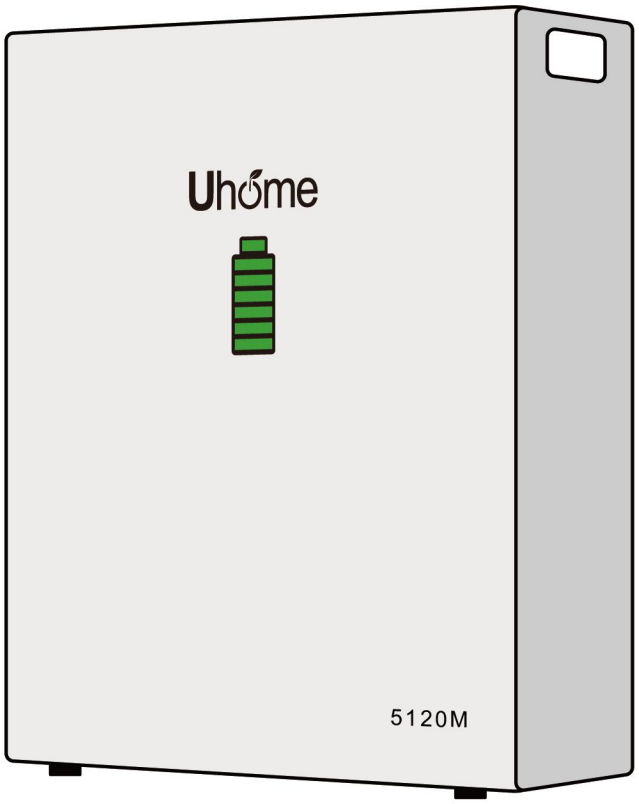
USER MANUAL

LFP 5120M/10240M

Verison: 2.2



Uhome Smart Energy(Wuxi)Co., Ltd.

About this manual

This manual is intended for the LFP 5120M/10240M Energy Storage battery.This batteries can be installed in Parallel, pay more attention for the power cable and communication cable connection.

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 5120M/10240M is compliance with the essential requirements and other relevant of RE Directive 2014/53/EU.

CONTENT

1. Safety Introduction

1.1 Important Safety Instructions

This manual contains important instructions for:
LFP 5120M/10240M 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, 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 5120M/10240M 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 5120M/10240M 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 5120M	LFP 10240M
Total Energy*	5.1kWh	10.2kWh
Usable Energy(DC)*	4.7kWh	9.4kWh
Max Charge Power	5.12kW	10.2kWh
Max Discharge Power	7.68kW	10.2kWh
Peak Power(Only Discharge)	8kW for 3s	8kW for 3s
Voltage	48~56Vd.c	
Nominal Voltage	51.2Vd.c	
Max. Charge Voltage	57.6Vd.c	
Max Discharge Current	150A	150A
Max Charge Current	100A	120A
Weight	46kg	88kg
Dimension(mm) (L*W*H)	442*165*535mm	442*165*920mm
Max.recommended DOD	93%	
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 convection	
Case Material	Metal	
Color	Black or White	
Installation	Wall/Ground/Rack Mounting	
IP rating	IP 20	
Protective Class	I	
Max. Connection Number	16P	
Warranty	10 years	
Life Cycle	6000, @25℃	
Communication	CAN/ RS485	
Protection Mode	Dual hardware protection	
Battery Protection	Over-current/Over-voltage/Short circuit/ Under-voltage/Over temperature	
Safety	Cell UL 1973	
	CE	
Hazardous Material classification	9	
Transportation	UN 38.3	

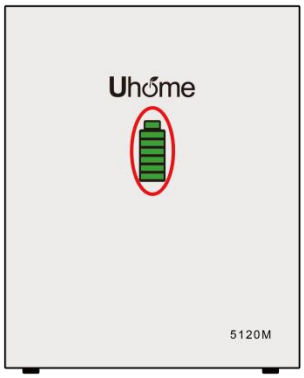
Testing conditions based on temperature 25℃ at the beginning of life.

*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 LED indicators on the front of the battery to show its operating status.

