LYCEBELL LC-7200C-APP Digital Clamp Bluetooth Multimeter User Manual

Contents

LYCEBELL

LYCEBELL LC-7200C-APP Digital Clamp Bluetooth Multimeter

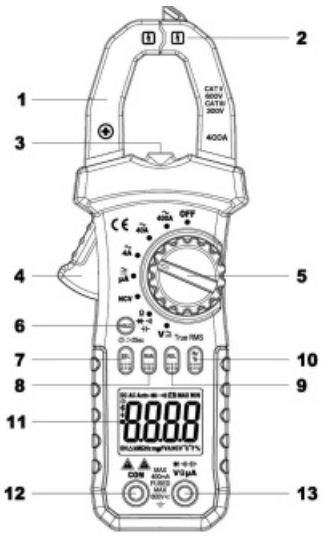
4000 COUNTS WITH APP

AC TRUE-RMS CLAMP MULTIMETER OPERATION MANUAL

Overview

- The auto range clamp multimeter is a portable and stable performance. Using 4000 counts digit LCD monitor with character 16mm 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 connected with mobile phone by Bluetooth, and display on phone by APP, you can remote monitoring the measurement condition, the distance control is 10 15m.
- The meters can be used to measure DC & AC voltage, DC & AC uA current, ACA current, resistance, capacitor, frequency, duty cycle, Non Contact AC Voltage (NCV) detection, positive diode voltage fall and audible continuity.

Panel Layout



1. **Clamp jaws:** Opens 26mm to enclose conductor.
2. NCV detection area (bottom).
3. **Lamp light**: Press the “HOLD” key over 2 seconds to light the lamp light, it will light up too when the built-in buzzer sounds.
4. **Jaw-opening handle**: Opens and closes the jaws.
5. **Rotary Switch**: Use this switch to select functions and ranges.
6. **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 and the lamp light will light up, press it more than 2 seconds again, the back light and the lamp light will light off.
7. **SEL key**: This key work on the “ "Ω⊣◁•))⊣⊢" ” range, press the key to choose resistance, continuity, diode or capacitance test, on the voltage or uA current range, change to DC or AC.
8. **RAN Key**: Press the “RAN” key, the meter enters manual range mode, press it more than 2 seconds again, return to auto mode.
9. **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.
10. **Hz% Key**: On “ACV/ACA” range, press the “Hz%” key, you can choose the Frequency or Duty Cycle measurement.
11. **LCD display**: 4000 counts digit, full function symbol display.
12. **COM**: COM input Jack
13. VuA Ω⊣◁•)): V/uA/Ω⊣◁•)/⊣⊢ input Jack

Safety Information

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

- 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.
- To avid risk of electric shock, do not use the meters before the cover is in place.
- The range switch should be right position for the testing.
- To avoid electric shock and damaging the instruments, the input signals are forbidden to exceed the specified limits.
- When measuring TV set or switched power, attention should be paid to the possible pulses that may bring

destruction to the circuit.

- Range switch position is forbidden to be changed at random during measurement.
- Take caution against shock in the course of measuring voltage higher than DC 60V & AC 30V.
- 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.
- Keep the fingers after the protection ring when measuring through the instrument lead.
- Keep the fingers after the protection ring when measuring through the clamp.
- After operation is finished, set function switch at OFF to save battery power.
- If the meter is without usage for long time, take out battery to avoid damage by battery leakage.

GENERAL SPECIFICATIONS

- **Max Voltage between input terminal and Earth Ground**: CAT Ⅱ 600V or CAT Ⅲ 300V
- **Over-range Indication:** display “OL” for the significant digit.
- Automatic display of negative polarity “-” .
- **Low Battery Indication:** “  ” displayed.
- **Max LCD display**: 4000 counts digit.
- Auto range control
- **Clamp opening size**: 26mm.
- **Power supply:** 1.5V×2 “AAA” R03P battery
- **Operating Temp.:** 0℃ to 40℃ (relative humidity <85%)
- **Storage Temp**.:-10℃ to 50℃ (relative humidity <85%)
- **Guaranteed precision Temp**.: 23±5℃ (relative humidity <70%)
- **Dimension**: 207(H)×75(W)×37(D)mm.
- **Weight**: Approx. 280g (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%.

