



USER MANUAL

LFP 2400/2500/5000

Version:2.1



Uhome Smart Energy(Wuxi)Co., Ltd.

About this manual

This manual is intended for the LFP 2400/2500/5000 Energy Storage battery. These batteries can be installed in Parallel and Series, pay more attention for the DIP setting and address selection.

Statement

Compliant to Best Practice Guide for Battery Storage Equipment—Electrical Safety Requirements- version 1- Pre-assembled integrated battery energy storage system equipment – Method 1 mandatory requirements and Optional requirements – a), c), e), f), g), h), i), j), k), l), m), n), o), p), q).

Declaration

Uhome declares that the LFP 2400/2500/5000 is compliance with the essential requirements and other relevant of RE Directive 2014/53/EU.

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1. Safety Introduction

1.1 Important Safety Instructions

This manual contains important instructions for:

LFP 2400/2500/5000 Energy Storage product and this manual must be followed when installing and using this product.

This product is designed and tested in accordance with international safety requirements CE IEC 62040 and IEC 62619, but as with all electrical and electronic equipment, certain precautions must be observed when installing and / or operating the product. To reduce the risk of personal injury and ensure the safe installation and operation of the product, you must read carefully and follow all instructions, cautions and warnings in this manual.

1.2 Warnings in this Document

A warning describes a hazard to equipment or personnel. It calls attention to a procedure or practice which if not correctly performed, could result in damage to or destruction of part or all of the Uhome equipment and/or other equipment connected to the Uhome equipment or personal injury.

Symbol	Description
	Caution, risk of electric shock
	Heavy enough may cause severe injure
	Keep the battery away from open flame or ignition sources
	Keep the battery away from children
	Dispose of waste batteries according to local laws and regulations
	Recycling
	Read this manual before installation and operation

For safety reasons, installers are responsible for familiarizing themselves with the contents of this manual and all warnings before performing installation.

1.3 Battery Handling Guide

- Use the battery pack only as directed.
- If the battery defective, appears cracked, broken or otherwise damaged, or fails to operate, contact the Uhome **hot line +86-510-8899-8080** immediately.
- Do not attempt to open, disassemble, repair, tamper, or modify the battery.

The battery is not suitable for users to use by themselves.

- -To protect the battery and its components from damage when transporting, handle with care.
- Do not subject it to any strong force.
- Do not insert foreign objects into any part of the battery pack.
- Do not use cleaning solvents to clean the battery.
- The battery not be connected directly to SELV circuit.

1.4 Response to Emergency Situations

The Uhome battery is designed with multiple safety strategies to prevent hazards resulting from failures. However, Uhome cannot guarantee their absolute safety for uncertain situations.

1.4.1 Leaking Batteries

If the battery pack leaks electrolyte, avoid contact with the leaking liquid or gas. Electrolyte is corrosive and contact may cause skin irritation and chemical burns. If one is exposed to the leaked substance, do these actions:

Inhalation: Evacuate the contaminated area, and seek medical attention immediately.

Eyes contact: Rinse eyes with flowing water for 15 minutes, and seek medical attention immediately.

Skin contact: Wash the affected area thoroughly with soap and water, and seek medical attention immediately.

Ingestion: Induce vomiting as soon as possible, and seek medical attention immediately.

1.4.2 Fire

In case of a fire, make sure that an ABC or carbon dioxide extinguisher is

nearby and does not use water to extinguish the fire.



WARNING

The battery pack may catch fire when heated above 150°

If a fire breaks out where the battery is installed, do these actions:

1. Extinguish the fire before the battery catches fire.
2. If the battery has caught fire, do not try to extinguish the fire. Evacuate people immediately.

WARNING

If the battery catches fire, it will produce poisonous gases. Do not approach.

1.4.3 Wet battery

If the battery is wet or submerged in water, do not try to access it. Contact **Uhome Customer Service** or your distributor for technical assistance.

1.4.4 Damaged Battery

If the battery damaged, please contact Uhome **customer service** or your distributor for help as soon as possible, because damaged battery is dangerous and must be handled with extreme caution. Damaged battery is not suit for use and may pose a danger to people or property. If the battery seems to be damaged, return it to Uhome or your distributor.

CAUTION

Damaged battery might export electrolyte or flammable gas, so contact Uhome for advice and information immediately we will deal with it.

1.5 Installers

Uhome Energy Storage battery is suggested installing by skilled worker or electrician. A skilled worker is defined as a people who had been trained and qualified electrician or had all of the following skills and experience:

- Knowledge of the functional principles and operation of on-grid Energy Storage systems.
- Knowledge of the dangers and risks associated with installing and using electrical devices and acceptable mitigation methods.
- Knowledge of the installation of electrical devices
- Knowledge of and adherence to this manual and all safety precautions and best practices.

1.6 Scrap Battery

For scrap battery(-ies), please treat with local laws or regulations to recycle or scrap.

1.7 Contact Information

Use the contacts for technical assistance. The phone numbers are available only during business hours on weekdays.

Fax	+86-510-8899-8080
Email	marketing@uhomeenergy.com
Address	No. 1, Qianluo Road, Qianqiao Street, Huishan District, Wuxi City, Jiangsu Province, CHINA

2.Guidance for Disconnection of Batteries During Shipment

- LFP 2400/2500/5000 is not suit for air transport.
- Cartons that have been crushed, punctured, or torn in such a way that contents are revealed shall be set aside in an isolated area and inspected by a skilled person. If the package is deemed to be not shippable, the contents shall be promptly collected, segregated, and either the consignor or consignee contacted.
- The DC circuit of LFP 2400/2500/5000 battery has been disconnected before outgoing.
- We have conducted comprehensive tests to ensure the equipment distribute around the world is safe for shipping. These products shall be handled with care and immediately inspected if visibly damaged. If the carton visibly damaged, please contact with Uhome **customer service** to confirm whether the battery could be used safely or not.

3. Product Introduction

3.1 Technical Specifications

Product Type	LFP 5000	LFP 2400	LFP 2500
Total Energy*	5.1kWh	2.4kWh	2.5kWh
Usable Energy(DC)*	4.6kWh	2.2kWh	2.3kWh
Nominal Dis-/Charge Power	3.0kW	1.5kW	1.5kW
Peak Power(Only Discharge)	6kW for 3s	3kW for 3s	3kW for 3s
Voltage	48~56Vd.c	48~56Vd.c	48~56Vd.c
Constant Current (Only Discharge)	80A	40A	40A
Nominal Voltage	51.2Vd.c	51.2Vd.c	51.2Vd.c
Nominal Current	60A	30A	30A
Max. Charge Voltage	57.6Vd.c	57.6Vd.c	57.6Vd.c
Weight	45kg	27.5kg	25kg
Dimension(mm)	500*442*133mm	500*442*133mm	500*442*88mm
Max.recommended DOD	90%		
Operating Condition	Indoor		
Charge Temperature	From 0~50℃		
Discharge Temperature	From -10~55℃		
WIFI Frequency Range	2400MHz~2483MHz		
Humidity	<60%(No condensed water)		
Over Voltage Category	II		
Cooling Type	Natural cooling		
Case Material	Metal		
Color	Black or White		
Installation	Wall mounting/Ground Installation		
IP rating	IP 20		
Protective Class	I		
Max. Number of Parallel	8S/8P		
Warranty	10 years		
Life Span	>15 years		
Communication	CAN/ RS485		
Protection Mode	Dual hardware protection		
Battery Protection	Over-current/Over-voltage/Short circuit/ Under-voltage/Over temperature		
Safety	Cell UL 1973	Cell UL 1973	Cell UL TUV
	CE		
Hazardous Material classification	9		
Transportation	UN 38.3		

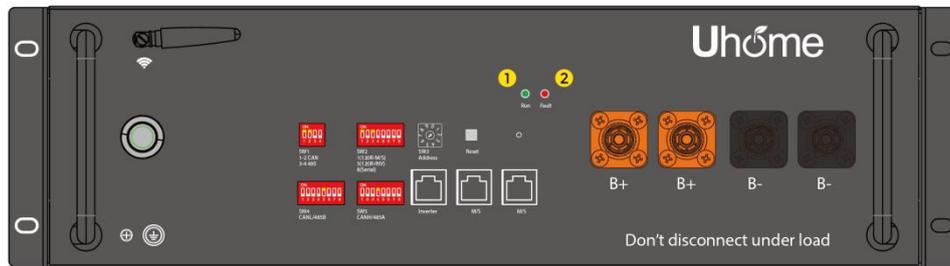
Testing conditions based on temperature 25℃ at the beginning of life.

