

**LiFePO4**

51.2V 100AH LiFePO4 BATTERY User Companion Software Guide

**(Model:ECO-LFP4810002)****SUPPORT**

If you are experiencing technical problems and cannot find a solution in this manual, please contact ECO-WORTHY for further assistance.



Call: +1 886-939-8222(US&CA)
+49 6175-6514-999(DE)
+44 7553-406-988(UK)

Web: www.eco-worthy.com/

E-mail: customer.service@eco-worthy.com

Contents

I. ECO_WORTHY APP	1
1.1 Download and Install the App	1
1.2 Battery Data Page Overview	2
1.3 Using Bluetooth Mode.....	5
1.4 Using WiFi Mode (Some models do not have this feature).....	6
1.5 Common Operations	9
II. BMS Tool ES-UP	13
2.1 Introduction	13
2.2 Preparation	13
2.3 Getting Started	15
2.4 Premium Account	17
III. Technical Support	18

Questions You May Have

Q: How many batteries should I connect? How do I determine which one to connect?

A: After establishing master-slave communication via the RS485-2 interface, only the master battery needs to be connected. You can identify the corresponding battery by its MAC address.

Q: Why is the connection failing even though I've set the correct Wi-Fi name and password?

A: The Server Rack series batteries can only connect to 2.4GHz Wi-Fi.

Q: Why does it show a successful Wi-Fi connection, but I can't see the connected device under "WiFi"?

A: After successfully connecting to Wi-Fi, wait 1-5 minutes for the battery to update data. While waiting, click "Device" in the lower left corner to refresh the interface. If the device doesn't display for a long time, delete the device and restart the app to connect.

Q: Where is the app's privacy policy?

A: Click "My" -> "About" to view the privacy policy.

I. ECO_WORTHY APP

1.1 Download and Install the App

1.1.1 Requirements

- Mobile phone operating system requirements: Android 5.0, IOS 6.0 and above.
- The Bluetooth function and location services of the mobile phone system need to be turned on before use.
- The permissions required to run the software needs to be agreed after entering the software, otherwise it will affect the use of software functions.
- If the device is not searched for a long time, please check whether the Bluetooth and location services of the mobile phone system is turned on, whether the device is turned on and whether the software has been given the permission to locate the device.

1.1.2 Steps

Android mobile phone users:
search 'eco-worthy' in google play, or scan the QR code below to download and install.



Apple mobile phone users:
search for 'eco-worthy' in the app store or scan the QR code below to download and install.