DC Voltage

Range	Resolution	Accuracy
400mV	0.1mV	±(0.5% of rdg + 2 digits)
4V	1mV	
40V	10mV	
400V	100mV	
600V	1V	±(0.8% of rdg + 2 digits)

- **Impedance:** 10MΩ, More than 100MΩ on 400mV range
- **Overload protection**: 600V DC or AC rms

AC Voltage (True RMS)

Range	Resolution	Accuracy
4V	1mV	±(1.0% of rdg + 3 digits)
40V	10mV	
400V	100mV	
600V	1V	±(1.5% of rdg + 3 digits)

- **Impedance**: 10MΩ
- **Overload protection:** 600V DC or AC rms
- **Frequency Range**: 40 to 2kHz

DC uA Current

Range	Resolution	Accuracy
400uA	0.1uA	±(1.2% of rdg + 2 digits)
4000uA	1uA	

- **Overload protection:** 400mA/250V PPTC Resettable Fuse

AC uA Current (True RMS)

Range	Resolution	Accuracy
400uA	0.1uA	±(1.5% of rdg + 3 digits)
4000uA	1uA	

- **Overload protection: 4**00mA/250V PPTC Resettable Fuse
- **Frequency Rang**e: 40 to 2kHz

ACA Current (True RMS)

Range	Resolution	Accuracy
4A	1mA	±(3.0% of rdg + 10 digits)
40A	10mA	±(2.5% of rdg + 10 digits)
400A	100mA	±(3.0% of rdg + 10 digits)

- **Overload protection:** 400A AC rms
- **Frequency Range:** 40 to 100Hz

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

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	±(5.0% of rdg + 10 digits)	10nF
400µF	±(10.0% of rdg + 20 digits)	100nF
4mF		1µF
40mF		10µF

- **Overload protection**: 250V DC or AC rms

Frequency

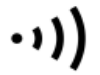
Range	Accuracy	Resolution
9.999Hz	± (0.1% of rdg + 5 digits)	0.001Hz
99.99Hz		0.01Hz
999.9Hz	± (0.1% of rdg + 5 digits)	0.1Hz
9.999kHz		1Hz

- **On AC range, press** “Hz%” key to select frequency measurement
- **Sensitivity:** sine wave 0.6V rms, 60uA rms or 0.6A rms (by clamp)
- **Overload protection:** 250V DC or AC rms

Duty cycle

- **0.1% 99.9%:** ± (2.0% of rdg + 2 digits)
- On AC range, press “Hz%” key to select duty cycle measurement
- **Sensitivity:** sine wave 0.6V rms, 60uA rms or 0.6A rms (by clamp)
- **Overload protection:** 250V DC or AC rms

Diode and Audible continuity test

Range	Description	Test Condition
	Display read approximately forward voltage of diode	Forward DC current approx. 1.5mA Reversed DC voltage approx. 4V
	Built-in buzzer sounds and the lamp light will light up if resistance is less than 50Ω	Open circuit voltage approx. 2V

- **Overload protection:** 250V DC or AC rms

Non Contact AC Voltage (NCV) detection

- **Test voltage range:** 90V 1000V AC rms
- The lamp light will light up together with sound.

OPERATING INSTRUCTIONS

Attention before operation

- 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.
- Pay attention to the “  ” besides the input jack which shows that the input voltage or current should be within the specified value.
- The range switch should be positioned to desired range for measurement before operation.

Measuring DC & AC Voltage

- Connect the black test lead to COM jack and the red to  jack.
- Set the rotary switch at the desired “  ” range position, it shows symbol for testing DC voltage, if you want to test AC voltage, push “SEL” button switch.
- Connect test leads across the source or load under measurement.

- You can get reading from LCD. The polarity of the red lead connection will be indicated along with the DC voltage value.
- On AC range, press “Hz%” key to measurement frequency or duty cycle.