*Total Energy/Usable Energy measured under specific conditions from uhome 0.2C CC-CV.

3.2 Indicator and Ports

3.2.1 Indicator

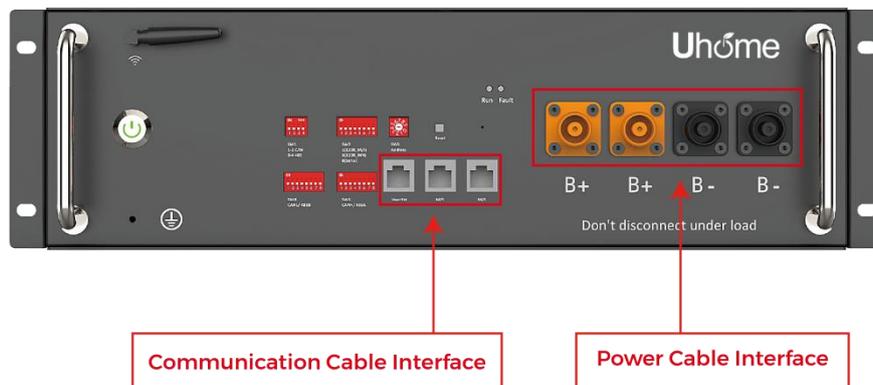
There are two LED indicators on the front of the battery to show its operating status.



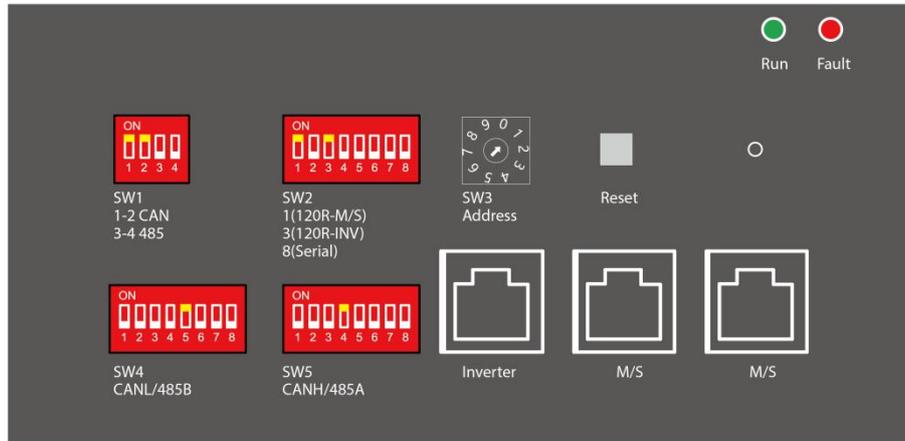
Item	Designation	Definition
1	Run	Battery working normally
2	Fault	Battery failures

3.2.2 Ports

The power cable interface and communication cable interface.



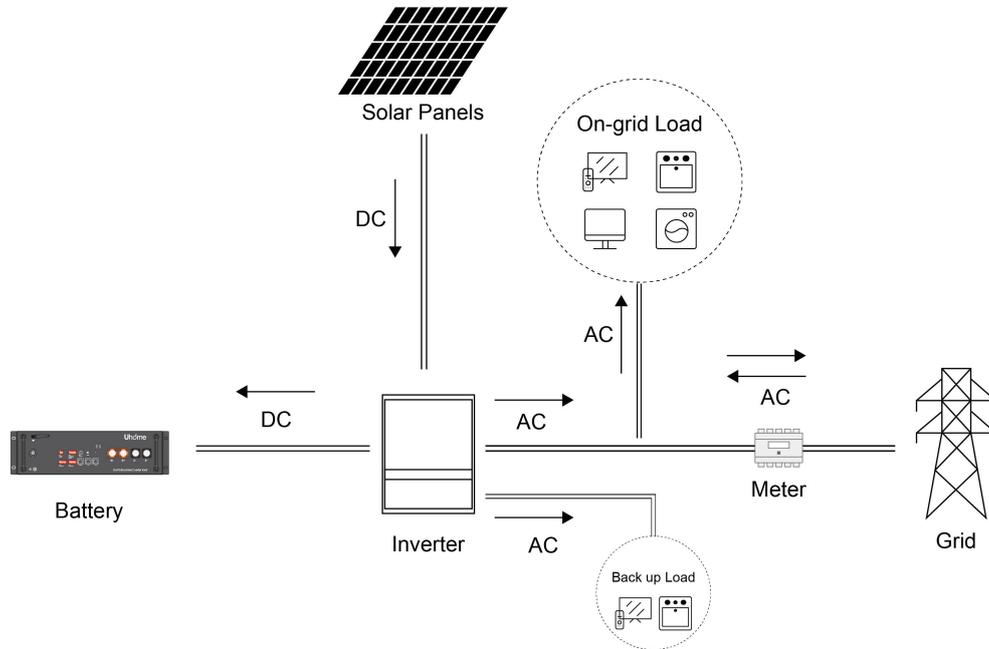
3.2.3 Communication Interface



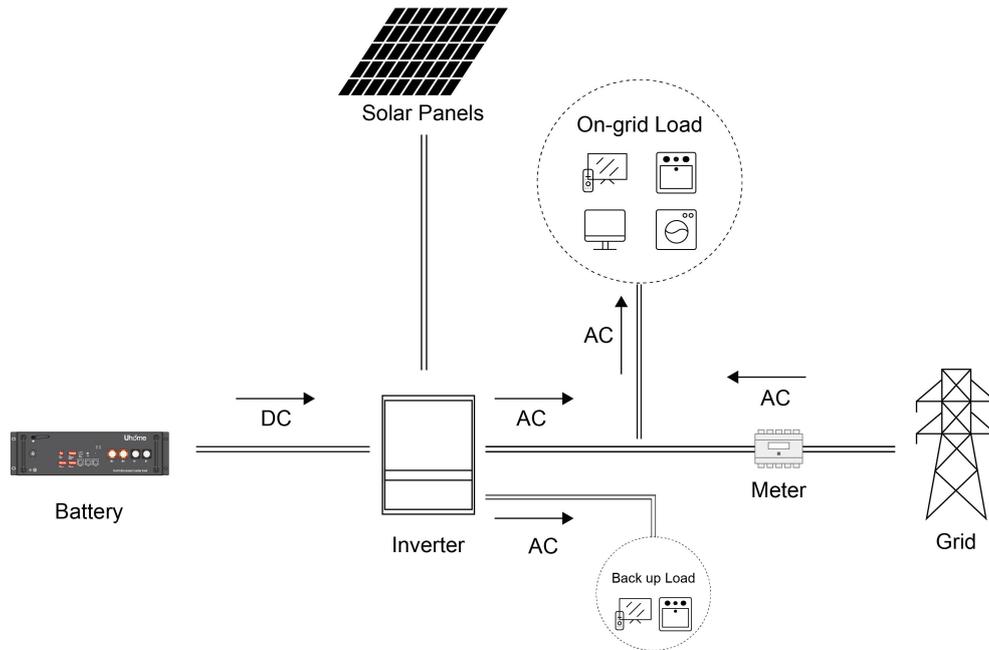
Designation	Definition
SW 1	DIP switch for CAN or RS485 communication(Defined in inverter's user manual.) For CAN Communication, SW1 = 1 & 2 For 485 Communication, SW1 = 3 & 4
SW 2	Resistance for communication and DIP switch for parallel or Series connection Master Battery SW2 setting: For Parallel connection, SW2 = 1 & 3 For Series connection, SW2 = 1, 3 & 8
SW 3	Setting battery address
SW 4	Communication for primary battery between inverter
SW 5	Communication for primary battery between inverter
Reset	Reset WIFI or GPPS/GPS module configure

