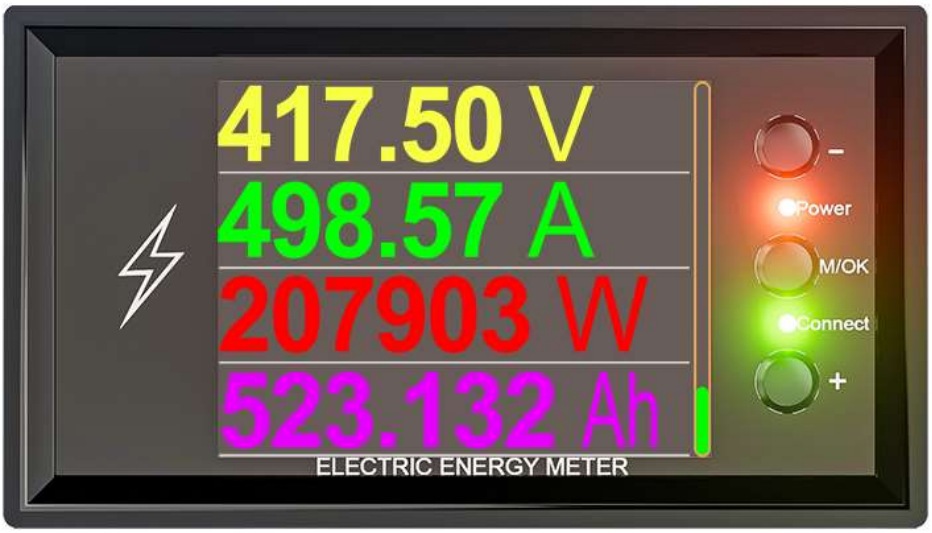
CW20 WIFI Networked Intelligent Battery Coulomb Meter
--User Manual--

Voltage Range:DC0~420V

Current Range:☐30A ☐100A ☐200A ☐300A ☐400A ☐500A ☐600A



This device is used to measure and display parameters such as voltage, current, power, true capacity, battery temperature, low capacity alarm, low voltage alarm, Current voltage curve, Electricity statistics,as well as remaining discharge time and remaining charging time of the battery pack. It accurately displays various working states of the battery pack at any time.

1. Scope of application and electrical measurement specifications

*This instrument is suitable for electric vehicles, RVs, cars, emergency power supplies, energy storage power supplies, measuring equipment, medical equipment, various instruments and other products that use battery equipment.

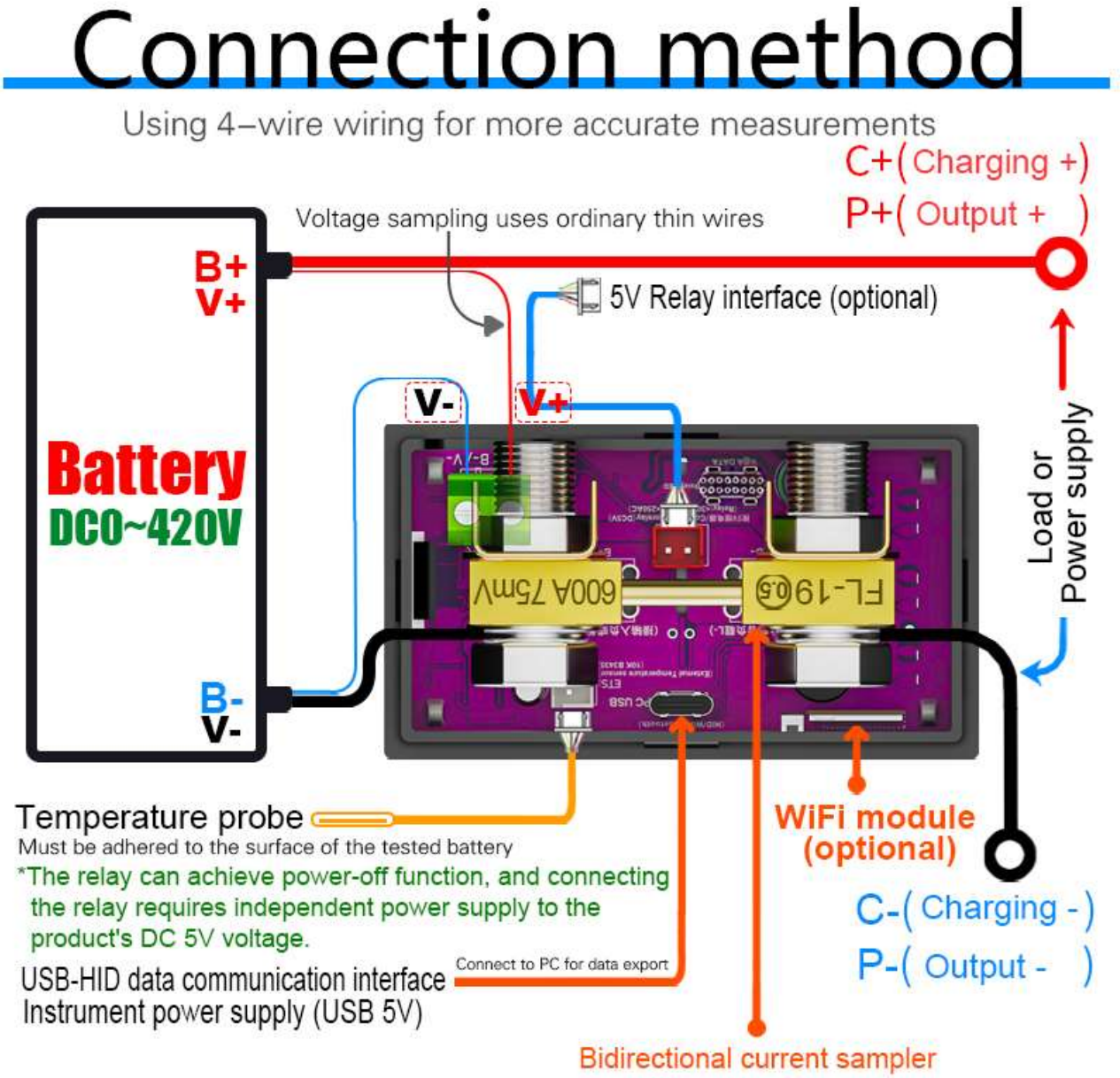
*Suitable for all types of battery packs, including lithium batteries, lithium iron phosphate, lead-acid batteries, nickel hydrogen batteries, etc., with operating voltages ranging DC 0~420V.

*Less than 10V, DC5V power supply is required for independent power supply!

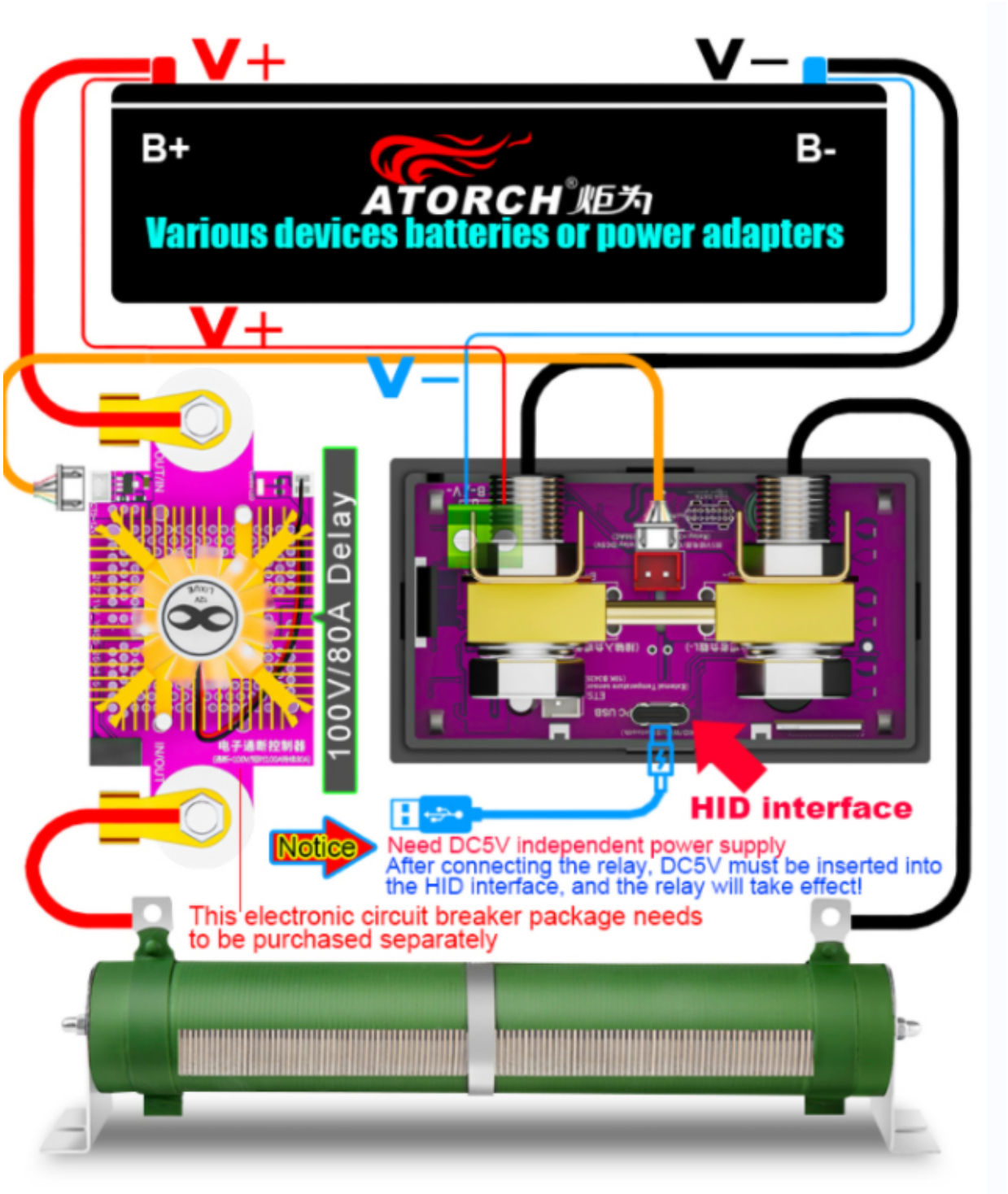
*Built in WiFi module:Remote Control:Connect the CW20 meter Wi-Fi to 2.4GHz Wi-Fi, then you can monitor or adjust on your phone through the app at any time anywhere.

