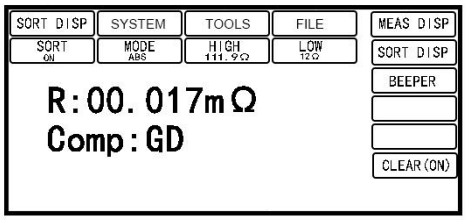


figure 3-2

The following parameters can be set in the < sorting display > page.

file

tool

Sorting

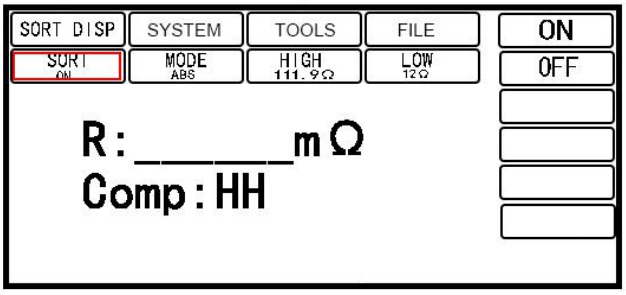
sorting mode

Upper limit (nominal)

lower limit

3.2.1 Sorting settings

1)Touch the sorting zone, the following soft keys will be displayed.



Sorting (ON/OFF): the ON comparison function is opened, and only this value is ON. Counting and sorting sound will play a role.

OFF closes this function.

3.2.2 Compare Mode and SETTINGS of ABS & Percent Error

You can set the compare mode and concerned values by touching the screen or pressing

keyboard. There are two compare modes: ABS and %.

Compare modes:

1) ABS (high and low limits)

In this mode, you can set low and high limits. The instrument will take comparison between the

tested values and the set ones so as to judge the DUT is HI or LO or IN.

2) % (percent error)

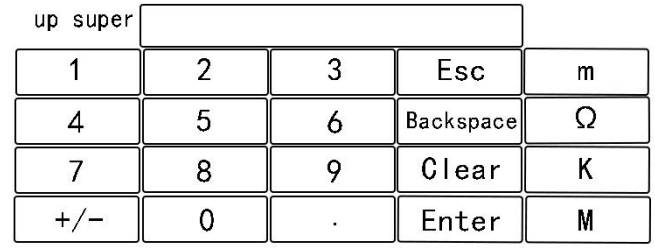
In this mode, you can set the nominal value and the percent error. If you set the nominal value as

100 and percent as 10, the set value should be 100±10%. The instrument will take comparison

between the tested values and the set ones so as to judge the DUT is HI or LO or IN.

3.2.3 up super and low super settings

1)Touch the up super, the following soft keys will be displayed.



Press the up and down key to select the value and press the confirmation key to select the highest setting of 6 digits.

If you find an error in setting, you can select "Backsapce", delete the data by pressing the key, and select "clear".

Press the confirmation key to reset. After setting up, select "Enter" and click confirm key to confirm the setting result.

Select "Esc", click the confirmation button to exit the upper limit setting interface, and enter the measurement display interface.

The setting of the low super is the same as the method of setting the up super.

4)Performance Index

4.1Measurement Function

4.1.1 Measurement Parameters and Notations

R：Resistance

LPR: Resistance tested at low voltage

4.1.2 Measurement Groups

Two measurement groups are available : R ,LPR

4.1.3 Range

Resistance Mode: AUTO, MANU (HOLD, UP, DOWN)

4.1.4 Trigger

Internal, manual, external, bus

Internal: Continuously test a DUT and then output and display the result.

Manual: Press the “TRIGGER” button on the panel, the instrument will test a DUT once and display the result. This mode keeps in waiting mode when it is not used.

External: Test a DUT once and display the result when the instrument receives an external “start up” signal from the footswitch of HANDLER interface on the rear panel.

BUS: The measurement of the instrument will be triggered through the communication interface.

4.1.5 Mode of Test Terminal

4‐terminal measurement mode

DRIVE HI：Current‐drive high terminal

DRIVE LO: Current‐drive low terminal

SENSE HI：Voltage‐sense high terminal

SENSE LO：Voltage‐sense low terminal

4.1.6 Time Expenditure of Measurement

Measurement time=100ms +t1 /100ms +t1 (60Hz) fast speed
130ms +t1 /130ms +t1 (60Hz) med speed
170ms +t1 /170ms +t1 (60Hz) slow speed

Note: t is the waiting time of measurement, and T1 is the data processing time, about 5ms.