3.3 Solution of Uhome

DAY TIME



NIGHT TIME



3.4 Feature

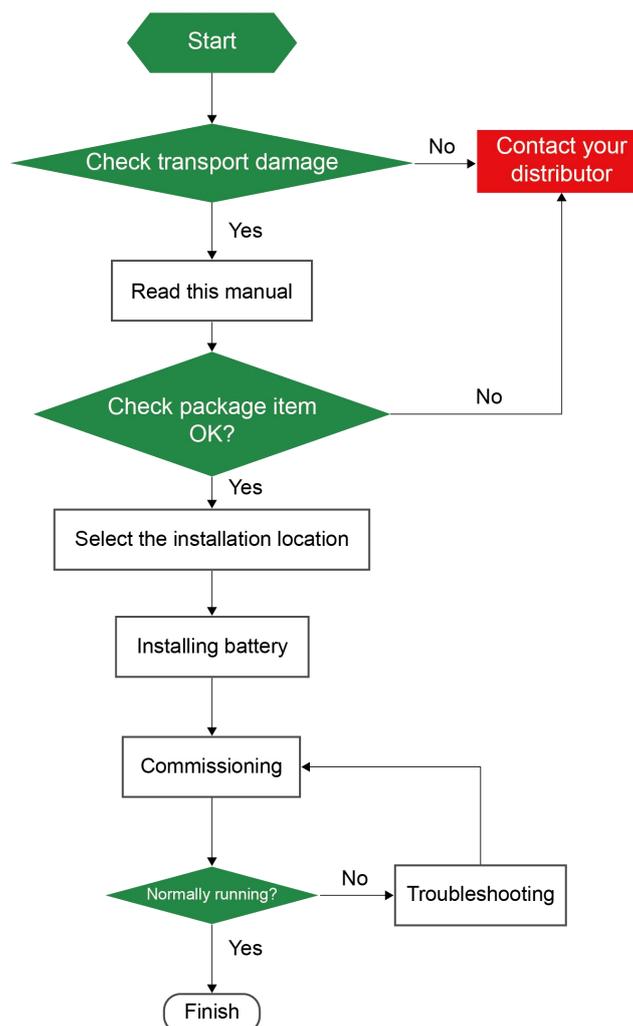
The Uhome Energy Storage battery has following features:

- **Energy storage unit:** This battery is suit for photovoltaic system compatibility.
- **Battery management system (BMS):** The battery built-in BMS monitors its operation and prevents the battery from operating outside design limitations.
- **Monitor:** The battery BMS built-in with WIFI module, the battery running information could be seeing in mobile phone and computer.
- **Easy firmware update:** The BMS firmware can be updated to the latest version.
- **Expandability:** The battery capacity can be increased by adding another battery.

4. Installation Prerequisites

4.1 Installation Process

The battery should be installed according to the following flow chart. The detail installation process described in chapter **5 Install process**.



4.2 Installation Position

Make sure that the installation position meets the following conditions:

- The building is designed to withstand earthquakes.
- Far away from the sea to avoid salt water and humidity.
- The floor is flat and level.
- No flammable or explosive materials nearby.
- Optimal ambient temperature is between 15°C and 30°C.
- Temperature and humidity stays at a constant level.
- Minimal dust and dirt in the area.
- No corrosive gases present, including ammonia and acid vapor.
- The battery is rated at IP20, therefore the battery is only suit for indoor usage.

If the ambient temperature is out of the operating range, battery will protect itself by shutting down. The battery optimal operate temperature is 15°C to 30°C. Frequent exposure to severe operating condition would exacerbate the performance and lifetime of the battery.

4.3 Tools

To install the battery pack, those following tools are required:

			
Phillips screwdriver	Torque wrench	Cable crimper	Wire clamp
			
Voltmeter	Tape measure	Drill	Flat-head screwdriver

In order to protect operator and installer's safety, please select and use suitable tools and measuring instruments that are certified for precision and accuracy.

4.4 Safety Instruments

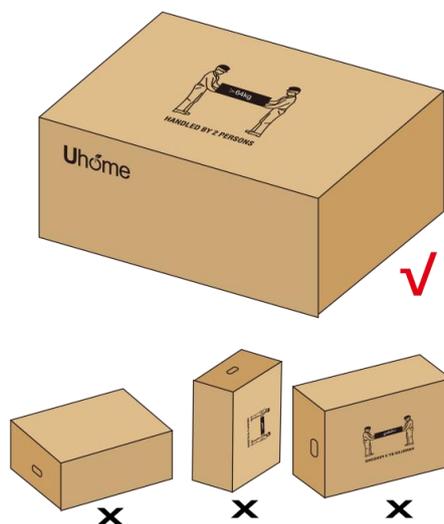
When dealing with the battery, following safety gears should be equipped. Installers must meet the relevant requirements of IEC 62040 and IEC 62619 or the domestic legislation and other relevant international standards.



4.5 Storage

If the battery is not to be installed immediately, and needs to be stored for a long period, please choose an appropriate location to store it. Instructions for storage are:

- Do not stack more than four battery boxes.
- The temperature of battery stored recommended in the range of -20°C to 30°C.
- Do not expose to water
- The battery box should be upright as shown in the following figure and not stacked upside down when storing the battery box.



- If the battery needs to be stored over 3 months, the battery would discharge at a minimum rate and capacity degrades depended on storage time.
- If the battery stored over 6 months, it is suggested to connect the battery with inverter and commissioning the system.

5. Battery Installation

5.1 Package Items

You can receive one packing cartons about the batteries, all items are summarized as follow:

(Product accessories are customized according to customer needs, the following is standard accessories list.)

		
Base*1	User Manual*1	Warranty*1
		
Communication Cable*1	Orange Power Supply *1	Black Power Supply *1
		
Grounding Cable *1		

5.2 Checks before Installation

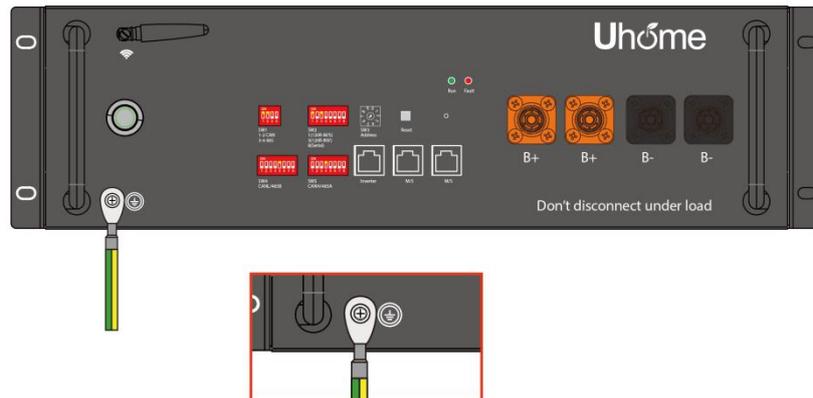
There are few things to check before installing the battery to ensure that it has no defects.

- Check the battery voltage using following instruction.
- Press and hold the panel button for 4s and release after two indicators turn on.
- Measure the voltage at the terminal interface with a voltmeter. If the voltage is lower than 48V, do not use the battery and contact customer service.

5.3 Battery Installation

There is a grounding icon on the front of the battery:

- For Series connection, the grounding cable is essential to be installed.
- For Parallel connection, the grounding cable is recommended to be installed.