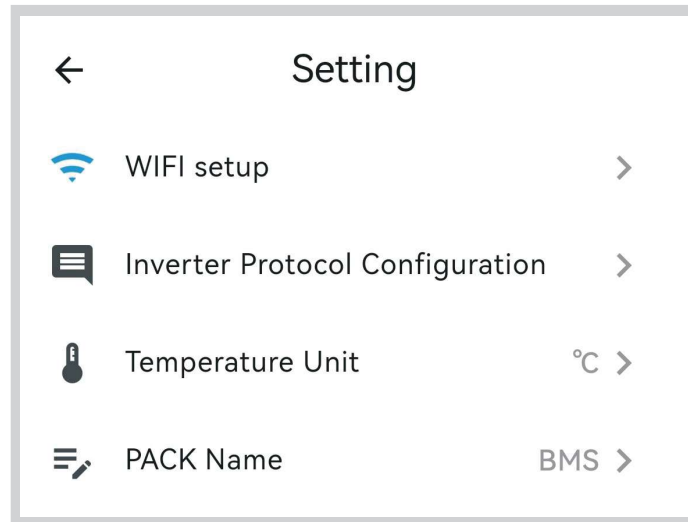


1.2 Battery Data Page Overview

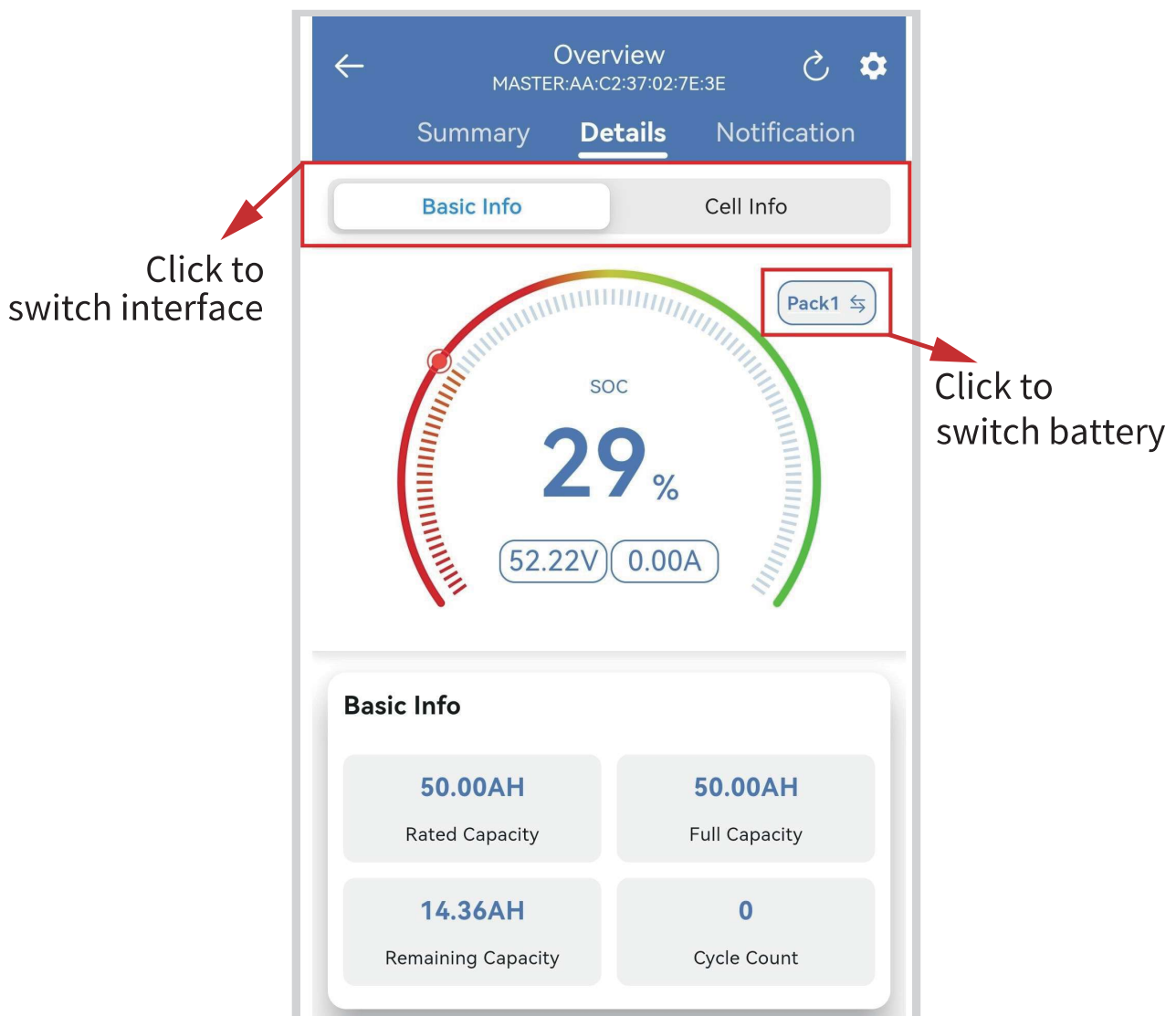
1.2.1 Summary



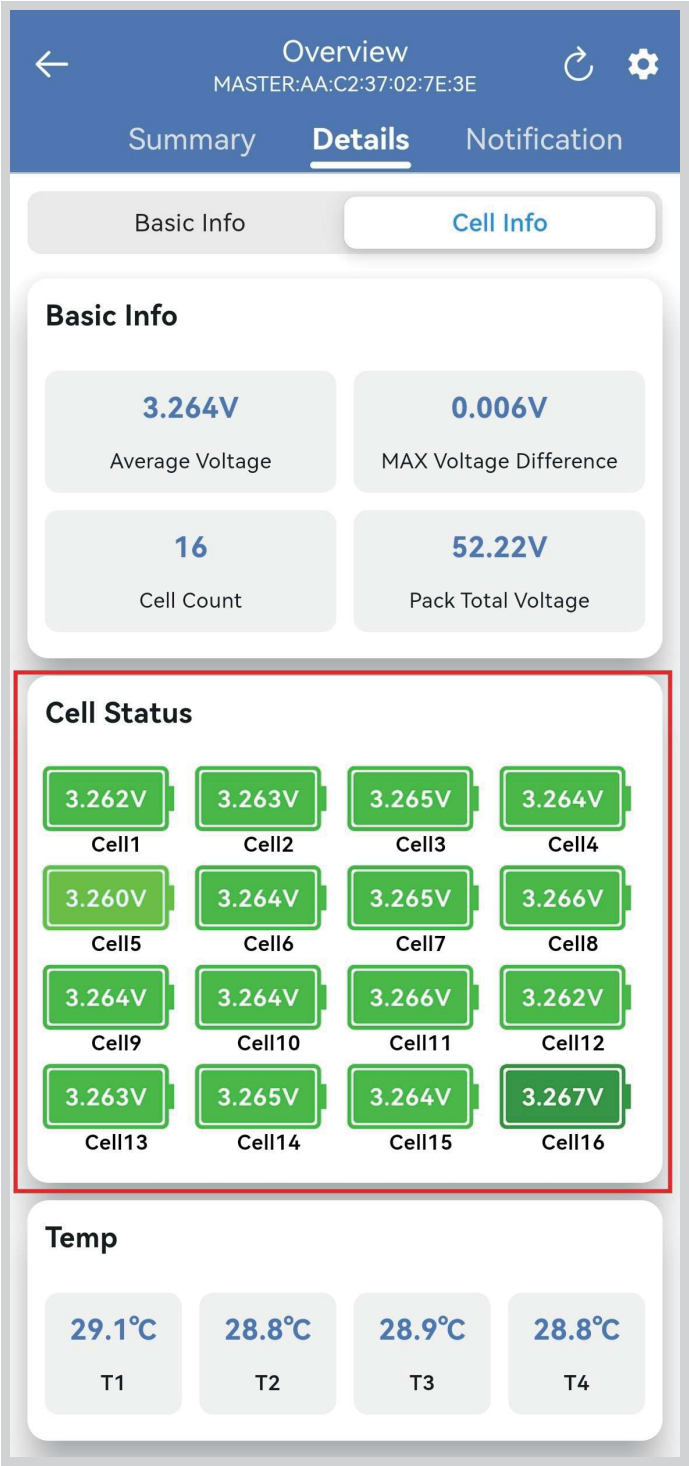
1.2.2 Setting



1.2.3 Details-Basic Info



1.2.4 Details-Cell Info



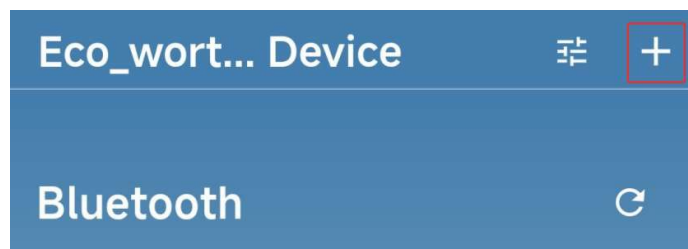
Displays green when
the battery voltage is normal

1.3 Using Bluetooth Mode

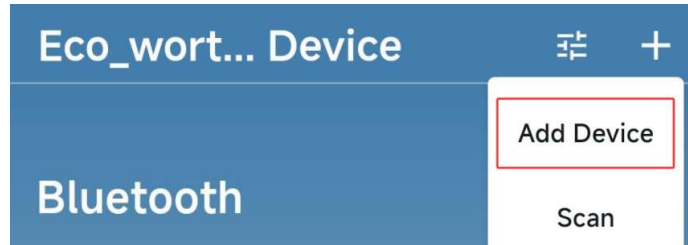
Bluetooth mode can be used both when you are logged in to your account or not, and the distance limitation is required between your mobile phone and the device when you use it.

1.3.1 Steps

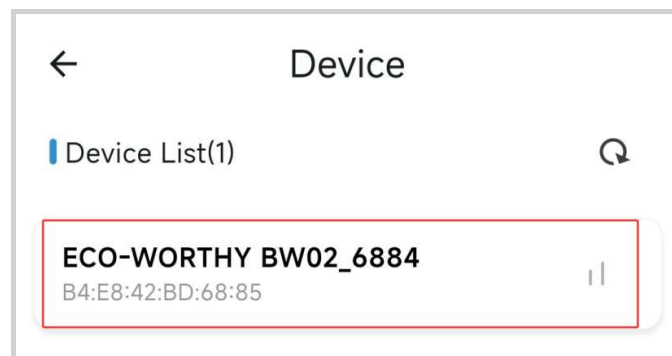
1.Put your mobile phone as close as possible to the device, then open eco-worthy APP to enter the device interface, and click the icon in the upper right corner.



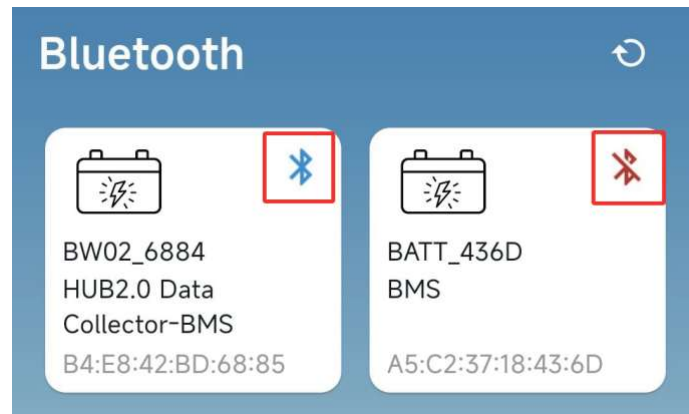
2.Select the Add Device function. If the device has a QR code sticker on the back, you can select the scanning function to connect.



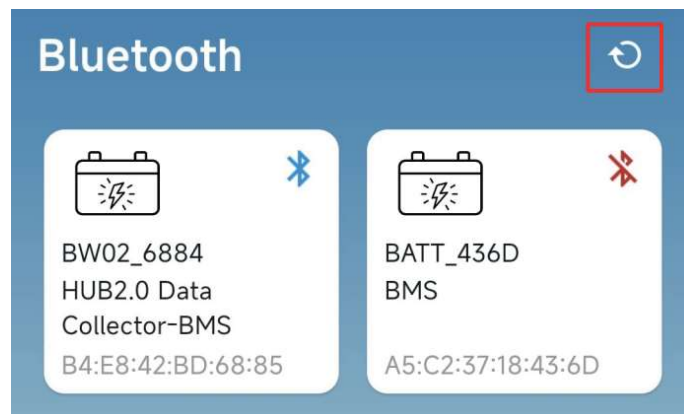
3.Select the number corresponding to the device to complete the Bluetooth connection.