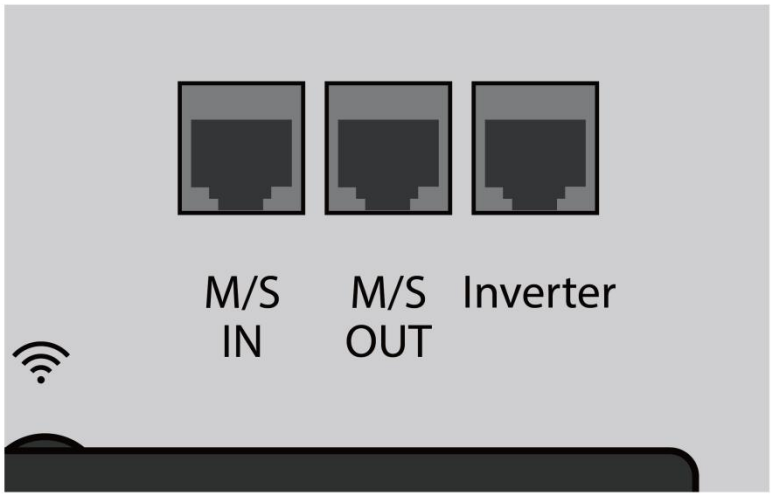


Item	Designation	Definition
1	SOC	Showing the SOC of battery

3.2.2 Ports

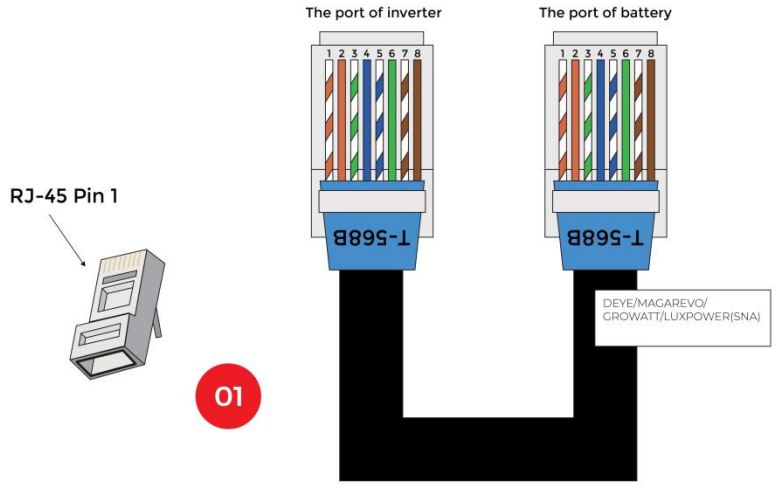
The power cable interface and communication cable interface.

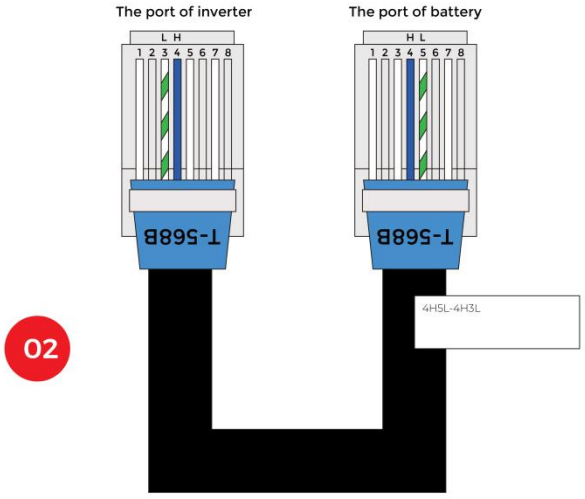
3.2.3 Communication Interface

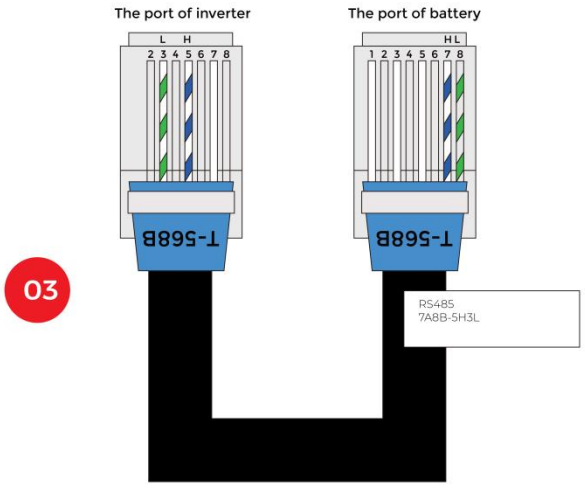


Designation	Definition
M/S IN	Communication between batteries-‘in’ port
M/S OUT	Communication between batteries-‘out’ port
Inverter	Communication between master battery and inverter

The communication cables of battery and inverter is showing as below:



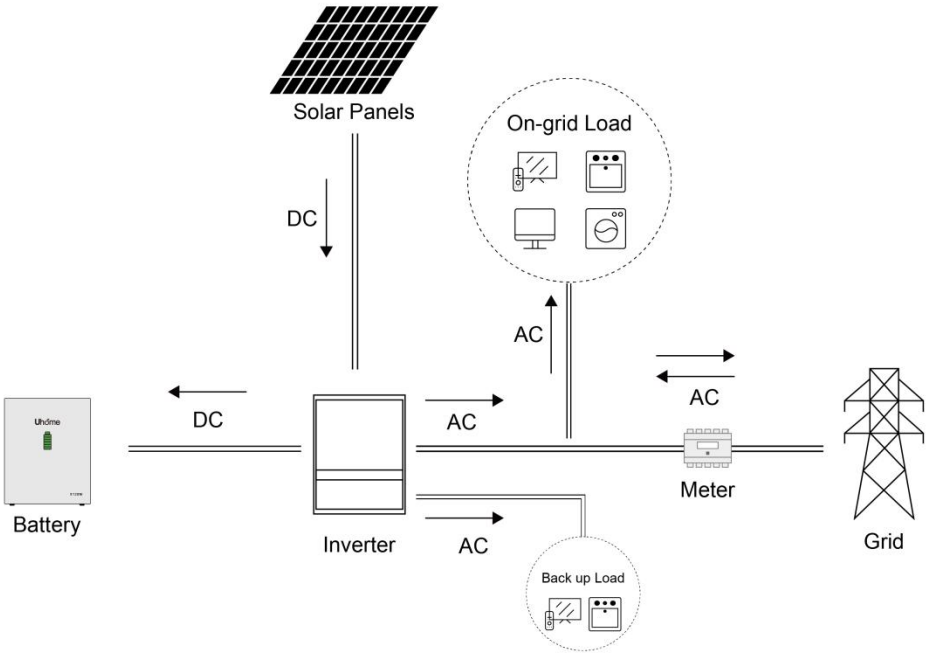




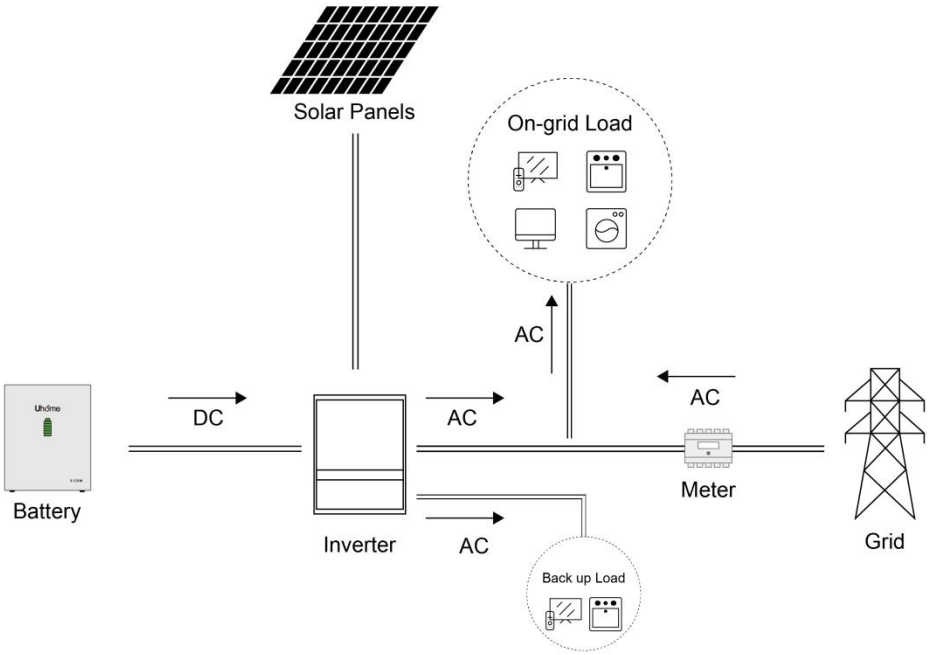
Items	Inverters
01 4H5L	SOFAR
	SOLIS
	GOODWE
	LUXPOWER(TEK)
	MAGAREVO
	DEYE
	Thinkpower
	TBB
	Sermatec
	Growatt
	Afore
	SMA
	Sol-ark
	AISWEI
02 4H3L	LuxPower(Old)
03 RS485 5A3B	Voltronic
	EPEVER