5.3.1 Ground Installation

1. Place the battery in the right place (**the details about installation position described in chapter 4.2**). Install the support feet on the 4 feet of the battery with M4 screws. Showing as below:



2. Stacking the batteries as pictures:

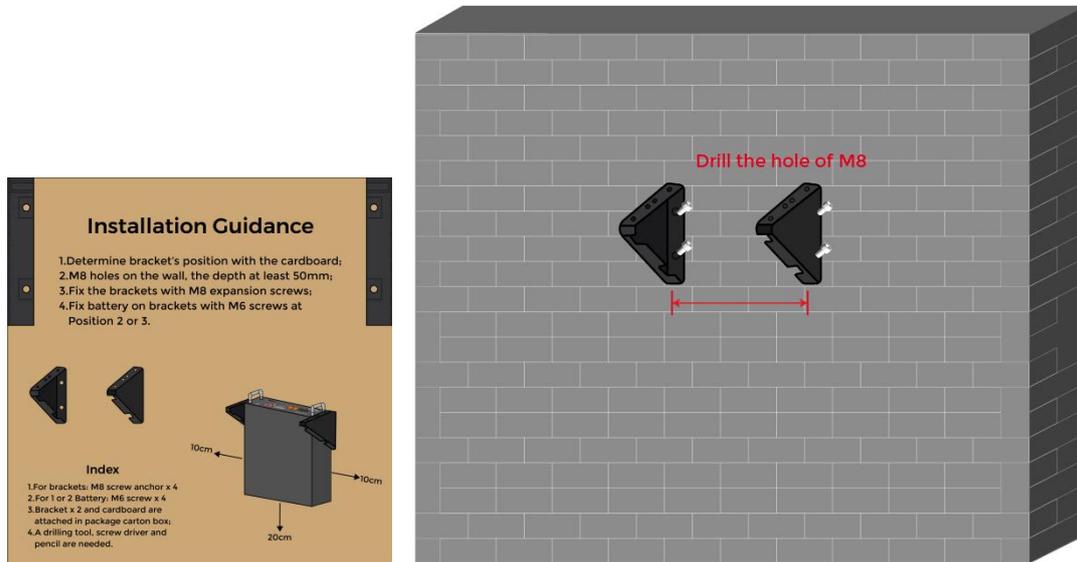


NOTICE

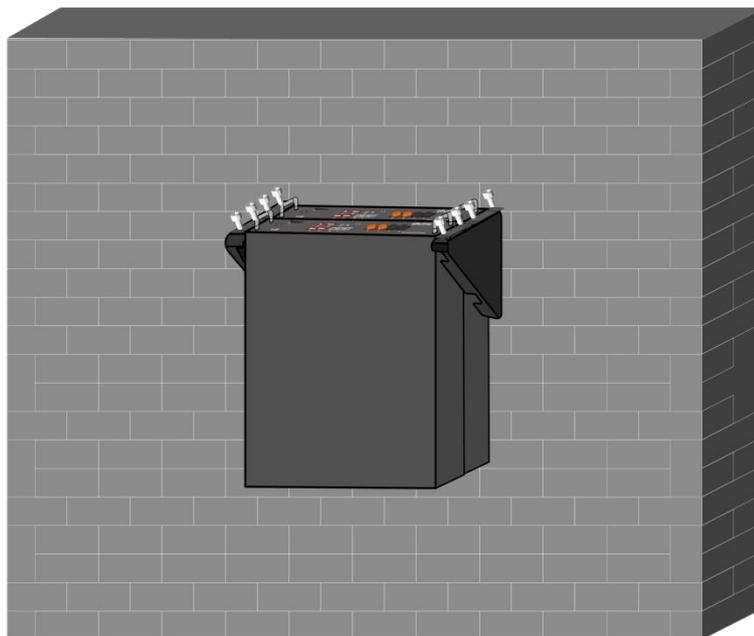
A cabinet is recommended to be used if more than 4 batteries are installed.

5.3.2 Wall Mounting

1. Drill holes of M8 in the wall at least 50 mm depth according to the positioning cardboard.



2. Tighten the screws of screws between the bracket and the battery with 2.5N.m torque. Two or four batteries can be installed by these brackets.



NOTICE

If more than 4 batteries need to be installed, rack mounting is recommended.

5.4 Cable Connections of the Battery

WARNING

Connect cables in accordance with local installation laws and regulations. Before connecting cables, ensure that the battery is **OFF**. Otherwise, the high voltage of the battery may result in electric shocks.

Make sure the cap is on, if you don't need to use the power interface.



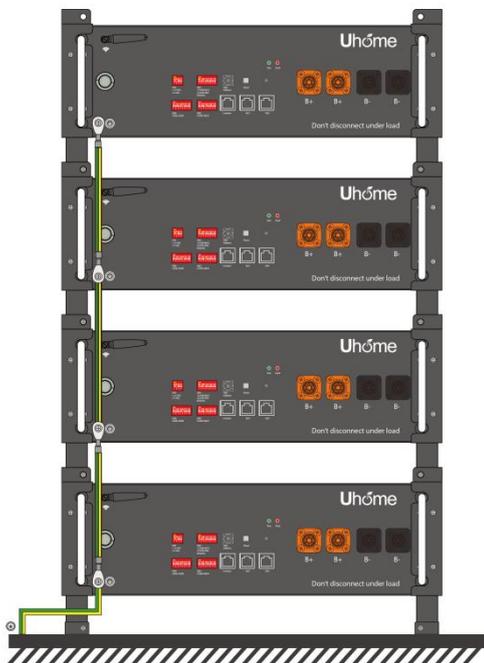
5.4.1 Series Connection

NOTICE

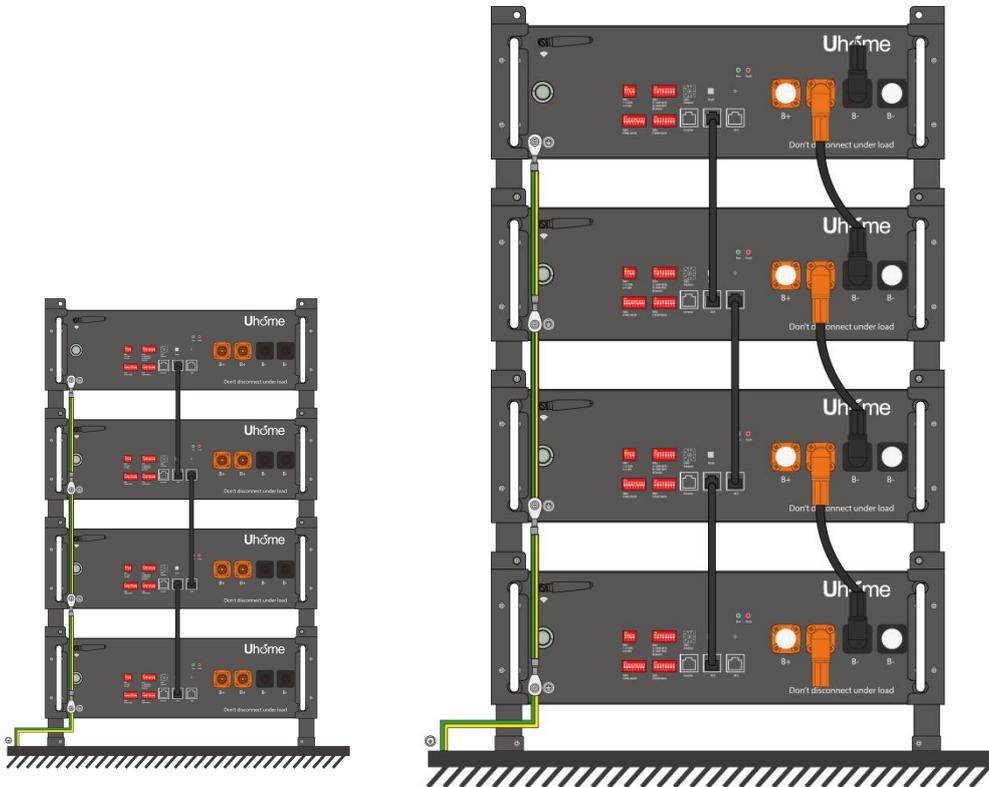
Before two or more batteries installed in series, please check the voltage of each battery and make sure the voltage is the same.

