



EHA05-(5-20)

QUICK INSTALLATION GUIDE

RECHARGEABLE LITHIUM ION BATTERY SYSTEM

Version: 2023 V1



1 Safety Precaution

1.1 General Disclaimer

The information in this user manual is subject to change due to product updates or other reasons. This guide cannot replace the product labels or the safety precautions in the user manual unless otherwise specified. All descriptions in the manual are for guidance only. Before installations, read through the quick installation guide. For additional information, please see the user manual. All installations should be performed by trained and knowledgeable technicians who are familiar with local standards and safety regulations. Check the deliverables for correct model, complete contents, and intact appearance. Contact after sales service if any damage is found or any component is missing. Use insulating tools and wear personal protective equipment (PPE) when operating the equipment to ensure personal safety. Wear anti-static gloves, cloths, and wrist strips when touching electron devices to protect the equipment from damage. Strictly follow the installation, operation, and configuration instructions in this guide and relative user manual. The manufacturer shall not be liable for equipment damage or personal injury if you do not follow the instructions. For more warranty details, please visit: <https://www.leaptonpv.com>.

1.2 Safety Disclaimer

Instructions during Installation

- The battery system is a high voltage system. High voltage exists when the equipment is running. Please keep Power Off before any operations to avoid danger. Strictly follow all safety precautions outlined in this manual and safety labels on the equipment during the operation.
- The inverter used with the battery shall be approved by the battery manufacturer. The approved list of batteries and the matched inverter can be obtained through the official website.
- Do not disassemble, modify, or replace any part of the battery or the power control unit without official authorization from the manufacturer. Otherwise, it will cause electrical shock or damages to the equipment, which shall not be borne by the manufacturer. Do not hit, pull, drag, squeeze or step on the equipment or put the battery into fire. Otherwise, the battery will be exploded.
- Do not place the battery in a high temperature environment. Make sure that there is no heat source near the battery and no direct sunlight. When the ambient temperature exceeds 60 C. it will cause a fire.
- Do not use the battery or the power control unit if it is defective, broken, or damaged. The damaged battery may leak electrolyte.

- To protect the battery pack and its components from damage during transportation, please ensure that the transportation personnel are professionally trained. All operations during the transportation have to be recorded. The equipment shall be kept in balance, thus avoiding falling down.
- The battery equipment is heavy. Please equip the corresponding personnel according to its weight, so that the equipment does not exceed the weight range of the human body can carry, and smash the personnel.
- Contact after-sale service immediately if the battery is not able to be started. Otherwise, the battery might be damaged permanently.
- Do not move the battery system if it is connected with external battery modules. Contact after-sale service if the battery shall be replaced or added.

Emergency Measures

Battery Electrolyte Leakage













If the battery module leaks electrolyte, avoid contact with the leaking liquid or gas. The electrolyte is corrosive. It will cause skin irritation or chemical burn to the operator. Any one contacts the leaked substance accidentally has to do as following:

- Breath in the leaked substance: Evacuate from the polluted area, and seek immediate medical assistance.
- Eye contact: Rinse your eyes for at least 15 minutes with clean water and seek immediate medical assistance.
- Skin contact: Thoroughly wash the touch area with soap and clean water, and seek immediate medical assistance.
- Ingestion: Induce vomiting, and seek immediate medical assistance.

Fire

- The battery may explode when the ambient temperature exceeds 150°C. Poisonous and hazardous gas may be released if the battery is on fire.
- In the event of a fire, please make sure that the carbon dioxide extinguisher or Novac1230 or FM-200 is nearby.
- The fire cannot be put out by water or ABC dry powder extinguisher. Firefighters are required to wear full protective clothing and self-contained breathing apparatus.

