

# DIGITAL MULTIMETER

## User manual

### Safety Operation Specifications



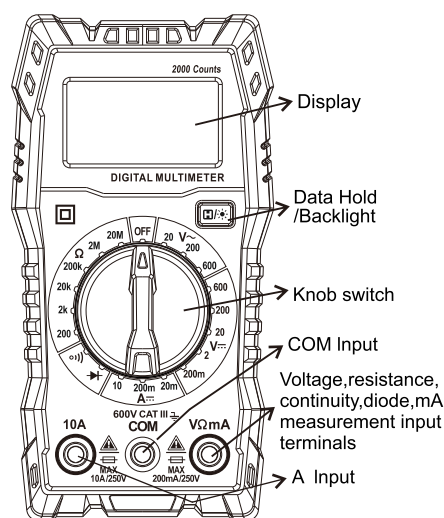
**In order to avoid possible electric shock or personal injury and other safety accidents, please abide by the following specifications:**

- Please read this manual carefully before using the instrument, and pay special attention to safety warning information.
- 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
- By measuring the known voltage to check whether the meter work is normal, if it is not normal or damaged, do not use it again.
- Before using the instrument, please check whether there is any crack or plastic damage in the instrument case. If you do, do not use it again.
- Before using the instrument, please check whether the probe is cracked or damaged. If so, please replace the same type and the same electrical specifications.
- The instrument shall be used in accordance with the specified measurement category, voltage or current rating.
- Please comply with local and national safety code. Wear personal protection equipment (such as approved rubber gloves, masks and flame retardant clothes, etc.) to prevent being damaged by electric shock and electric arc due to exposed hazardous live conductor
- When it shows low battery indicator, please replace the battery in time in case of any measurement error.
- Do not use the instrument around explosive gas, steam or in wet environment.
- When using the probe, please put your fingers behind the finger protector of the probe.
- When measuring, please connect the zero line or the ground line firstly, then connect the live wire; but when disconnecting, please disconnect the live wire firstly, then

disconnect the zero line and ground line.

- Before opening the outer cabinet or battery cover, please remove the probe on the instrument. Do not use the instrument in the circumstances that the instrument is taken apart or battery cover is opened.
- It only meets the safety standards when the instrument is used together with the supplied probe. If the probe is damaged and needs to replace, the probe with same model number and same electrical specifications must be used for replacement.

### Instrument panel



### Measurement operation



- **Do not measure power supply or circuit greater than 600V**
- **Pay attention to safety when measuring high voltage to avoid electric shock or personal injury.**
- **Measure the known voltage or current before use to ensure that the instrument functions well**

### Data Hold

Press key, enter data hold mode/cancel data hold mode

### Backlight

Press key, and keep more than 2 seconds to turn on backlight / turn off back light,

### Auto power off

- If there is no operation within 15 minutes, the meter will auto power off. Press key or turn the knob, and the meter will return to working state.
- Press and hold the key and turn on the power supply of the meter to cancel auto power off function.

### DC/AC voltage measurement

- 1) Turn the knob to DC voltage or AC voltage shift and select the appropriate range.
- 2) Insert the red probe in “**VΩmA**” socket, insert the black probe in “COM” socket.
- 3) Contact the probe to the measured circuit (connect to the measured power supply or circuit in parallel), measure the voltage.
- 4) Read the measurement result on display.

### DC current measurement

- 1) Turn the knob to DC current shift and select the appropriate range.
- 2) Insert the red probe in “**VΩmA**” socket or 10A Socket, insert the black probe in “COM” socket.
- 3) Disconnect the power of the tested circuit; connect the meter to the circuit under test, then turn on the circuit power supply.
- 4) Read the measurement result on display.

### Resistance measurement

- 1) Turn the knob to resistance shift and select the appropriate range.
- 2) Insert the red probe in “**VΩmA**” socket, insert the black probe in “COM” socket.
- 3) Contact the probe to the measured circuit, measure the resistance.
- 4) Read the measurement result on display.

