正面

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Statement

⚠ **CAUTION**

The "CAUTION" sign indicates a hazardous situation which, if not avoided, could cause damage to the multimeter or equipment.
Care must be taken when performing the operation. Failure to perform this operation correctly or to follow this procedure may result in damage to the multimeter or equipment. Do not proceed with any operation indicated by the CAUTION sign without meeting these conditions or without fully understanding them.

⚠ **WARNING**

The "Warning" sign indicates a hazardous situation which, if not avoided, could pose a danger to the user.
Care must be taken when performing this operation. Failure to perform this operation correctly or to follow this procedure may result in personal injury or death. Do not proceed with any operation

indicated by the WARNING sign without meeting these conditions or without fully understanding them.

Please read the instructions carefully and pay attention to the relevant safety warnings before use.

Overview

This portable digital multimeter has stable performance, high accuracy, low power consumption and novel structure, which is safe and reliable, making it an ideal measuring instrument for most users.
This instrument can measure DC voltage, AC voltage, 1.5V/9V/12V battery voltage, resistance, diode and continuity. Non-contact voltage detector promptly reminds users to pay attention to safety in operation for a secure use.
This manual includes relevant safety information and warnings. Please read the relevant contents carefully before use and strictly abide all warnings and cautions.

Safety Information

This measuring instrument is designed and produced strictly in accordance with the safety requirements for IEC61010 and meets the double insulation over-voltage standard CAT III 600V and pollution degree II.
Failure to use the instrument as described in this user

manual can weaken or negate the protections provided.

Safe Work Procedure

⚠ **WARNING**

In order to avoid possible electric shock or personal injury, please strictly comply with the following instructions:

- Please read the "Safety Instructions" before use. Use the instrument in strict accordance with the regulations. Failure to use the instrument as described in this user manual can weaken or negate the protections provided
- Inspect the case before using the meter. Check for cracks or defective plastic parts. Pay attention to the insulation around the connectors.
- Do not use the meter if it is not working properly or is damaged.
- Do not touch conductors when measuring voltages greater than 30V AC (true RMS), 42V AC (peak) or 60V DC.
- The meter should be used in accordance with the specified measurement category, voltage or battery operating voltage.
- Please replace the battery promptly when low battery symbol is displayed to prevent measurement errors.

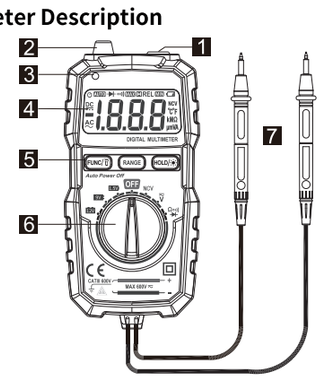
- Please follow local and national safety regulations. Wear personal protective equipment (approved rubber gloves, masks, flame-retardant clothing, etc.) to prevent injury from electric shock and arcing when dangerous live conductors are exposed.
- Do not apply signals greater than those specified between any two terminals or any terminal and ground.
- Measure a known voltage to determine if the meter is operating properly.
- Use the proper terminals, function, and range for your measurements.
- Do not store or use the instrument in an explosive or flammable environment or an environment characterized by high temperature, high humidity, or strong electromagnetic fields.
- Do not use test leads that have been damaged. Inspect the test leads for damaged insulation or exposed metal. Check the test leads for continuity.
- When measuring, please connect the neutral or ground wire first, and then the live wire. When disconnecting, please cut off the live wire first, then the neutral or ground wire.
- Keep fingers behind the finger guard on the test leads to avoid electrical shocks when measuring.
- Disconnect the test leads from any source of voltage before removing the back cover.
- Do not use the meter in an environment that

exceeds the measurement category (CAT) rating of the lowest rated individual component of the meter, test leads, or accessories.

Safety Symbols

⚠	Warning and Caution safety label	⧈	Double insulation or reinforced insulation
CE	Complies with CE standard		Shall not be discarded as household garbage

Meter Description



① Backlight
② Non-contact voltage induction zone
③ Non-contact voltage induction indicator
④ Display
⑤ Button
⑥ Function switch
⑦ Red test lead
⑧ Black test lead

FUNC/ Function selection button and backlight button. Press and hold it for 2 seconds to turn on the backlight. You can press and hold it again for 2 seconds to turn it off manually.