4.2Test Signal

4.2.1 Current range

JK2516 :Current range: 1μA‐1A

JK2516A :Current range:10μA-1A

JK2516B:Current range:100μA-1A

4.2.2 Output Voltage of Open Circuit

Output voltage of open circuit: 0.7V ,3V ,40mV

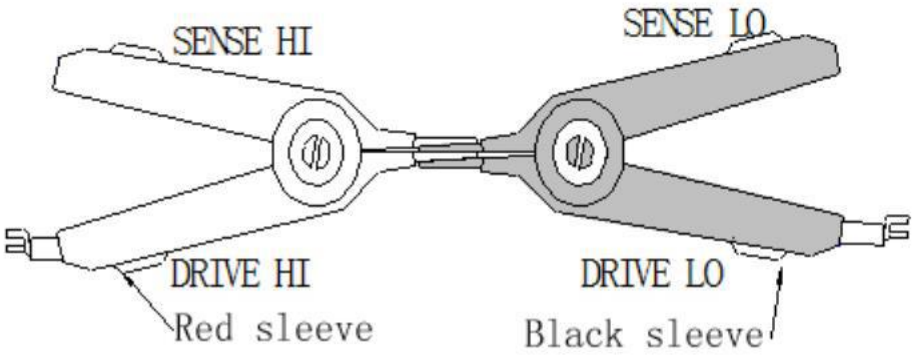
4.2.3 Maximum Display Range

Parameter	Measurement Display Range
R	1μΩ – 2MΩ
LPR	**0**.1mΩ-2.1kΩ

4.3Measurement Accuracy

Measurement accuracy depends on measurement stability, temperature coefficient, linearity,
repeatability and correction interpolation error.
Checking the measurement accuracy should be taken under the following circumstances:
a. Warm - up time should be more than 30 minutes.
b. Correctly short the test cables, turn 0 ADJ to ON and perform short calibration by pressing the touch key or 0 ADJ panel.

The correct short of the test cable is as follows:



4.3.1 Basic Accuracy for Resistance Measurement

JK2516

RANGE	20mΩ	200mΩ	2Ω	20Ω	200Ω	2kΩ	20kΩ	200kΩ	2MΩ
Current	1A	1A	100mA	10mA	1mA	100μA	100μA	10μA	1μA
open voltage	0.7V			3V					
resolution	1μΩ	10μΩ	100μΩ	1mΩ	10mΩ	100mΩ	1Ω	10Ω	100Ω
Accuracy	0.1%+3	0.05%+2	0.05%+2						0.2%+2
temperature coefficient	330ppm		100ppm						

JK2516A

Range	200mΩ	2Ω	20Ω	200Ω	2kΩ	20kΩ	200kΩ
Current	1A	100mA	10mA	1mA	100μA	100μA	10μA
open	0.7V		3V				

voltage							
resolution	10μΩ	100μΩ	1mΩ	10mΩ	10mΩ	1Ω	10Ω
Accuracy	0.05%+2						
temperature coefficient	300ppm	100ppm					

JK2516B

Range	20mΩ	200mΩ	2Ω	20Ω	200Ω	2kΩ	20kΩ
Current	1A	1A	100mA	10mA	1mA	100μA	100μA
open voltage	0.7V			3V			
resolution	1μΩ	10μΩ	100μΩ	1mΩ	10mΩ	100mΩ	1Ω
Accuracy	0.1%+3		0.1%+2				
temperature coefficient	300ppm		100ppm				

4.3.2 Accuracy for Resistance Tested at Low Voltage Measurement

JK2516,JK2516A,JK2516B

RANGE	2Ω	20Ω	200Ω	2kΩ
Current	10mA	1mA	100μA	10μA
open voltage	40mV			
resolution	100μΩ	1mΩ	10mΩ	100mΩ
accuracy	0.2%+5			
temperature coefficient	200ppm			

Note: Rd is the readout of the measuring instrument; Fs is full scale.

5) Package Contents and Warranty

5.1 Package Contents

Following items should be contained in the package.

Serial Number	Name	Quantity
1	JK2516B DC Resistance Meter	1
2	JK2516B 26050A 4‐terminal test cable	1
3	Three‐Wire power line	1
4	PT500 temperature sensor	1
5	Operation Manual	1
6	Manufacturer Certificate	1
7	Fuse of 2A	2
8	Test Report	1
9	Warranty Card	1

Verify that you have received all above items and any optional accessories you may have ordered.

If anyone is missing, please contact our company or operating division without delay.

5.2Marks

The following marks can be seen on each instrument panel and nameplate:

a.Manufacturer name and trademark

b.Product name and model

c.Product number and date

d.the License for Manufacturing Measurement Instruments and its number

e.Marks for test terminal

5.3Package

The instrument, generally wrapped in a plastic bag, should be packed in a strong packing box that

could resist dust, vibration and moisture. Accessories, spare parts, operation manual and manufacturer certificates, etc. should also be included in it.

5.4 Shipping

In the shipment, the instrument should be handled with care and some precautions must be taken to resist moisture and water.

5.5Storage

The instrument should be stored in an airy room where the environment temperature ranges from 5℃ to 40℃, relative humidity is not greater than 85% and the air contains no detrimental

impurities that might corrode the instrument.

5.6Warranty

This Jinko instrument product is warranted against defects in material and workmanship for a period of two years from the date of shipment. You should supply us with the warranty card before you enjoy the free maintenance service. This warranty does not apply in the event of misuse or abuse of the product or as a result of unauthorized alterations or repairs. Jinko will,without charge, repair or replace, at its option, defective product or component parts.

The maintenance for this instrument should be performed by professional maintenance personnel. Do not substitute the internal components unauthorized when maintaining. In order to ensure the measurement accuracy, the instrument must be measured and corrected after maintenance. You should bear the maintenance expense for damages caused by unauthorized repairing or substituting components.