User Manual

Limited Warranty and Liability

From the date of purchase, this product is covered by a one-year warranty.

This warranty does not cover damage to general accessories, blown fuses, or damage caused by accident, negligence, misuse, modification, contamination, or abnormal operating environments.

Note: If the device freezes or becomes unresponsive during use, please restart it.

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Overview

This product is a 2-in-1 digital measuring instrument combining a transistor tester and a high-precision multimeter. It features an elegant design, compact size, portability, and flexible operation.

It is equipped with a 2.4-inch TFT high-definition display and supports one-button intelligent switching between transistor test mode and multimeter mode.

In transistor test mode, it provides professional measurement and analysis of various semiconductor components, including transistors, diodes, bipolar transistors, and field-effect transistors.

In multimeter mode, it adopts a 25,000-count high-precision display, capable of simultaneously displaying measurement values and waveform curves.

This product offers users a “one device, multiple functions, precise and efficient” measurement solution and is an essential tool for electronic repair, education, and R&D applications.

Safety Information

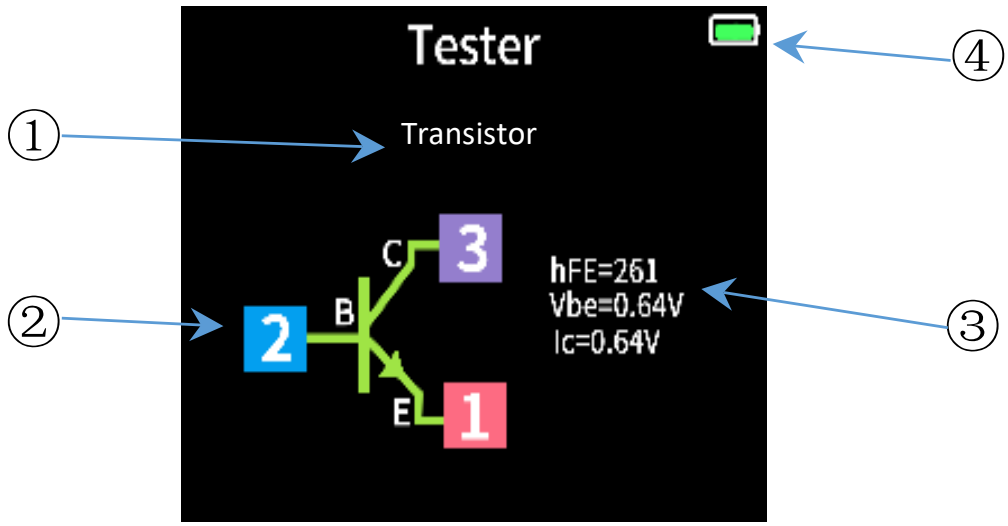
To avoid possible electric shock, fire, or personal injury, please read the safety precautions carefully before use.

Use this product only for its specified purpose, otherwise the protection provided by the instrument may be impaired.

- Before using the product, check whether the enclosure is cracked or damaged. Carefully inspect the insulation around the input terminals.
- Use the correct input terminals and measurement ranges as specified in this User Manual.
- Do not use this product in explosive gas, vapor, or humid environments.
- Keep your fingers behind the probe finger guards when using the test leads.
- Do not touch unused input terminals when the instrument is connected to a circuit.
- Disconnect the test leads from the circuit before changing measurement ranges.
- DC voltages above 36 V or AC voltages above 25 V may cause serious personal injury. Use caution to avoid electric shock.
- Select the correct measurement function and range to avoid damage to the instrument or personal injury.
- Do not operate the product with the front or rear cover open.
- When the battery level is low, measurement accuracy may be affected. Recharge promptly.
- Keep the device stable during use and avoid severe shaking.