### Continuity measurement

- 1) Turn the knob to shift.
- 2) Insert the red probe in “**VΩmA**” socket, insert the black probe in “COM” socket.
- 3) Contact the probe to the measured circuit, measure the resistance.
- 4) If the resistance or circuit of the measured resistance is less than 50Ω, the buzzer will sound; the screen displays the resistance of the measured circuit.

### Diode measurement

- 1) Turn the knob to shift.
- 2) Insert the red probe in “**VΩmA**” socket, insert the black probe in “COM” socket.
- 3) Touch the diode anode with the red probe, the black probe contacts the diode cathode.

### Technical Specifications

- Environment condition of using:
  - CAT.III 600V
  - Pollution level: 2
  - Altitude < 2000m.
  - Working environment temperature and humidity: 0~40°C (<80% RH, <10°C non condensing).
  - Storage environment temperature and humidity: -10~60°C (<70% RH, remove the battery).
- Temperature coefficient: 0.1× accuracy/°C (<18°C or >28°C).
- MAX. Voltage between terminals and earth ground: 600V
- Fuse protection: mA: F200mA/250V fuse; 10A: F10A/250V fuse
- Sampling rate: about 3 times/second.
- Over range indication: it displays “OL”.
- Low battery indication: “” will be displayed.
- Input polarity indication: automatically display “-”.
- Power requirement: 2 x 1.5V AAA batteries.

### Accuracy Specifications

The accuracy applies within one year after the calibration. Reference condition: the environment temperature 18°C to 28°C, the relative humidity is no more than 80%, accuracy: ± (% reading + word) .

### DC Voltage

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

Overload protection: 600V; Maximum input voltage: 600V

### AC Voltage

Range	Resolution	Accuracy
20V	0.01V	±(1.0% reading+5)
200V	0.1V	
600V	1V	

Overload protection: 600V ; Maximum input voltage: 600V  
Frequency Response: 40Hz ~ 400Hz

### DC Current

Range	Resolution	Accuracy
20mA	0.01mA	±(1.5% reading+5)
200mA	0.1mA	
10A	0.01A	

Overload protection: mA: F200mA/250V fuse  
A: F10A/250V fuse

Maximum input current: mA: 200mA; A: 10A  
When measuring large current, continuous measurement should be no longer than 15 seconds

### Resistance

Range	Resolution	Accuracy
200Ω	0.1Ω	±(1.2% reading+5)
2kΩ	0.001kΩ	
20kΩ	0.01kΩ	
200kΩ	0.1kΩ	
2MΩ	0.001MΩ	
20MΩ	0.01MΩ	

Overload protection: 250V

### Continuity&Diode

	The resistance is <50, the buzzer will sound	Open circuit voltage is about 2V Overload protection:250V
	Displays the approximate forward voltage of the diode.	Reverse DC voltage is about 2V Overload protection:250V

### Maintenance

#### Clean

If there is dust or humidity on the terminals, wrong measurements may be made. Please clean the instrument as follows:

- 1) Turn off the meter power and remove the test probe
- 2) Clean the dust accumulated in the socket. Wipe the case with a wet 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

#### Replace Battery and Fuse

- 1) Turn off the meter power and remove the test probe
- 2) Remove the screws that fix the battery cover and remove the battery cover
- 3) Remove the old battery and replace it with a new battery of the same specification
- 4) Put the battery cover back to its original position, and fix and lock the battery cover with screws



- **To avoid electric shock or personal injury caused by wrong reading, please replace the battery immediately when the battery is low.**
- **When it is not used for a long time, please take out the battery to prevent the battery leakage from damaging the product**

#### Replace Fuse

- 1) Turn off the meter power and remove the test probe
- 2) Screw out the screws to fix the back cover and remove the back cover
- 3) Remove the burnt fuse tube and replace it with a new one of the same specification. Make sure that the fuse tube is installed in the safety clip and clamped tightly
- 4) Install the back cover and fix it with screws.