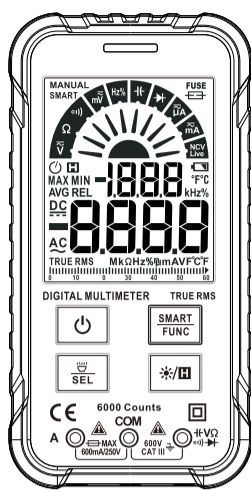


DIGITAL MULTIMETER



Before using the instrument, please read this manual carefully, and save it well for future using.

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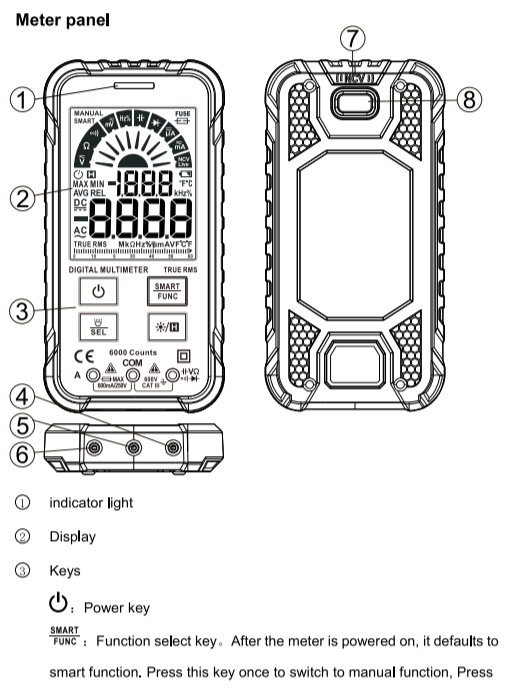
**Statement**  
 In accordance with the international copyright law, without permission and written consent, do not copy the contents of this manual in any form (including storage and retrieval or translation into languages of other countries or regions).  
**Safety Statement**  
 ⚠️ **Caution** mark refers to the condition and operation which may cause damage to the instrument or equipment.  
 It requires that you must be careful during the execution of the operation. If incorrectly perform the operation or do not follow the procedure, it may damage the instrument or equipment. In the circumstances that such conditions are not met or not fully understood, please do not continue to perform any operation indicated by the caution mark.  
 ⚠️ **Warning** mark indicates the condition and operation which may cause danger to users.  
 It requires that you must pay attention during the execution of this operation. If incorrectly perform the operation or do not follow the procedure, it may result in personal injury or casualties. In the circumstances that such conditions are not met or not fully understood, please do not continue to perform any operation indicated by the warning mark.

**Safety Instructions**  
 This meter conforms to IEC61010-1 international electrical safety standard. The design and manufacture of instruments shall strictly comply with IEC61010-1 CAT.III 600V safety standard and pollution level 2.  
**Safety Operation Specifications**  
 ⚠️ **Warning**  
 In order to avoid possible electric shock or personal injury and other safety accidents, please abide by the following specifications:  
 • Please read this manual carefully before using the instrument.  
 • Strictly observe the operation of this manual and use this instrument. Otherwise, the protection function of the instrument may be damaged or weakened.  
 • Please be careful if the measurement exceeds 30V AC true RMS, 42V AC peak or 60V DC. There may be danger of electric shock at this kind of voltage.  
 • Do not measure voltage higher than the rated value between terminals or between terminals and ground.  
 • Check whether the meter works normally by measuring the known voltage. Do not use it again if it is abnormal or damaged.  
 • Before using the meter, please check whether the instrument shell is cracked or damaged by plastic parts, if any, please do not use it again.

• Before using the instrument, please check whether the probe is cracked or damaged. If so, please replace the probe of the same model and the same electrical specification.  
 • Please use the meter according to the measurement category, voltage or current rating specified on the instrument or manual.  
 • Please observe local and national safety regulations. Wear personal protective equipment (such as approved rubber gloves, masks, flame-retardant clothing, etc.) to prevent injury caused by electric shock and electric arc when the dangerous live conductor is exposed.  
 • Do not work alone so that you can get help in an emergency.  
 • To avoid electric shock or injury due to wrong reading, please replace the battery in time when the indicator "⚡" is displayed.  
 • Do not use the instrument around explosive gas or steam or in humid environment.  
 • When using the probe, hold your finger behind the probe finger guard.  
 • When measuring, please connect the neutral or ground wire first, and then connect the live wire; when disconnecting, please disconnect the live wire first, and then disconnect the neutral or ground wire.  
 • Remove the probe from the meter before opening the case or battery cover

	High voltage warning
	AC (Alternating current)
	DC (Direct current)
	AC or DC
	Warning, important safety signs
	Ground
	Fuse
	double insulation/reinforced insulation protection
	Low power
	Product complies with all relevant European laws
	The additional product label shows that do not discard this electrical/electronic product into household garbage.
<b>CAT. II</b>	Class II measurements are suitable for testing and measuring circuits directly connected to power points (sockets and similarities) of low voltage power installations.
<b>CAT. III</b>	Class III measurement is suitable for testing and measuring circuits connected to the distribution part of low voltage power supply devices in buildings.
<b>CAT. IV</b>	Class IV measurements are suitable for testing and measuring circuits connected to the power supply of low voltage power installations in buildings.