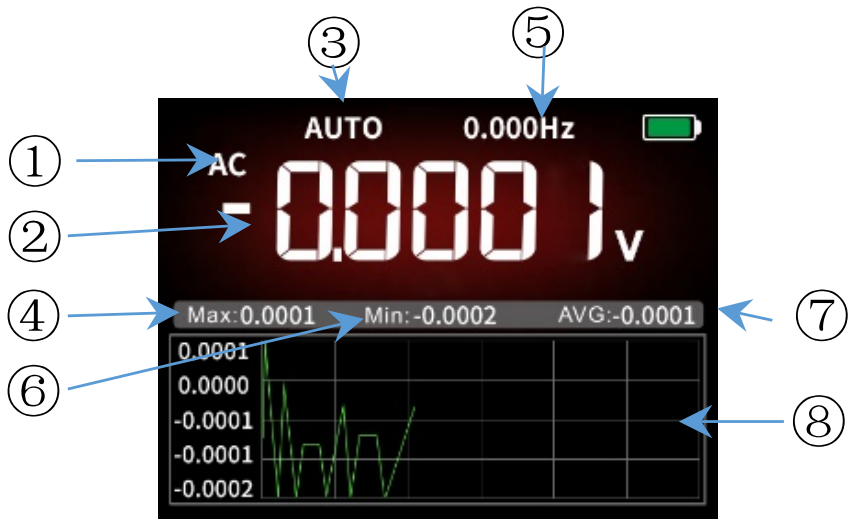
Instrument Panel Description

Transistor Test Display Interface Description



1	Component Name	Automatically identifies and displays the component name during measurement, such as transistor, diode, field-effect transistor, etc.
2	Component Symbol	Automatically recognizes the component during measurement and displays the corresponding component symbol and pin configuration.
3	Component Parameters	Automatically displays the relevant component parameters during measurement.
4	Battery Level Indicator	Displays the current power supply / battery status.

Multimeter Display Interface Description



1	Measurement Symbol Display	Displays the symbol of the current measurement type, including AC, DC, Resistance, Capacitance, Diode, and Continuity (Buzzer).
2	Main Display	Displays the multimeter measurement value, with a maximum display of 25,000 counts.
3	AUTO	Indicates that the meter is currently in auto-ranging mode.
4	Max	Displays the maximum measured value.
5	FreQ	Displays the measured frequency value.
6	Min	Displays the minimum measured value.
7	AVG	Displays the average measured value.
8	Waveform Display Area	Automatically generates a waveform curve based on changes in the measured value, recording the variation state of the measured signal.

Key Function Description

- 1 Power Key

Long press (2 seconds): Power ON/OFF
Short press (Multimeter mode): Clear waveform record

- 2 RANGE / REL Key

Short press: Manual range selection
Long press: Enter relative measurement mode

- 3 Up Arrow Key

Long press: Switch between multimeter and transistor test modes
Short press (settings): Adjust values or move menu selection
Short press (multimeter): Switch current ranges
Short press (transistor mode): Start test

- 4 Down Arrow Key

Short press (multimeter): Switch voltage ranges
Short press (settings): Decrease value or move right
Long press (transistor mode): Enter diode test
Short press (transistor mode): Enter toolbox

- 5 Return Key

Return or exit settings
Switch resistance, capacitance, diode, continuity, and temperature ranges in multimeter mode

- 6 OK / MENU Key

Long press: Enter system settings
Short press (settings): Confirm
Short press (multimeter): Save data

Transistor Test Function Introduction

Input Terminals

To accommodate rapid testing of components with different packages, the transistor test input terminals include locking sockets and SMD sockets.

Locking sockets are used for leaded components

SMD sockets are used for surface-mount components

Measurement Method

1.Long press the MODE key to switch to transistor test mode.

2.Insert the component into the appropriate socket.

3.Short press the TEST key to start testing. Parameters and pin configuration will be displayed automatically.

4.Read the measurement results on the screen.

Notes:

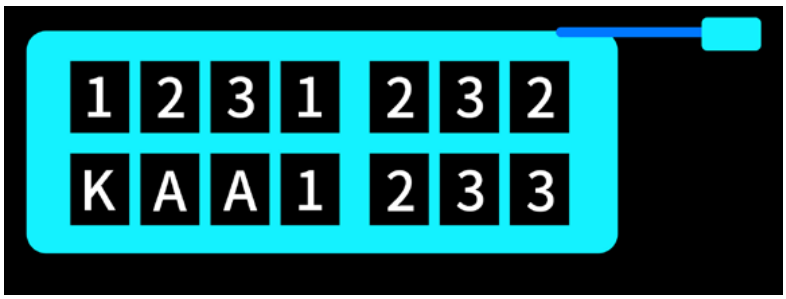
For two-pin components, insert the pins into any two of (1–2, 1–3, or 2–3).