4. When the Bluetooth icon is blue, the device is within the Bluetooth connection range. When the Bluetooth icon is red, the device is outside the Bluetooth connection range.



5. Click on the icon to update the Bluetooth status.



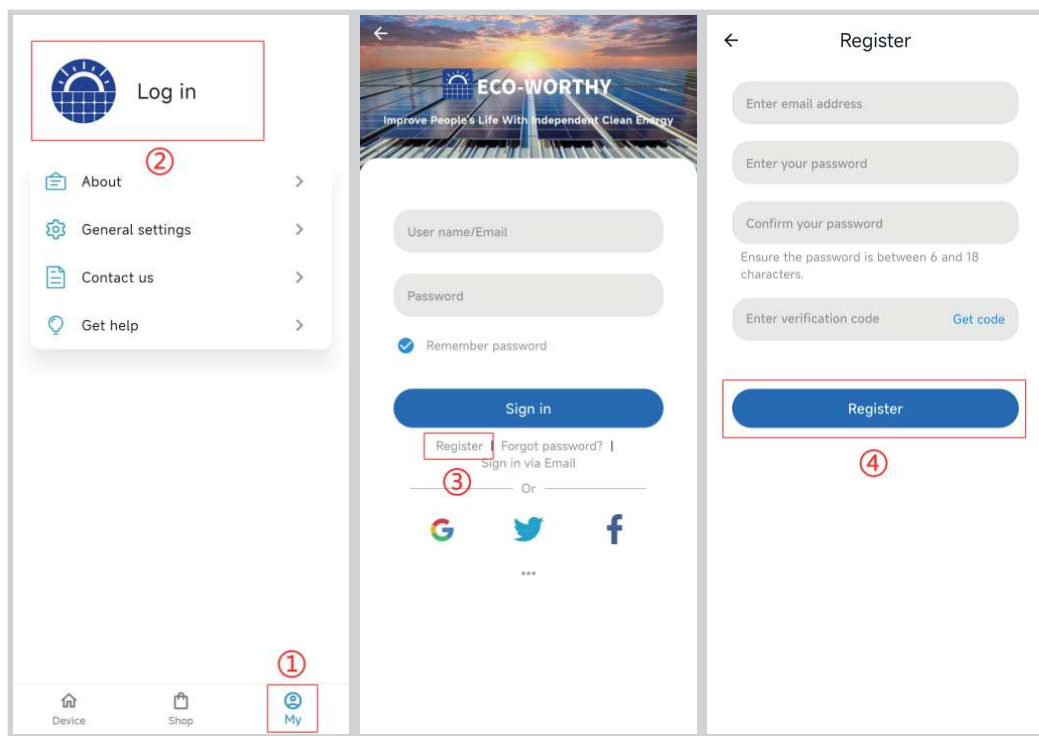
1.4 Using WiFi Mode (some models do not have this feature)

To use WiFi mode, you need to log in to your account, and there is no distance limitation between your mobile phone and the device when you use it.

1.4.1 Steps

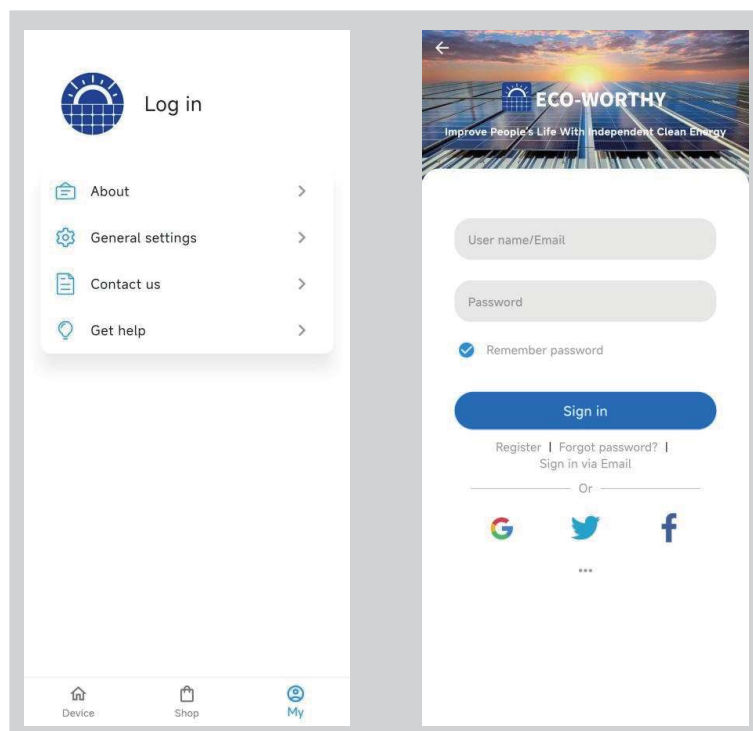
1. Register

Click My -> Log in -> Register, fill in the relevant information and use your email address to receive the verification code to complete the registration.



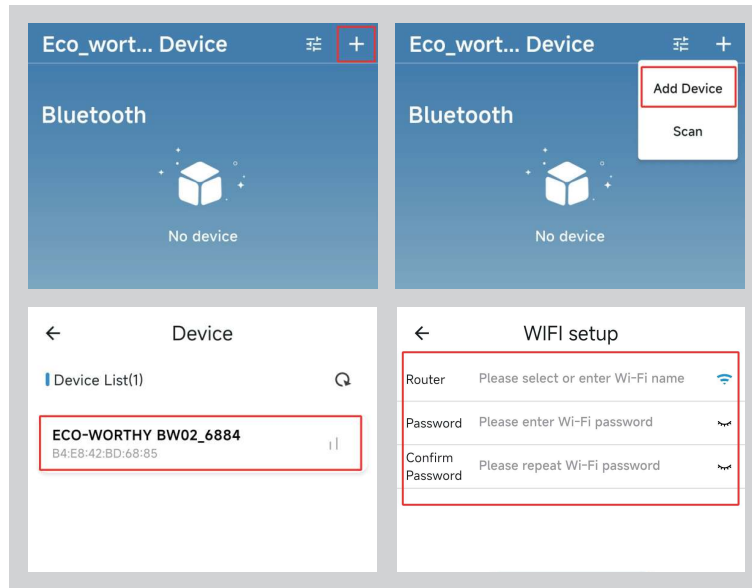
2.Log in

Click My -> Log in and sign in to your account using your email address.



3.Add Device

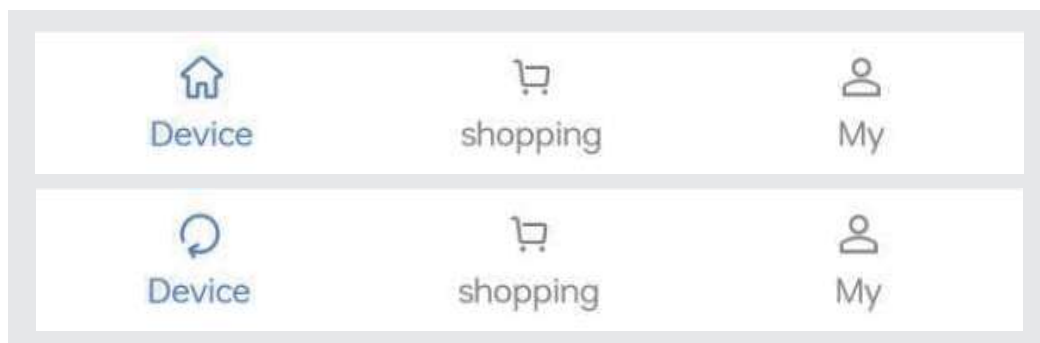
If the device is not bound: follow the steps below and fill in the WiFi setting information to complete the WiFi connection to the device and bind the current account.