1.3 Label Description

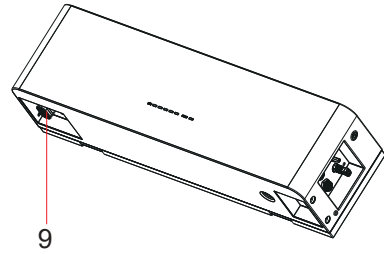
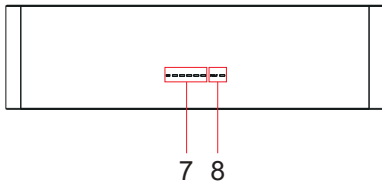
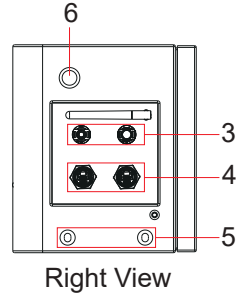
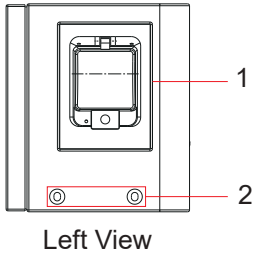
	Potential risks exist. Wear proper PPE before any operations.		Do not place at the children and pet touchable area.
	HIGH VOLTAGE HAZARD. High voltage exists during the equipment's running. Ensure the equipment is powered off before any operations.		Do not reverse connection the positive and negative.
	Operate the equipment properly to avoid explosion danger.		Label for Waste Electrical and Electronic Equipment (WEEE) Directive (2012/19/EU)
	Batteries contain flammable materials, beware of fire.		Recycle label
	Read the product and operation manual before operating the battery system		CE Marking
	Read the product and operation manual before operating the battery system		The certificate label for Safety by TÜV NORD

1.4 Check Before Power On

NO.	Check Item
1	The battery is firmly installed in a clean place where is well-ventilated and easy to operate.
2	The PE cable, power cable, communication cable, and the terminal resistors are connected correctly and securely..
3	Cable ties are intact, routed properly and evenly.
4	Unused ports and terminals are sealed.

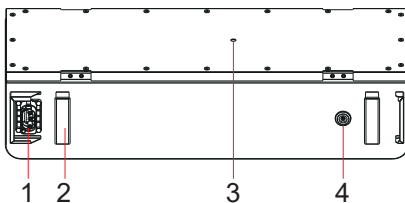
2 Product Introduction

Parts Introduction(PCU)



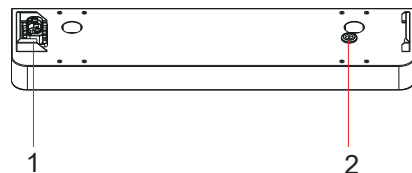
- | | | |
|---------------------------|---------------------------|--------------------------|
| 1. Circuit Breaker | 2. Left Battery Mounting | 3. DC Terminal |
| 4. Communication Terminal | 5. Right Battery Mounting | 6. Button Indicator |
| 7. SOC Indicator | 8. Fault Indicator | 9. Rectangular Connector |

Parts Introduction(Battery)