For three-pin components, insert the pins into (1–2–3).

For Zener diodes, insert the positive terminal into A and the negative terminal into K.

Transistor Test Function Introduction

Measurement Socket



The locking socket is divided into 1–2–3 area and K–A–A area.

Sockets marked with the same number (1, 2, or 3) are internally connected.

The lever on the left side loosens the socket when raised and locks it when lowered.

Two-pin components may be inserted into any two different numbered sockets.

Three-pin components may be inserted into any three different numbered sockets.

The K–A–A sockets are dedicated for withstand voltage testing and contain DC high voltage above 30 V.

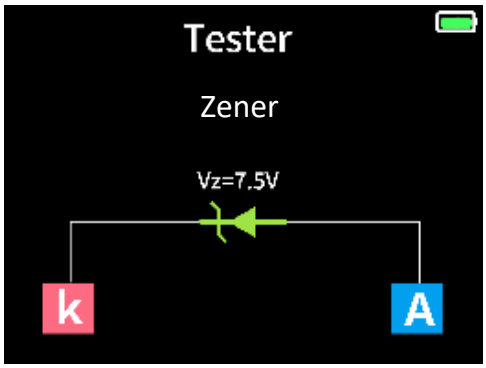
K: Positive

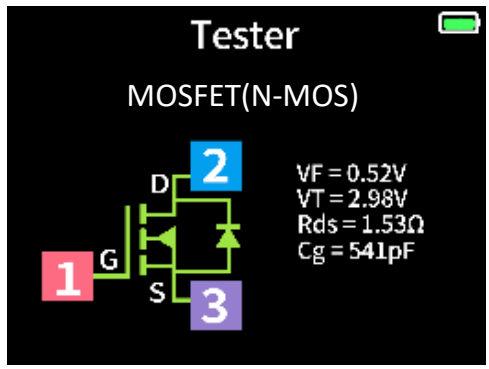
A: Negative

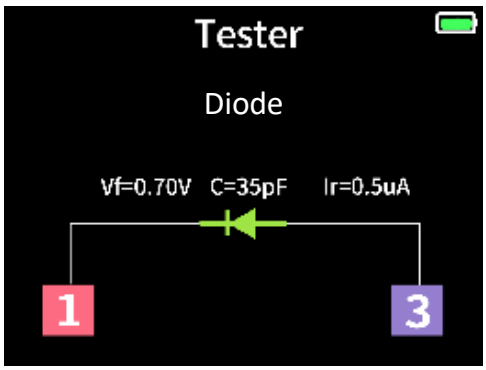
Do not mix with other tests.