* Rack mounting

1. Install the grounding cables as below:

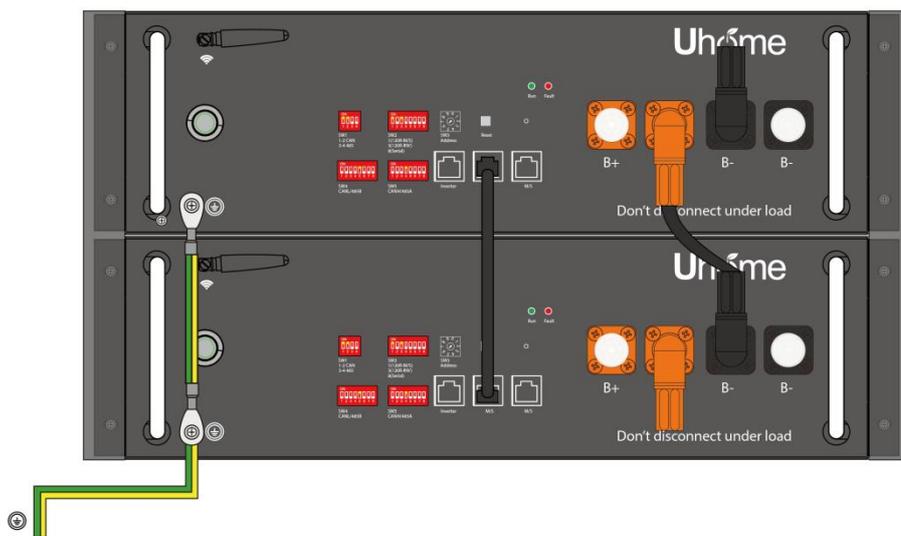


2. Connect the **M/S Port**. between the batteries with communication cables, then connect the power cables.

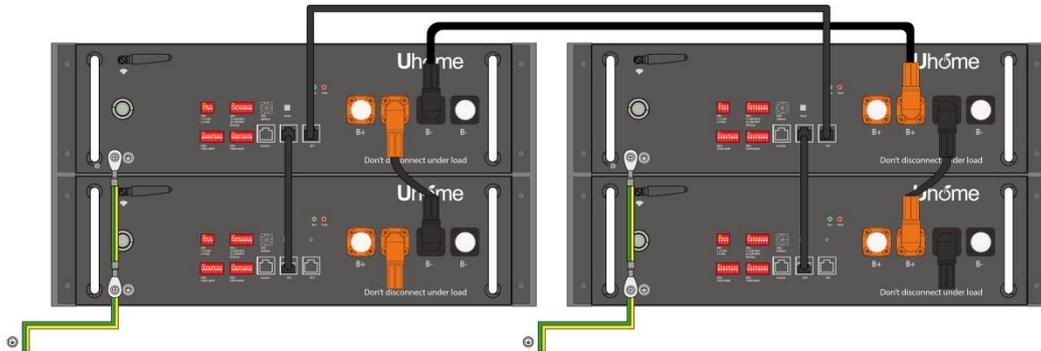


*** Wall mounting**

1. Two batteries installed.



2. Four batteries installed.



NOTICE

For wall mounting, the number of batteries should be less than 4. If more batteries are installed, a cabinet is recommended to use. If batteries are connected in Series, ground installation is recommended.

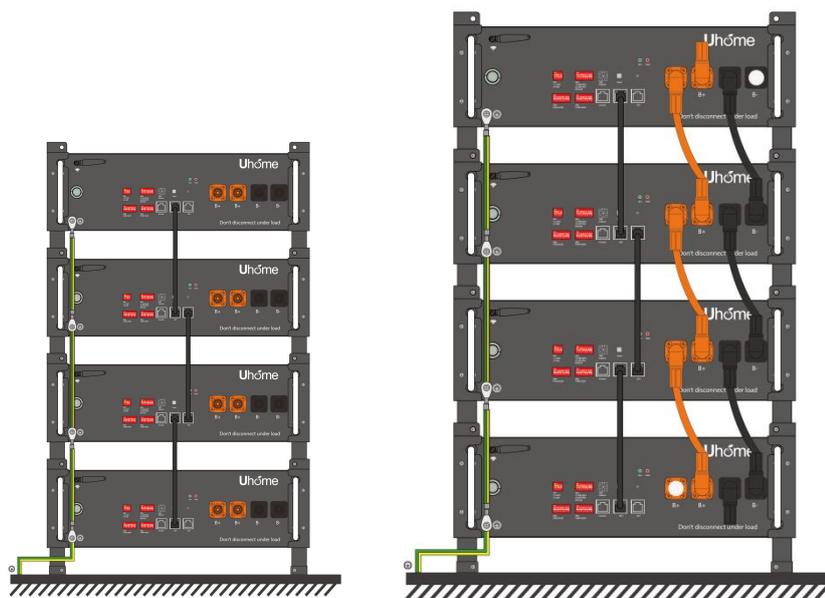
5.4.2 Parallel Connection

NOTICE

Before two or more batteries installed in parallel, please check the voltage of each battery and make sure the voltage difference less than 2.0V.

