# Digital Clamp Meter Multimeter 4000 Counts Amp Voltage Tester with APP Instruction Manual



# Digital Clamp Meter

**4000 COUNTS AUTO RANGE**
**INTELLIGENT DIGITAL**
**AC/DC CLAMP MULTIMETER**
**OPERATION MANUAL**

Contents

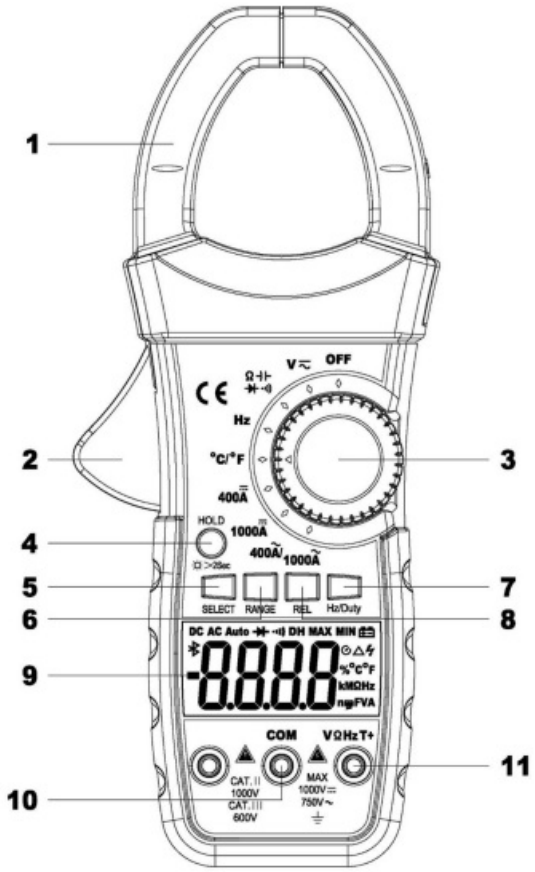


## Overview

The auto range clamp multimeter is a portable and stable performance. Using 4000 counts digit LCD monitor with character 18mm high. With overall circuitry design centering on large-scale IC A/D converters in conjunction and over-load protection circuit, the meters give excellent performance and exquisite making as a handy utility

instrument.
The meter can be used to measure DC & AC voltage, DC & AC current resistance, capacitor, frequency, duty cycle, temperature, positive diode voltage fall and audible continuity.
The meter can be connected with mobile phone by wireless transmission, and display on phone by APP, you can remote monitoring the measurement condition, the distance control is 10  15m.

## Panel Layout




https://res.app.elinkthings.com/app/download/app69/index.html?IntellignentMeter

1. Clamp jaws: Opens 45mm to enclose conductor.
2. Jaw-opening handle: Opens and closes the jaws.
3. Rotary Switch: Use this switch to select functions and ranges.
4. HOLD key: Press the “HOLD” key to lock display value, and the “DH” sign will appear on the display, press it again to exit. Press “HOLD” key more than 2 seconds, the back light will light up, press it more than 2 seconds again, the
   back light will light off.
5. SELECT key: This key work on the "Ω ⊣◀ •)) ⊣⊢" range, press it to choose resistance, diode, continuity or capacitance test, on the voltage range, change to DC or AC, on the range, change to ℃ or ℉ test.
6. RANGE Key: Press the “RANGE” key, the meter enters manual range mode, press it more than 2 seconds again, return to auto mode.
7. Hz/Duty Key: On “ACV/ACA” or “Hz” range, press the “Hz/Duty” key, you can choose the Frequency or Duty Cycle measurement.
8. REL Key: Press the “REL” key, the meter enters relative measuring mode, “ △” is displayed on the LCD and the present reading becomes the reference value and displayed on the display. Relative measurement REL △=measurement value-Reference value. Press it again to exit.

9. LCD display: 4000 counts digit, full function symbol display.
10. COM: COM and Temperature “-” Input Jack
11. VΩ⊣◀)))Hz°C/°F: V/Ω⊣◀)))/⊣⊢/Hz/T+

## Safety Information

3-1 The meter is designed according to IEC-1010 concerning electronic measuring instruments with an over-voltage category CAT Ⅱ1000V or CAT Ⅲ 600V and pollution 2.
3-2 Follow all safety and operating instructions to ensure that the meter is used safely and is kept in good operating condition.
**3-3 safety symbols:**

⚠Important safety information, refer to the operating manual.
⚠Dangerous voltage may be presence.
⧈ Double insulation (protection Class II)

## Special Cautions for Operation

4-1 The meters can be safe only according to standard procedures when used in conjunctions with the supplied test leads. To replace damaged test leads with only the same model or same electric specifications.
4-2 To avid risk of electric shock, do not use the meters before the cover is in place.
4-3 The range switch should be right position for the testing.
4-4 To avoid electric shock and damaging the instruments, the input signals are forbidden to exceed the specified limits.
4-5 When measuring TV set or switched power, attention should be paid to the possible pulses that may bring destruction to the circuit.
4-6 Range switch position is forbidden to be changed at random during measurement.
4-7 Take caution against shock in the course of measuring voltage higher than DC 60V & AC 30V.
4-8 Before opening the cover of the battery cabinet to replace batteries. disconnect the test leads from any external circuit, set the selector switch to “OFF” position.
4-9 Keep the fingers after the protection ring when measuring through the instrument lead.
4-10 Keep the fingers after the protection ring when measuring through the clamp.
4-11 After operation is finished, set function switch at OFF to save battery power.
4-12 If the meter is without usage for long time, take out battery to avoid damage by battery leakage.