2. Wiring Instructions

1.>Excluding relay connection method



2.>Excluding relay connection method



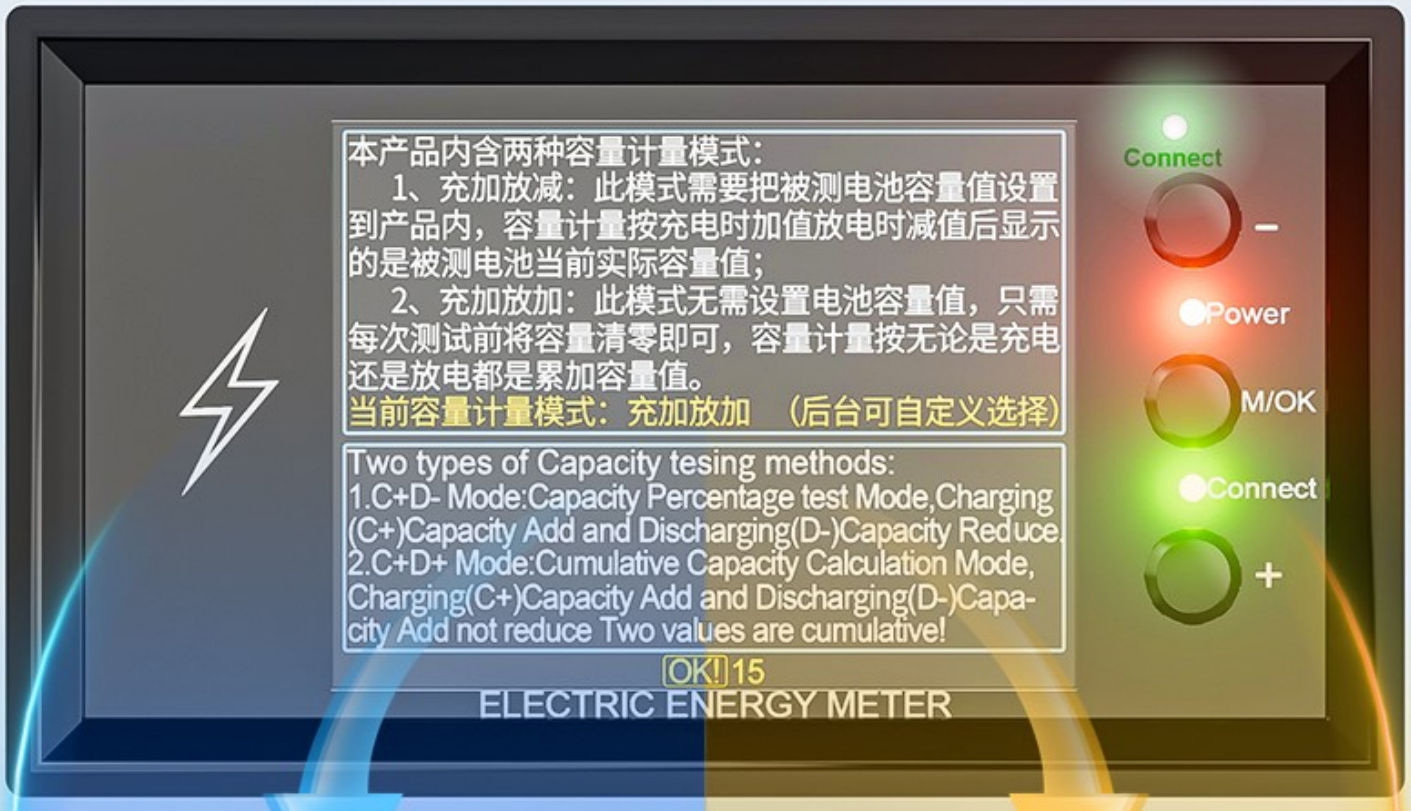
3. Two ways to test battery percentage

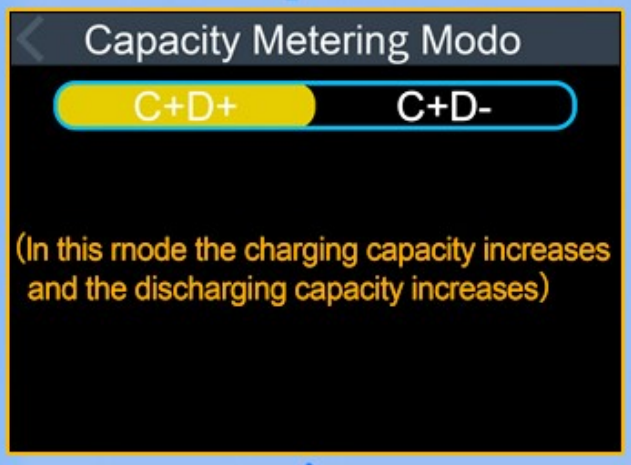
You can choose one of the appropriate ways to test your battery!

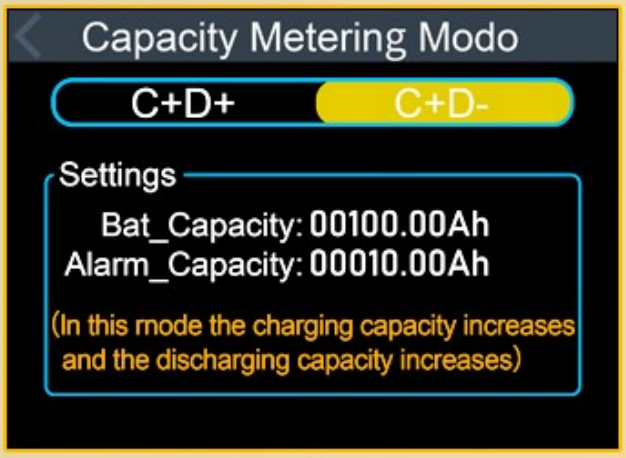
1.C+D-Mode: Capacity Percentage test Mode,Charging(C+)Capacity Add and Discharging(D-)Capacity Reduce.

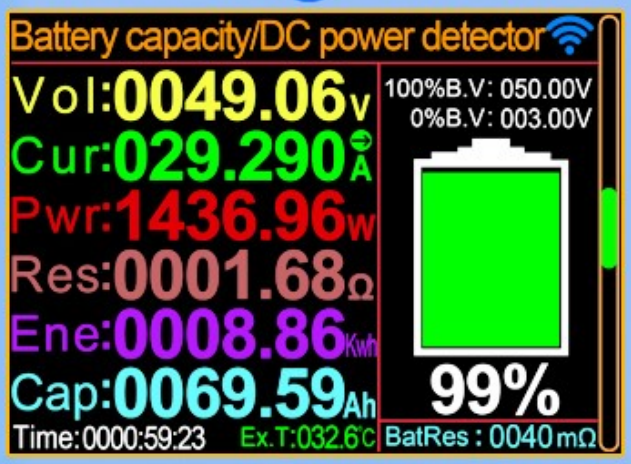
2.C+D+ Mode: Cumulative Capacity Calculation Mode,Charging(C+)Capacity Add and Discharging(D-)Capacity Add not reduce Two values are cumulative!

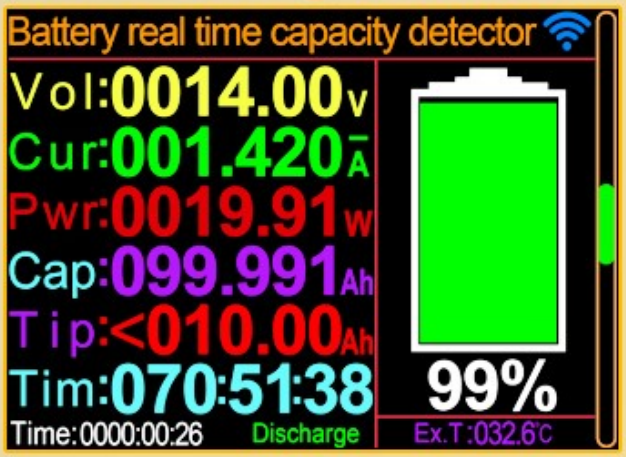
Operation method: Please long press M key to enter background, select: Capacity metering mode,and choose testing mode you need!


本产品内含两种容量计量模式：
1、充加放减：此模式需要把被测电池容量值设置到产品内，容量计量按充电时加值放电时减值后显示的是被测电池当前实际容量值；
2、充加放加：此模式无需设置电池容量值，只需每次测试前将容量清零即可，容量计量按无论是充电还是放电都是累加容量值。
当前容量计量模式：充加放加 （后台可自定义选择）
Two types of Capacity tesing methods:
1.C+D- Mode:Capacity Percentage test Mode,Charging (C+)Capacity Add and Discharging(D-)Capacity Reduce.
2.C+D+ Mode:Cumulative Capacity Calculation Mode, Charging(C+)Capacity Add and Discharging(D-)Capacity Add not reduce Two values are cumulative!
OK! 15
ELECTRIC ENERGY METER
Connect
Power
M/OK
Connect


Capacity Metering Modo
C+D+
C+D-
(In this rnode the charging capacity increases and the discharging capacity increases)

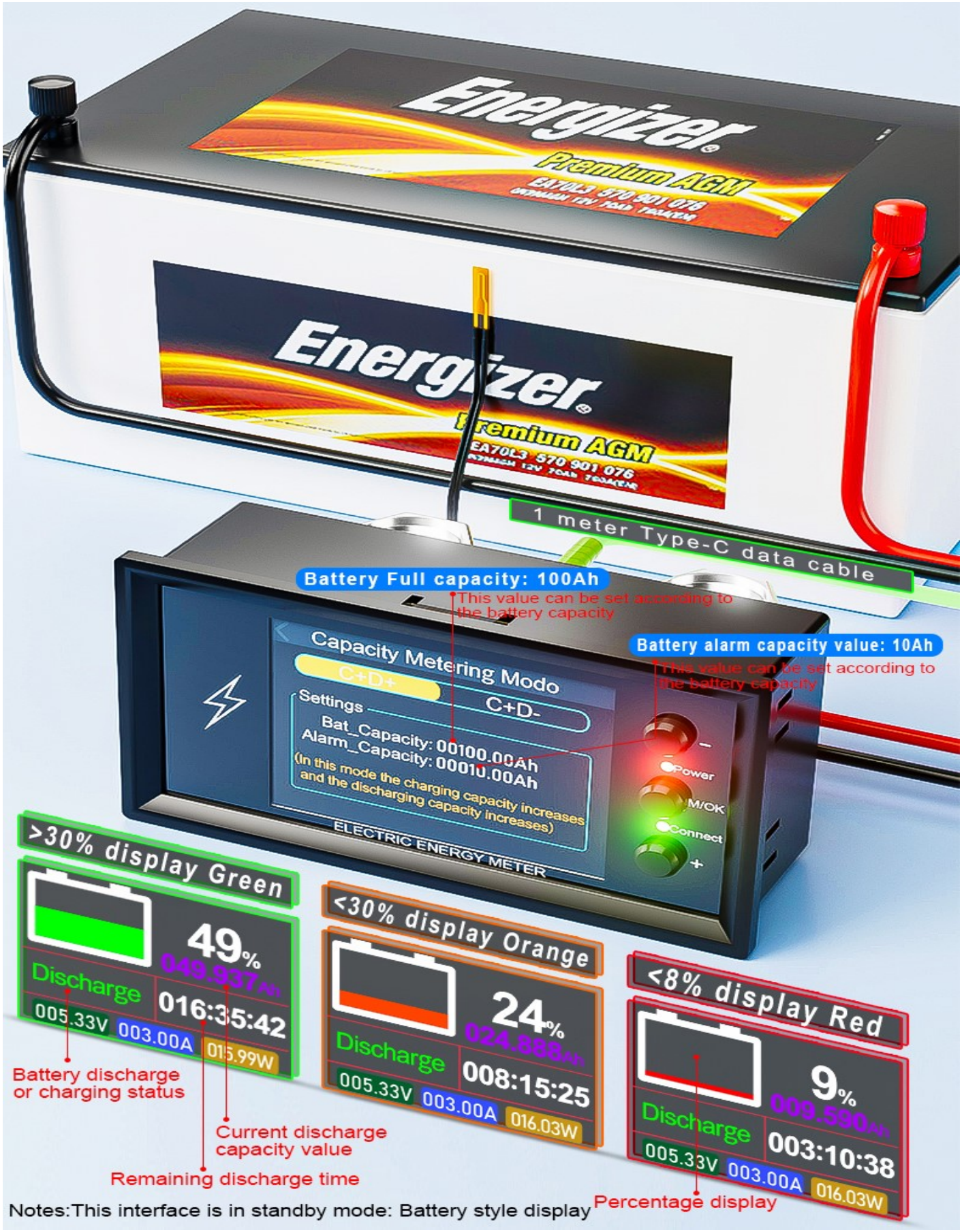

Capacity Metering Modo
C+D+
C+D-
Settings
Bat_Capacity: 00100.00Ah
Alarm_Capacity: 00010.00Ah
(In this rnode the charging capacity increases and the discharging capacity increases)


Battery capacity/DC power detector
Vol:0049.06V
Cur:029.290A
Pwr:1436.96W
Res:0001.68Ω
Ene:0008.86Kwh
Cap:0069.59Ah
Time:0000:59:23
Ex.T:032.6℃
100%B.V: 050.00V
0%B.V: 003.00V
99%
BatRes : 0040mΩ


Battery real time capacity detector
Vol:0014.00V
Cur:001.420A
Pwr:0019.91W
Cap:099.991Ah
Tip:<010.00Ah
Tim:070:51:38
Time:0000:00:26
Discharge
99%
Ex.T:032.6℃