**Safety Symbols**  
**Overview**  
 This meter is an intelligent true effective value multimeter. Intelligent identification and manual function are integrated, which can measure AC and DC voltage, AC and DC current, resistance, capacitance, continuity, diode, NCV, etc. It is the best choice for professional electrician, engineer, electronic enthusiast or family use.



this key again to switch to other functions. Press this key for more than 2 seconds to restore smart function  
 SEL: Function selection / flashlight key. When a position has multiple functions, press this key to switch; press this key for more than 2 seconds to turn on or off the flashlight  
 \*H: Backlight / data hold key. Press this key to turn on or off the data holding function; press this key for more than 2 seconds to turn on or off the backlight  
 ① Measuring input terminals except current  
 ② COM input terminals  
 ③ Current input terminals  
 ④ NCV sensor  
 ⑤ Flashlight  
**Auto power off**  
 • No operation within 15 minutes, the meter will auto power off.  
 • Press and hold the "SMART FUNC" key and turn on the power, the auto power off function will be cancelled.  
 • When the "⚡" symbol is displayed, it means that the auto power off function is on

**Fuse burn out prompt**  
 When the "⚡" symbol is displayed, it indicates that the fuse is burnt out. Please replace the fuse  
**The probe Wrong prompt**  
 When the current measurement function is used, if the probe is not inserted into the current input terminal, "ERR" will be displayed.  
**Measurement operation**  
**SMART measurement**  
 It can measure DC voltage, AC voltage, resistance, continuity. The meter can measure automatically without user selection function. This measurement function is default when power on.  
 1) Press "ON" key to turn on the power, and the meter displays "Auto" to enter the smart measurement function.  
 2) Insert the red probe into the "VΩ" input terminal and the black probe into the "COM" input terminal.  
 3) Connect the probe with voltage source or resistor in parallel for measurement, and the meter will automatically recognize the currently measured signal.  
 4) When measuring AC voltage, the frequency will be displayed at the same

time.  
 5) When measuring the resistance, when the resistance is less than about 50Ω, the buzzer will sound and the indicator light will be on.  
 6) Read the results on the display.  
 ⚠️ **WARNING**  
 1. Voltage higher than 600V cannot be measured; otherwise the meter may be damaged.  
 2. Pay special attention to safety when measuring high voltage to avoid electric shock or personal injury.  
 3. Before use, use the meter to test the known voltage and confirm that the meter is in good condition.  
**NOTE: Minimum measurable voltage: 0.5V**  
**DC/AC mV measurement**  
 1) Press "ON" key to turn on the power, press "SMART FUNC" key to Switch to "mV" function.  
 2) Insert the red probe into the "VΩ" input terminal and the black probe into the "COM" input terminal.  
 3) Connect the probe with voltage source or both ends of load in parallel for measurement.

4) When measuring AC voltage, the frequency will be displayed at the same time.  
 5) Read the results on the display.  
 ⚠️ **WARNING**  
 1. Voltage higher than 250V cannot be measured; otherwise the meter may be damaged.  
 2. Pay special attention to safety when measuring high voltage to avoid electric shock or personal injury.  
 3. Before use, use the meter to test the known voltage and confirm that the meter is in good condition.  
**Note: When the probe is not connected with the measuring circuit, the meter display reading may not be zero, which is normal and will not affect the normal measurement.**  
**Frequency/Duty measurement**  
 1) Press "ON" key to turn on the power, press "SMART FUNC" key to Switch to "Hz%" function.  
 2) Insert the red probe into the "VΩ" input terminal and the black probe into the "COM" input terminal.  
 3) Connect the probe with voltage source or both ends of load in parallel for measurement.