## GENERAL SPECIFICATIONS

5-1 Max Voltage between input terminal and Earth Ground: CATⅡ1000V or CAT Ⅲ 600V
5-2 Over-range Indication: display “OL” for the significant digit.
5-3 Automatic display of negative polarity “-” .
5-4 Low Battery Indication: “ “⊟” ” displayed.
5-5 Max LCD display: 4000 counts digit.
5-6 Auto range control
5-7 Clamp opening size: 45mm.
5-8 Power supply: 9V Zinc-carbon battery.
5-9 Operating Temp.: 0 ℃ to 40 ℃ (relative humidity <85%)
5-10 Storage Temp.:-10 ℃ to 50 ℃ (relative humidity <85%)
5-11 Guaranteed precision Temp.: 23±5 ℃ (relative humidity <70%)
5-12 Dimension: 225(H)×77(W)×45(D)mm.
5-13 Weight: Approx. 330g (including battery).

## Testing Specifications

Accuracy is specified for a period of year after calibration and at 18 ℃ to 28 ℃ (64 ℉ to 82 ℉) with relative humidity to 70%.

**6-1 DC Voltage**

| Range | Resolution | Accuracy |
|---|---|---|
| 400mV | 0.1mV | ±(0.5% of rdg + 2 digits) |
| 4V | 1mV | |
| 40V | 10mV | |
| 400V | 100mV | |
| 1000V | 1V | ±(0.8% of rdg + 2 digits) |

- Impedance: 10MΩ, More than 100MΩ on 400mV range
- Overload protection: 1000V DC or 750V AC rms

**6-2 AC Voltage**

| Range | Resolution | Accuracy |
|---|---|---|
| 4V | 1mV | ±(1.0% of rdg + 3 digits) |
| 40V | 10mV | |
| 400V | 100mV | |
| 750V | 1V | ±(1.5% of rdg + 3 digits) |

- Impedance: 10MΩ
- Overload protection: 1000V DC or 750V AC rms
- Frequency Range: 40 to 400Hz
- Response: average, calibrated in rms of sine wave

**6-3 DC Current**

| Range | Resolution | Accuracy |
|---|---|---|
| 400A | 100mA | ±(2.5% of rdg + 10 digits) |
| 1000A | 1A | ±(3.0% of rdg + 10 digits) |

— Overload protection: 1000A DC or AC rms

**6-4 AC Current**

| Range | Resolution | Accuracy |
|---|---|---|
| 400A | 100mA | ±(2.5% of rdg + 10 digits) |
| 1000A | 1A | ±(3.0% of rdg + 10 digits) |

— Overload protection: 1000A DC or AC rms
— Frequency Range: 40 to 100Hz
— Response: average, calibrated in rms of sine wave

**6-5 Resistance**

| Range | Resolution | Accuracy |
|---|---|---|
| 400Ω | 0.1Ω | ±(1.0% of rdg + 3 digits) |
| 4kΩ | 1Ω | ±(1.0% of rdg + 2 digits) |
| 40kΩ | 10Ω | |
| 400kΩ | 100Ω | |
| 4MΩ | 1kΩ | |
| 40MΩ | 10kΩ | ±(1.5% of rdg + 3 digits) |

— Overload protection: 250V DC or AC rms

**6-6 Capacitance**

| Range | Accuracy | Resolution |
|---|---|---|
| 4nF | ±(5.0% of rdg + 10 digits) | 1pF |
| 40nF | ±(3.0% of rdg + 10 digits) | 10pF |
| 400nF | | 100pF |
| 4μF | | 1nF |
| 40μF | | 10nF |
| 200μF | ±(5.0% of rdg + 10 digits) | 100nF |

— Overload protection: 250V DC or AC rms

**6-7 Frequency**

| Range | Accuracy | Resolution |
|---|---|---|
| 9.999Hz | ± (0.1% of rdg + 5 digits) | 0.001Hz |
| 99.99Hz | | 0.01Hz |
| 999.9Hz | | 0.1Hz |
| 9.999kHz | | 1Hz |
| 99.99kHz | | 10Hz |
| 999.9kHz | | 100Hz |
| 9.999MHz | | 1kHz |

— Sensitivity: sine wave 0.6V rms (9.999MHz: 1.5V rms)
— Overload protection: 250V DC or AC rms