3.3 Solution of Uhome

DAY TIME



NIGHT TIME



3.4 Feature

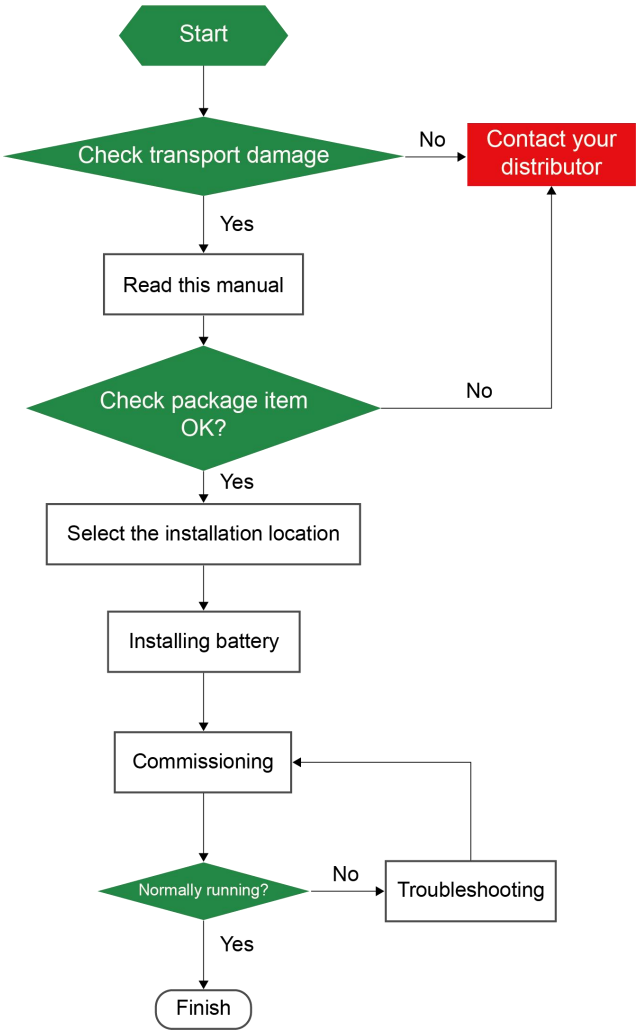
The Uhome Energy Storage battery has following features:

- **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℃ 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

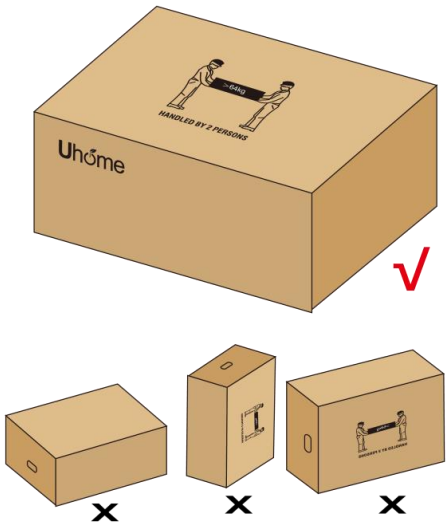
When dealing with the battery, following safety gears should be equipped. Installers must meet the relevant requirements of IEC 62040 and IEC 62619 or the domestic legislation and other relevant international standards.

		
Insulated glove	**Safety goggles**	**Safety shoes**

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 Checks before Installation

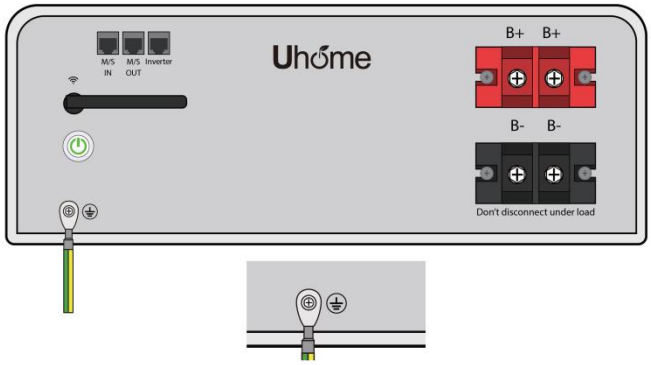
There are few things to check before installing the battery to ensure that it has no defects.

- 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.