NOTE

1. “ ⚠ ” means you can’t input the voltage more than 600V, it’s possible to show higher voltage, but it may destroy the inner circuit or pose a shock.
2. Be cautious against shock when measuring high Voltage.

Measuring DC & AC uA Current

- Connect the black test lead to COM jack and the red to VuAΩ⊣•))
- Set the rotary switch at the desired “ μA≂ ” range position, it shows symbol for testing DC uA current, if you want to test AC uA current, push “SEL” button switch.
- Connect test leads in series with the load under measurement. 7-3-4 You can get reading from LCD. The polarity of the red lead connection will be indicated along with the DC current value.
- On AC range, press “Hz%” key to measurement frequency or duty cycle.

  NOTE: “⚠ ” means the socket VuAΩ⊣•))’ ’s maximum current is 400mA, over 400mA current can be protected by the PPTC resettable fuse.

Measuring ACA Current

- Set the rotary switch at the desired “4A~’ ”, “40A~ ” or “400A~ ” range position.
- Disconnect the test leads from the Meter.
- Clamp the Jaws around the one conductor to be measured. Center the conductor within the Jaw using the Centering Marks as guides.
- You can get reading from LCD.
- Press “Hz%” key to measurement frequency or duty cycle.

NOTE

1. When the value scale to be measured is unknown beforehand, set the range selector at the highest position.
2. When only “OL” is displayed, it indicates over-range situation and the higher range has to be selected.

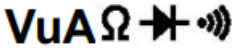
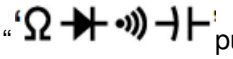
Measuring Resistance

- Connect the black test lead to COM jack and the red to VuAΩ⊣•)) jack.
- Set the rotary switch at the desired “Ω⊣•))⊣⊢ ” range position.
- Connect test leads across the resistance under measurement.
- 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.

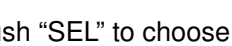
Measuring Capacitance

- Connect the black test lead to COM jack and the red to  jack.
- Set the rotary switch at the desired “  push “SEL” to choose Capacitance measurement.
- Connect test leads across the capacitance under measurement.
- You can get reading from LCD.

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

- Capacitors should be discharged before being tested.
- When testing large capacitance, it will take longer time before the final indication (For 400uF~40mF range, it will take about 10 seconds).
- When testing small capacitance (≤1uF), to assure the measurement accuracy, first press “REL”, then go on measuring.

Diode & Audible continuity Testing

- Connect the black test lead to COM jack and the red to  jack.
- Set the rotary switch at the “  ” range position, push “SEL” to choose Diode or Audible continuity measurement.
- On diode range, connect the test leads across the diode under measurement, display shows the approx. forward voltage of this diode.
- On Audible continuity range, connect the test leads to two point of circuit, if the resistance is lower than approx. 50Ω, the lamp light will light up together with sound.

NOTE: Make sure the power is cut off and all capacitors need to be discharged under this measurement.

Non Contact AC Voltage detection

- Set the rotary switch at the desired “NCV” range position.
- Hold the meter so that the bottom of the mater’s clamp jaws right is vertically and horizontally centered and contacting the conductor, when the live voltage ≥ 90V AC rms, the lamp light will light up together with sound.

NOTE

1. Even without LED indication, the voltage may still exist. Do not rely on non-contact voltage detector to determine the presence of voltage wire. Detection operation may be subject to socket design, insulation thickness and different type and other factors.
2. When the meter input terminals presence voltage, due to the influence of presence voltage, voltage sensing indicator may also be bright.
3. Keep the meter away from electrical noise sources during the tests, i.e., florescent lights, dimmable lights, motors, etc.. These sources can trigger Non-Contact AC Voltage detection function and invalidate the test.

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

- When the battery voltage drop below proper operation range the “  ” symbol will appear on the LCD display and the battery need to changed.
- 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.
- Replace the old battery with the same type battery (AAA R03P 1.5V×2).
- Close the cover of the battery cabinet and fasten the screw.