After WiFi connection is successful, add the connected devices in both Bluetooth list and WiFi list in APP device page.

Wait for more than ten seconds after successful connection, if the device under the WiFi list is online, it indicates that the device has been correctly connected to the set wireless network; if the status is offline, please check whether the wireless network is available and whether the configured wireless network name and password are correct.

You can click the Device tab at the bottom left corner of the device interface to refresh the latest status of the device.



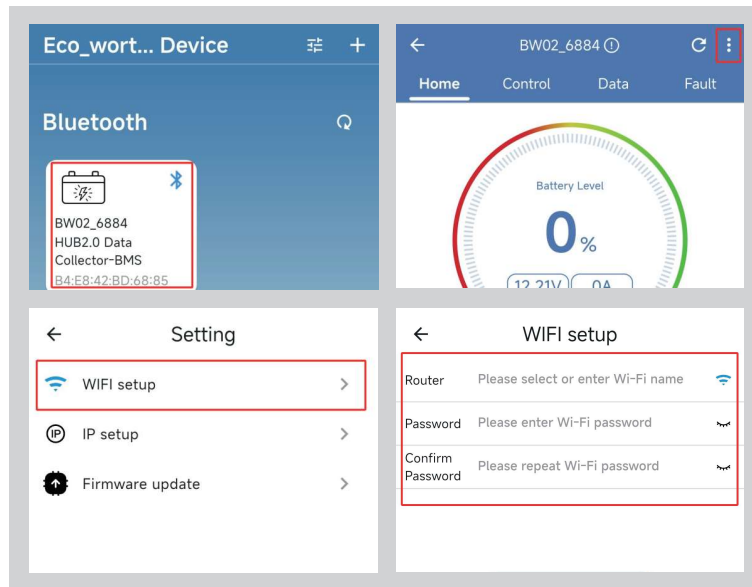
If the device is bound: another account has connected to the device via WiFi. The current account can only use Bluetooth to connect to the device unless the other account deletes the device (it is automatically unbound after deletion).

1.5 Common Operations

● WiFi Setting

The device has been connected via WiFi mode and the customer wants to change the WiFi Setting information.

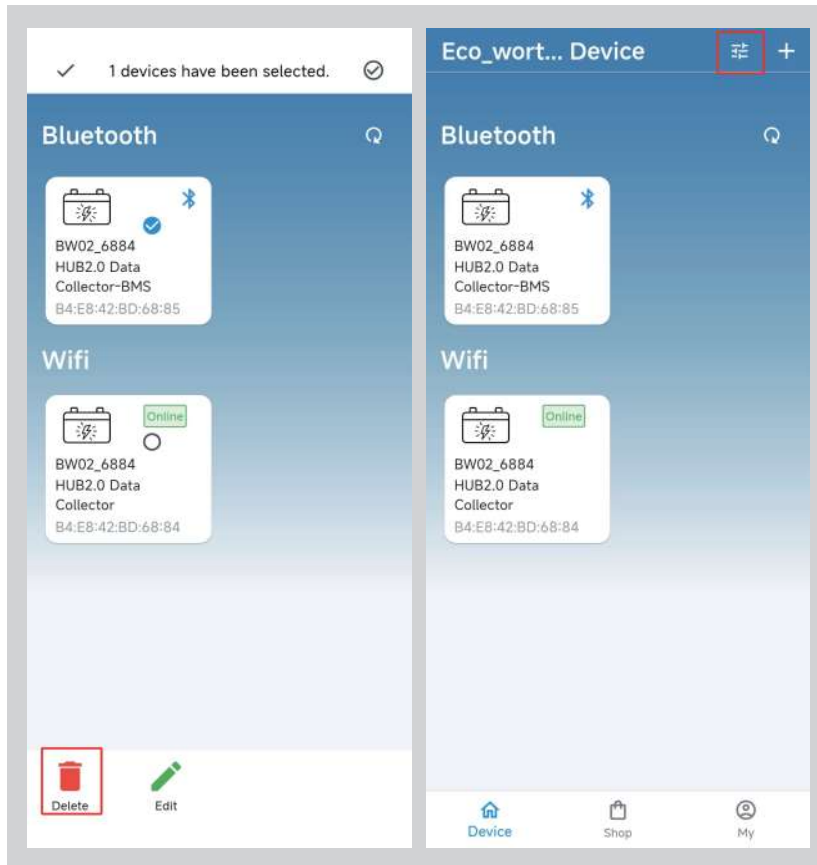
Click the device icon in the Bluetooth list on the APP device page to enter the device data page, and click the More icon (...) in the upper right corner -> WiFi Setting



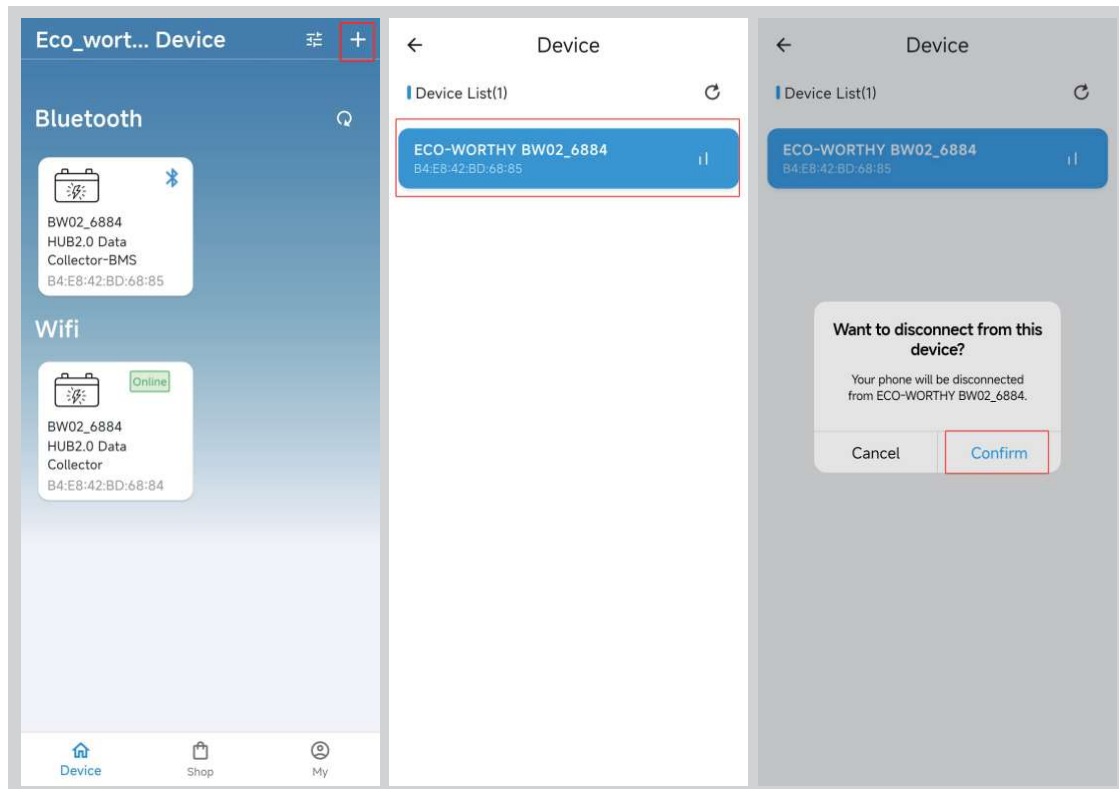
Enter the wireless network name and password, the device will reboot after successful setup, and the APP interface jumps back to the device interface. You need to wait for more than ten seconds after clicking the device icon, then you can re-enter the device data interface.