1. >Capacity percentage mode

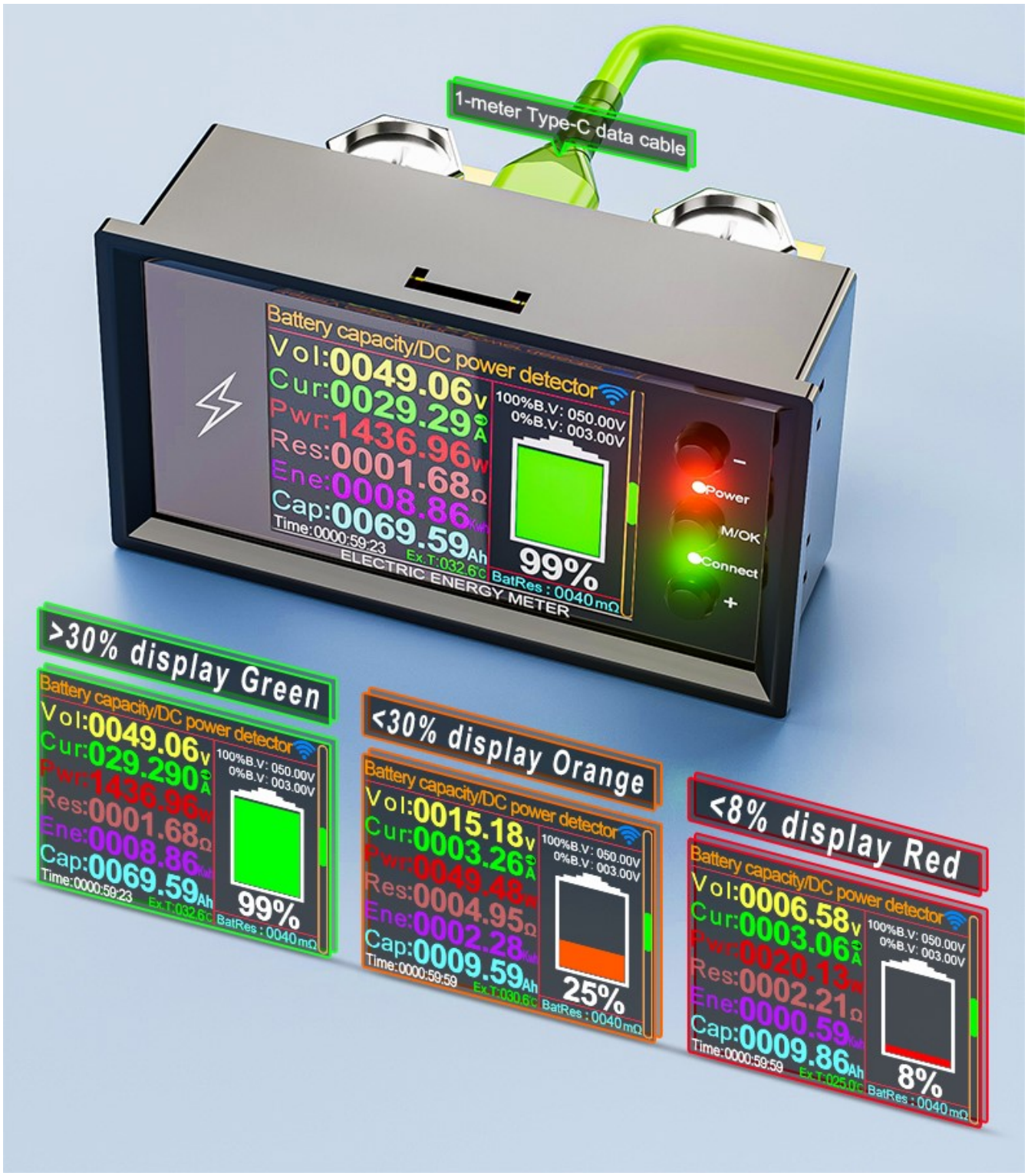
Operation method:
Please press and hold the M key to enter the background,select: Capacity metering mode (C+D -) mode test!



2. >Battery level percentage color change display

High and low threshold free setting for real-time detection of charging and discharging control output

This meter allows users to freely set the corresponding full charge voltage value and minimum discharge voltage value for battery types in the background, After calculating the percentage based on the threshold set by the user, the system displays the percentage color change through the battery symbol (green >30% yellow < 30%, red < 10%); When the display is within the range of 1% to 100%, the red light on the Power panel lights up, and the relay output interface outputs a high level to control the relay to connect the current path. When it exceeds the range of 1% to 100%,the red light goes out and the relay outputs a low level to disconnect the current path, ensuring safe charging and discharging protection for the battery, avoiding the risk of battery damage due to over-charging and discharging. It can also be used for other purposes of over-voltage and low-voltage disconnection protection.

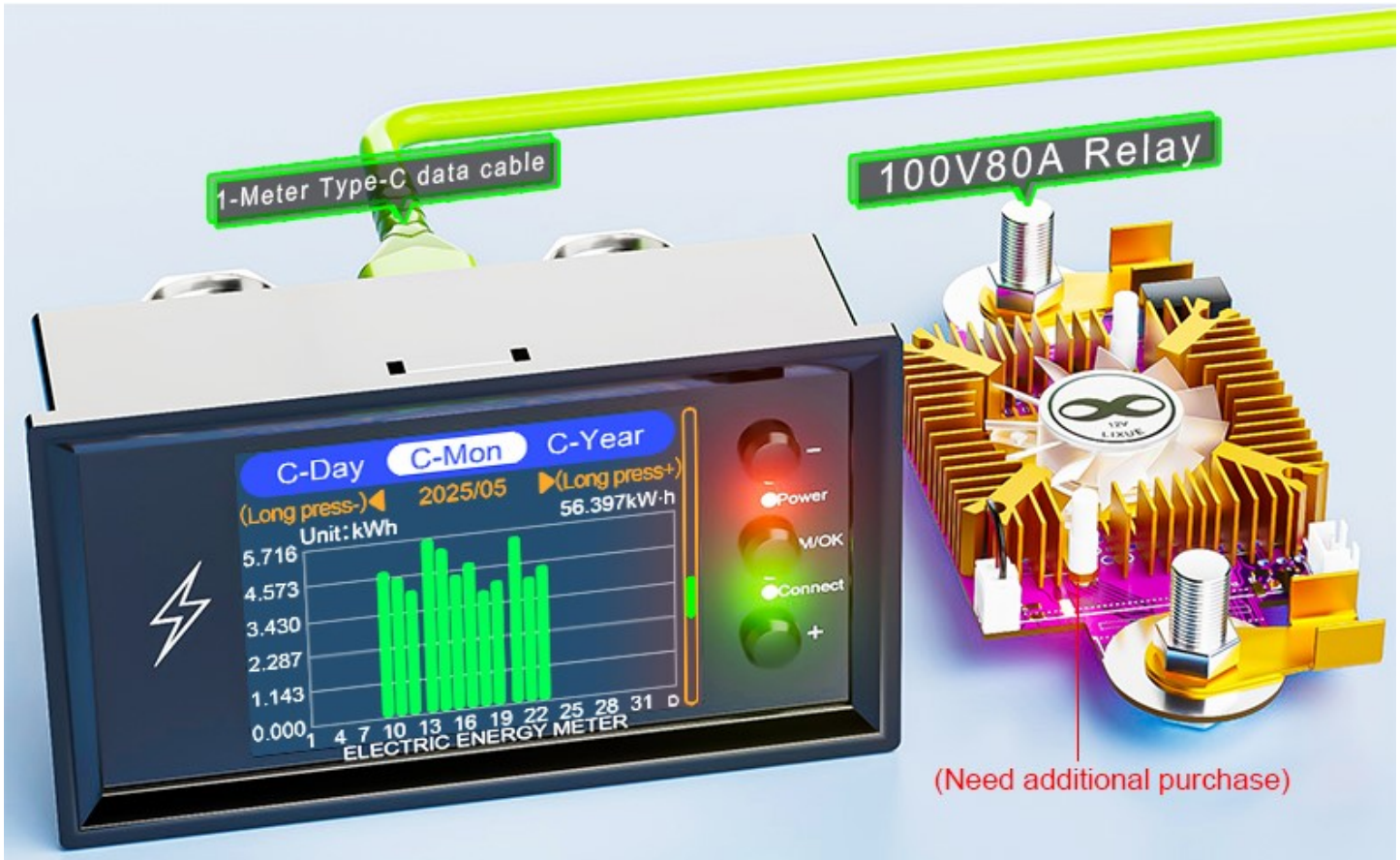


4. CW20 WiFi Battery Capacity Meter view

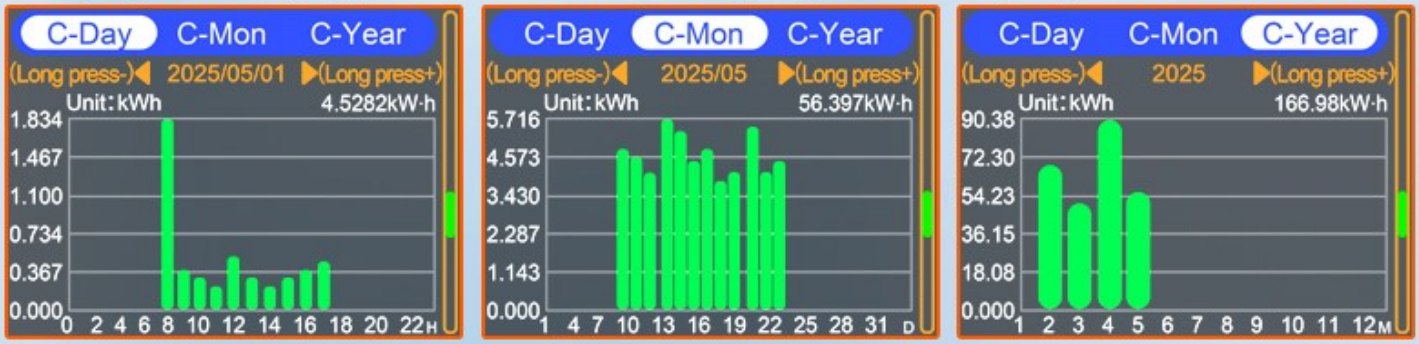
5. Four Standby Display modes

6. Measurement data of charging and discharging capacity statistics table

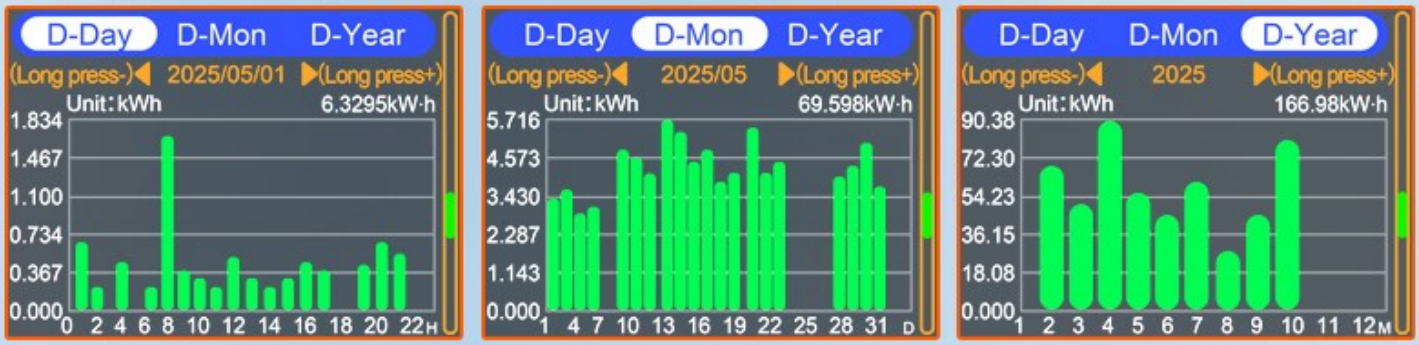
View charging and discharging capacity/daily report/monthly report/annual report Real time management of efficient charging and discharging power, statistics of daily charging and power consumption, real-time viewing of charging and discharging operation power through the host interface, real-time recording of daily, monthly, and annual charging and discharging power data, simple operation, and high measurement and statistical accuracy.