Maintenance

- You must replace the test leads if the lead is exposed, and should adopt the leads with the same specifications as origin.
- 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.
- When take current measurement, keep the cable at the center of the clamp will get more accurate test result.
- Repairs or servicing not covered in this manual should only by qualified personal.
- Periodically wipe the case with a dry cloth and detergent. Do not use abrasives or solvents on this instruments.
- Please take out the battery when not using for a long time.

Accessories

1. **Test Leads:** electric rating 600V 10A
2. 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.

Intelligent Meter

Operation manual Summary

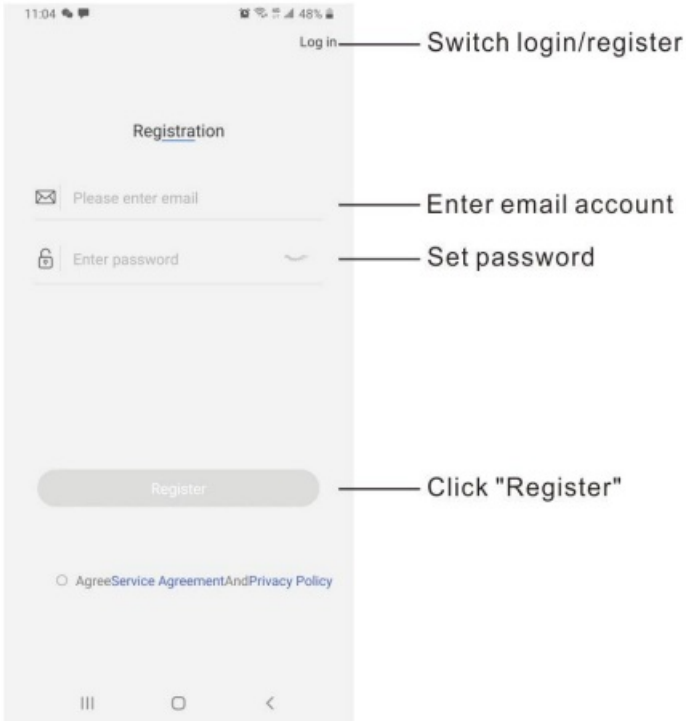
Intelligent Meter is a comprehensive intelligent hardware management platform. Through Intelligent Meter App, you can complete the convenient between mobile phones and intelligent hardware,achieve the interconnection and intercommunication between devices and users. Intelligent Meter supports multiple 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”.