4) Read the results on the display.  
 ⚠️ **WARNING**  
 1. Voltage higher than 250V cannot be measured; otherwise the meter may be damaged.  
 2. Pay special attention to safety when measuring high voltage to avoid electric shock or personal injury.  
 3. Before use, use the meter to test the known voltage and confirm that the meter is in good condition.  
**Capacitance measurement**  
 1) Press "ON" key to turn on the power, press "SMART FUNC" key to Switch to "C" function.  
 2) Insert the red probe into the "VΩ" input terminal and the black probe into the "COM" input terminal.  
 3) Connect the probe with both ends of capacitor in parallel for measurement.  
 4) Read the results on the display.  
 ⚠️ **WARNING**  
**When measuring capacitance, please disconnect the power supply and discharge capacitors, otherwise the instrument may be damaged and may suffer electric shock.**

**Diode test**  
 1) Press "ON" key to turn on the power, press "SMART FUNC" key to Switch to "▶" function.  
 2) Insert the red probe into the "VΩ" input terminal and the black probe into the "COM" input terminal.  
 3) Connect the red probe to diode anode and connect the black probe to diode cathode.  
 4) Read the results on the display.  
**Note 1: The meter shows is approximation of diode forward voltage drop. The forward voltage drop of the diode is generally in the range of 0.3V to 0.8V.**  
**Note 2: If the probe has reverse connection or the probe is open, the meter will show "OL".**  
**DC/AC current measurement**  
 1) Press "ON" key to turn on the power.  
 2) Press "SMART FUNC" key to Switch to "µA" or "mA" function; or directly insert the red probe into "A" Current input terminal and automatically switch to the "µA" or "mA" function.  
 3) The black probe into the "COM" input terminal.

4) Press "SEL" key to switch to AC or DC current  
 5) Disconnect the power supply, connect the meter in series to the circuit under test, and then turn on the power supply.  
 6) When measuring AC current, the frequency is displayed at the same time.  
 7) Read the results on the display  
 ⚠️ **WARNING**  
 1. Pay special attention to safety when measuring high voltage to avoid electric shock or personal injury.  
 2. Before use, use the meter to test the known voltage or current and confirm that the meter is in good condition.  
 ⚠️ **Caution:**  
**To avoid damaging meter or equipment, and ensure that the measured current does not exceed the rated maximum current of 600mA; And use the correct input terminal.**  
**NCV Detection**  
 1) Press "ON" key to turn on the power, press "SMART FUNC" key to Switch to "NCV" function. The meter shows "NCV".  
 2) Detection with the meter of NCV sensing area.  
 3) When the meter senses weak AC signal, the green indicator light will be

on, and the buzzer will beep slowly, displaying "L".  
 4) When the meter senses strong AC signal, the red indicator light will be on, and the buzzer will beep fast, displaying "H".  
 ⚠️ **WARNING**  
**When using the NCV function, please remove the probe, otherwise the detection accuracy will be affected.**  
**NCV function is affected by many factors, even if there is no alarm prompt, there may still be high voltage**  
**Live test**  
 1) Press "ON" key to turn on the power, press "SMART FUNC" key to Switch to "Live" function. Then press "SEL" key to switch to live function, the meter shows "Live".  
 2) Insert the red probe into the "VΩ" input terminal and remove the black probe from the "COM" input terminal.  
 3) When the meter detected weak AC signal, the green indicator light will be on, and the buzzer will beep slowly, displaying "L".  
 4) When the meter detected strong AC signal, the red indicator light will be on, and the buzzer will beep fast, displaying "H". In general, what is detected is the live at this time  
 ⚠️ **WARNING**

**Please remove the black probe; otherwise the detection accuracy will be affected.**  
**General technical**  
 • Environmental conditions:  
 CAT. III 600V;  
 Pollution: 2  
 Altitude < 2000m.  
 Working temperature and humidity:  
 0~40°C (<80% RH, <10°C non-condensing)  
 Storage temperature and humidity:  
 -10~60°C (<70% RH, without batteries)  
 • Temperature coefficient: 0.1% Accuracy / °C (<18°C or >28°C)  
 • Maximum voltage allowed between input terminals: 600V  
 • Current protection: F600mA/250V fuse  
 • Sampling: approx. 3 times / second.  
 • Display: maximum 6000 count.  
 • Over range indication: display "OL".  
 • Low battery: Display "⚡".  
 • Polarity indication: display "-" sign automatically.  
 • Power: 2 x 3V CR2032 batteries.