**6-8 Duty cycle**
0.1%  99.9%: ± ( 2.0% of rdg + 2 digits ), Frequency lower than 10kHz
— Sensitivity: sine wave 0.6V rms
— Overload protection: 250V DC or AC rms
**6-9 Temperature**

| Range | Accuracy | | Resolution |
|---|---|---|---|
| ℃ | -20~150℃ | ± ( 3℃+ 1digit ) | 1℃ |
| | 150~1000℃ | ± ( 3% of rdg + 2digits ) | |
| ℉ | -4~302℉ | ± ( 5℉+ 2digits ) | 1℉ |
| | 302~1832℉ | ± ( 3% of rdg + 3digits ) | |

— NiCr-NiSi K-type sensor
— Overload protection: 250V DC or AC rms
**6-10 Diode and Audible continuity test**

| **Range** | **Description** | **Test Condition** |
|---|---|---|
|  | Display read approximately forward voltage of d iode | Forward DC current approx. 1.5mA R eversed DC voltage approx. 4V |
|  | Built-in buzzer sounds if resistance is less than 50Ω | Open circuit voltage approx. 2V |

Overload protection: 250V DC or AC rms

## OPERATING INSTRUCTIONS

**7-1 Attention before operation**

7-1-1 Check battery. When the battery voltage drop below proper operation range, the "" symbol will appear on the LCD display and the battery need to changed.

7-1-2 Pay attention to the " " besides the input jack which shows that the input voltage or current should be within the specified value.

7-1-3 The range switch should be positioned to desired range for measurement before operation.

7-2 Measuring DC & AC Voltage

7-2-1 Connect the black test lead to COM jack and the red to VΩHzT+ jack.

7-2-2 Set the rotary switch at the desired " " range position, it shows symbol for testing DC voltage, if you want to test AC voltage, push "SELECT" button switch.

7-2-3 Connect test leads across the source or load under measurement.

7-2-4 You can get reading from LCD. The polarity of the red lead connection will be indicated along with the DC voltage value.

**NOTE:**

a) " " means you can't input the voltage more than 1000V DC or 750V AC, it's possible to show higher voltage, but it may destroy the inner circuit or pose a shock.

b) Be cautious against shock when measuring high Voltage.

7-3 Measuring DC Current

7-3-1 Set the rotary switch at the desired "400A " or "1000A " position.

7-3-2 Press the "REL" the display show "0".

Note: As the jaw core may remain some magnetic force after using for a while. If the display can not reach "0" When press the "REL", please take following process to correct it:

A. To change the direction of the measured DC current.

B. Open the JAWS several times.

7-3-3 Open the clamp by pressing the jaw-opening handle and insert the cable (one cable only) to be measured into the jaw.

7-3-4 Close the clamp and get the reading from the LCD panel. The arrow in the Jaw indicates the direction of positive current flow (positive to negative).

**Note**:

a) Before this measurement, disconnect the test lead with the meter for safety.

b) In same occasion that the reading is hard to read, push the HOLD button and read the result later.

7-4 Measuring AC Current

7-4-1 Set the rotary switch at the desired "400A /1000A " position.

7-4-2 Open the clamp by pressing the jaw-opening handle and insert the cable (one cable only) to be measured into the jaw.

7-4-3 Close the clamp and get the reading from the LCD panel.

Note: a) Before this measurement, disconnect the test lead with the meter for safety.

b) In same occasion that the reading is hard to read, push the HOLD button and read the result later.

**7-5 Measuring Resistance**

7-5-1 Connect the black test lead to COM jack and the red to VΩHzT+ jack.

7-5-2 Set the rotary switch at the desired " " range position.

7-5-3 Connect test leads across the resistance under measurement.

7-5-4 You can get reading from LCD.

**NOTE**: Max. input overload: 250V rms 10sec

1. For measuring resistance above 1MΩ, the mete may take a few seconds to get stable reading.
2. When the input is not connected, i.e. at open circuit, the figure 'OL' will be displayed for the over-range condition.
3. When checking in-circuit resistance, be sure the circuit under test has all power removed and that all capacitors have been discharged fully.

**7-6 Measuring Capacitance**

7-6-1 Connect the black test lead to COM jack and the red to VΩHzT+ jack.

7-6-2 Set the rotary switch at the desired "Ω →| •)) ⊣⊢" range position, push "SELECT" to choose Capacitance measurement.
7-6-3 Connect test leads across the capacitance under measurement.
7-6-4 You can get reading from LCD.

**NOTE**: Max. input overload: 250V rms 10sec

1. Capacitors should be discharged before being tested.
2. When testing large capacitance, it will take longer time before the final indication (For 200uF range, it will take about 10 seconds).