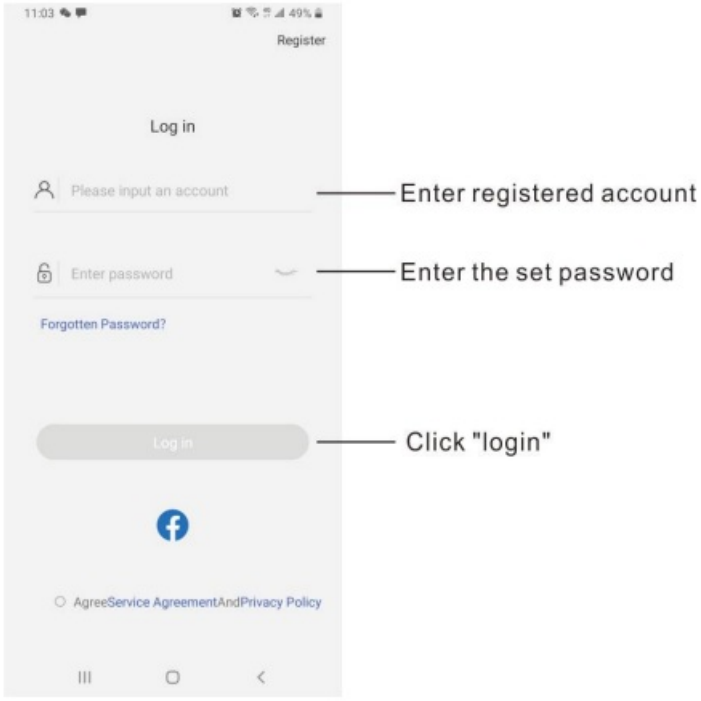
Account registration

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



Account login

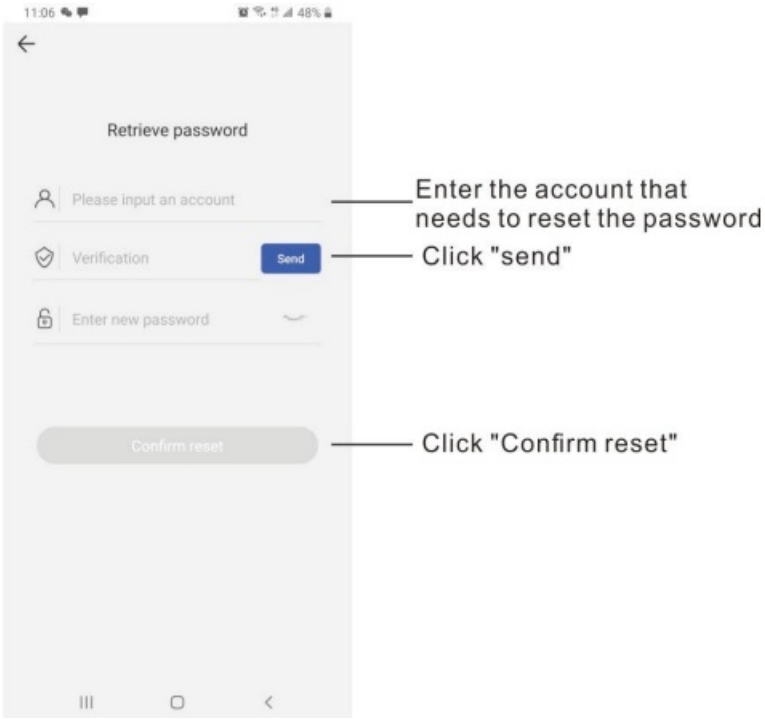
Enter the account and password and click login



Retrieve password

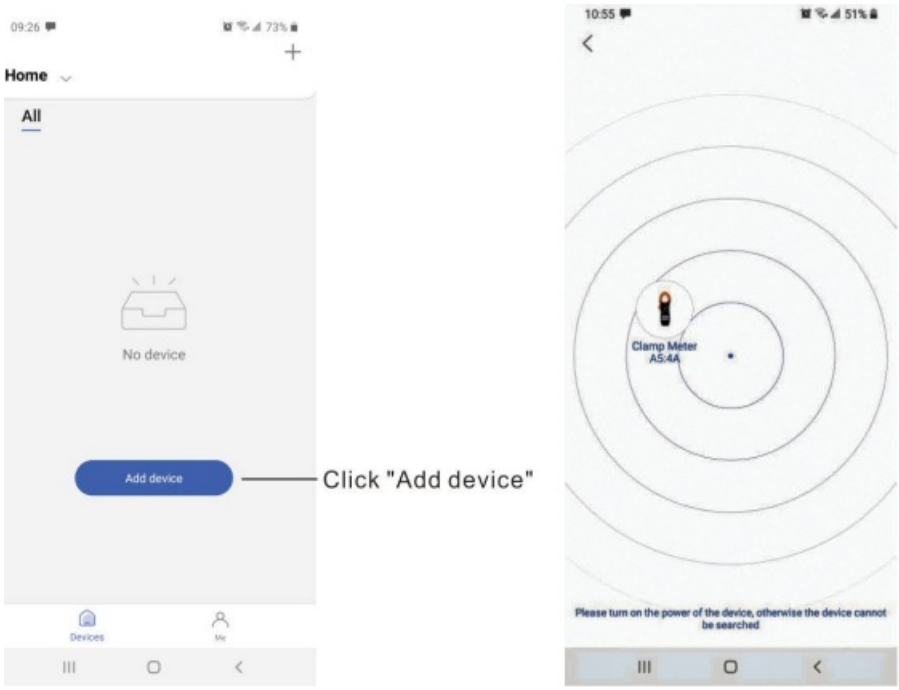
When the user forgets the login password, the login password can be reset through this function .