**Accuracy**  
 Accuracy is applicable within one year after calibration  
 Reference conditions: ambient temperature 18°C to 28°C, relative humidity no more than 80%  
 Accuracy: ± (% reading + word)  
**DC voltage**

Range	Resolution	Accuracy
600mV	0.01mV	±(0.5%+3)
600mV	0.1mV	
6V	0.001V	
60V	0.01V	
600V	0.1V	

Input impedance: 10MΩ; Overload protection/ Maximum voltage: 600V  
**AC voltage**

Range	Resolution	Accuracy
60mV	0.01mV	±(1.0%+3)
600mV	0.1mV	
6V	0.001V	
60V	0.01V	
600V	0.1V	

Input impedance: 10MΩ; Overload protection/ Maximum voltage: 600V

Frequency Response: 40Hz ~ 1kHz; True RMS  
**DC current**

Range	Resolution	Accuracy
6000µA	1µA	±(1.2%+5)
60mA	0.01mA	
600mA	0.1mA	
600mA	0.1mA	

Overload protection: F600mA/250V Fuse; Maximum current: 600mA  
**AC current**

Range	Resolution	Accuracy
6000µA	1µA	±(1.5%+5)
60mA	0.01mA	
600mA	0.1mA	
600mA	0.1mA	

Overload protection: F600mA/250V Fuse; Maximum current: 600mA  
 Frequency Response: 40Hz ~ 1kHz; True RMS  
**Resistance**

Range	Resolution	Accuracy
600Ω	0.1Ω	±(1.0%+5)
6kΩ	0.001kΩ	
60kΩ	0.01kΩ	
600kΩ	0.1kΩ	
6MΩ	0.001MΩ	
60MΩ	0.01MΩ	±(1.5%+3)

Overload protection: 250V  
**Capacitance**

Range	Resolution	Accuracy
6nF	0.001nF	±(4.0%+5)
60nF	0.01nF	
600nF	0.1nF	
6µF	0.001µF	
60µF	0.01µF	
600µF	0.1µF	
6mF	0.001mF	±(5.0%+5)
60mF	0.01mF	

Overload protection: 250V  
**Frequency/Duty**

Range	Resolution	Accuracy
10Hz	0.001Hz	±(3.0%+5)
100Hz	0.01Hz	
1000Hz	0.1Hz	
10kHz	0.001kHz	
100kHz	0.01kHz	
1000kHz	0.1kHz	
10MHz	0.001MHz	
1~99%	0.1%	

Hz/% Position:  
 1) Range: 10Hz ~ 10MHz  
 2) Voltage response: 0.5~10V AC  
 3) Overload protection: 250V  
 ACV Position:  
 1) Range: 10Hz ~ 2 kHz  
 2) Voltage response: ≥ 0.5V AC  
 3) Overload protection: 250V  
 µA or mA Position:  
 1) Range: 10Hz ~ 2 kHz  
 2) Current response: ≥ 2mA  
 3) Overload protection: F600mA/250V fuse;  
**Diode**  
 shows is approximation of diode forward voltage  
 Open Voltage: Approx. 2.0V  
 Overload protection: 250V  
**Continuity**  
 <Approx.50 Ω, the buzzer sound and the LED light up  
 Open Voltage: Approx. 1.0V  
 Overload protection: 250V

**Maintain**  
**Clean**  
 If there is dust or humidity on the input terminal, wrong measurement may occur. Clean the instrument as follows:  
 1) Turn off the meter power and remove the test probe.  
 2) Wipe the case with a damp cloth or mild detergent. Do not use abrasives or solvents. Wipe the contacts in each input jack with a clean cotton swab soaked in alcohol.  
 ⚠️ **WARNING**  
**Please keep the inside of the meter clean and dry at all times to prevent electric shock or damage to the instrument**  
**Replace battery or fuse**  
**Replace battery:**  
 1) Turn off the meter power and remove the test probe.  
 2) Using a screwdriver, remove the screws that secure the battery cover and remove the battery cover.  
 3) Remove the old battery and replace it with a new battery of the same specification. Please pay attention to the polarity of the battery.  
 4) Replace the battery cover in its original position, and fix and lock the battery cover with screws.

⚠️ **WARNING**  
 • In order to avoid electric shock or personal injury caused by wrong reading, please replace the battery immediately when the battery power is low.  
 • Do not discharge the battery by shorting it or reversing its polarity.  
 • In order to ensure the safe operation and maintenance of the meter, please take out the battery when it is not used for a long time, so as to prevent the battery leakage from damaging the meter.  
**Replace fuse**  
 1) Turn off the meter power and remove the test probe.  
 2) Use a screwdriver to unscrew the screws that fix the back cover and remove the back cover.  
 3) Remove the burned fuse tube, replace it with a new one of the same specification, and make sure that the fuse tube is installed in the fuse clip and clamped tightly.  
 4) Install the back cover and lock it with screws.  
 ⚠️ **WARNING**  
**To prevent possible electric shock, personal injury or damage to the meter, use fuses of the same specification or specified specification.**