7-7 Measuring Frequency & Duty cycle
7-7-1 Connect the black test lead to COM jack and the red to VΩHzT+ jack.
7-7-2 Set the rotary switch at the desired "Hz" range position.
7-7-3 Push "Hz/Duty" key to choose Frequency or Duty cycle test.
7-7-4 Connect the probe across the source or load under measurement.
7-7-5 You can get reading from LCD.

**7-8 Measuring Temperature**

7-8-1 Connect the black banana plug of the sensor to COM jack and the red banana plug to the VΩHzT+ jack.
7-8-2 Set the rotary switch at the desired "ºC/ºF" range position, push "SELECT" to choose ℃ or ℉ measurement.
7-8-3 Put the sensor probe into the temperature field under measurement.
7-8-4 You can get reading from LCD.

**NOTE:**

1. Please don't change the thermocouple at will, otherwise we can't guarantee to measure accuracy.
2. Please don't importing the voltage in the temperature function.

7-9 Diode & Audible continuity Testing
7-9-1 Connect the black test lead to COM jack and the red to VΩHzT+ jack.
7-9-2 Set the rotary switch at the "Ω →| •)) ⊣⊢" range position, push "SELECT" to choose Diode or Audible continuity measurement.
7-9-3 On diode range, connect the test leads across the diode under measurement, display shows the approx. forward voltage of this diode.
7-9-4 On Audible continuity range, connect the test leads to two point of circuit, if the resistance is lower than approx. 50Ω, the buzzer sounds.
NOTE: Make sure the power is cut off and all capacitors need to be discharged under this measurement.
7-10 Connect to mobile phone APP
The meter has serial data output function. It can be connected with mobile phone by Bluetooth, so the measured data can be recorded, analyzed, and processed by mobile phone APP. Before use this function, you need install the mobile phone APP "Intelligent Meter" by scan the QR code.
It includes the "Intelligent Meter" APP packages for download and detailed installation and usage instructions.

⚠NOTE: The mobile phone APP can be installed in iphone 4S iOS 7.0 or android 4.30 system and up.

## Battery replacement

8-1 When the battery voltage drop below proper operation range the " "⊟" " symbol will appear on the LCD display and the battery need to changed.
8-2 Before changing the battery, set the selector switch to "OFF" position and remove the test leads from the terminals. Open the cover of the battery cabinet by a screwdriver.
8-3 Replace the old battery with the same type battery (9V battery 6F22 or NEDA 1604).
8-4 Close the cover of the battery cabinet and fasten the screw.

## Maintenance

9-1 You must replace the test leads if the lead is exposed, and should adopt the leads with the same specifications as origin.
9-2 Do not use the meter before the back cover is properly closed and screw secured. Upon any abnormality, stop operation immediately and send the meter for maintenance.
9-3 When take current measurement, keep the cable at the center of the clamp will get more accurate test result.
9-4 Repairs or servicing not covered in this manual should only by qualified personal.
9-5 Periodically wipe the case with a dry cloth and detergent. Do not use abrasives or solvents on this instruments.
9-6 Please take out the battery when not using for a long time.

## Accessories

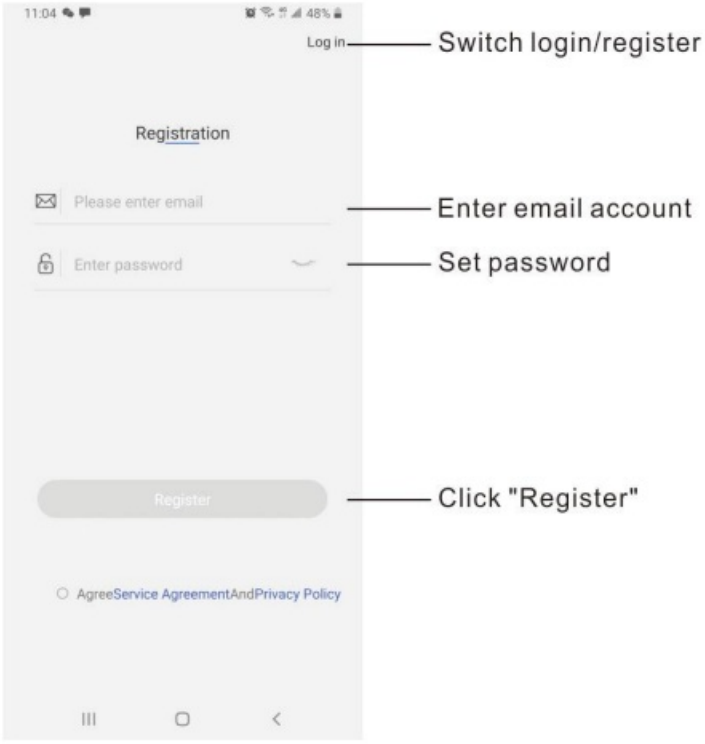
[1] Test Leads: electric rating 1000V 10A
[2] “K” type thermocouple sensor probe
[3] Operator’s Manual
Above picture and content just for your reference. Please be subject to the actual products if anything different or updated. Please pardon for not informing in advance.