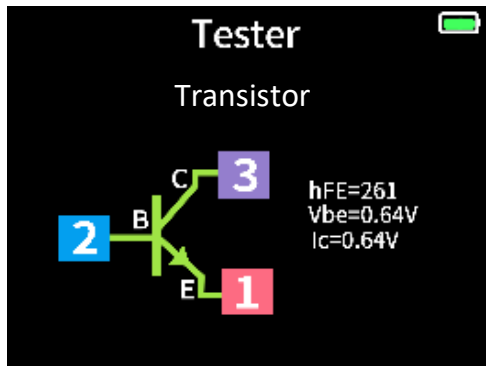
Transistor Test Function Introduction

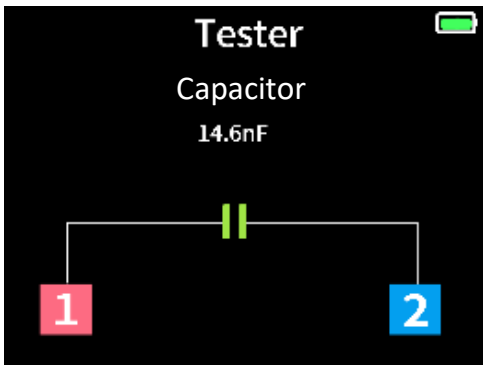
Measurement Status Display

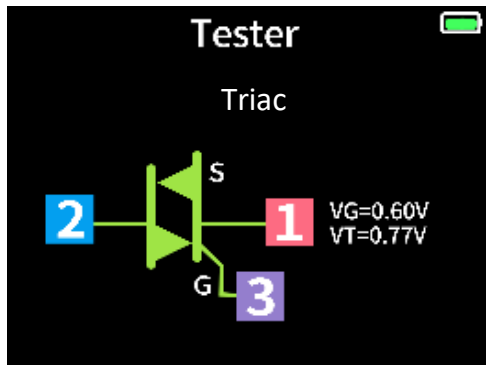






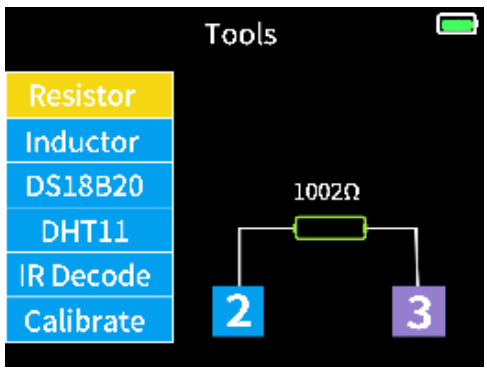


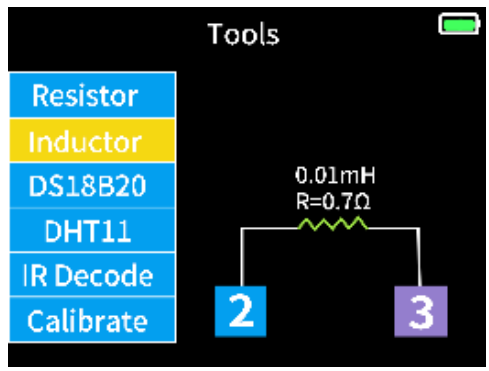


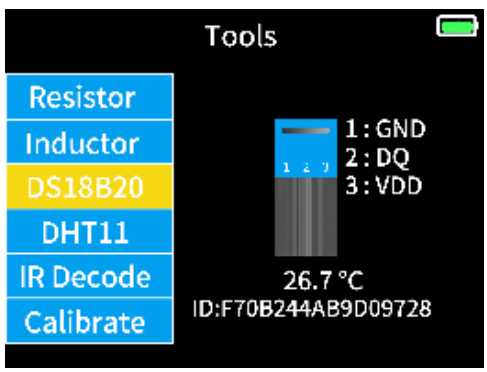


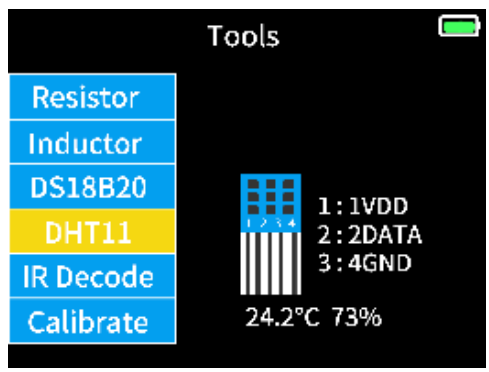
Transistor Test Function Introduction

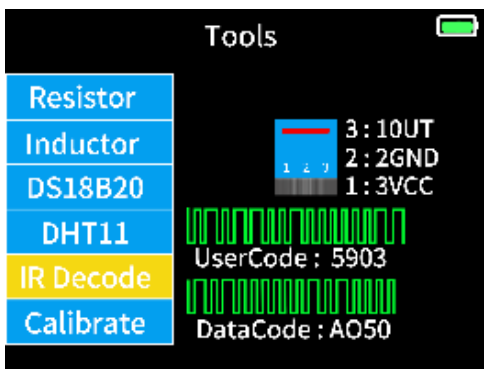
Measurement Status Display











Multimeter Function Introduction

Measurement Input Terminals

1	Input terminal for current measurement (≤ 10 A)
2	Input terminal for current measurement (≤ 250 mA)
3	Common (return) terminal for all measurements
4	Input terminal for the following measurements: 1.AC / DC voltage 2.Resistance 3.Capacitance 4.Frequency 5.Continuity 6.Diode 7.Temperature