Display of charging column interface Daily report/monthly report/annual report

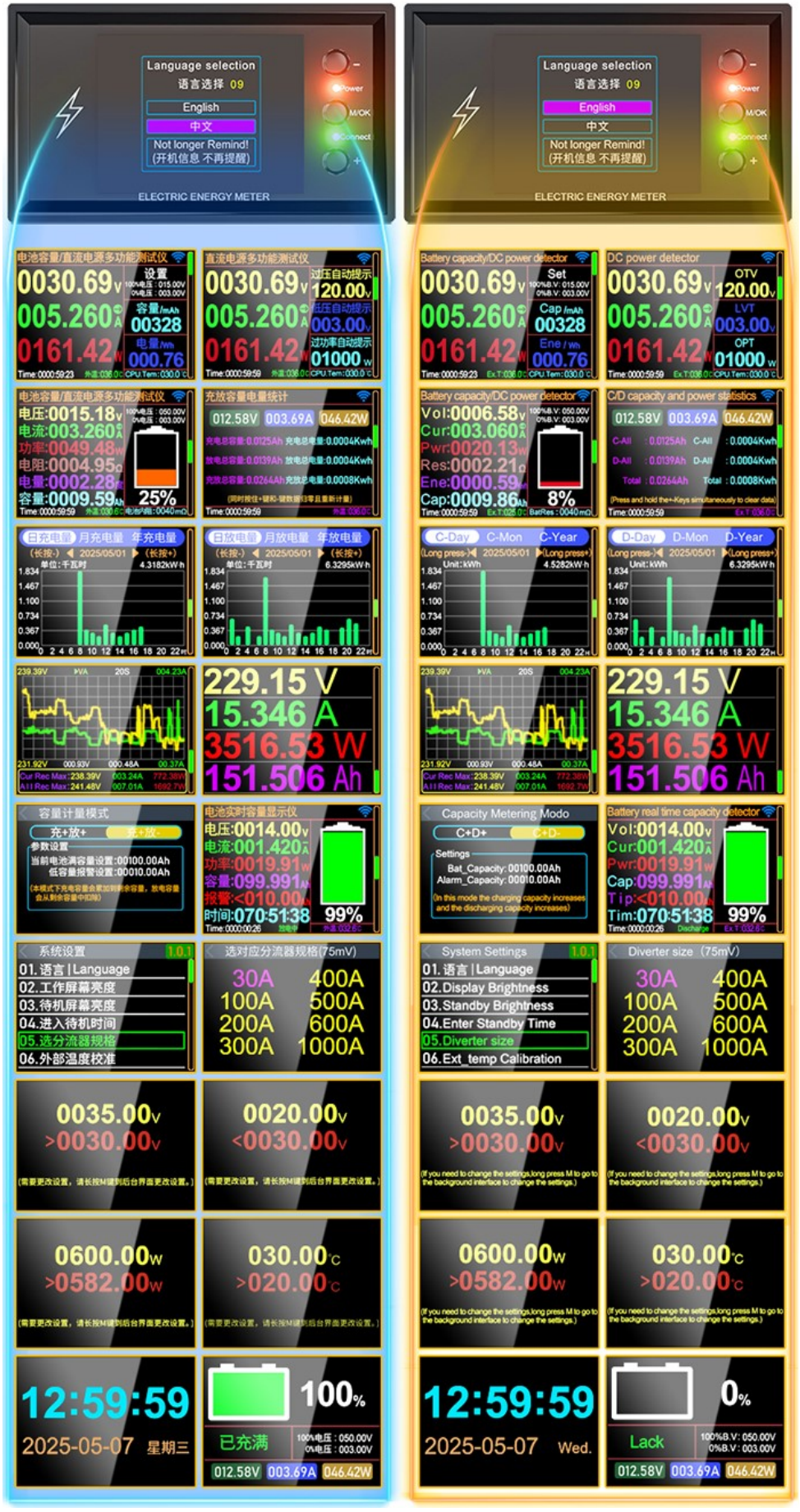


Display of Discharging column interface Daily report/monthly report/annual report



7. CW20 Multi HD Color Screen Interface Design

The CW20 true color screen brings you a different color visual experience, with multiple functional interface contents designed, multiple parameters displayed on one screen, and switching between different functional interfaces through short button presses ..

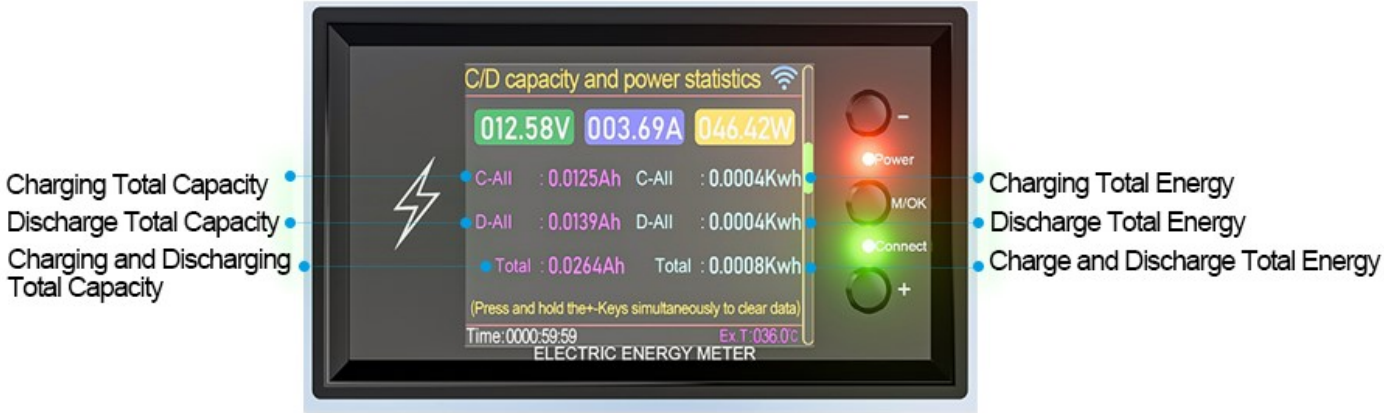


8. Latest backend settings

Long press the “M” key to enter the background, then short press the“+”/ “-"keys to select the column and enter the parameters under the corresponding function settings.

9. Independent statistical function for charging and discharging capacity and energy

After summarizing the urgent needs of numerous photovoltaic power generation users for engineers, ATORCH designed an independent statistical interface page for charging and discharging capacity and electricity. The page includes the total charging capacity value, total discharging capacity value, total charging and discharging capacity value, total charging energy value, total discharging energy value, total charging and discharging energy value, etc., which makes the data more detailed and clear at a glance.



10.Four fold alarm prompt

Dual alarm with sound and display for

Over-voltage/ Low-voltage/ Over-power/ Over-temperature!

Long press the"M/OK" button to enter the backend system settings for the Over-voltage threshold, Low-voltage threshold, and Over-power threshold of the tested battery. After the probe exceeds the temperature threshold, the device will display an alarm message and the internal buzzer will beep to remind users to charge the battery in a timely manner due to low battery voltage and low battery capacity, in order to avoid situations where the battery runs out of battery.

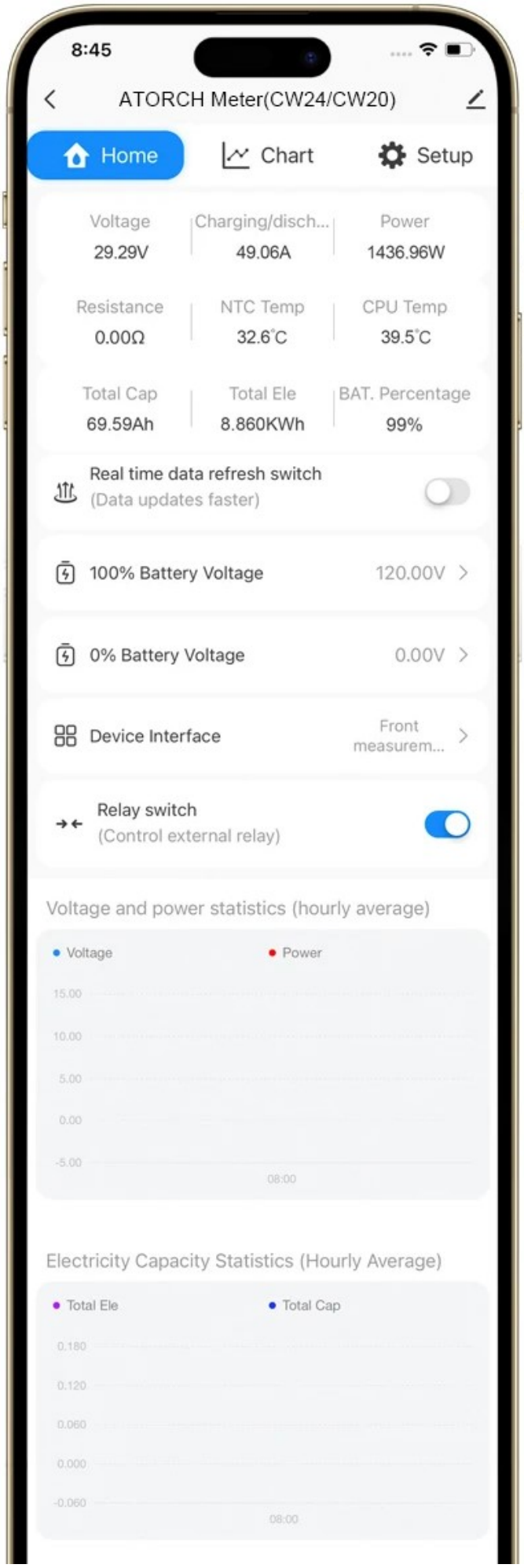
11.Product size:

12.Powerful IoT intelligent APP control software

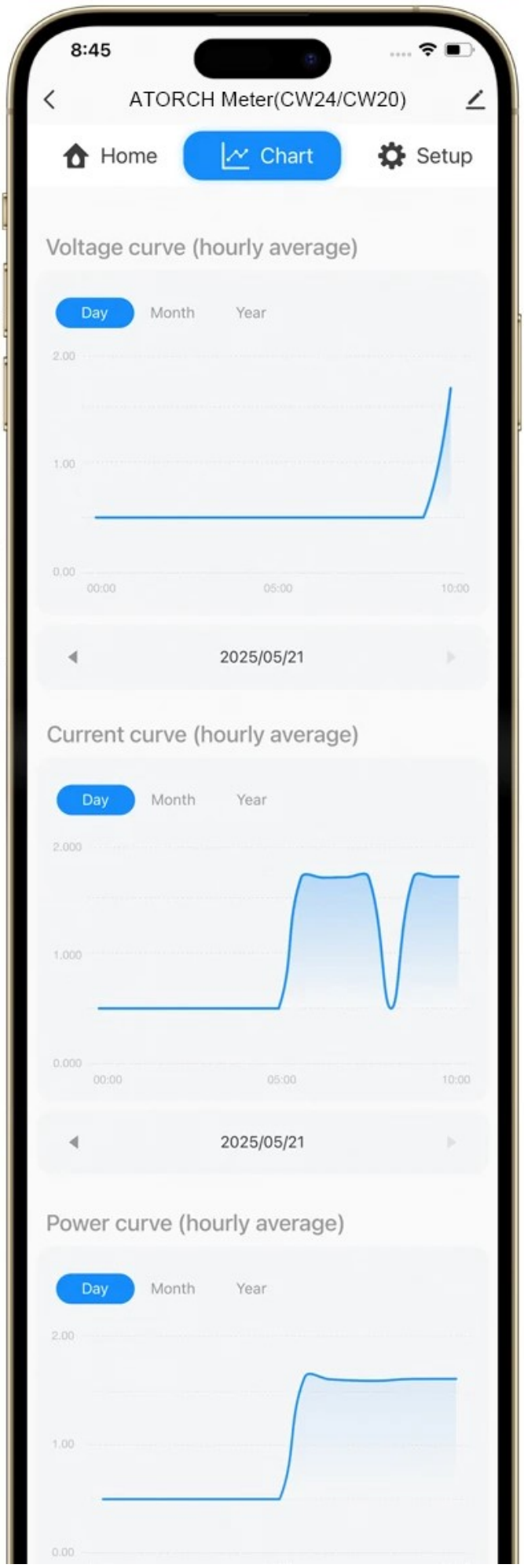
WiFi connected DC meter (CW20) can be downloaded from the smart life app and installed on your mobile phone to achieve remote control and testing, with rich functions. It almost covers all the functions of the host remotely on the mobile app for functional control, battery power data detection, charging and discharging curves, and charging Daily/monthly/annual electricity column statistics, etc .....

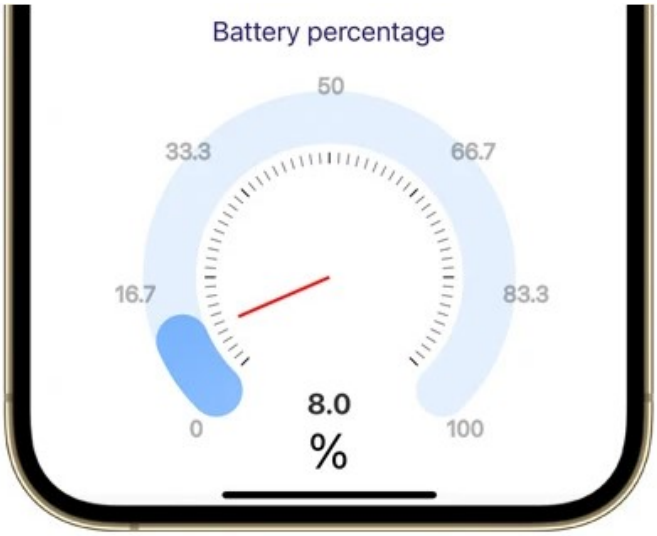
Note:Supports 2.4G WiFi network, requires Bluetooth device and WiFi signal to be turned on!

