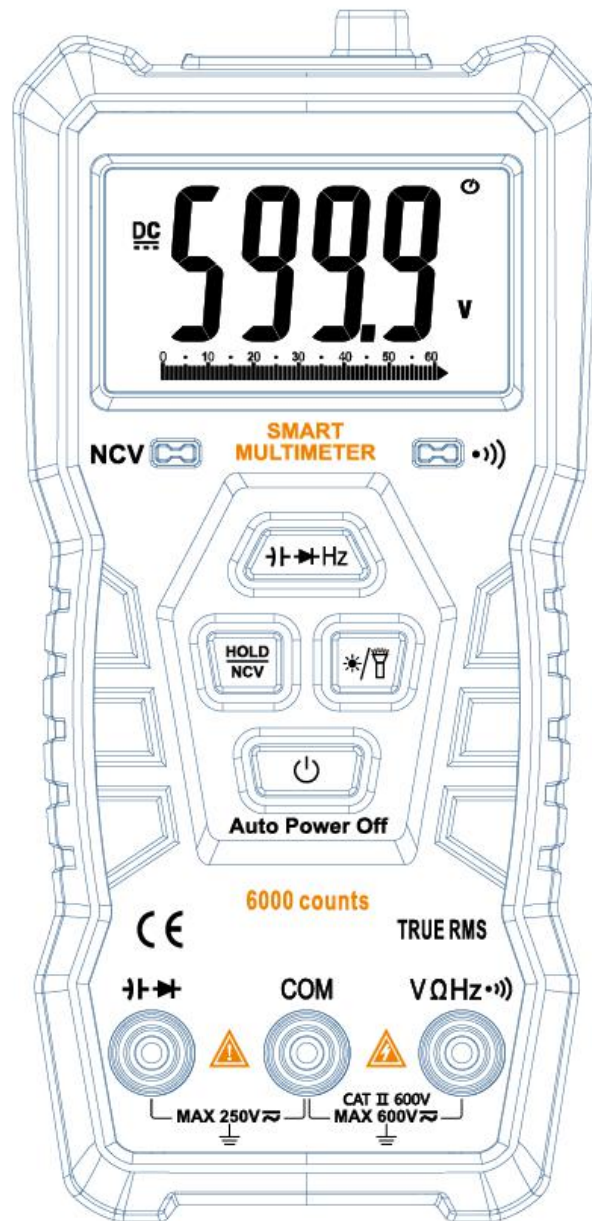


Intelligent Digital Multimeter



Brief Introduction

The meter is a portable intelligent one that can automatically identify the ACV, DCV, resistance, buzzer and capacitance and choose the range accordingly. The users with no professional physical knowledge can measure the technical data of electrical appliance easily.

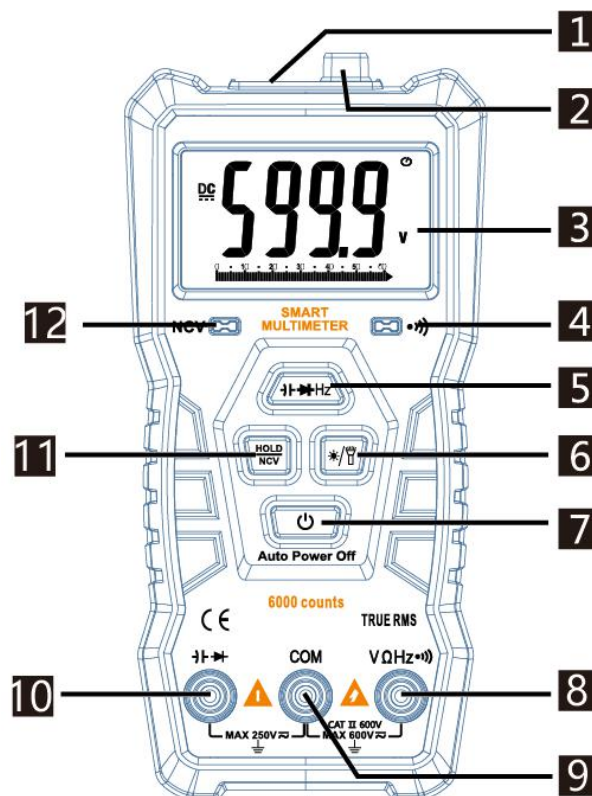
The meter has illumination, backlight function and magnetic adherence design can provide lots of help to air conditioner maintenance engineers.