RANGE Range selection button. Press short to enter the manual range selection, and press short again to switch to the next range. Press and hold for 2 seconds to return to auto-range mode.

HOLD/ Data hold button. Press and hold it for 2 seconds to turn on the backlight. It will go off automatically after about 15 seconds, or you can press and hold it for 2 seconds to turn it off manually. The meter will automatically turn off to save power, when there is no operation within 15 minutes. Press and hold the button FUNC/ to turn on the meter, and the auto-off function will be canceled. In the auto-off state, the meter will turn on automatically by pressing the FUNC/ button or dialing the switch.

Measuring Procedure

Battery Test

1. Turn the function switch to the position

corresponding to the rated voltage of the single dry battery.
2. Connect the red test lead to the positive terminal of the battery to be tested, and the black test lead to the negative terminal of the battery.
3. Read the voltage and polarity of the battery from the display.

Note: The battery detection function will consume the battery capacity. Do not run the test for a long time. The internal resistance of the battery is about 75Ω at 1.5V, about 510Ω at 9V, and 680Ω at 12V.

⚠ **WARNING**

- **This gear can't be used as voltage measurement gears. Do not use this gear to measure the operating voltage of DC sources other than batteries. Otherwise, there is a risk of damage to the meter.**
- **Do not measure the battery voltage beyond the labeled value, as this may burn out the meter. If you need to measure multiple battery packs, it is recommended to remove the single cells and measure them in sequence.**

Non-Contact Voltage Test

1. Turn the function switch to the NCV position.
2. Place the non-contact voltage induction zone of the meter close to the live wire of the AC voltage.
3. The non-contact voltage induction indicator will light up and you will hear the beep sound, indicating

that there is AC voltage on the live wire.

Note: The strength of the induction signal is affected by distance and insulation. Please do not rely entirely on the NCV function to determine the presence or absence of electricity.

AC/DC Voltage Measurement

1. Set the function switch to the V position and press the FUNC/ button to select DC or AC voltage measurement function.
2. Connect the test probes to each end of the voltage to be measured.
3. Read the measurement results from the display. When measuring DC voltage, the display also shows the voltage polarity of the test point of red test probes.

⚠ **WARNING**

- **The input voltage should not be higher than 600V RMS. It is possible to display higher voltage values, but there is a risk of damage to the meter.**
- **Be extra careful when measuring voltages greater than 36V to avoid electric shock.**
- **After completing the measurement operation, disconnect the test leads from the circuit under test.**

Resistance Measurement

1. Set the function switch to the Ω position and press the FUNC/ button to select resistance measurement function.

2. Connect the test probes to each end of the resistance to be tested.
3. Read the measurement result from the display.

⚠ **WARNING**

- **To prevent possible electric shock, fire, or personal injury, please disconnect power supply from the circuit under test and fully discharge all high-voltage capacitors before measuring resistance.**
- **After completing the measurement operation, disconnect the test leads from the circuit under test.**

Diode Test

1. Set the function switch to the Ω position and press the FUNC/ button to select diode test function.
2. Connect the red test probe to the anode of the diode to be measured and the black test probe to the cathode of the diode to be measured.
3. The reading on the display is an approximation of the forward voltage drop of the diode. Reverse connection will show "**OL**"

⚠ **WARNING**

- **To prevent possible electric shock, fire, or personal injury, please disconnect power supply from the circuit under test and fully discharge all high-voltage capacitors before measuring diodes or continuity.**

- **If the diode under test is in the open circuit or the polarity is reversed, the meter will display "OL".**
- **After completing the measurement operation, disconnect the test leads from the circuit under test.**

Continuity Test

1. Set the function switch to the Ω position and press the FUNC/ button to select continuity test function.
2. Connect the test probes in parallel to each end of the measured circuit. The buzzer will sound, when the resistance of the measured circuit is less than 35Ω.

Note: The buzzer may make a slight sound at 35Ω ~100Ω.