Measurement Methods

AC/DC Voltage Measurement

1. Insert the black probe into COM and the red probe into V Ω Hz.
2. Select the appropriate voltage range: DCV, ACV, DC mV, or AC mV.
3. Touch the probes to the correct test points.
4. Read the voltage value displayed. Frequency will be shown simultaneously during AC voltage measurement.

Warning:
- Do not exceed the rated maximum input voltage.
- Avoid contact with high-voltage circuits during measurement.

Resistance Measurement

1. Insert the black probe into COM and the red probe into V Ω Hz.
2. Select the resistance range.
3. Touch the probes to the test points.
4. Read the resistance value displayed.

AC/DC Current Measurement

1. Insert the black probe into COM. Insert the red probe into 10A or mA terminal according to the expected current value.
2. Select DCA or ACA mode.
3. Break the circuit and connect the meter in series.
4. Read the current value displayed.

- Warning:
- Do not exceed the maximum rated current.
- If the current value is unknown, start with the A terminal.
- Never input voltage in current measurement mode.

Continuity Test

1. Insert probes into COM and V Ω Hz.
2. Select continuity mode.
3. If the buzzer sounds, the circuit is shorted.

Diode Measurement

1.Select diode mode.

2.Connect the red probe to the diode anode and black probe to the cathode.

3.Read the forward voltage drop.

4.“OL” indicates reverse polarity or a faulty diode.

- Do not apply voltage in continuity or diode mode.
- Disconnect circuit power and discharge capacitors before testing.

Capacitance Measurement

1. Insert probes into COM and V Ω Hz.
2. Select capacitance mode.
3. Connect probes to the capacitor terminals.
4. Read the stable capacitance value.

Temperature Measurement

1. Insert the thermocouple black plug into COM, red plug into V Ω Hz.
2. Select temperature mode.
3. Touch the probe to the test point.
4. Read the temperature value.

System Settings

Press the MENU key to enter system settings.

Use the arrow keys to select and adjust values.

Press MENU to confirm and Return to exit.

System Settings List	
Setting Item	**Description**
Language	English, Chinese
Volume	0%~100%
Auto Power Off	Set auto power-off time: 10 minutes ~ 120 minutes
Backlight Brightness	10%~100%
Auto Power Off	Off, 5 minutes ~ 120 minutes
Restore Factory Settings	No, Yes (restore to factory default data)
About	Displays current firmware version information

Firmware Upgrade

1.With the device powered off, press and hold the RANGE key, then press the Power key.

The screen will display “USB-Boot”.

2.Connect the device to a computer using a TYPE-C cable.

A TesterMeter U-disk will appear.

3.Copy the upgrade firmware into the U-disk. The upgrade will start automatically.

Do not operate the device during the upgrade.

4.When the progress reaches 100%, the upgrade is complete.

Maintenance

Except for basic maintenance, do not attempt to repair or modify this product unless you are qualified and have the appropriate calibration and repair documentation.

Cleaning

Clean the enclosure with a damp cloth and mild detergent.

Do not use corrosive agents or solvents.

Dust or moisture in the input terminals may affect measurement accuracy.

Before cleaning, disconnect all input signals.

Battery Charging

When the battery indicator shows low power  , recharge promptly.