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 .

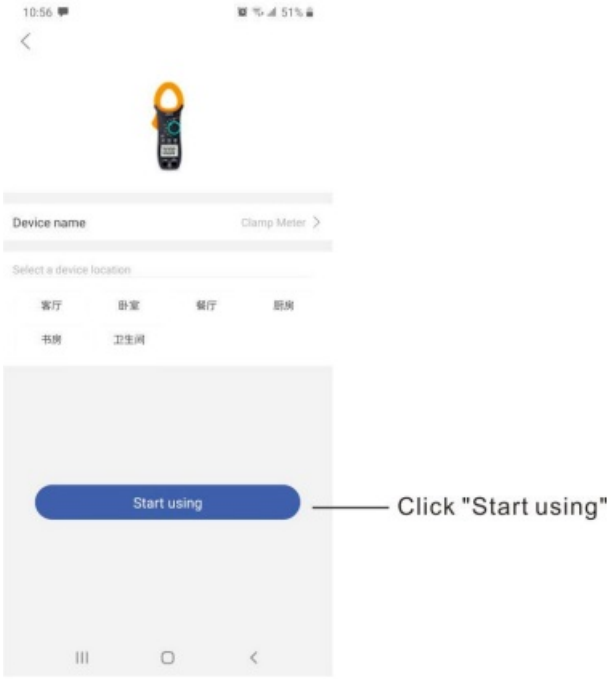


Add device

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.