Mobile APP homepage display

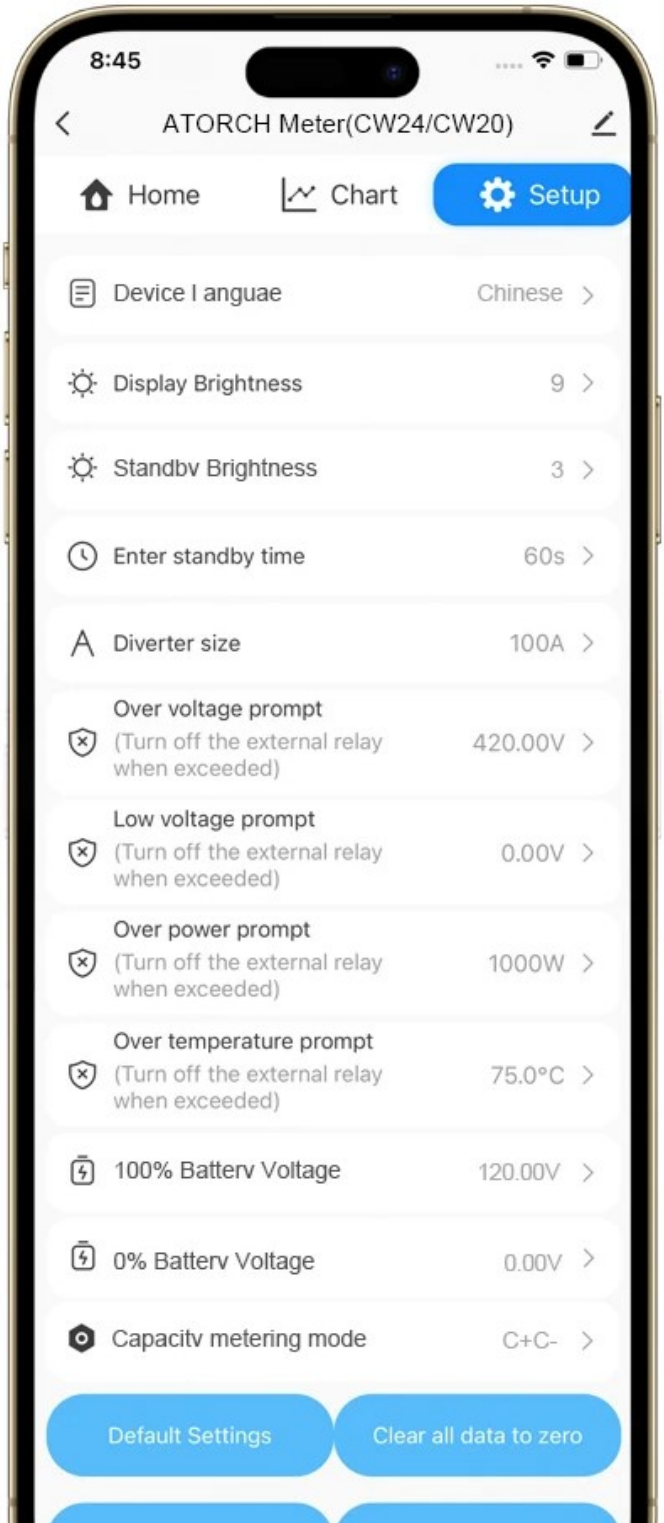


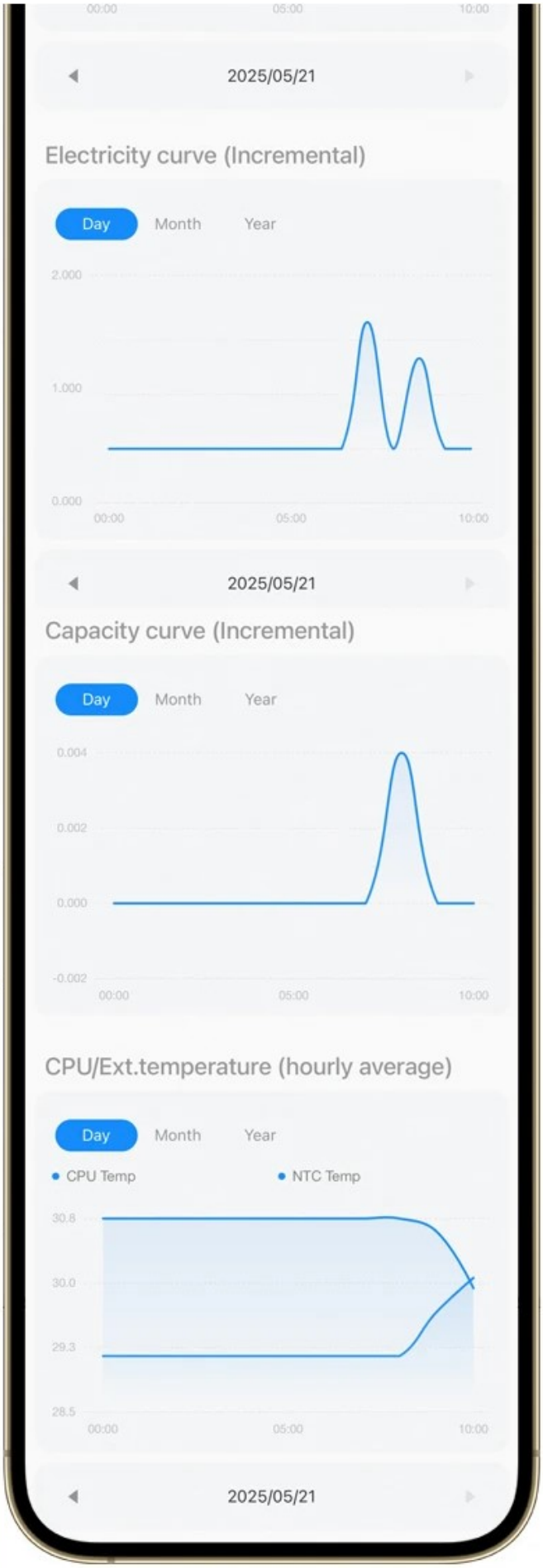
Mobile APP Graph display





Mobile APP backend settings





13.Support Firmware upgrade

14.Powerful PC software APP

PC software download:http://en.atorch.cn/NewsDetail.aspx?ID=90

Powerful PC software APP

Computer online backend synchronization setting function

1. PC computer upper online functions(Connect through HID data cable)
2. Bluetooth APP functions
3. WiFi Smart life APP functions

The PC computers can read device current, voltage, power, capacity and other data, and export XLS table data
The Bluetooth app can read device current, voltage, power, capacity and other data, and export XLS table data
The WiFi app can only view data, curve data, and cannot export data!

15.WiFi Voltmeter Distribution Network Description

WiFI Voltmeter Distribution Network Description

WiFi connection to the network only requires three steps

*For voltmeters with WiFi modules

Download the Smart Life APP Smart Connection Meter "CW20"

01

- Smart life APP Tuya APP
- Can be downloaded from the mobile app market (Google Play Market, Apple APP Store)

Add "ATorch as WiFi Connected Electricity Meter "(CW20)"

02

After being powered on, the device's red light flashes and remains on to enter the distribution network mode; Waiting for WiFi connection.

Boot interface

Power on distribution network waiting the interface

Power on distribution network to enter the interface

Paired successfully WiFi interface

*For voltmeters with WiFi modules

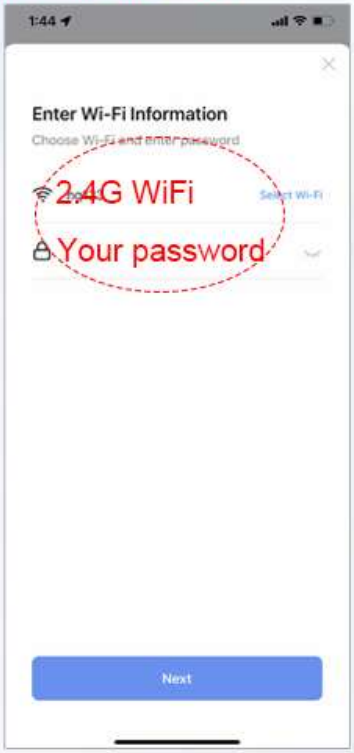
Smart Life APP Pair Operation Steps

03

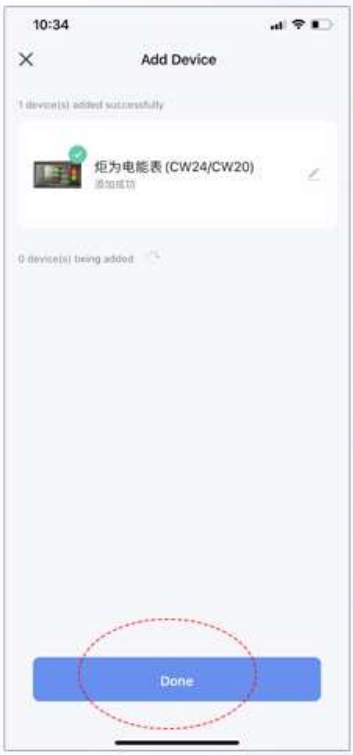
Attention: Be sure to turn on Bluetooth and location permissions when adding devices

Open the Smart Life app and it will automatically pop up
To add a device, click Add to proceed

Select device working WiFi and enter Click to manually enter the password



Enter the WiFi name and Password, and then Click Next to continue



After pairing is completed, Click on Next

After a successful WiFi connection, multiple values can be set for remote control

After a successful connection, open the app and automatically connect via WiFi

16.CW20 DC0-420V Product Parameter

CW20 Integrated type WiFi smart voltmeter							
Prducts Model	30A	100A	200A	300A	400A	500A	600A
Measure voltage	DC0-420V	DC0-420V	DC0-420V	DC0-420V	DC0-420V	DC0-420V	DC0-420V
Measure current	0.100-30.000A	0.10-100.00A	0.20-200.00A	0.30-300.00A	0.40-400.00A	0.50-50.00A	1.00-1000.00A
Measure power	12.60KW	42.00KW	84.00KW	126.00KW	168.00KW	210.00KW	252.00KW
Operation type	3 Key button	3 Key button	3 Key button	3 Key button	3 Key button	3 Key button	3 Key button
Capacity range (Ah)	999999Ah	999999Ah	999999Ah	999999Ah	999999Ah	999999Ah	999999Ah
Energy Range (Wh)	999999K*Wh	999999K*Wh	999999K*Wh	999999K*Wh	999999K*Wh	999999K*Wh	999999K*Wh
Battery charge	√	√	√	√	√	√	√
Battery discharge	√	√	√	√	√	√	√
Over-voltage protection reminder function	√	√	√	√	√	√	√
Low-voltage protection reminder function	√	√	√	√	√	√	√
Over temperature protection reminder function	√	√	√	√	√	√	√
Over-power protection reminder function	√	√	√	√	√	√	√
Screen color size	Color 2.0 inches	Color 2.0 inches	Color 2.0 inches	Color 2.0 inches	Color 2.0 inches	Color 2.0 inches	Color 2.0 inches
Firmware update	√	√	√	√	√	√	√
Bluetooth	√	√	√	√	√	√	√
WiFi	√	√	√	√	√	√	√
Computer Online	√	√	√	√	√	√	√
Export Data	√	√	√	√	√	√	√
Remote control	√	√	√	√	√	√	√
Battery Percentage	√	√	√	√	√	√	√
Percentage of battery capacity	√	√	√	√	√	√	√
Mobile app	Tuya or Smart life app (Free)						