All the ranges have overload protection of 250V AC/DC.

The large LED screen has analog display which can show the variation trends of the measurements. 5999 display makes the readings more accurate.

It complies with the IEC 61010 600V CATII and pollution grade 2 standards.

Panel Symbols:



- 1: Illumination
2. NCV sensing area
3. LED display
4. Buzzer
5. Capacitance/Diode/Frequency shift button
6. Backlight/illumination button
7. Power on/off
8. $V\Omega Hz$ input socket
9. COM input socket
10. \rightarrow input socket
11. Data Hold/NCV button
12. NCV indicator

Safety Information

Safety Instructions








*When using this meter, the user must comply with all the standard safety regulations in the following two aspects

A: Protection against electric shocks

B: Preventing the misuse of the instrument's safety procedures


*To ensure your personal safety, please use the test pen provided with the meter, check before use, and make sure they are intact.

Safety Symbols

	Warning
	AC (alternative current)
	DC (direct current)
	Ground
	Double insulation
	European union standard
	High voltage warning
CAT II	II category overvoltage protection

Safety Notices:

- The use of meter instruments near devices with large electromagnetic disturbances will be unstable and may even cause large errors.

- Do not use when the appearance of the meter or the test pen is broken.
- If the meter is not used correctly, the safety functions provided by the meter may fail.
- Care must be taken when working around bare conductors or buses.
- Do not use this instrument near explosive gas vapor or dust.
- The correct input function must be used to measure the range.
- The input value must not exceed the limit of the input value specified for each range to prevent damage to the instrument.
- Do not touch the unused input when the instrument is connected to the circuit under test.
- When the measured voltage exceeds 60 VDC or 30 VAC, use caution to prevent electric shock.
- When measuring with a test pen, place your finger behind the guard ring of the test.
- Before converting the range, it must be ensured that the test pens have left the circuit under test.
- Before carrying out a resistance, diode, capacitance measurement or continuity test, the circuit under test must be powered off and all high-voltage capacitors in the circuit under test should be discharged.
- Do not measure the resistance on a live circuit or perform buzzer test.
- Before conducting the current measurement, the fuse of the meter should be checked. Before connecting the meter to the circuit under test, the power of the circuit under test should be turned off.
- When performing TV repairs or measuring power conversion circuits, care must be taken in the high-amplitude voltage pulses in the circuit under test to avoid damage to the meter.
- The instrument uses three pieces AAA 1.5V batteries as the power supply. The battery must be properly installed in the battery compartment of the meter.
- When the battery with low voltage symbol "+" appears, replace the battery immediately. Insufficient battery power can make the meter read incorrectly, which may result in electric shock or personal injury.
- When measuring voltages, do not exceed 600V. Do not use the instrument when the instrument's housing or part of the housing is removed.

Maintenance:

- When opening the instrument case or removing the battery cover, pull out the test pen first.

- The specified replacement parts must be used to service the meter.
- Before opening the meter, all relevant power must be disconnected. At the same time, you must ensure that you do not have static electricity to avoid damage to the meter.
- Instrument components, instrument calibration and maintenance operation instructions are operated by professionals.
- When opening the instrument housing, some capacitance in the instrument must be noticed. Even after the instrument is turned off, dangerous voltages are kept.
- If the instrument is observed any abnormality, the table should be immediately stopped and sent for repair, and to ensure that it can not be used before inspection qualified.

When not in use for a long time, please remove the battery, and avoid storing in high temperature and humidity.