Charging methods:

Connect TYPE-C cable to a DC 5 V adapter

Connect TYPE-C cable to a computer USB port

Charging: Indicator light red

Fully charged: Indicator light blue

Technical Specifications

General Multimeter Specifications	
Display	25,000 counts
Range Selection	Auto / Manual
Housing Material	ABS+TPE
Sampling Rate	3 times / second
True RMS	√
Data Hold	√
Backlight	√
Low Battery Indicator	√
Auto Power Off	√

Mechanical Specifications	
Dimensions	149*76*33.5mm
Weight	191 g (with built-in battery)
Battery Type	2000 mAh lithium battery × 1
Warranty	One year

Environmental Specifications		
Environment	Temperature	0~40℃
	Humidity	＜75%
Storage	Temperature	-20~60℃
	Humidity	＜80%

Technical Specifications

Function	*Range*	*Resolution*	*Accuracy*
DC Voltage (V)	2.5000V	0.0001V	±(0.05%+3)
	25.000V	0.001V	
	250.00V	0.01V	
	1000.0V	0.1V	
DC Voltage (mV)	250.00mV	0.01mV	±(0.5%+3)
AC Voltage (V)	2.5000V	0.0001V	±(0.5%+3)
	25.000V	0.001V	
	250.00V	0.01V	
	750.0V	0.1V	
AC Voltage (mV)	250.00mV	0.01mV	±(0.8%+3)
AC Voltage Frequency Response: 40 Hz ~ 1 kHz			

Function	*Range*	*Resolution*	*Accuracy*
DC Current (A)	2.5000A	0.0001A	±(0.5%+3)
	10.000A	0.001A	
DC Current (mA)	25.000mA	0.001mA	±(0.5%+3)
	250.00mA	0.01mA	
AC Current (A)	2.5000A	0.0001A	±(0.8%+3)
	10.000A	0.001A	
AC Current (mA)）	25.000mA	0.001mA	±(0.8%+3)
	250.00mA	0.01mA	
AC current frequency response: 40 Hz – 1 kHz			

Function	*Range*	*Resolution*	*Accuracy*
Resistance	250.00Ω	0.01Ω	±(0.5%+3)
	2.5000kΩ	0.0001kΩ	±(0.2%+3)
	25.000kΩ	0.001kΩ	
	250.00kΩ	0.01kΩ	
	2.5000MΩ	0.0001MΩ	±(1%+3)
	25.00MΩ	0.01MΩ	
	250.0MΩ	0.1MΩ	±(5.0%+5)
Capacitance	9.999nF	0.001nF	±(5.0%+20)
	99.99nF	0.01nF	±(2.0%+5)
	999.9nF	0.1nF	
	9.999μF	0.001μF	
	99.99μF	0.01μF	
	999.9μF	0.1μF	
	9.999mF	0.001mF	±(5.0%+5)
	99.99mF	0.01mF	

Function	*Range*	*Resolution*	*Accuracy*
Frequency	9.999Hz	0.001Hz	±(2.0%+2)
	99.99Hz	0.01Hz	±(0.1%+2)
	999.9Hz	0.1Hz	
	9.999kHz	0.001kHz	
	99.99kHz	0.01kHz	
	999.9kHz	0.1kHz	

Function	*Range*	*Resolution*	*Accuracy*
Temperature	(-20~1000)℃	1℃	±(2.5%+5)
	(-4~1832)℉	1℉	
Diode	√		
Continuity	√		

Transistor Tester Technical Specifications

Item	Range	Description
Bipolar Transistor	10<β<600	hFE – current gain; Vbe – forward voltage drop of emitter junction; Ic – collector current
Diode	Forward voltage < 4.5 V	Vf – forward voltage; C – junction capacitance; Ir – reverse leakage current
Zener Diode	0.01~4.5V 0.01~32V	Vz – reverse breakdown voltage; Forward voltage measured in 1-2-3 area; Reverse breakdown voltage measured in K-A-A test area
Field-Effect Transistor	JFET IGBT MOSFET	Vf – forward conduction voltage of protection diode; Vt – threshold voltage; Rds – on-resistance; Cg – gate capacitance
Thyristor	Unidirectional, Bidirectional	Vg – gate trigger voltage; Vt – on-state voltage drop
Resistor	0.01~30MΩ	Resistance value
Capacitor	1pF~100mF	Capacitance value; Vloss – dissipation factor; ESR – equivalent series resistance
Inductor	10uH~1000mH	Inductance value; R – DC resistance
DS18B20	0~85℃	Temperature
DHT11	0~60℃ 5%~95%	Temperature and humidity
Infrared Remote Decoder	NEC protocol IR code	Displays user code and data code; Displays corresponding infrared waveform