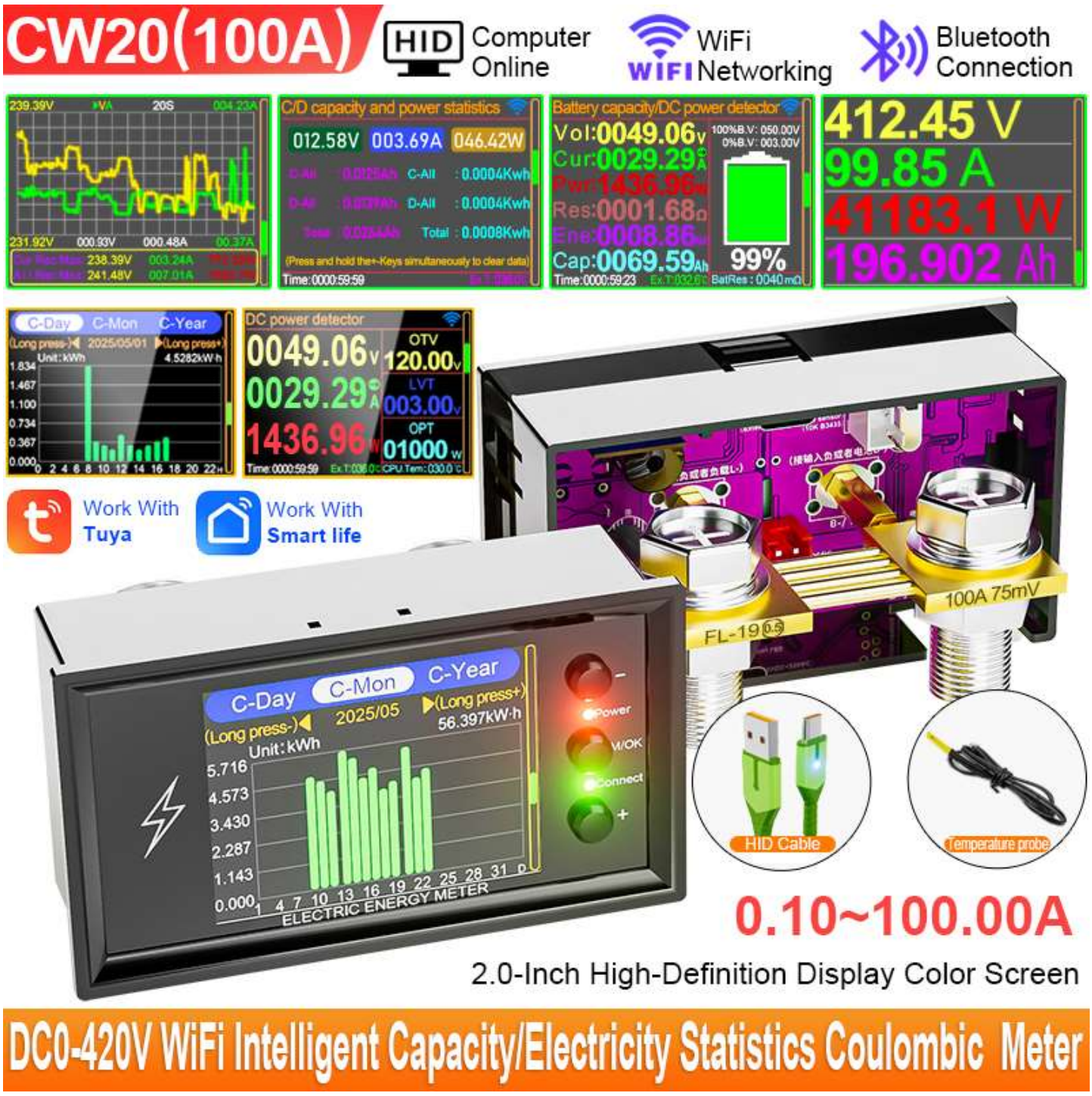
17.100V/80A Relay description

18.CW20 DC 0-420V 30A Product list

1.30A meter WiFi version x1pcs
2.Temperature probe x1pcs
3.USB power supply cables x1pcs

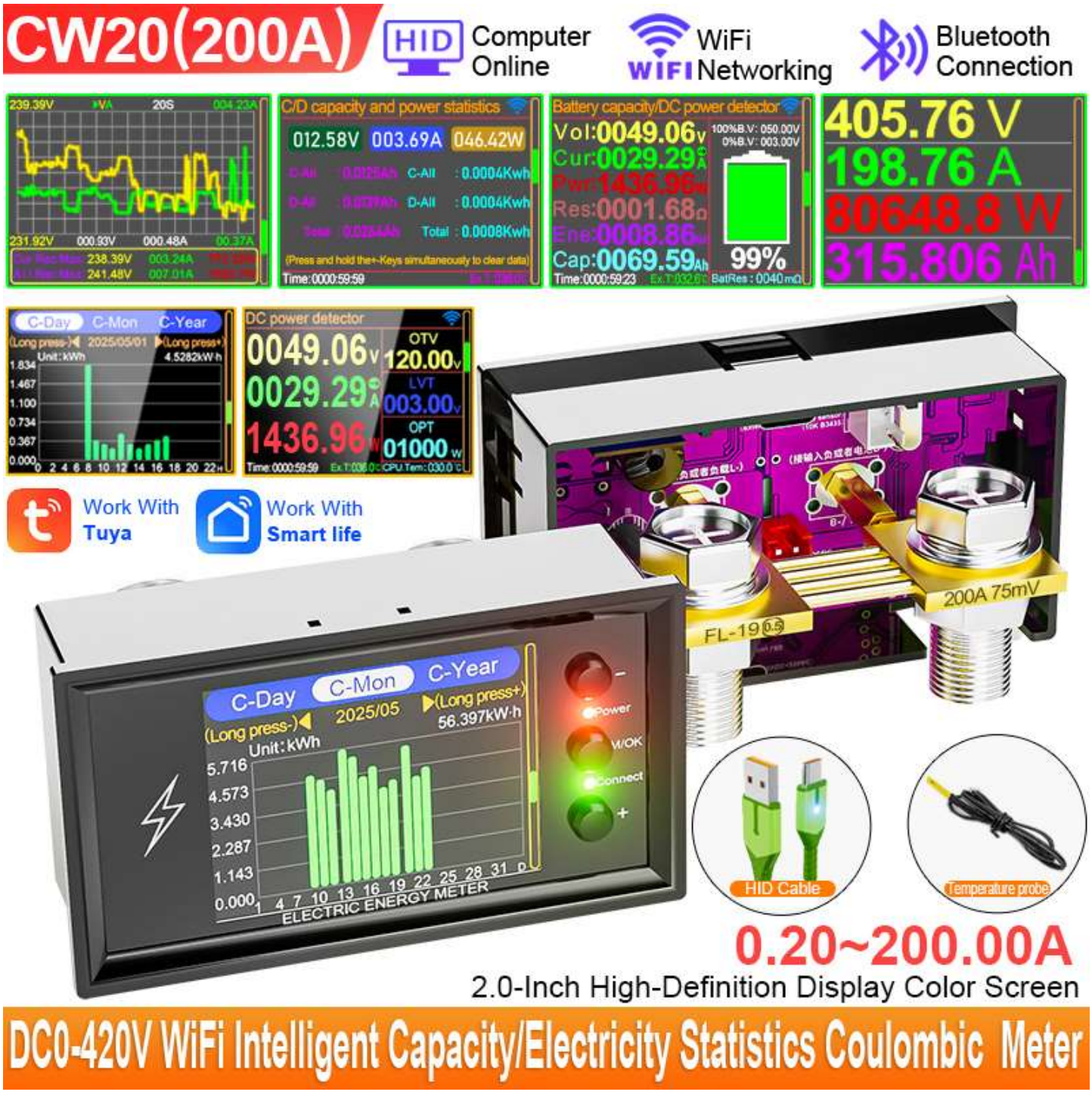
19.CW20 DC 0-420V 100A Product list

1.100A meter WiFi version x1pcs
2.Temperature probe x1pcs
3.USB power supply cables x1pcs



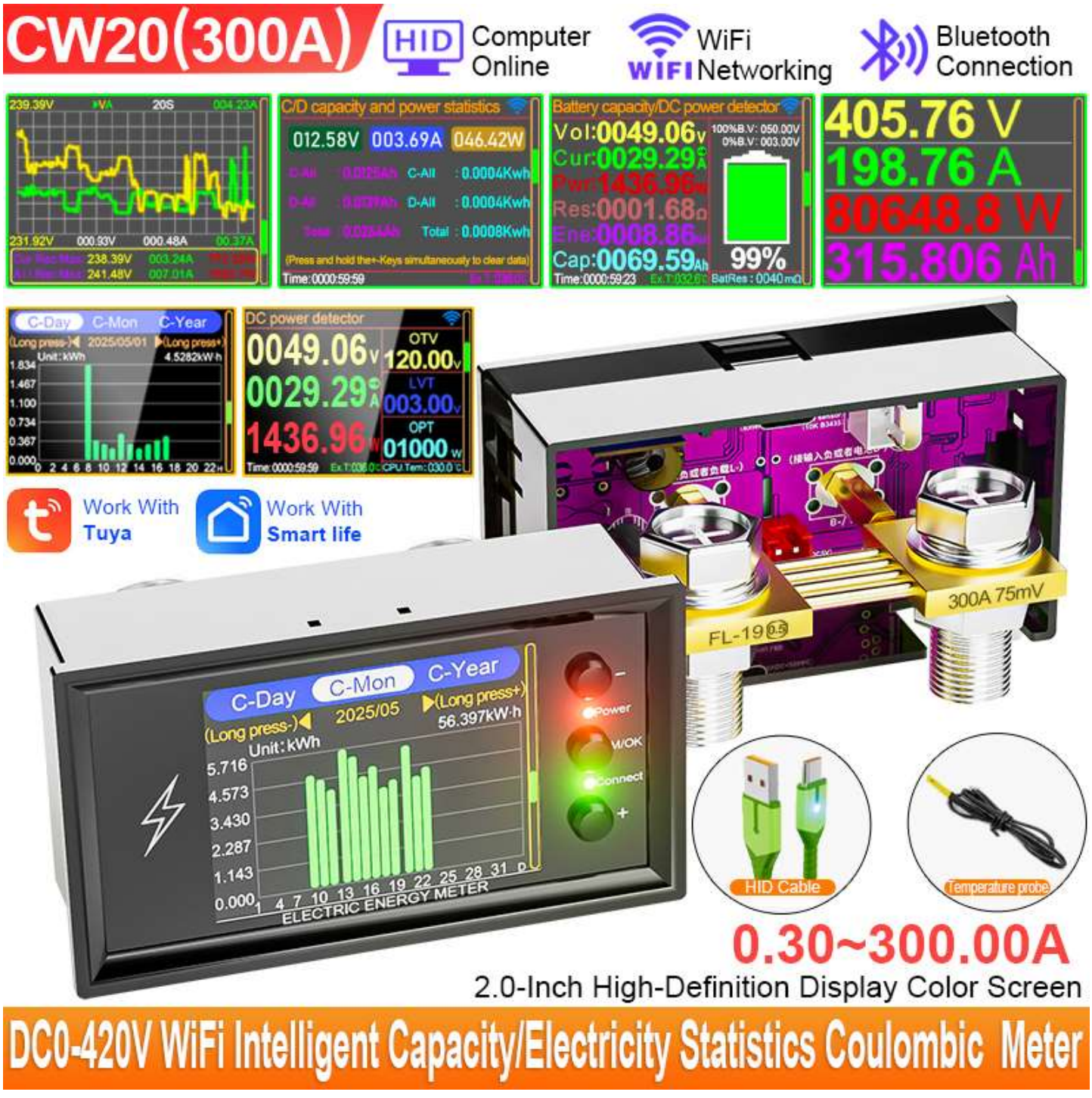
20.CW20 DC 0-420V 200A Product list

1.200A meter WiFi version x1pcs
2.Temperature probe x1pcs
3.USB power supply cables x1pcs



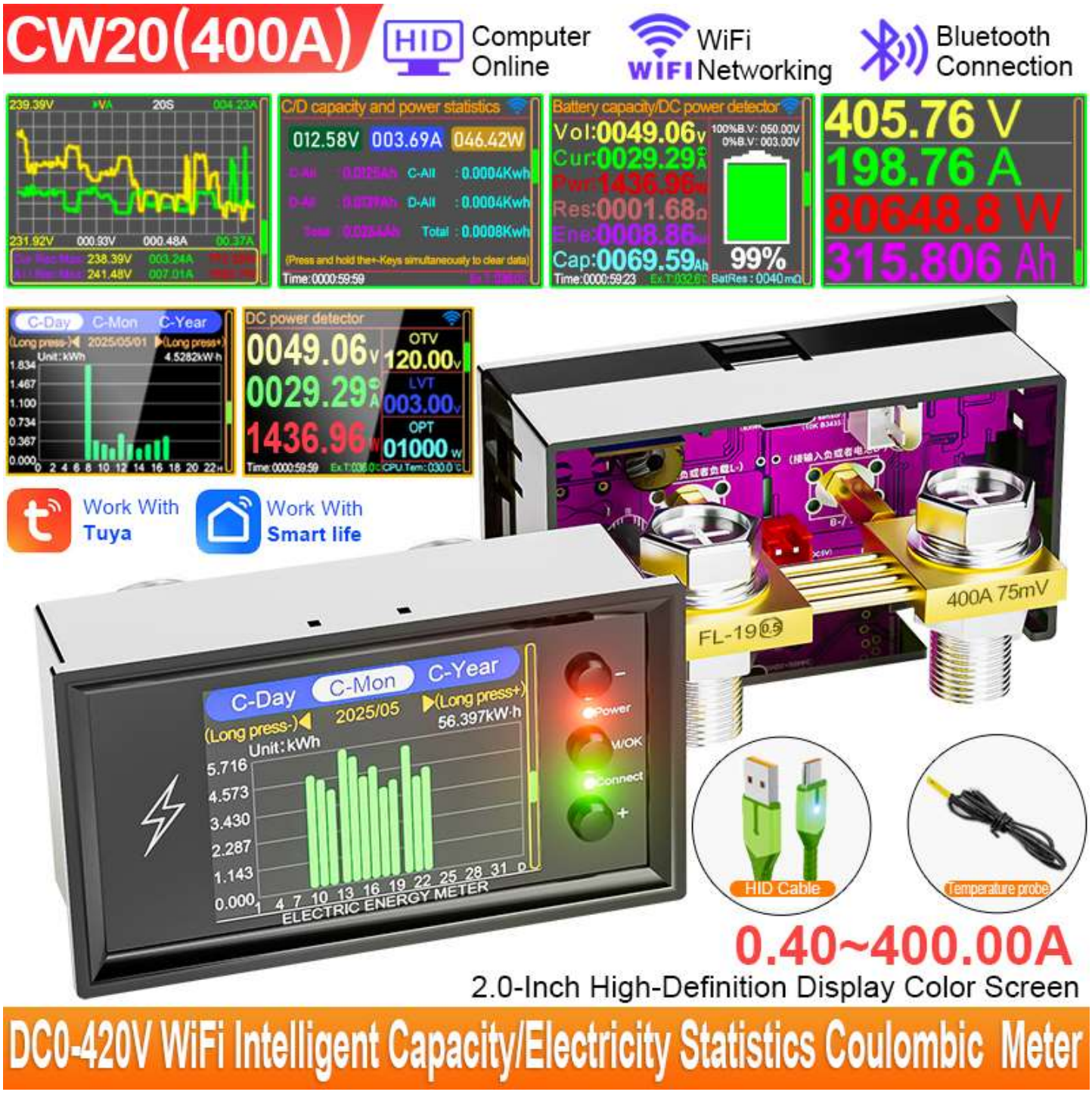
21.CW20 DC 0-420V 300A Product list

1.500A meter WiFi version x1pcs
2.Temperature probe x1pcs
3.USB power supply cables x1pcs