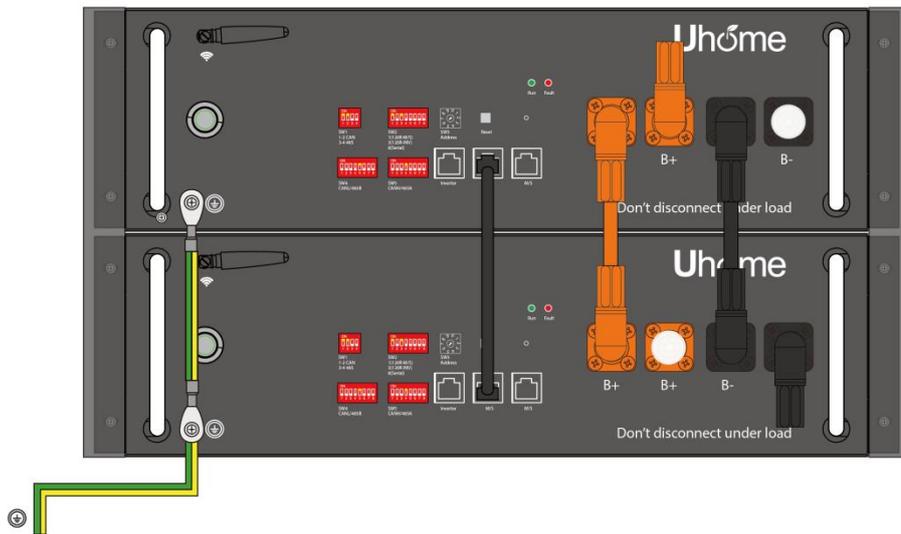
*** Rack mounting**

1. Connect all the communication cables and power cables showing as below.

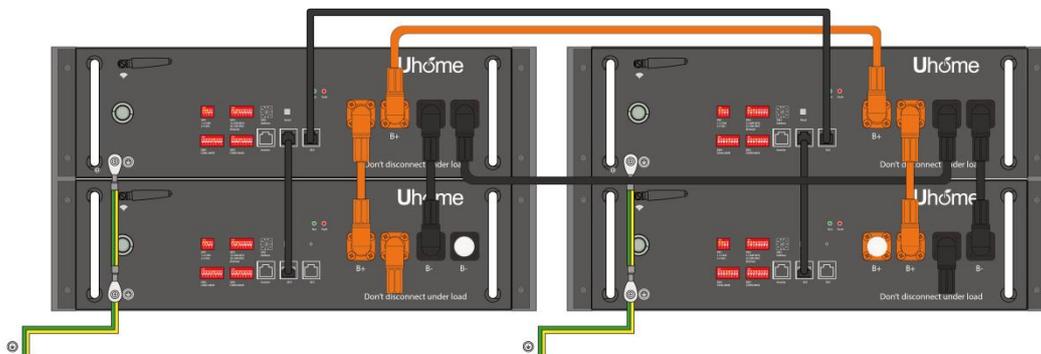


*** Wall mounting**

1. Two batteries installed.



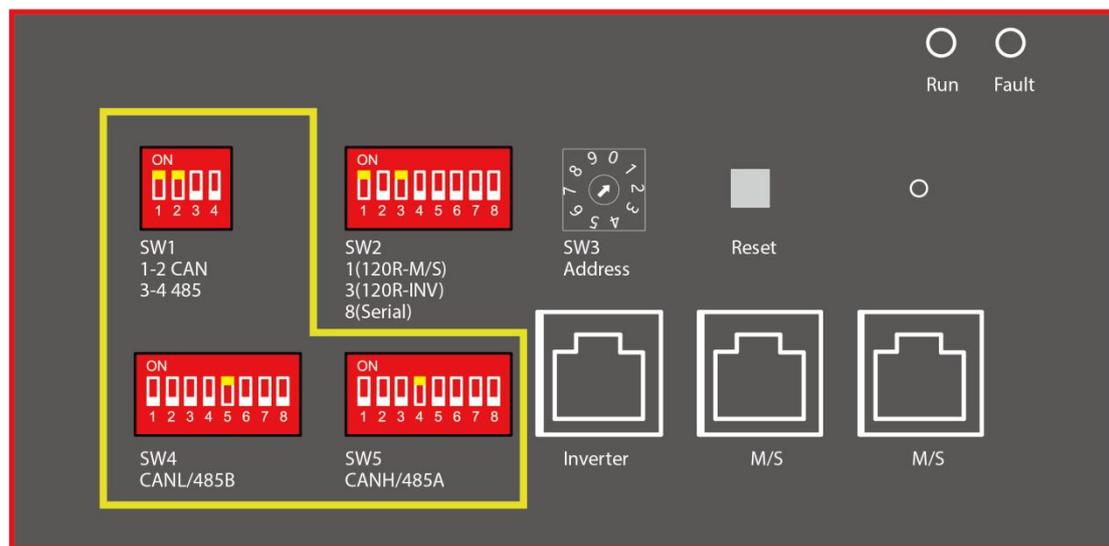
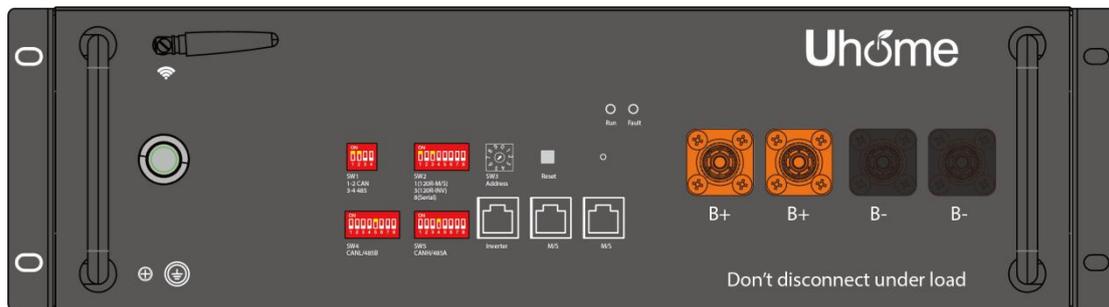
2. Four batteries installed.



NOTICE

For wall mounting, the number of batteries should be less than 4. If more batteries are installed, a cabinet is recommended to use. If batteries are connected in Series, ground installation is recommended.

5.5 Battery Address DIP Switch Setting



**For Parallel connection, SW2 DIP 8 select 'OFF';
For Series connection, SW2 DIP 8 select 'ON' .**

The SW1/SW4/SW5 defined in inverter's user manual.

Warning:

Please check the SW1 / SW4 / SW5 are correctly set as manufacturer default, and have not been accidentally changed!

The battery default protocol is CAN bus(SW1), if the inverter communication mode is RS485 or other protocol, please contact us before installing the battery.

Note:

You only need to select the actual number of batteries you need to view the installation method

Connected Battery Numbers	Group	Set of SW 2		Address(Set of SW3)
		Series connect	Parallel connect	
1	/			
2	Primary			
	Sub 1			
3	Primary			
	Sub 1			
	Sub 2			
4	Primary			
	Sub 1			

	Sub 2			
	Sub 3			
5	Primary			
	Sub 1			
	Sub 2			
	Sub 3			
	Sub 4			
6	Primary			

	Sub 1			
	Sub 2			
	Sub 3			
	Sub 4			
	Sub 5			
7	Primary			
	Sub 1			
	Sub 2			

	Sub 3			
	Sub 4			
	Sub 5			
	Sub 6			
8	Primary			
	Sub 1			
	Sub 2			
	Sub 3			

Sub 4			
Sub 5			
Sub 6			
Sub 7			

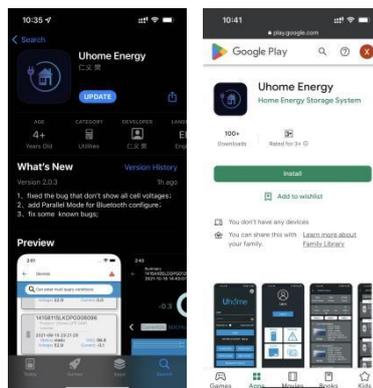
6. Configuration

NOTICE

There are three ways to configure WIFI, choose one of them according to your needs

6.1 APP Download

Search for the **Uhome Energy APP** in the Google or Appstore and download.

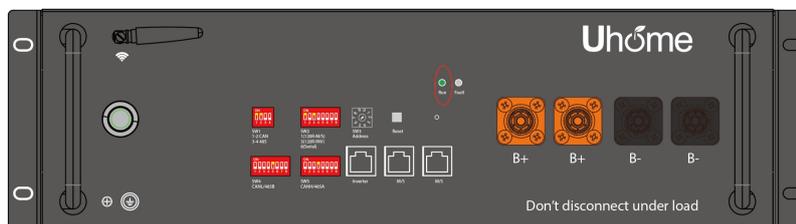


6.2 Configure Battery WIFI

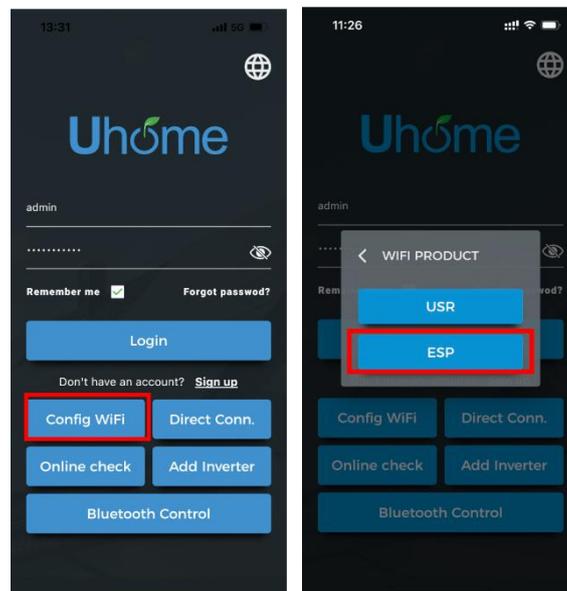
The battery has a built-in WIFI module for use with the App.