5.2 Battery Installation

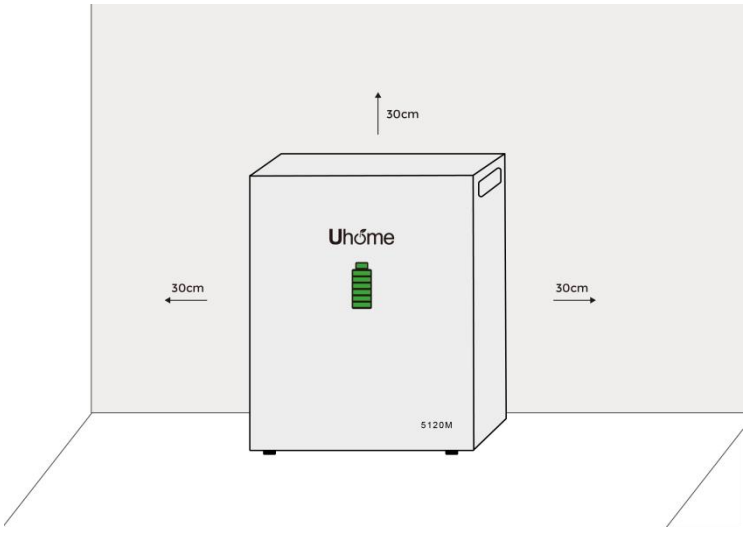
There is a grounding icon on the front of the battery:

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

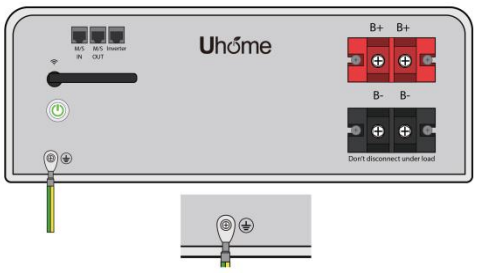


5.2.1 Ground Installation

1. Place the battery in the right place **(the details about installation position described in chapter 4.2).**

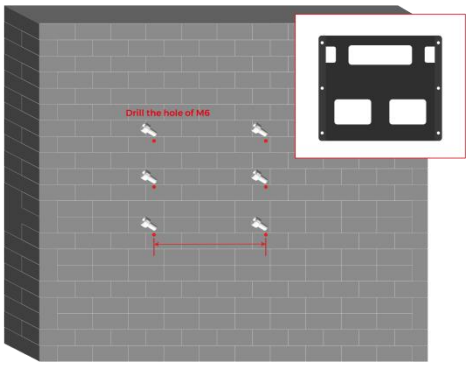
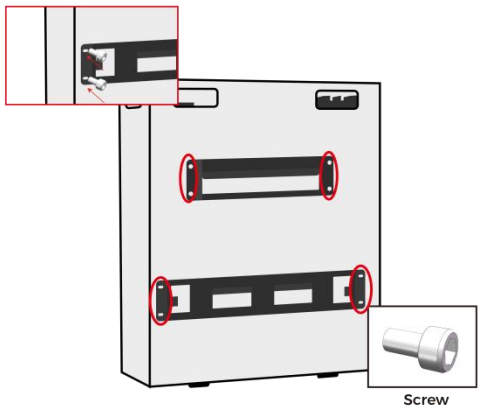
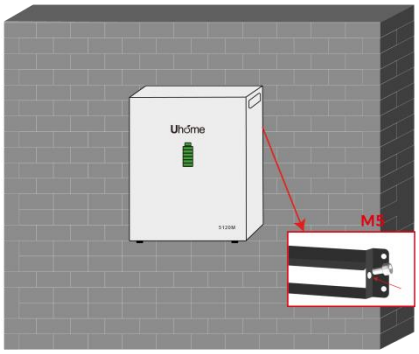
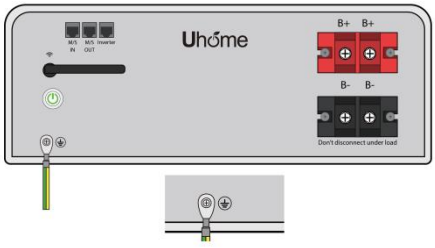


2.Connecting the ground cables



NOTICE
If more batteries are installed, the support feeds are recommended to use.

5.2.2 Wall Mounting

1.Drill holes of M6 in the wall according to the distance of the holes in the bracket.	2.Install the screws of M6 between the bracket and the battery.
	
3.Putting the battery on the bracket,and fixing the M5 screws of the side of bracket.	4.Connecting the ground cables.
	