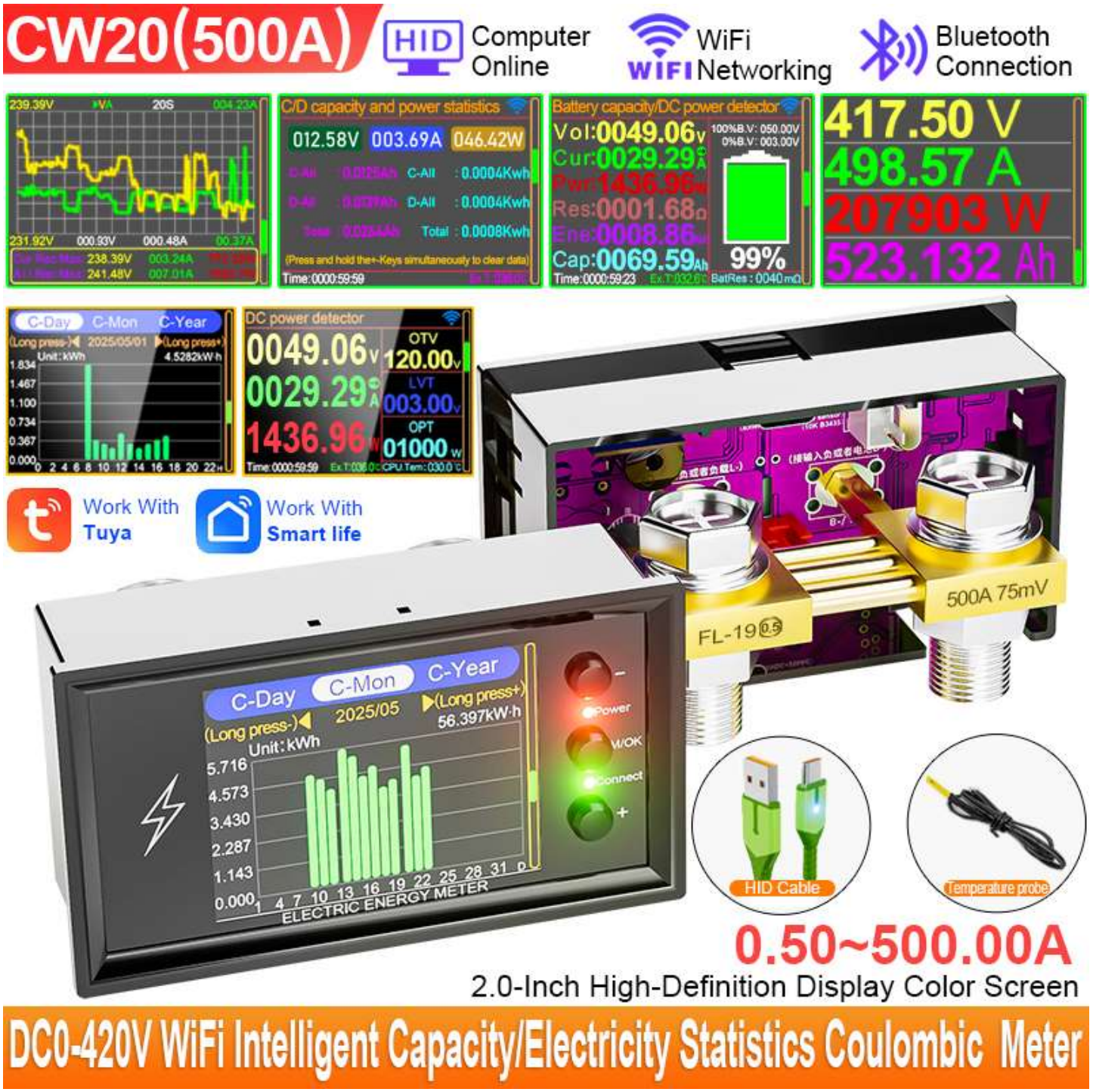
22.CW20 DC 0-420V 400A Product list

1.400A meter WiFi version x1pcs
2.Temperature probe x1pcs
3.USB power supply cables x1pcs



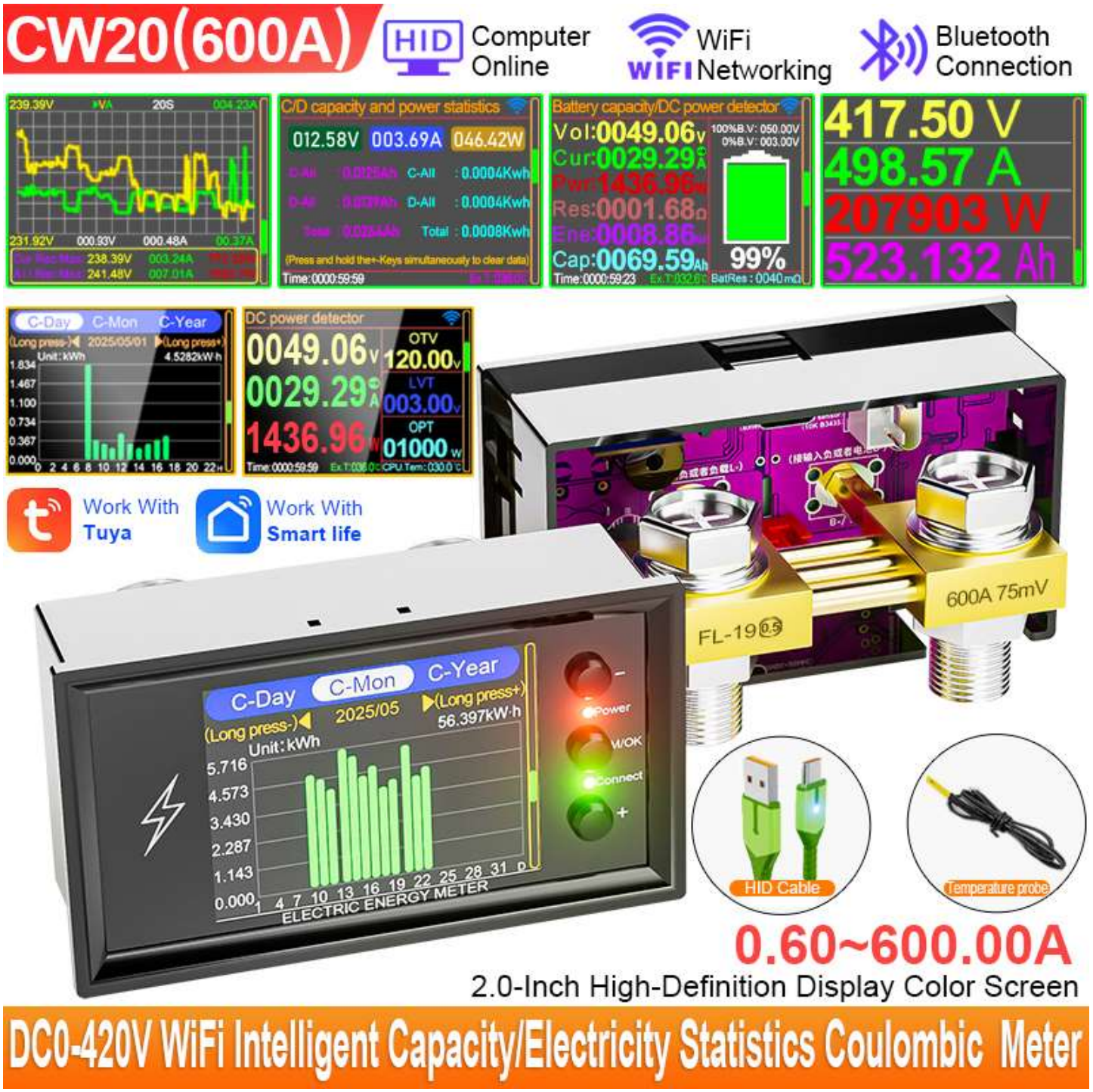
23.CW20 500A Assembly Instructions

1.500A meter WiFi version x1pcs
2.Temperature probe x1pcs
3.USB power supply cables x1pcs



24.CW20 600A Assembly Instructions

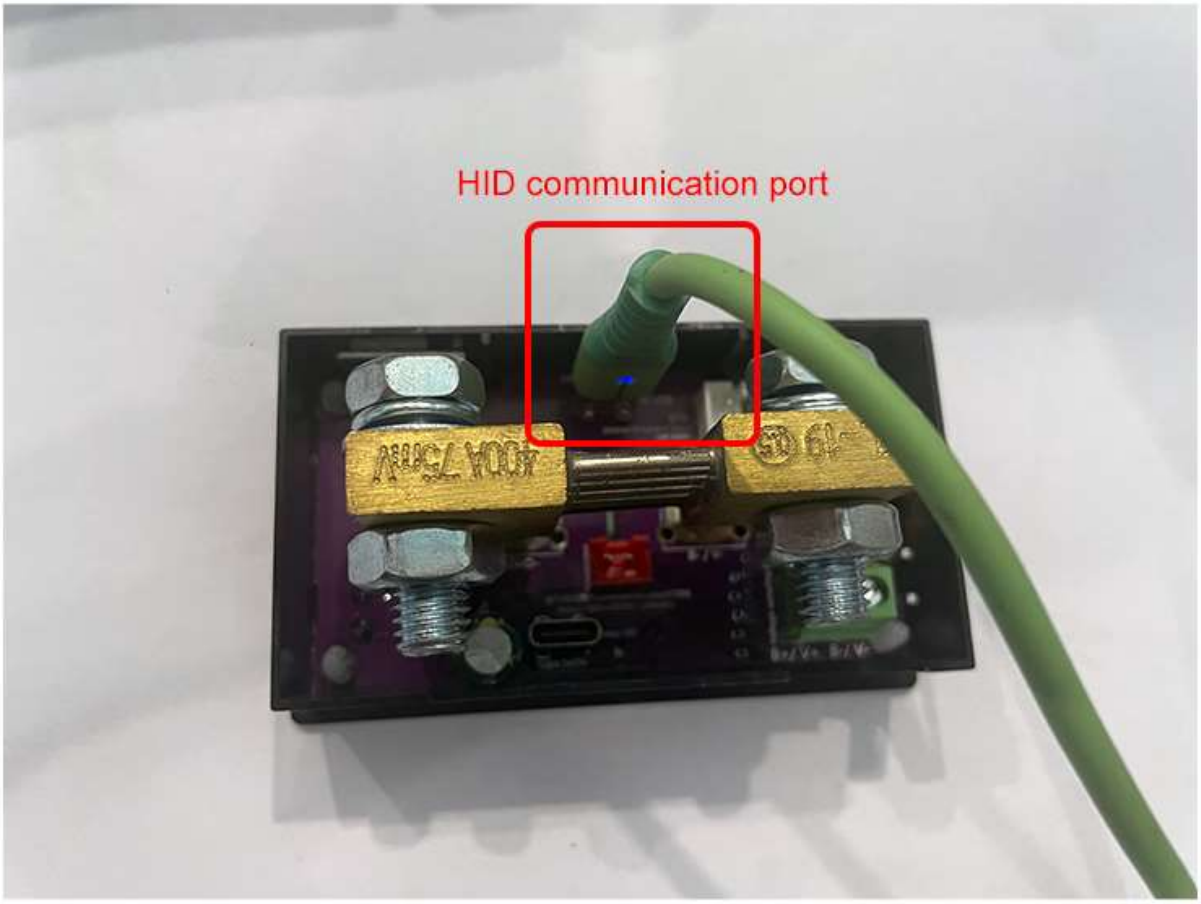
1.600A meter WiFi version x1pcs
2.Temperature probe x1pcs
3.USB power supply cables x1pcs