## Summary

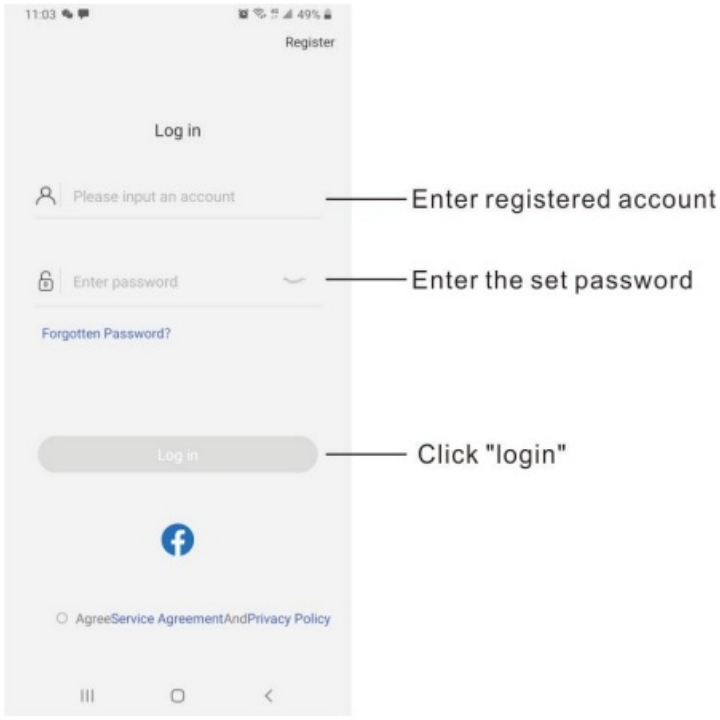
Intelligent Meter is a comprehensive intelligent hardware management platform. Through Intelligent Meter App, you can complete the convenient between mobile phones and intelligent hardware, achieve the interconnection and intercommunication between devices and users. Intelligent Meter supports multiple types of devices, Such as intelligent instrument, electrical instrument, anemometer and infrared thermometer.
APP download and installation
Scan the below QR code to download directly, or search for “Intelligent Meter” in the APP Store, Google Play download and install the “Intelligent Meter”.

https://res.app.elinkthings.com/app/download/app69/index.html?IntellignentMeter

**Account registration**
To register an email account, enter the email number and password, and click Register. This account is used for future login;