5.3 Cable Connections of the Battery

WARNING
Connect cables in accordance with local installation laws and regulations. Before connecting cables, ensure that the battery and relative devices are **OFF**. Otherwise, the high voltage of the battery may result in electric shocks. **Our products have auto wake up function built in BMS, so the batteries can wake up automatically if the DC side of inverters has more than 1V voltage.** **After shutting down all devices, use a multimeter to measure the voltage on the DC side of the inverter, make sure the voltage below the 1V.** **It's recommend to install the DC breaker between the batteries and inverter.**

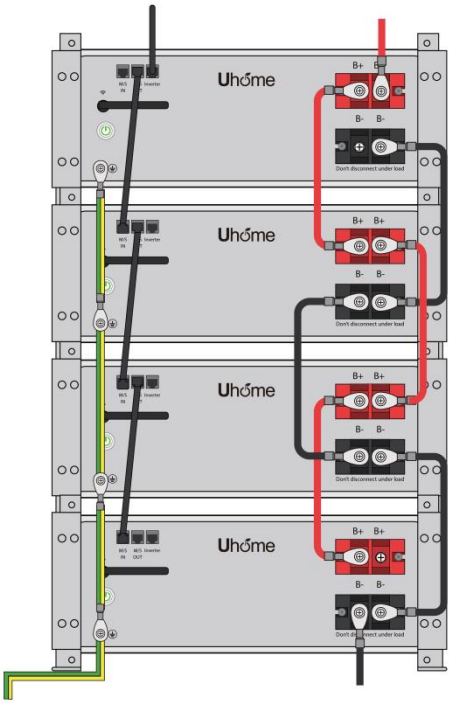
5.3.1 Parallel Connection

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.

*** Ground mounting**

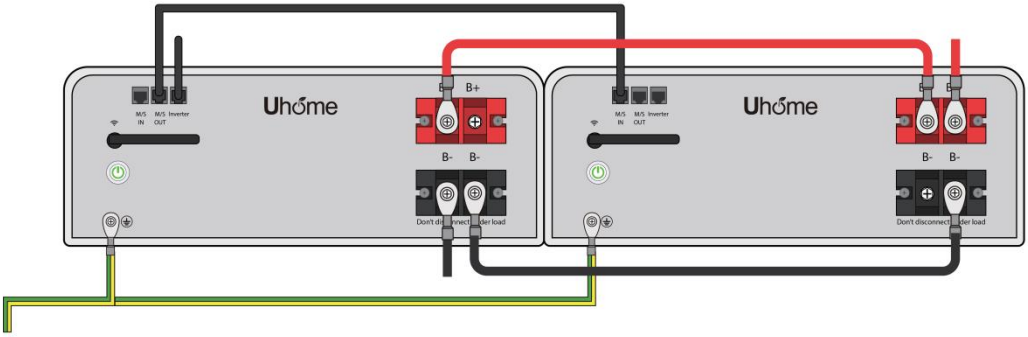
1. Connect all the communication cables and power cables showing as below.

NOTICE
Notice the M/S IN and M/S OUT of the battery. It will result in communication failed if the connection is wrong.

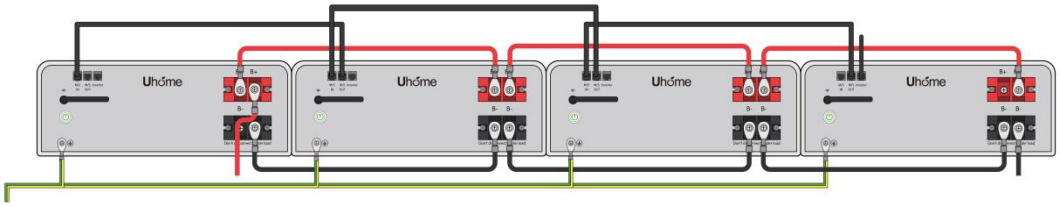


*** Wall mounting**

1. Two batteries installed.



2. Four batteries installed.



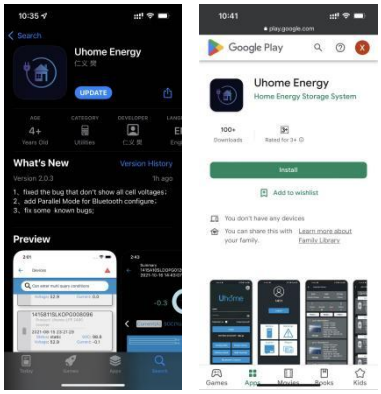
NOTICE
For wall mounting, the number of batteries should be less than 4. If more batteries are installed, a cabinet is recommended to use.

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.