PC HID firmware upgrade instructions

1.Before upgrading the firmware, hold down the "-" key without releasing it while not powered on

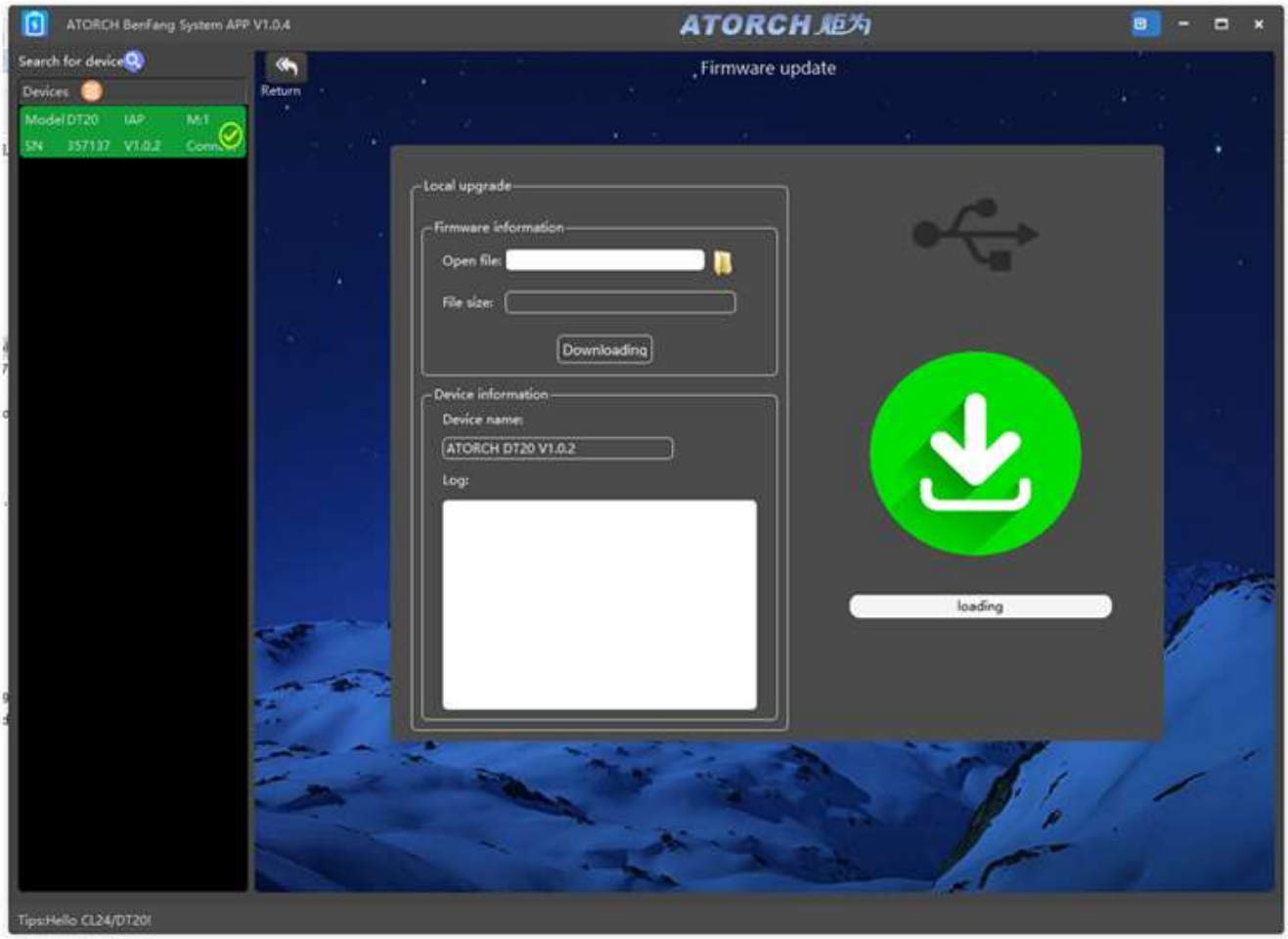
2. Insert HID port to communicate with PC computer



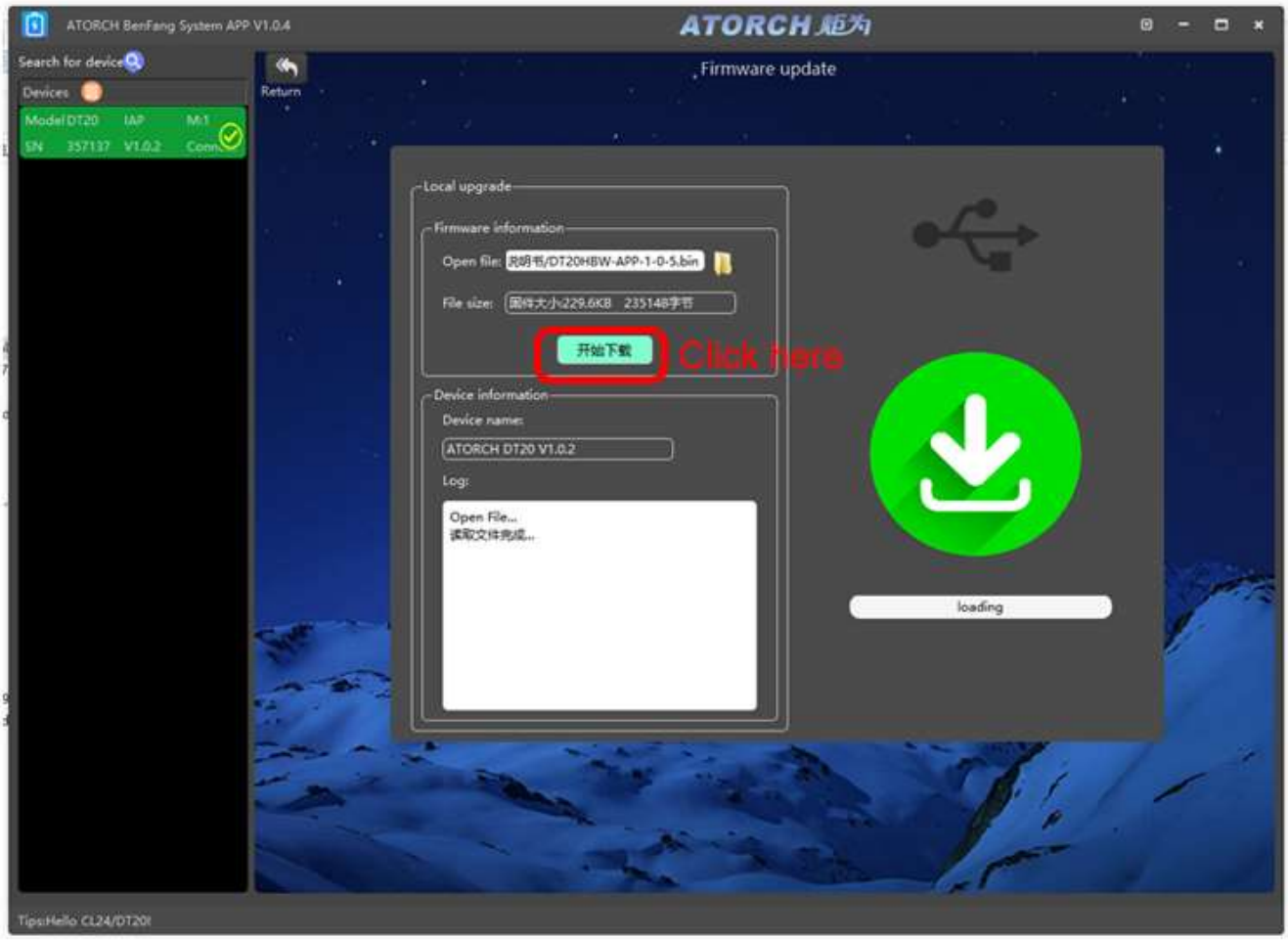
3. Enter the HID-PC computer upgrade mode interface

4. Open the DT20 program software (Computer)

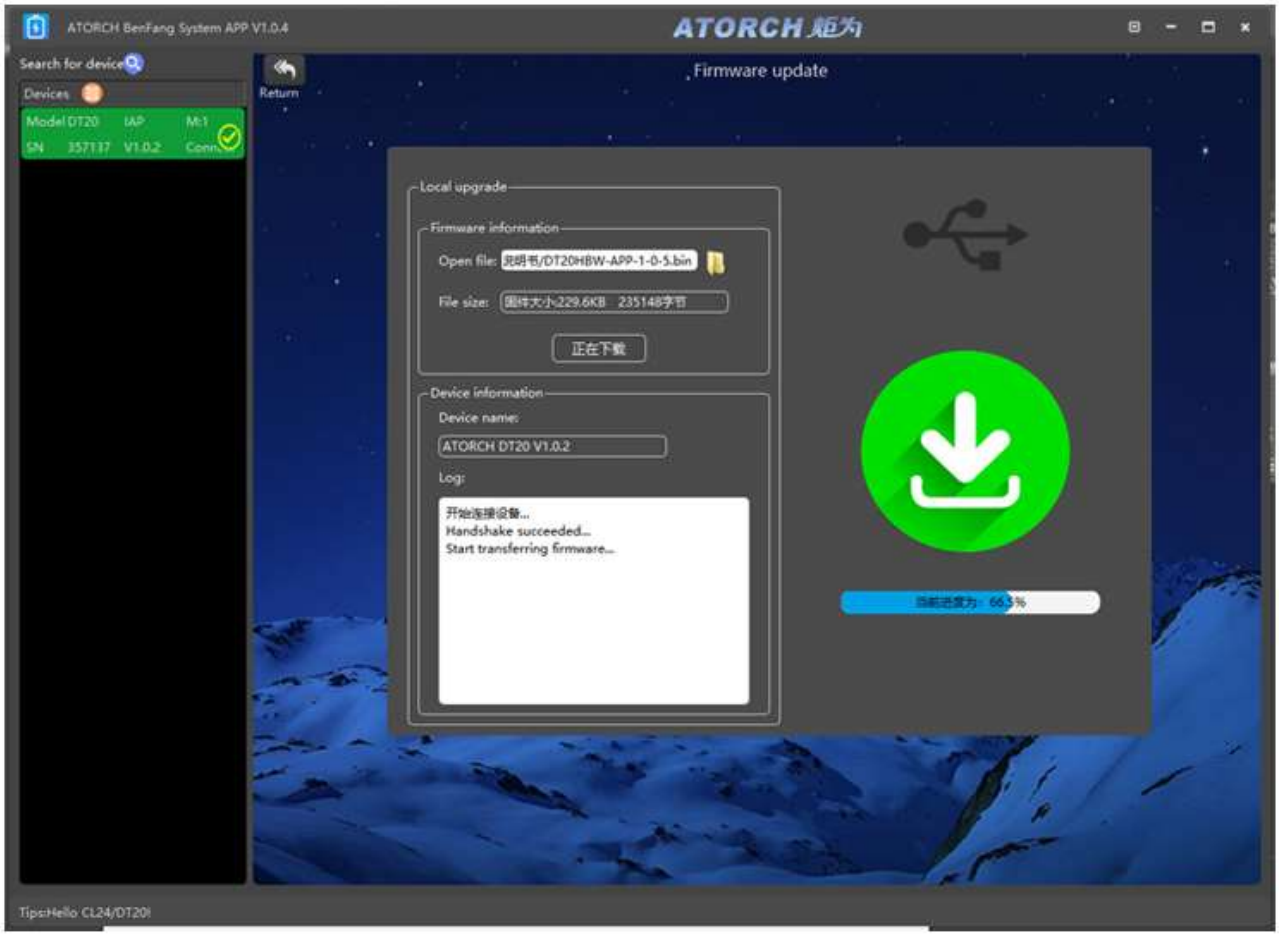
5. Open the firmware upgrade window



6. Load upgrade firmware (. bin file)



7. Upgrading in progress



8. Upgrade successful, enter the boot interface