● Delete or disconnect the device

Delete: Long press the corresponding device icon for 2s in APP device page or click the icon in the upper right corner of the device page to delete and disconnect the device. And the deleted device needs to be re-added before it can be used.



Disconnect: Only disconnect the device, but the Bluetooth/WiFi list in APP device page will keep the connected device information.

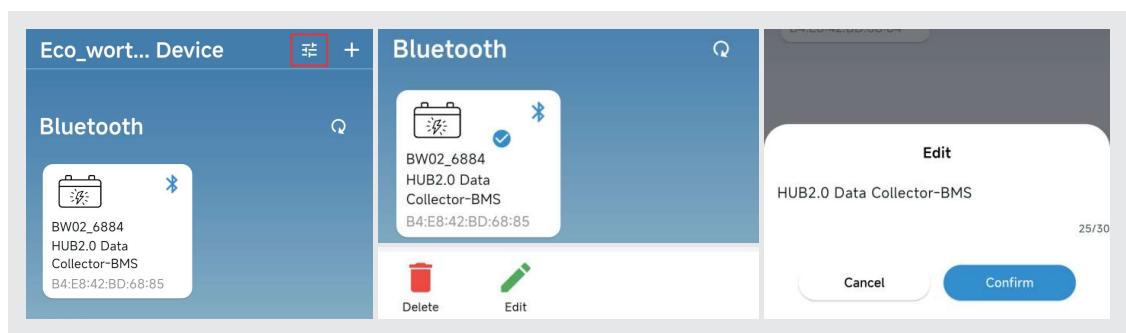


● Reconnecting devices

For connected devices that have not been deleted, the Bluetooth/Wi-Fi list in APP device page will keep the connected device information. When you want to reconnect the device again, you can click the corresponding device icon in APP device page directly, no need to repeat the operation of adding devices.

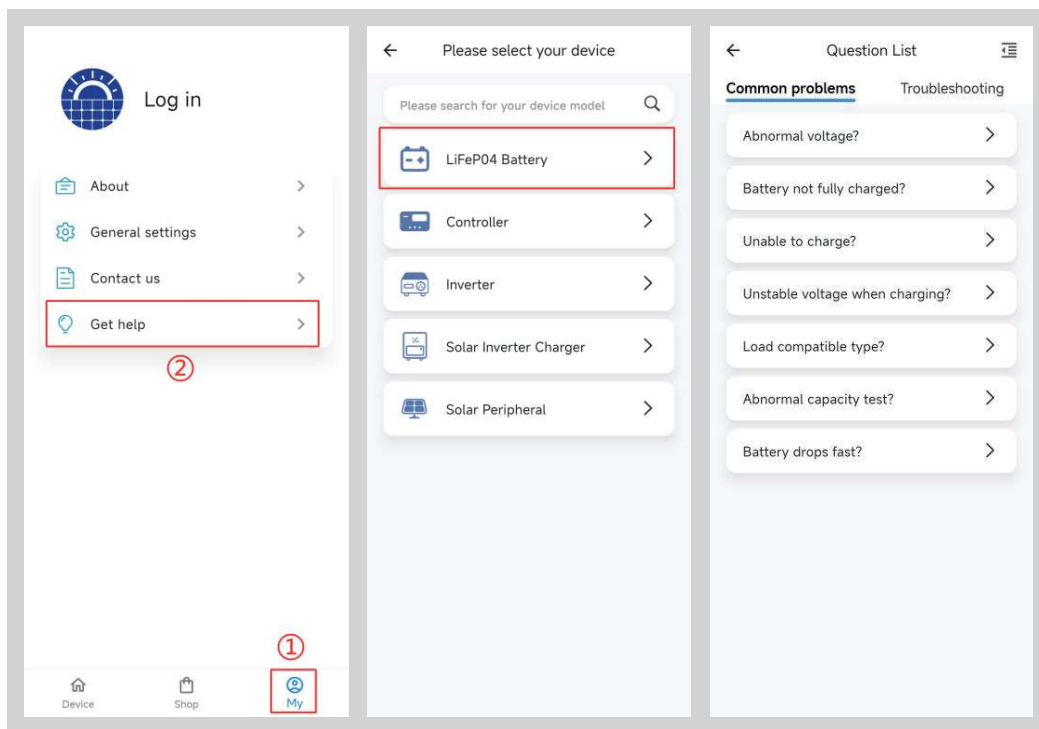
● Device renaming

You can click the icon or rename the device as required. When the number of selected devices is 1, you can rename the device.