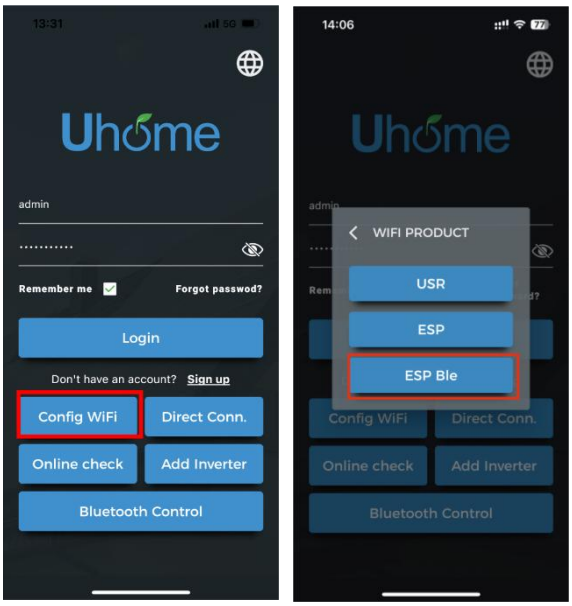


6.2 Configure Battery WIFI

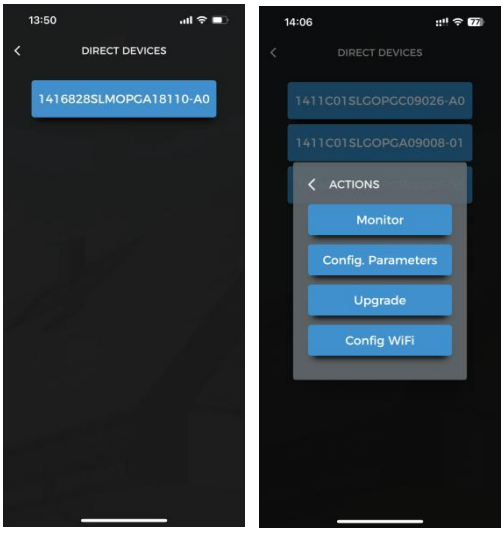
The battery has a built-in WIFI module for use with the App.

1. Turn on the battery and the green light on is showing in the battery. **The connection must be completed within 5 minutes of the battery is being turned on.**

2.Select **'Config WIFI'**, and select **'ESP Ble'**.



3. Select the correct SN code of battery and connect, showing as below:



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

NOTICE
Make sure the WIFI connected is 2.4GHz, if not, that is not work.

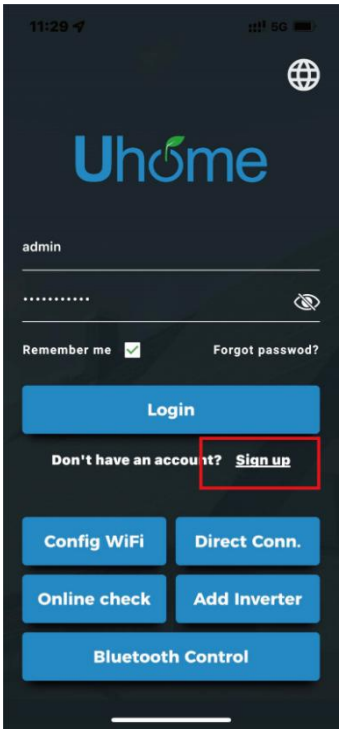
NOTICE
If the WIFI cannot be set or there is no WLAN accessible, the battery can still operate normally.

6.3 Register Account

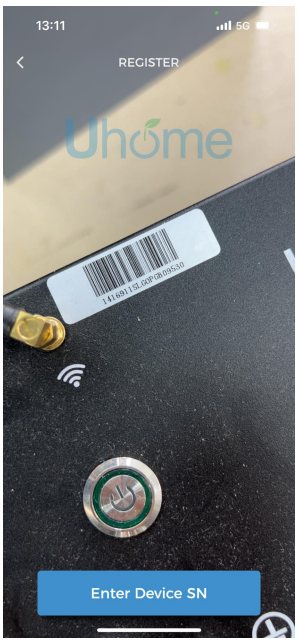
NOTICE
The Uhome battery could be registered only one time.