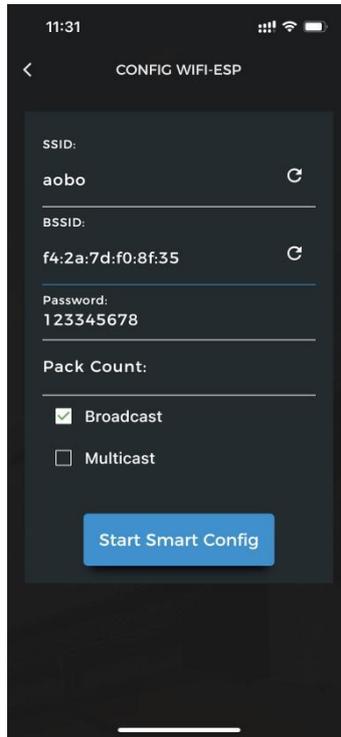
1. Turn on the battery and Press the "Reset" button for 2 seconds, the green light on the battery starts flashing slowly and searching for WIFI, connecting the local WIFI.



2. Select 'Config WIFI' option, and select 'ESP'.



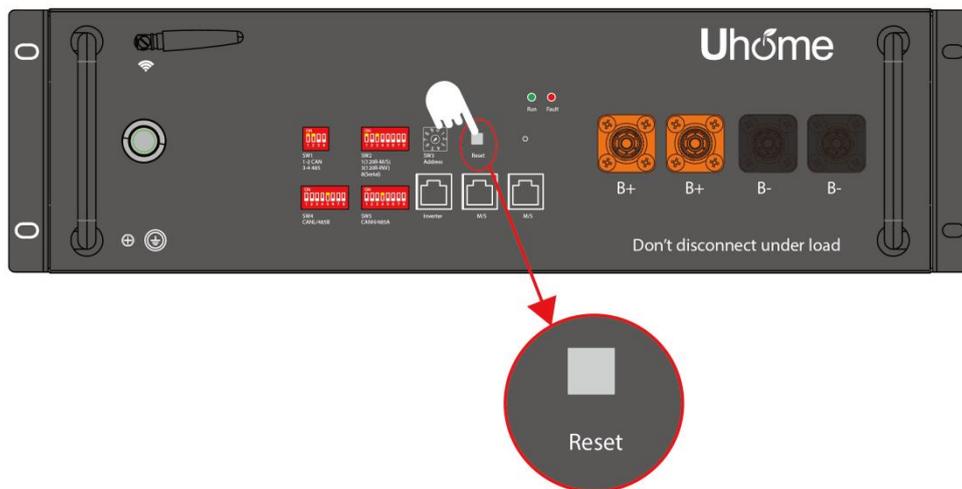
3. Enter the local wifi password, select **Broadcast** then press **Start Smart Config.**(If the broadcast doesn't work, replace it with multicast.)



NOTICE

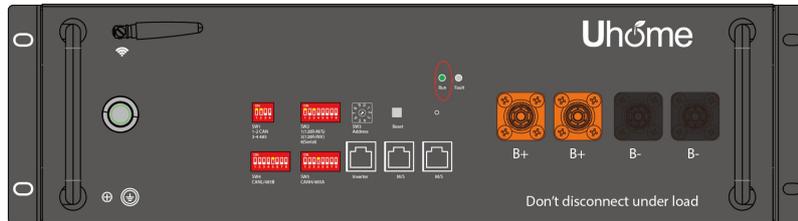
If the WIFI cannot be set or there is no WLAN accessible, the battery can still operate normally.

If you can't find the WIFI, press the **“RESET”** button for 2 seconds and repeat the above steps.

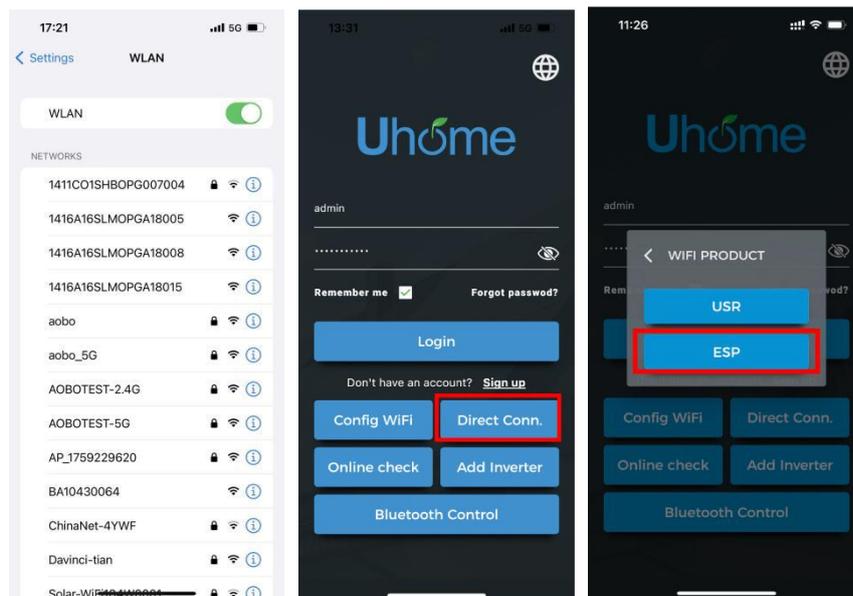


6.3 Direct Connected

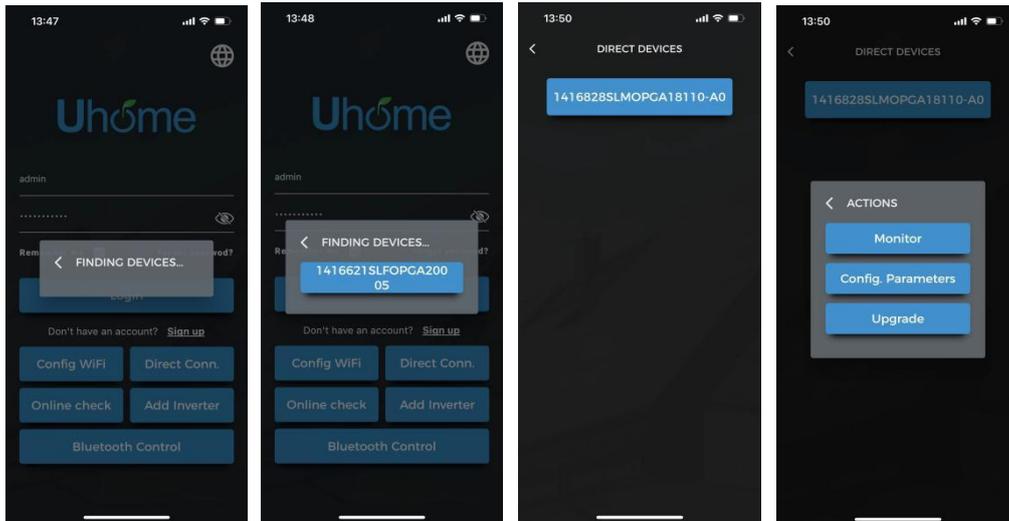
1. Turn on the battery and Press the "Reset" button for 5 seconds, the green light on the battery starts flashing fast.



1. Search for WIFI, connecting WIFI starting with number **14XXXXXXX** (Battery's SN number), select **'Direct Conn.'** option, and select **'ESP WIFI'**.



2. Continue to select **according to the steps** showing as below.



6.4 Register Account

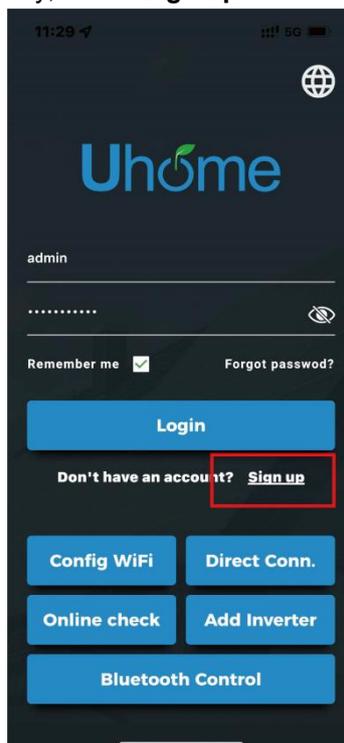
NOTICE

The Uhome battery could be registered only one time.