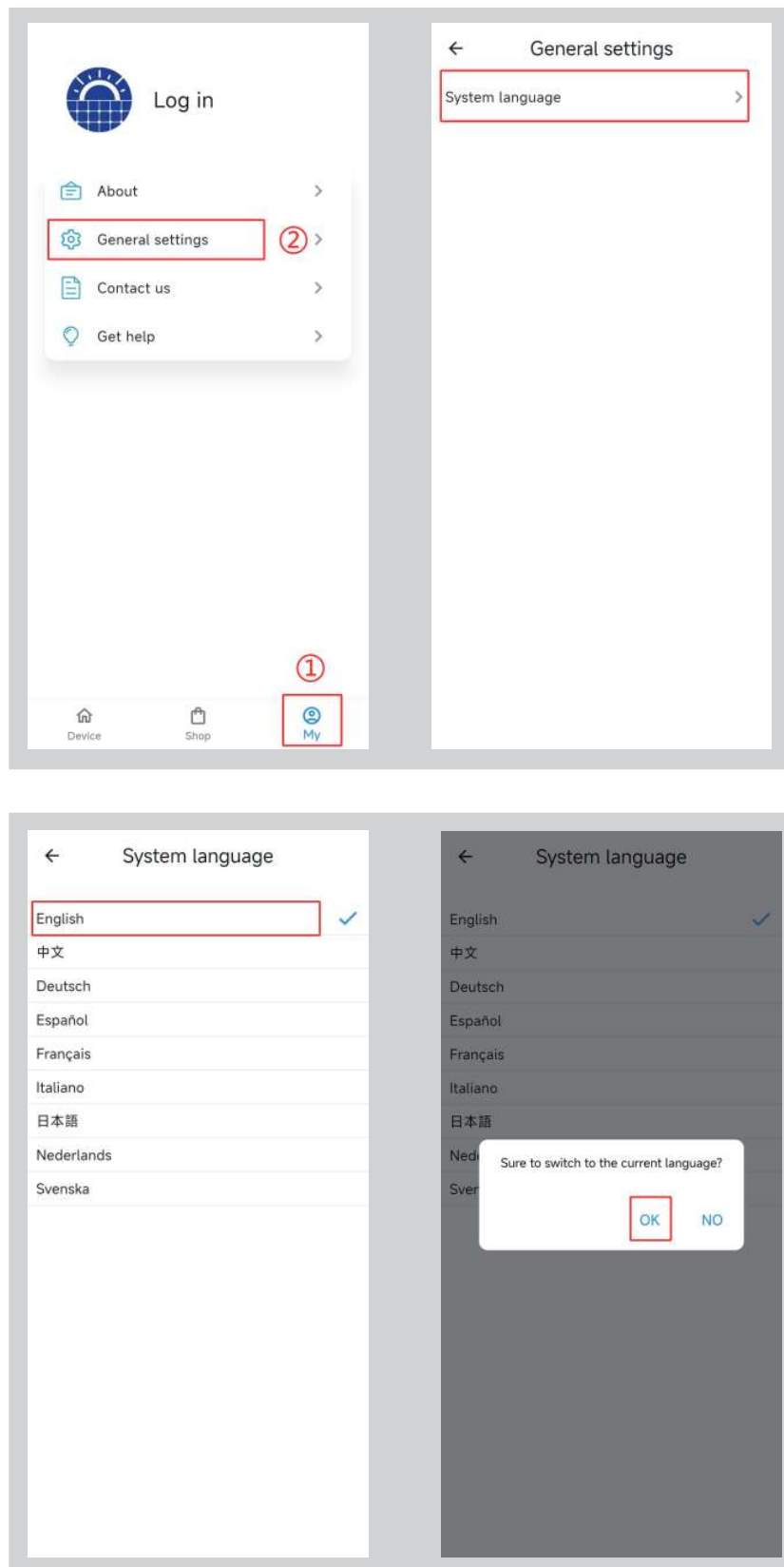
● Common Problems of Devices

Click on "My" → "Get Help", select the corresponding device and view the common problems of the device.



- **Change the App language**

Click "My" → "General Settings" → "System Language", select the language, and click "OK".



II. BMS Tool ES-UP

2.1 Introduction

ES-UP is a BMS tool that runs on a computer, which can help you monitor and manage the performance of the battery in the system, including voltage, current, temperature and other parameters to ensure the safe and efficient operation of the battery.



Warning

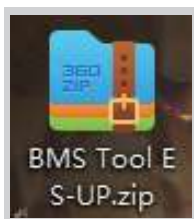
Modifying BMS parameters with the upper computer software requires authorisation from ECO-WORTHY. Otherwise, it will be considered an illegal modification and will result in the loss of warranty eligibility.

2.2 Preparation

Download the software package from the following website (only supports Windows system)

<http://app.eco-worthy.com:7777/Download/BMS-Tool&Drive-for-Windows.zip>

Unzip the file



Install the “USBDrive”

ES-UP-V1.22.16

USBDrive_CH340CH341SER

Use RS485 to USB cable to connect the battery and computer

Open the software “ES-UP-V1.22.16”



Prepare the communication cable in advance; it can be purchased from the official website.

RS232/RS485 to USB Adapt Cable for Server Rack Battery & PC Communicat – ECO-WORTHY.

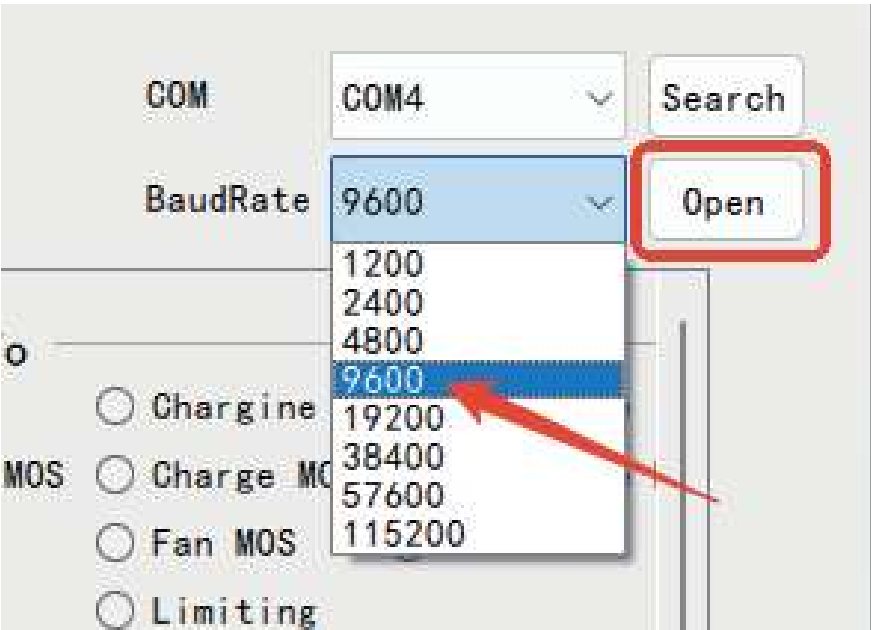
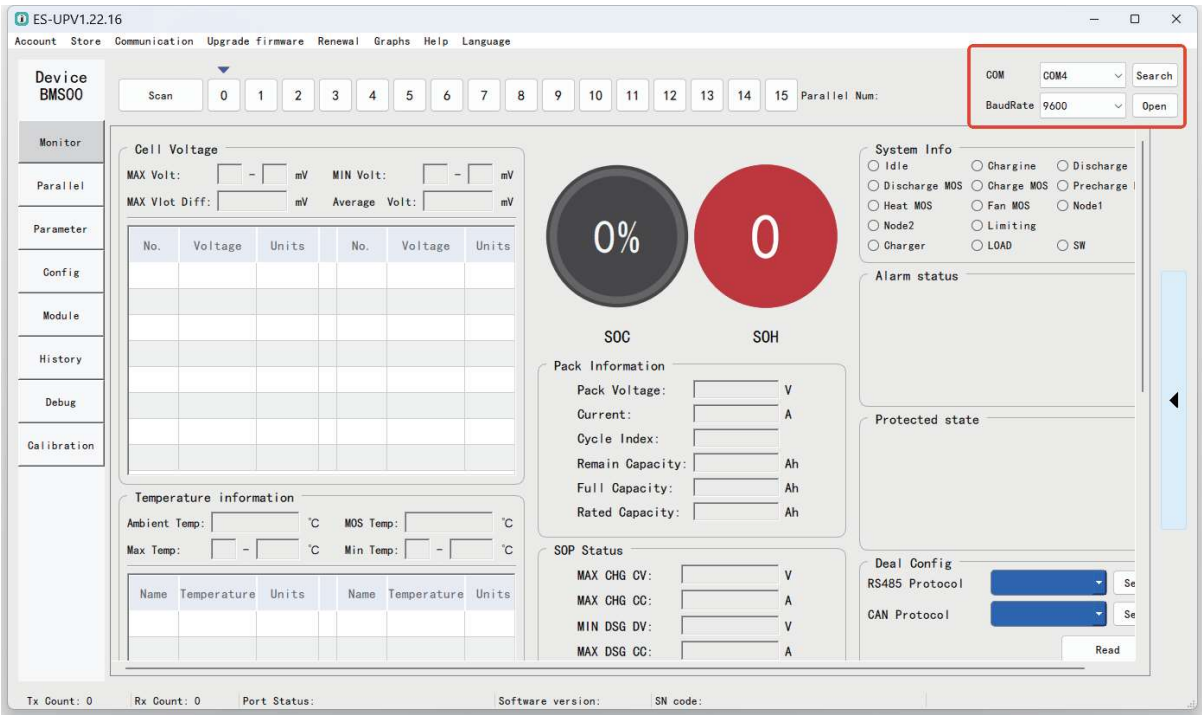


Either RS232-to-USB or RS485-to-USB is acceptable. Since the RS485 port is usually occupied by the inverter, it is recommended to purchase an RS232-to-USB communication cable. Connect the RS485-to-USB / RS232-to-USB cable between the battery and the computer.