⚠ **WARNING**

- **To prevent possible electric shock, fire or personal injury, disconnect power to the circuit to be measured and fully discharge all high voltage capacitors before measuring diodes or continuity.**
- **After completing the measurement operation, disconnect the test leads from the circuit under test.**

General Specifications

- Operating environment condition: IEC/EN 61010-1 600V CAT III; Pollution Degree II
- Altitude < 2000 m
- Operating temperature and humidity: 0~40°C (<80% RH, not considered when <10°C)
- Storage temperature and humidity: -10~60°C (<70% RH without battery)
- Temperature coefficient: 0.1 x Accuracy / °C
- Maximum voltage allowed between measurement terminal and ground: 600V DC or AC RMS
- Sampling rate: approx. 3 times per second
- Display: 3 1/2 digits LCD
- Over-range indication: "OL" is displayed
- Battery low voltage indication: is displayed
- Input polarity indication: "—" is automatically displayed
- Power supply: 2 x 1.5V AAA batteries
- Dimension: 128 x 61 x 25 mm

Accuracy

Accuracy is applicable within one year after calibration. Reference conditions: ambient temperature 18°C~28°C, RH <80%

DC Voltage

Range	Resolution	Accuracy
200mV	0.1mV	±(0.8%rdg+5dgt)
2V	0.001V	
20V	0.01V	
200V	0.1V	±(1.0%rdg+5dgt)
600V	1V	

Input impedance: Approx. 10MΩ.
Maximum input voltage: 600V DC or AC RMS

AC Voltage

Range	Resolution	Accuracy
2V	0.001V	±(1.2%rdg+5dgt)
20V	0.01V	
200V	0.1V	
600V	1V	

Input impedance: Approx. 10MΩ.
Maximum input voltage: 600V DC or AC RMS
Frequency: 40Hz~1000Hz

Battery Test

Position/Range	Resolution	Load
1.5V/2V	0.001V	75Ω
9V/20V	0.01V	510Ω
12V/20V	0.01V	680Ω

Maximum input voltage: 1.5V position (2V); 9V position (11V); 12V position (13V)

Note: Excessive input voltage may burn out the load resistance.

Resistance

Range	Resolution	Accuracy
200Ω	0.1Ω	±(0.8%rdg+3dgt)
2kΩ	0.001kΩ	
20kΩ	0.01kΩ	
200kΩ	0.1kΩ	
2MΩ	0.001MΩ	
20MΩ	0.01MΩ	

Over voltage protection: max. 600V DC or AC RMS

Diode

Function	Range	Resolution	Test environment
Diode	2V	0.001V	Open circuit voltage: approx. 2.4V. The display shows the approximate value of the forward voltage drop of the diode.

Over voltage protection: max. 600V DC or AC RMS

Continuity

Function	Description	Test environment
	The buzzer beeps when the measured resistance value is less than 35Ω.	Test current: about 1mA; Open circuit voltage: about 2.4V.

Over voltage protection: max. 600V DC or AC RMS

Maintenance

Disclaimer: Do not attempt to repair this meter unless you are an experienced repairer and have relevant calibration, performance test and maintenance materials at hand.

⚠ **WARNING**

- **Do not use the meter for any measurement operation while the case is open.**
- **Remove the input signal and turn off the meter before cleaning.**
- **Replace with specified parts. Let a professional technician repair the meter.**

General Maintenance

Clean the case with a damp cloth and a small amount of detergent. Do not use abrasives or chemical solvents.

Battery Replacement

⚠ **WARNING**

- **To avoid electric shock or personal injury caused by incorrect readings, the battery should be replaced promptly when the " " symbol appears on the display.**
- **Please remove the batteries when the meter is not in use for a long period of time to prevent damage to the product due to battery leakage.**
- **To avoid electric shock or personal injury, please turn off the meter and check if the test leads are disconnected from the measurement circuit, before opening the back cover to replace the battery.**

Please follow the steps below to replace the battery:
1. Turn off the meter.
2. Disconnect the test leads from the circuit to be measured.
3. Loosen the screw of the back cover with a screwdriver and remove the back cover.
4. Remove the old batteries and replace them with new ones.
5. Put on the back cover and tighten the screws.

反面

折页前尺寸:230mm*320mm
折页后尺寸:115mm*80mm
双面印刷,页面边框不要印