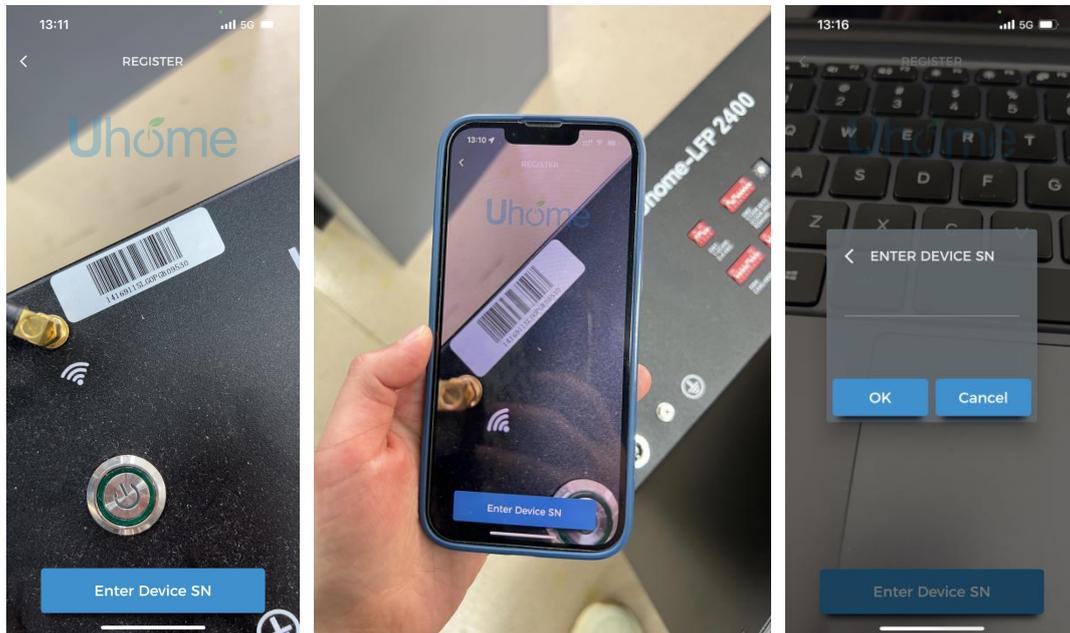
NOTICE

The Uhome battery running is not associated with registration or not.

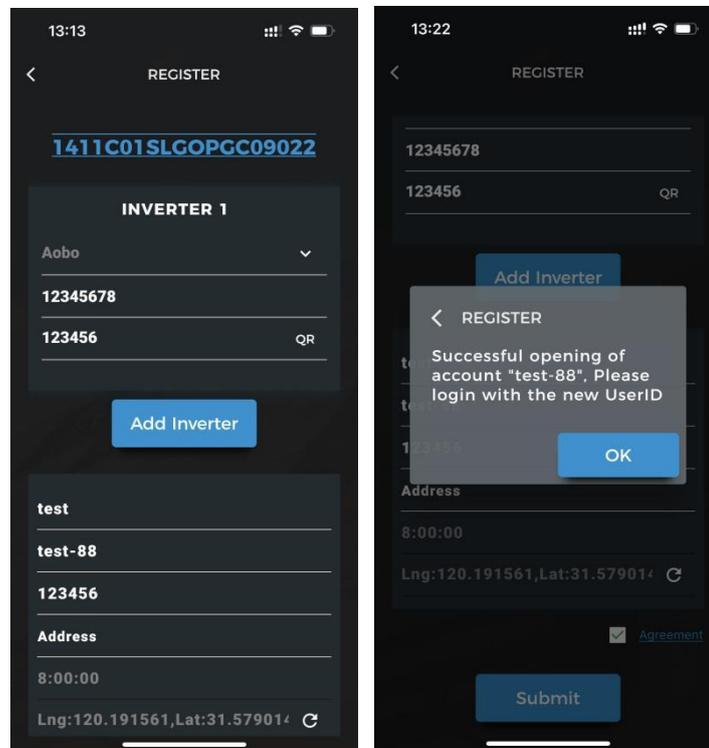
1. Open the APP monitor of battery, select **Sign up**.



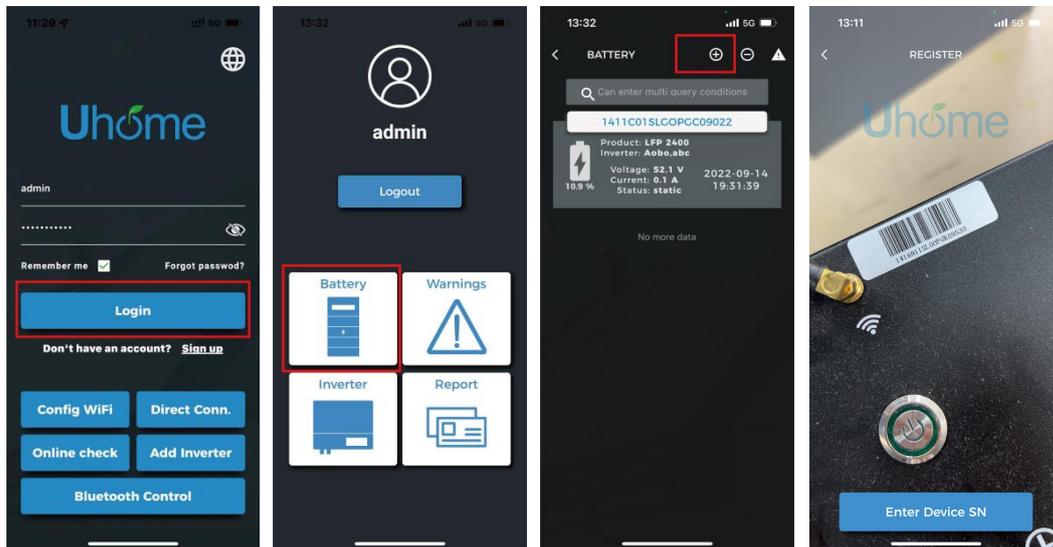
2. Scan the device QR code or enter the device SN manually, as show in the pics:



3. Registration completion pop up after select inverter manufacturer and enter battery information.



4. If more than two batteries are used at the same time, you need to manually add additional information about another set of devices, as shown in the pics:



7. Commissioning

7.1 Commissioning Battery

If only one battery is installed, use the following steps to put it in operation:

- 1 Press and hold the panel button on the left side of the unit for 4s. Release when the indicator lights on.
- 2 Make sure the Run light is on. If it stays off, do not use the battery and contact customer service.
- 3 Turn on the inverter. Wait for the start-up sequence to complete fully.

If two or more batteries are connected in parallel, connect the power cables and the communication cables first. Follow the steps as below:

- 1 Check battery voltage. If it is lower than 48V, charge the battery first. If more assistance is needed, contact customer service.
- 2 Press and HOLD the panel button for 4s, after that the indicator lights turn on.
- 3 For all batteries, make sure that the Run light is on.
- 4 Make sure the maximum voltage difference between batteries is less than 2V. If not, balance the battery voltage and connect batteries in parallel together.
- 5 Set the DIP switches according to the part 5.5.
- 6 Turn on the inverter. Wait for the start-up sequence to complete fully.

7.2 Shutting Down Battery

Shut down the battery only when the battery is no charging or discharging which can be seen in your phone with APP.

1. Press and hold the Panel Button for 5s, release after hearing the sound of relay breaking.
2. Make sure all lights on the battery are off

8.Firmware Update

If you need to upgrade the BMS software version, please contact the after-sales staff by email: marketing@uhomeenergy.com.



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