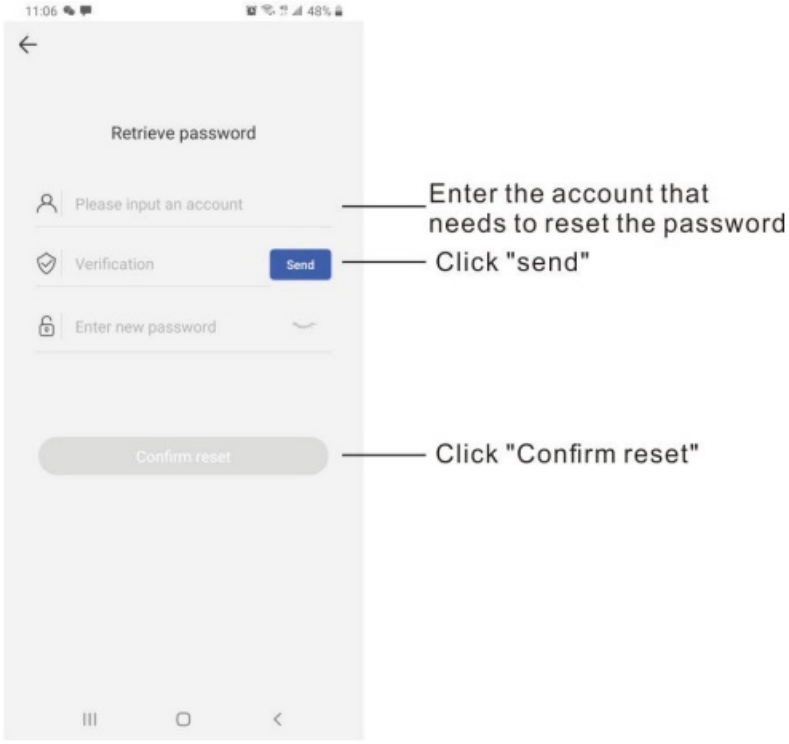



**Account login**
Enter the account and password and click login



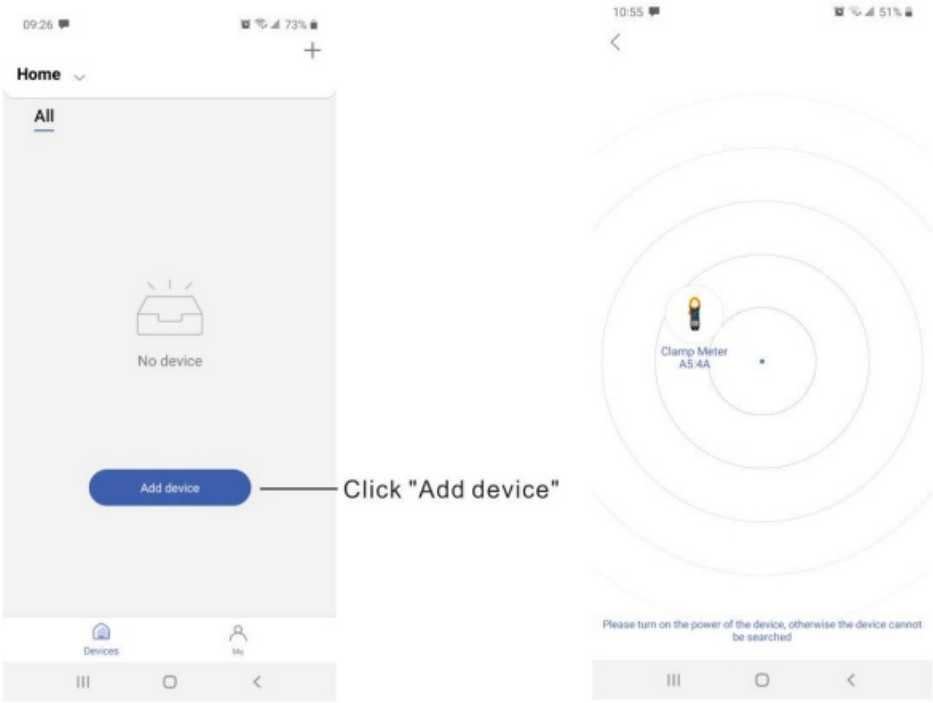

**Retrieve password**
When the user forgets the login password, the login password can be reset through this function .

1. Enter the account number to retrieve the password;
2. Click the “send” button to send the verification code to the email;
3. Enter the verification code, reset the new password, click “submit reset”, and then you can log in to the app with the new password .