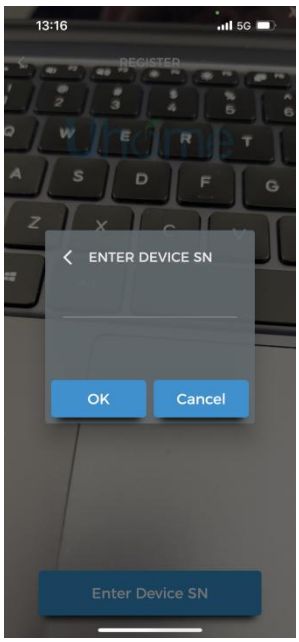
NOTICE
The Uhome battery running is not associated with registration or not.

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

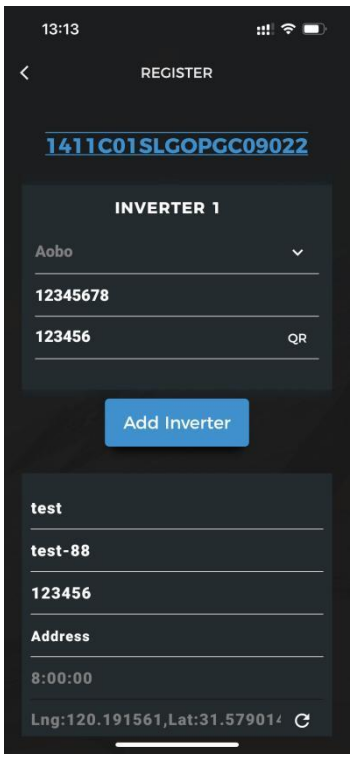


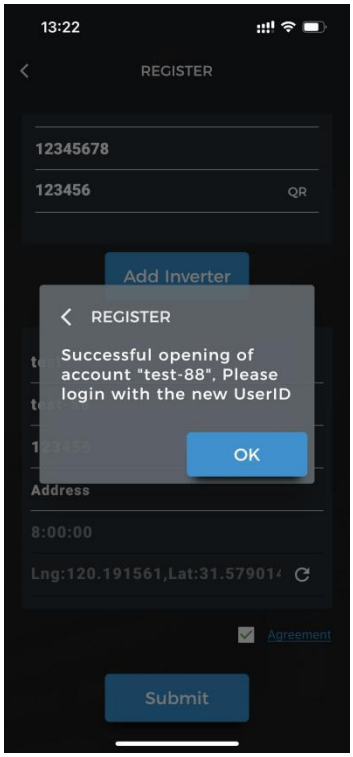
2. Scan the device QR code or enter the device SN manually, as show in the pics:



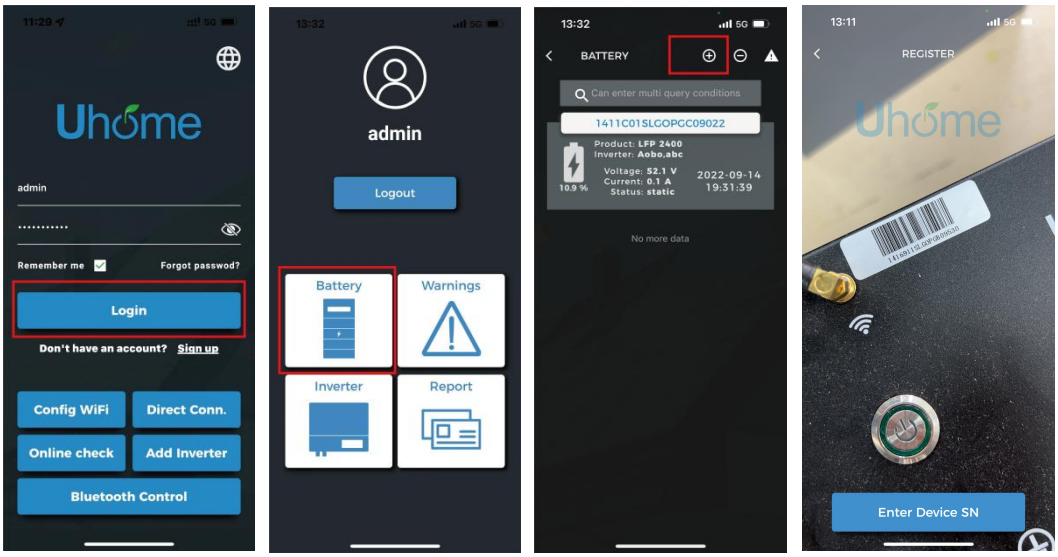


3. Registration completion pop up after select inverter manufacturer and enter battery information.





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 the button on the upper side of the unit until 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 the button on the upper side of the unit until the indicator lights 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 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 the whole lights are off.

8.Firmware Update

If you need to upgrade the BMS software version, please contact the after-sales staff.

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