Input protection measures

- The limit voltage is 600V when the voltage is measuring.
- The limit voltage is 250 ACV or the equivalent RMS voltage when the capacitance or the diode is measuring.

Battery Replacement and Accessories

Replace batteries to avoid electric shock or personal injury caused by erroneous readings. When the symbol "E+" appears on the instrument display, replace the battery immediately. To avoid electric shock or personal injury, turn off the battery cover and replace it with a new one before turning it on. The test pen has been disconnected from the measurement circuit.

Please follow the steps below to replace the battery:

1. Turn off the power of the instrument and pull all the test pens out of the input socket
2. Use a screwdriver to loosen the screws fixing the battery.
3. Remove the battery cover and take away the old battery
4. Replace the new batteries.
5. Install batteries cover and close the screws.

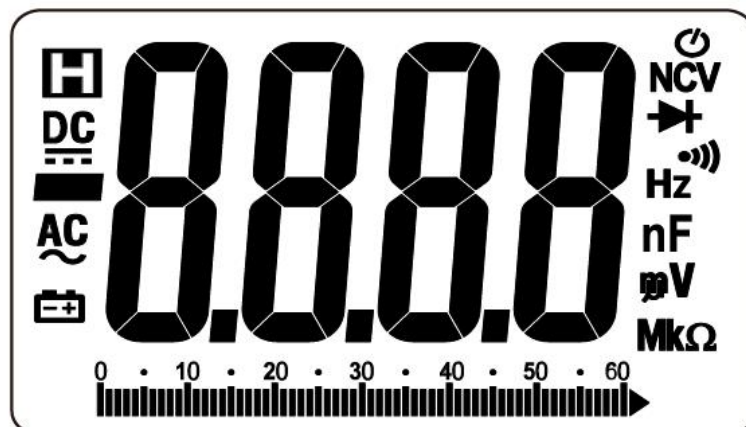
Accessories









1. An instruction
2. A pair of test leads
3. Three pieces of AAA batteries

Specifications

Function	Range	Resolution	Accuracy	Note
DCV	0.5V-600V	0.001V-0.1V	±（0.8%+5）	Min Input Voltage:0.5V Max Input Voltage:600V Resistor Impedance:10M
ACV	1V-600V(50-60HZ)	0.001V-0.1V	±（1.0%+5）	Min Input Voltage:1V Max Input Voltage:600V Resistor Impedance:10M
	1V-600V(10-400HZ)	0.001V-0.1V	±（1.5%+5）	
Resistor	1 Ω -10M Ω	1 Ω -10K Ω	±（1.0%+5）	Protection:600V AC/DC
CAP	600uF	0.1uF	±（3.5%+5）	Min Cap:0.1uF
	6000uF	1uF	±（4.5%+5）	Protection:250V AC/DC
HZ	10Hz-1000Hz	0.1Hz-1Hz	±（2.0%+5）	VPP more than 1V RMS
Max display	5999			
Auto Power-off	✓			No operation for 5 mints
Backlit	✓			Turn off after 30 seconds
Illumination	✓			Turn off after 30 seconds
Diode	✓			Voltage forward drop 2.0V
Buzzer				Protection:600V AC/DC
Buzzer Indicator	✓			
NCV	✓			3-2-1refers strong-middle-weak
NCV Indicator	✓			
L Wire Detect	✓			3-2-1refers strong-middle-weak
True RMS	✓			10-400Hz
Low Battery	✓			
Alarm	✓	Capacitance and Diode Over Voltage Alarm Protection:250V AC/DC		

Symbols on the Screen



Symbol	Description
	Battery low voltage display
	Auto power off
	Negative polarity input indication
	Alternative input indication
	Direct input indication
	In continuity test mode
	In diode test mode
	Data hold mode
NCV	Non-contact voltage detection mode
nF	Capacitance unit
Hz	Frequency unit
V, mV	Voltage unit
Ω, kΩ, MΩ	Resistance unit

Technical Datasheet

Comprehensive indicators

*Operating conditions:

600V CAT II Pollution grade: 2

Height: under 2000m

Working temperature: 0-40℃ (<80%RH)

Storage temperature: -10-60℃ (<70%RH, take off battery)


*Test or calibrate surrounding temperature: 20℃ ± 2℃

*The biggest voltage between measurement end and ground: 600V

*Conversion rate: about 3s/second

*Display: 5999 counts LED display

*Overload: 'OL' displayed

*Low voltage display of battery: "" displayed when the working voltage is low

*Input polarity indicator: “-” shown automatically

*Battery: 3 X 1.5V AAA

*Size: 147mm (L)*71mm (W)*45mm (H)

*Weight: about 220g (battery excluded)


Accuracy index

Accuracy: \pm (%reading+digit) ,one year warranty from the manufacture date

Conditions: surroundings temperature from 18°C to 28°C, <80%RH



Operation instruction

Regular operation

The “HOLD” and “  ” functions are on invalid mode if there is no input and the functions recover when there has input.

Backlight and the torch function

The meter has backlight and illumination function for users' convenient reading of measuring results in the dark situations. To enter and exit this mode, please operate as below:

1. Short press “  ” key to turn on backlight and short press again to exit. It turns off automatically with no operation for 30S.
2. Long press “  ” to turn on the illumination function and the backlight at the same time. Short press the key again to turn off the illumination function. It turns off automatically with no operation for 30S.
3. When the backlight is on, press the key for 2S can start the illumination too. Both them will be turned off with no operation for 30S.


Auto power off

After about 5 minutes after power on, if there is no operating instrument, it will give audible voice prompts, will automatically cut off the power, enter the hibernation mode, in the automatic shutdown mode, any key can be restarted.

Do not measure any voltage greater than 600V to prevent electric shock or damage to the instrument.


Do not apply more than 600V voltage between the common and earth to prevent electric shock or damage to the instrument.


ACV/DCV/Resistance/Frequency/Buzzer Measurement

1. Connect the black test pen to the COM jack and the red pen to the “  ” jack.
2. Turn on the meter by pressing the power key.
3. Connect the test leads to the circuit to be tested, power or resistance. The meter will judge the ACV, DCV or resistance automatically.
4. If the resistance of the circuit under test is not greater than about 30 ohms, the indicator light will turn on and the buzzer will sound

continuously.


5. The screen also shows the polarity of the red test pen when the DCV is in measurement.

6. When the ACV is in measurement, the screen can show the frequency of the ACV if “Hz” key is pressed,



7. Press the “” key to save relative data.





Capacitance/Diode Measurement (overload protection 250V AC/DC)

If it is connected to ACV 220V by mistake, the screen shows “LIVE” and alarm with buzzer and flash.

1. Connect the black test pen to the “COM” jack and the red pen to the “” jack.


2. Turn on the meter by pressing the power key.

3. The meter starts measuring the capacitance when the red test lead inputs “”, the screen shows the readings. Press “” to save the data.

4. When the red test lead inputs “”, press “Hz” to detect the diode. The voltage forward drop can be read in the screen. Press “” to save the data. After the diode test, press “Hz” to go back to capacitance test mode.

NCV non contact voltage detection(3-2-1 refers strong-middle-weak)

1. Turn on the meter by pressing the power key.

2. Press the “” continuously and put the meter NCV area near to the live wire of the ACV.

3. The NCV indicator flashes with buzzer when there is voltage on the live wire.


4. The screen shows how strong the magnetic.

Note:


1. The voltage may still be there even if no flash with buzzer of NCV indicator, which can be affected by the sockets designs or insulation etc.

2. The outer factors such as flash lights or radar may cause NCV flashes.

Live Wire Identification (3-2-1 refers strong-middle-weak)

1. Connect the black test pen to the COM jack and the red pen to the “” jack.

2. Turn on the meter by pressing the power key.

3. Press the “” continuously and put the red or black test lead into the live wire. If there is NCV flashes with buzzer then there is voltage on the live wire.

4. The screen shows “---3”, which is the strong electric field.