2.3 Getting Started

Select COM and BaudRate



Click “Read” to obtain BMS data

ES-UPV1.22.16

Account Store Communication Upgrade firmware Renewal Graphs Help Language

Device BMS01

Scan 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 Parallel Num: 1

COM COM7 Search BaudRate 9600 Close

Monitor

Cell Voltage

MAX Volt: 2 - 3332 mV MIN Volt: 1 - 3330 mV

MAX Vlot Diff: 2 mV Average Volt: 3330 mV

No.	Voltage	Units	No.	Voltage	Units
1	3330	mV	9	3331	mV
2	3332	mV	10	3330	mV
3	3331	mV	11	3331	mV
4	3331	mV	12	3330	mV
5	3331	mV	13	3330	mV
6	3331	mV	14	3331	mV
7	3330	mV	15	3330	mV
8	3330	mV	16	3330	mV

Temperature information

Ambient Temp: 29.5 °C MOS Temp: 26.7 °C

Max Temp: 1 - 25.3 °C Min Temp: 3 - 25 °C

Name	Temperature	Units	Name	Temperature	Units
T1	25.3	°C	T3	25.0	°C
T2	25.2	°C	T4	25.0	°C

Data Recording

Tx Count: 34 Rx Count: 31 Port Status: Open (COM7, 9600) Software version: V1 SN code: JBD48100000

System Info

Idle Discharge MOS Charge MOS Precharge MOS

Heat MOS Fan MOS Node1

Node2 Limiting Charger LOAD SW

Alarm status

Protected state

Pack Information

Pack Voltage: 53.28 V

Current: 0.00 A

Cycle Index: 1

Remain Capacity: 90.86 Ah

Full Capacity: 92.85 Ah

Rated Capacity: 100.00 Ah

SOP Status

MAX CHG CV: 57.6 V

MAX CHG CC: 100.0 A

MIN DSG DV: 45.6 V

MAX DSG CC: 100.0 A

Deal Config

RS485 Protocol PYLON Set

CAN Protocol PYLON Set

Read

ES-UPV1.22.16

Account Store Communication Upgrade firmware Renewal Graphs Help Language

Device BMS01

Monitor

Parallel

Parameter

Config

Module

History

Debug

Calibration

Cell Overvoltage

Cell UV Alarm 3600 mV Set

Cell UV Alarm Release 3400 mV Set

Cell UV Alarm Delay 3000 ms Set

Cell UV Protect 3650 mV Set

Cell UV Protect Release 3400 mV Set

Cell UV Protect Delay 3000 ms Set

Cell Undervoltage

Cell UV Alarm 2850 mV Set

Cell UV Alarm Release 2900 mV Set

Cell UV Alarm Delay 3000 ms Set

Cell UV Protect 2800 mV Set

Cell UV Protect Release 3000 mV Set

Cell UV Protect Delay 3000 ms Set

Battery Overvoltage

Batt OV Alarm 57.60 V Set

Batt OV Alarm Release 54.40 V Set

Batt OV Alarm Delay 3000 ms Set

Batt OV Protect 58.40 V Set

Batt OV Protect Release 54.40 V Set

Batt OV Protect Delay 3000 ms Set

Battery Undervoltage

Batt UV Alarm 45.60 V Set

Batt UV Alarm Release 48.00 V Set

Batt UV Alarm Delay 1000 ms Set

Batt UV Protect 44.80 V Set

Batt UV Protect Release 48.00 V Set

Batt UV Protect Delay 3000 ms Set

Charge Over Current

CHG OC Alarm 105.00 A Set

CHG OC Alarm Delay 2000 ms Set

CHG OC Protect 120.00 A Set

CHG OC Protect Delay 2000 ms Set

CHG OC Release Delay 600 s Set

CHG OC Lock Times 65535 Set

CHG Over Current 2

CHG OC2 Protect 130.00 A Set

CHG OC2 Protect Delay 500 ms Set

CHG OC2 Release Delay 600 s Set

Discharge Over Current

DSG OC Alarm 105.00 A Set

DSG OC Alarm Delay 2000 ms Set

DSG OC Protect 120.00 A Set

DSG OC Protect Delay 2000 ms Set

DSG OC Release Delay 60 s Set

DSG OC Lock Times 3 Set

Discharge Over Current 2

DSG OC2 Protect 140.00 A Set

DSG OC2 Protect Delay 200 ms Set

DSG OC2 Release Delay 60 s Set

Charge Over Temperature

CHG OT Alarm 50.0 °C Set

CHG OT Alarm Release 48.0 °C Set

CHG OT Protect 55.0 °C Set

CHG OT Protect Release 50.0 °C Set

Charge Low Temperature

CHG LT Alarm 0.0 °C Set

CHG LT Alarm Release 10.0 °C Set

CHG LT Protect 0.0 °C Set

CHG LT Protect Release 5.0 °C Set

Discharge Over Temperature

DSG OT Alarm 50.0 °C Set

DSG OT Alarm Release 48.0 °C Set

DSG OT Protect 55.0 °C Set

DSG OT Protect Release 50.0 °C Set

Discharge Under Temperature

DSG UT Alarm -10.0 °C Set

DSG UT Alarm Release 0.0 °C Set

DSG UT Protect -15.0 °C Set

DSG UT Protect Release -10.0 °C Set

MOS Over Temperature

MOS OT Alarm 95.0 °C Set

MOS OT Alarm Release 80.0 °C Set

MOS OT Protect 105.0 °C Set

Ambient Over Temperature

Ambient OT Alarm 60.0 °C Set

Ambient OT Alarm Release 50.0 °C Set

Ambient OT Protect 65.0 °C Set

Voltage Different Over

Volt Diff Alarm 600 mV Set

Volt Diff Alarm Release 500 mV Set

Volt Diff Protect 800 mV Set

SOC Low

SOC Low Alarm 10 % Set

SOC Low Alarm Release 15 % Set

Read Import Export Write parameters 0%

Tx Count: 469 Rx Count: 465 Port Status: Open (COM7, 9600) Software version: V1 SN code: JBD48100000