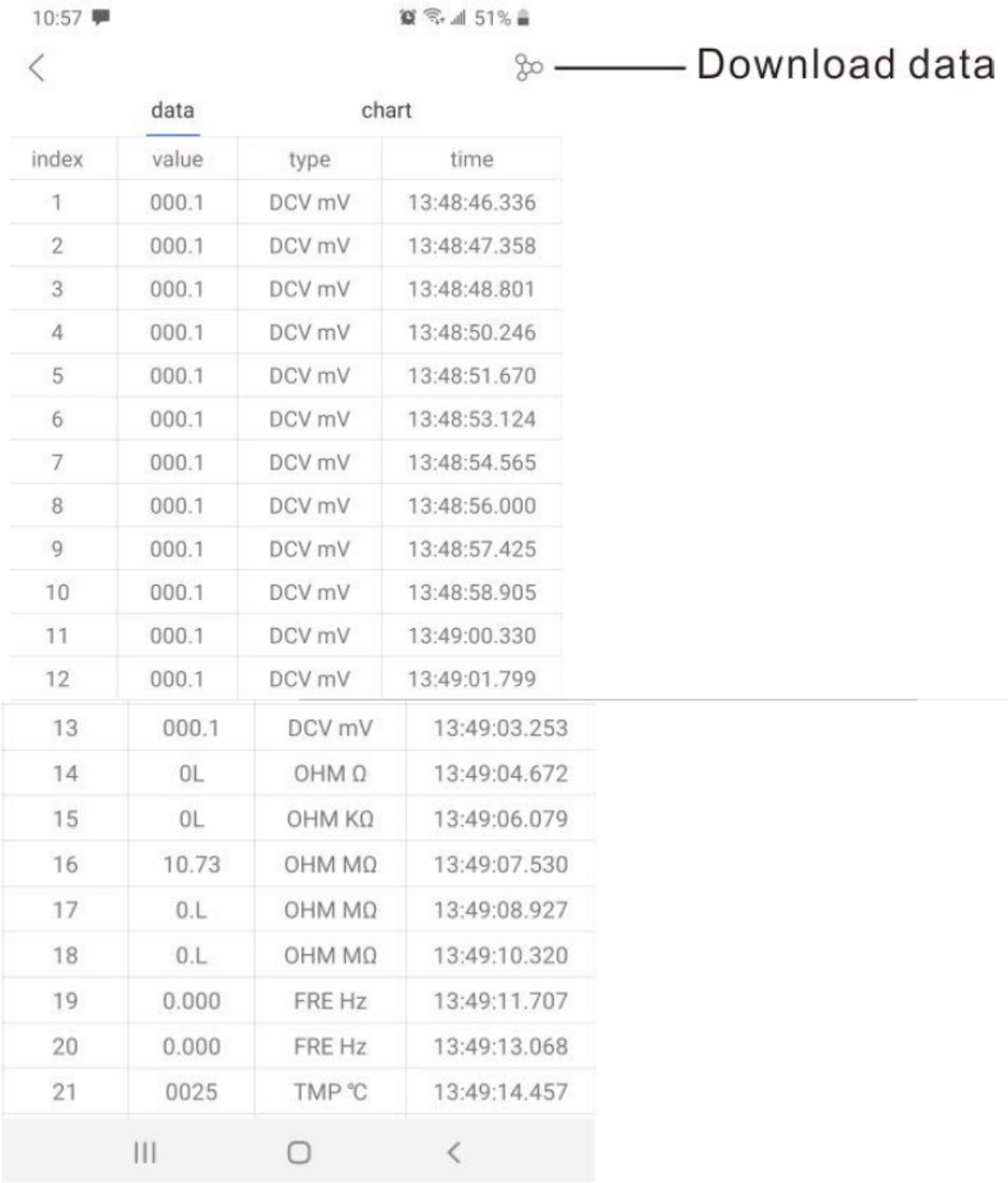


Function

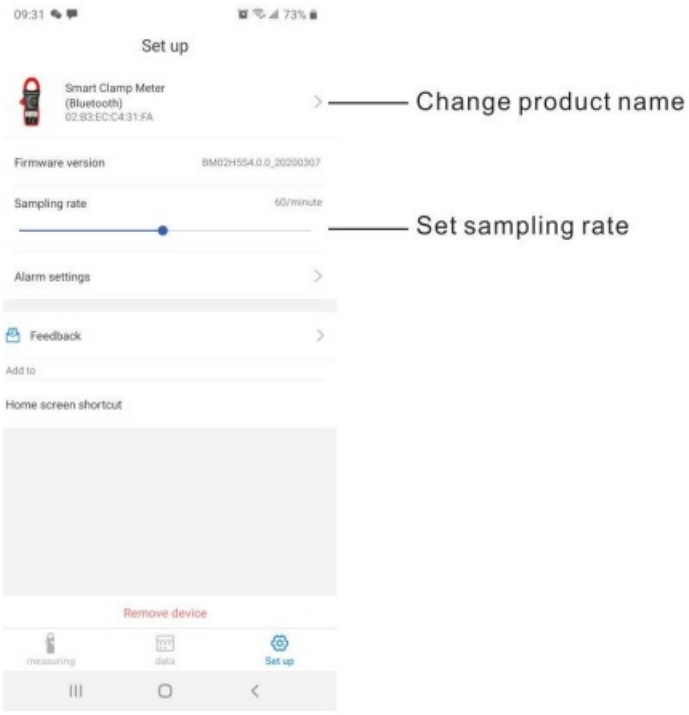
1. The maximum or minimum value and the corresponding time will be displayed on the mobile phone application, and the average value over a period of time from the start of measurement will also be displayed.
2. Press the “start” key to start recording measurement data, and press the “stop” key to stop 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.


connection succeeded
DC
AC
Auto
000.0
Start
stop
Reset
No data
measuring
data
Set up
Start recording measurement data
Reset and stop measurement
Stop measurement
Viewing test data time


history record
2022-08-24
13:53
13:48
13:46
13:45
View records



1. 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)

Documents / Resources

	**LYCEBELL LC-7200C-APP Digital Clamp Bluetooth Multimeter** [pdf] User Manual LC-7200C-APP Digital Clamp Bluetooth Multimeter, LC-7200C-APP, Digital Clamp Bluetooth Multimeter, Clamp Bluetooth Multimeter, Bluetooth Multimeter, Multimeter

References

- User Manual