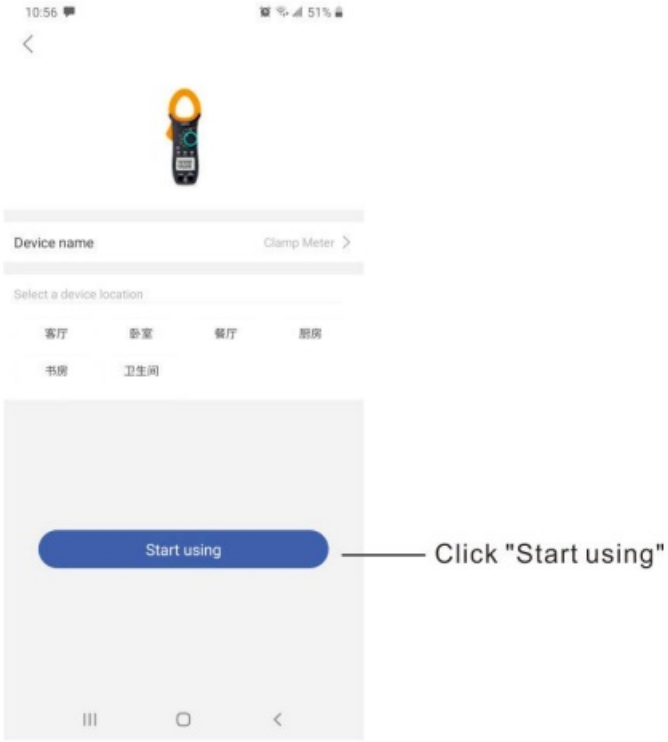



**Add device**

1. Click add equipment, select the equipment to be added, and operate according to the operation instructions to add;

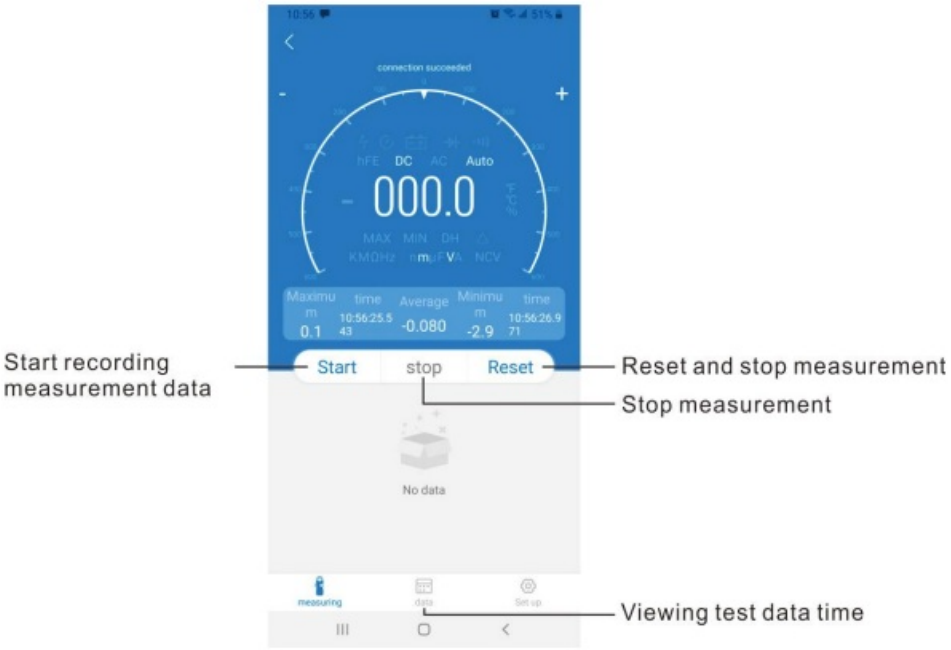


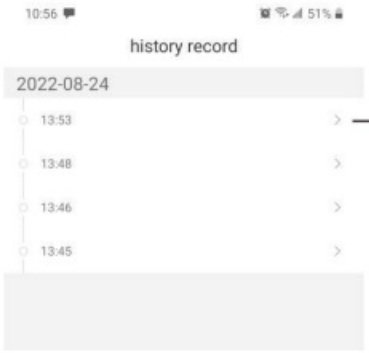

2. Click “start using” to enter the function page.

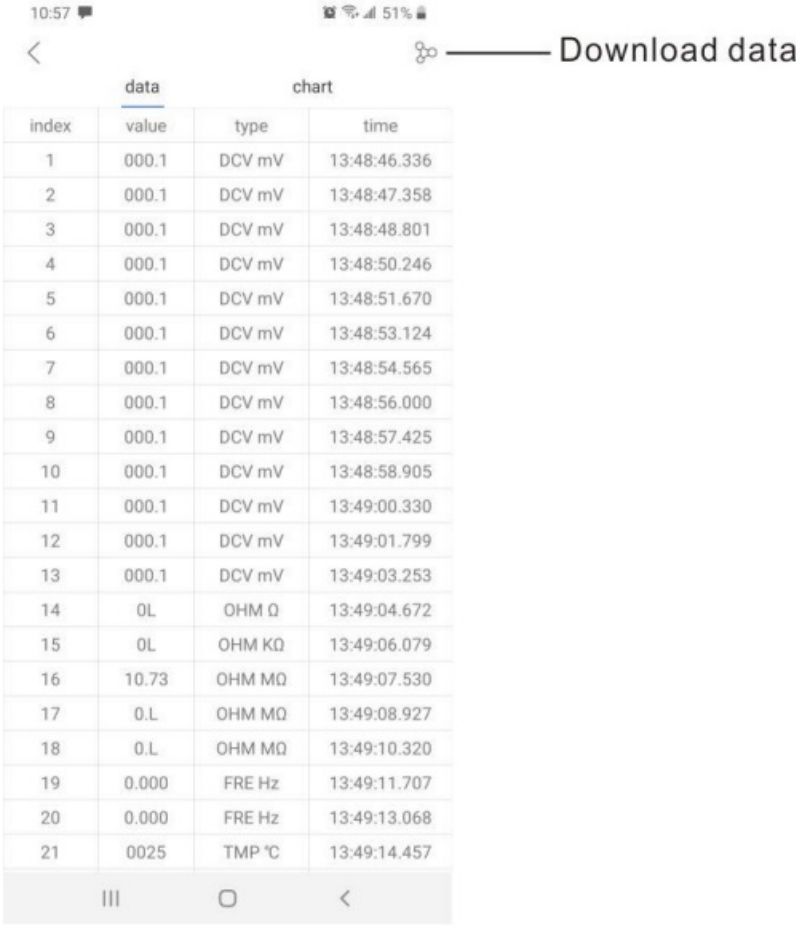



## Function

1. The maximum or minimum value and the corresponding time will be displayed on the mobile phone application, and the average value over a period of time from the start of measurement will also be displayed.
2. Press the “start” key to start recording measurement data, and press the “stop” key to stop recording. Press the “reset” key to reset and stop the measurement, clear the old data and restart the recording.
3. Click the “data” button to view the historical record time and historical record data, and press the button at the upper right corner to share or download data.