ES-UPV1.22.16

Account Store Communication Upgrade firmware Renewal Graphs Help Language

Device BMS01

Monitor

Parallel

Parameter

Config

Module

History

Debug

Calibration

Inverter Parameter

RS485 Protocol PYLON Set CAN Protocol PYLON Set

MAX CHG CV 57.6 V Set MAX CHG CC 100 A Set

MIN DSG DV 45.6 V Set MAX DSG CC 100 A Set

Balance

Balance Mode IDLE Set BMS软件地址 0 Set

Balance Open Vlot 3400 mV Set Balance Open VDiff 30 mV Set

Pack SN Code

BMS SN Code UP165019000110524090601811

SN Code JBD48100000

Bar Code JBD

BMS MFG 2024 ~ 10

PACK MFG 2024 ~ 6

Function Config

Hot Parameter Buzzer Anti Theft GPS

报警 Func 02 Func 03 Func 04

Capacity algorithm

Capacity not steady Close SOC Trace Func 01 Func 02 Set

SOH Parameter

SOH 92 Set Cycle-Index 1 Times Set

Cycle Coeff 80 % Set Cycle Damping Factor 150 Set

SOC Parameter

Rated Capacity 100 AH Set Full Capacity 92.85 AH Set

Remain Capacity 90.85 AH Set SOC 97.84 % Set

Total CHG Ah 186.7 Ah Set Total DSG Ah 130.5 Ah Set

Full CHG Voltage 57.28 V Set Full CHG Current 1500 mA Set

Thermal Management Parameter

Hot Start Te 0.0 °C Set Hot Stop Tem 10.0 °C Set

Idle Sleep Parameter

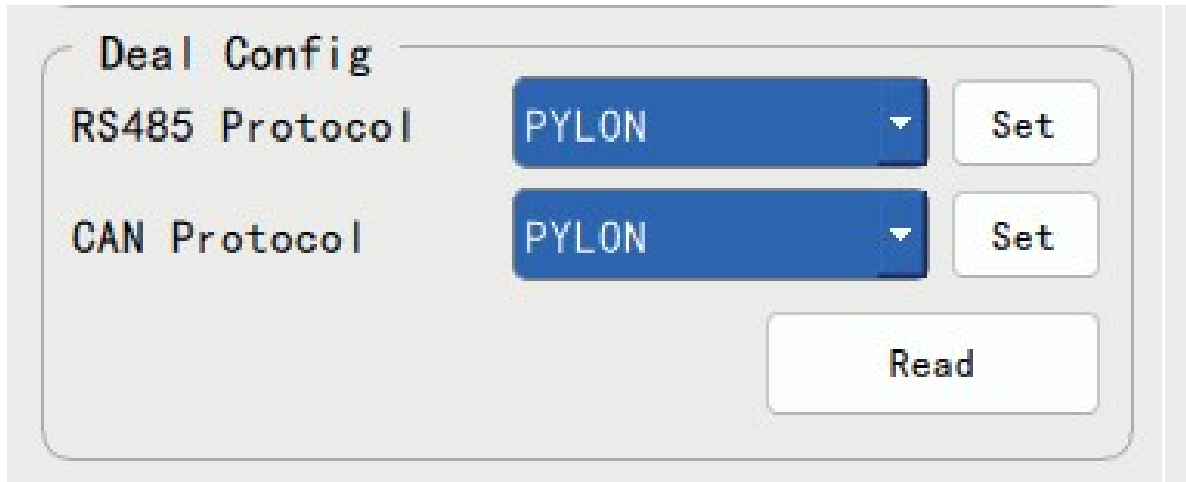
Sleep Voltage 300.0 mV Set Sleep Delay Time 2880 min Set

Sleep Current 1.0 A Set 静态休眠延时 4905 min Set

Read Import Export Write parameters 0%

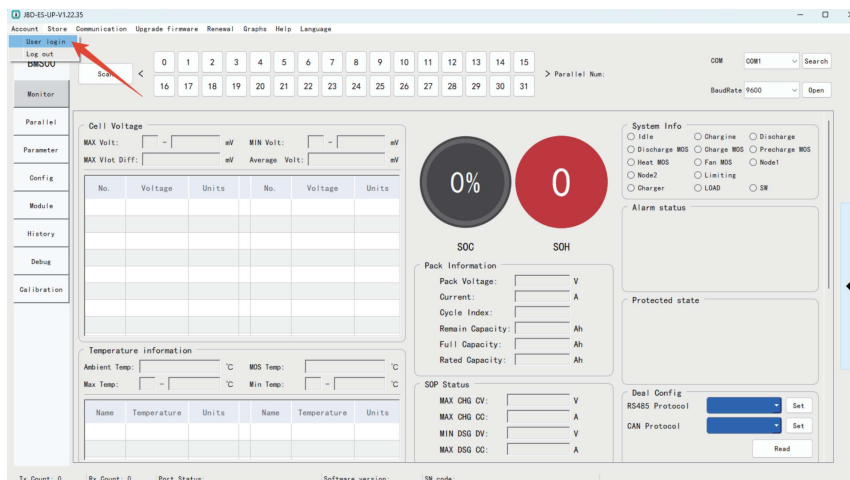
Tx Count: 435 Rx Count: 432 Port Status: Open (COM7, 9600) Software version: V1 SN code: JBD48100000

Read and adjust the battery communication protocol in the bottom right corner of the Monitor page

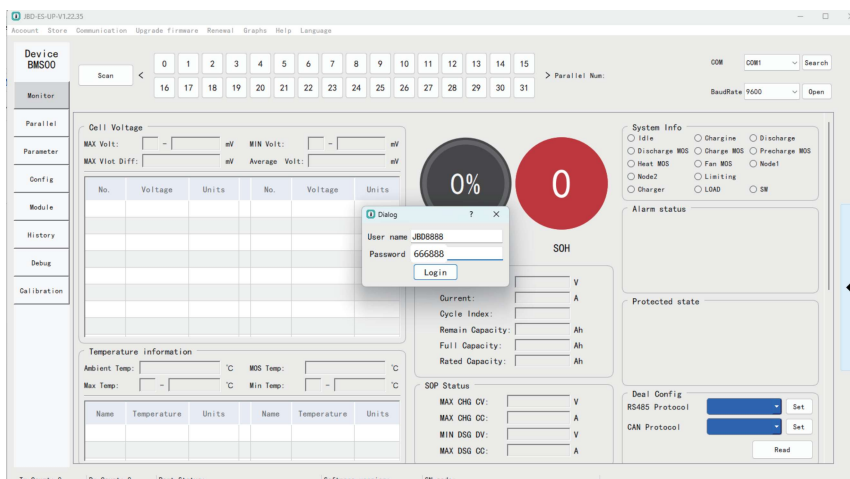


2.4 Premium Account

If you have extensive DIY battery experience, you can log in to the advanced account and modify the BMS parameters




The password for the premium account is 666888



VI. Technical Support

1) Customer service email:

 **E-mail:** customer.service@eco-worthy.com

2) Company address: USA/Germany



Address(US): 4411 East State Hwy D Suite C Springfield, Missouri 65809



Address(DE): ECO-Worthy Europe GmbH Otto-Hahn-Str. 20 61381 Friedrichsdorf - Köppern Germany

3) Customer service telephone numbers:

Tel(DE): +49 6175-6514-999

Tel(US&CA): 1-866-939-8222

Tel(UK): +44 7553-406-988

Note:

Customer Service Hours:

US: Mon-Fri 8:30 AM - 6:00 PM(CST)

UK: Mon-Fri 9 AM - 5 PM(GMT)

DE: Mon-Fri 9 AM - 5 PM(CET)

4) Official website address:

 **Web:** <https://www.eco-worthy.com/>

5) Official social media:



Facebook: <https://www.facebook.com/ecoworthy.store/>



Youtube: @ecoworthy



Tiktok: https://www.tiktok.com/@eco_worthy



Warning:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

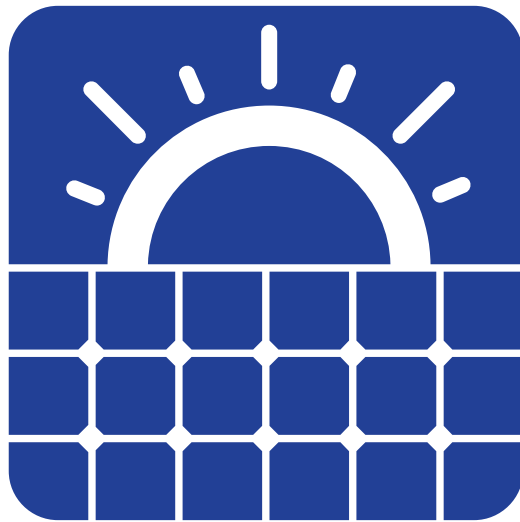
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

NOTE:

This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.

RF exposure:

The device has been evaluated to meet general RF exposure requirement.



ECO-WORTHY



customer.service@
eco-worthy.com



Tel(DE): +49 6175 6514 999
Tel(US): 1-866-939-8222
Tel(UK): +44 7553 406988



www.eco-worthy.com