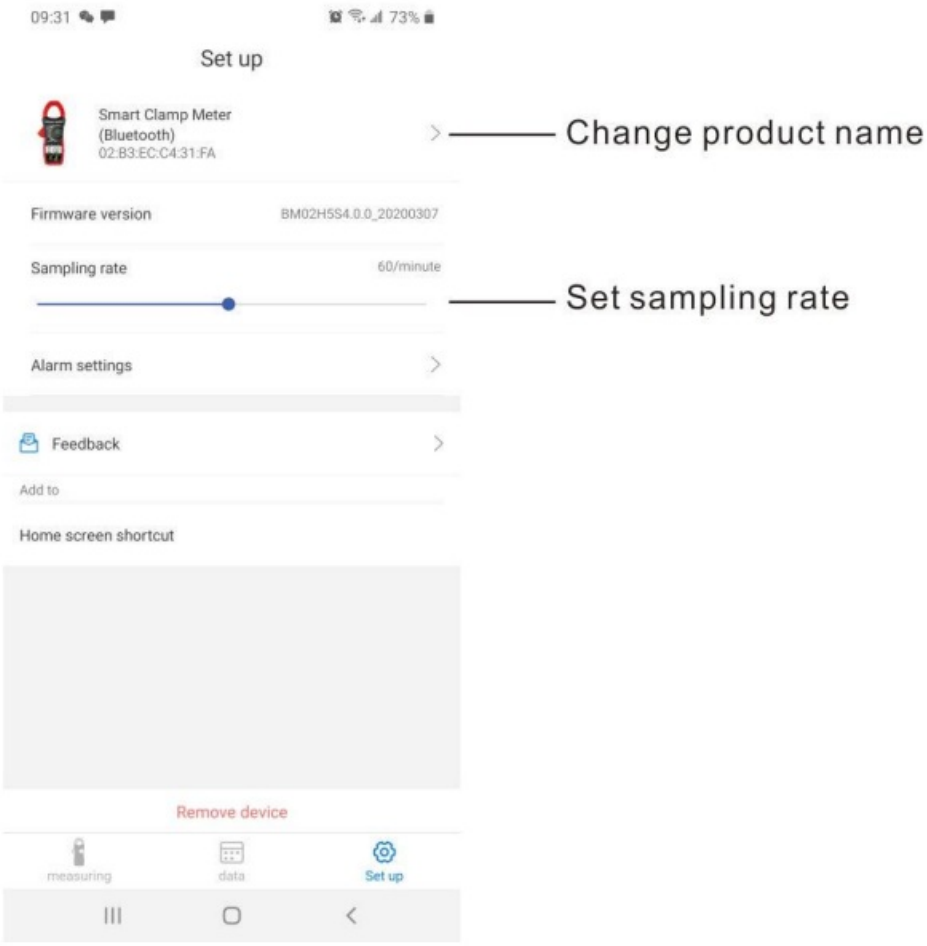



| index | value | type | time |
|---|---|---|---|
| 1 | 000.1 | DCV mV | 13:48:46.336 |
| 2 | 000.1 | DCV mV | 13:48:47.358 |
| 3 | 000.1 | DCV mV | 13:48:48.801 |
| 4 | 000.1 | DCV mV | 13:48:50.246 |
| 5 | 000.1 | DCV mV | 13:48:51.670 |
| 6 | 000.1 | DCV mV | 13:48:53.124 |
| 7 | 000.1 | DCV mV | 13:48:54.565 |
| 8 | 000.1 | DCV mV | 13:48:56.000 |
| 9 | 000.1 | DCV mV | 13:48:57.425 |
| 10 | 000.1 | DCV mV | 13:48:58.905 |
| 11 | 000.1 | DCV mV | 13:49:00.330 |
| 12 | 000.1 | DCV mV | 13:49:01.799 |
| 13 | 000.1 | DCV mV | 13:49:03.253 |
| 14 | 0L | OHM Ω | 13:49:04.672 |
| 15 | 0L | OHM KΩ | 13:49:06.079 |
| 16 | 10.73 | OHM MΩ | 13:49:07.530 |
| 17 | 0.L | OHM MΩ | 13:49:08.927 |
| 18 | 0.L | OHM MΩ | 13:49:10.320 |
| 19 | 0.000 | FRE Hz | 13:49:11.707 |
| 20 | 0.000 | FRE Hz | 13:49:13.068 |
| 21 | 0025 | TMP ℃ | 13:49:14.457 |

4. Click “setting” to enter the setting interface, click the device image to change the product name, view the firmware version and set the sampling rate.




※ After using this product, if it is not used for a long time, it is recommended to take out the battery, otherwise the battery will be consumed all the time.

**CONTACT US**

For any problem or concern, welcome to email us for prompt response.

**AFTERSALES1010@HOTMAIL.COM**

**P.S.**

To make sure you can receive immediate solution and your requests processed quickly, please email us with these information:

1. Order Number
2. Platform of Your Purchase
3. Full Model Number
4. Description of the Problem(Attaching videos or photos can help us troubleshoot the problems even faster)

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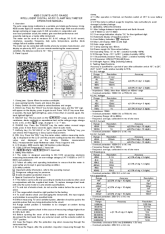
**Documents / Resources**

| | |
|---|---|
|  | **Digital Clamp Meter Multimeter 4000 Counts Amp Voltage Tester with APP** [pdf] Instruction Manual<br>Multimeter 4000 Counts Amp Voltage Tester with APP, Multimeter 4000, Counts Amp Voltage Tester with APP, Voltage Tester with APP, Tester with APP |

## References

- **User Manual**