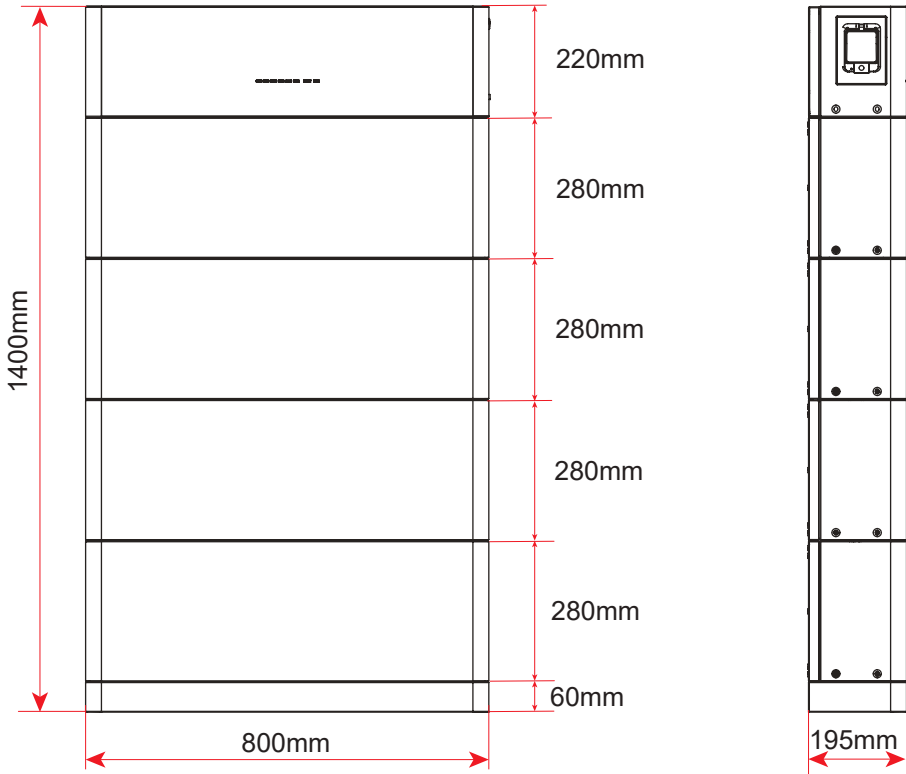
- | | |
|--------------------------|------------------------|
| 1. Rectangular Connector | 2. Battery Orientation |
| 4. Ventilation Valve | |

Parts Introduction(Base Support)



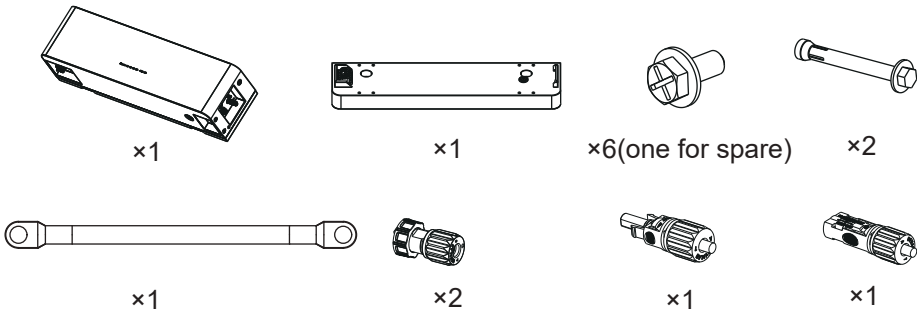
- | |
|-------------------|
| 3. Lifting Handle |
|-------------------|

Dimension

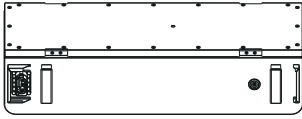


Battery System Installation

Deliverables(PCU)



Deliverables(Battery)



x1



x2



x2



x10

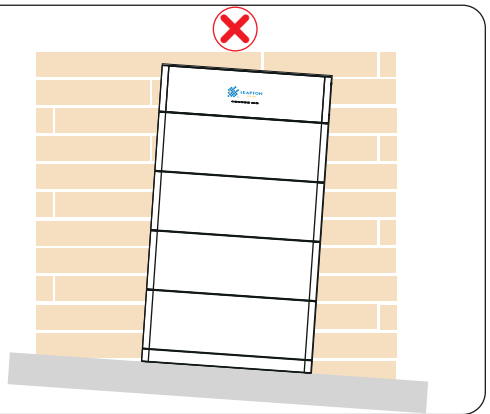
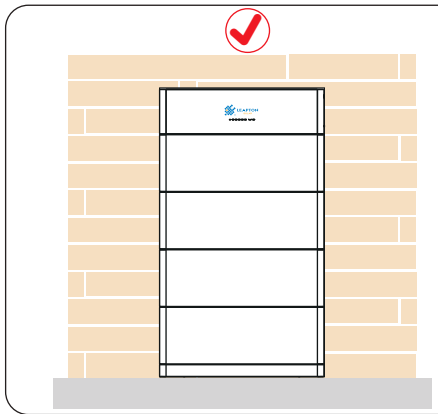
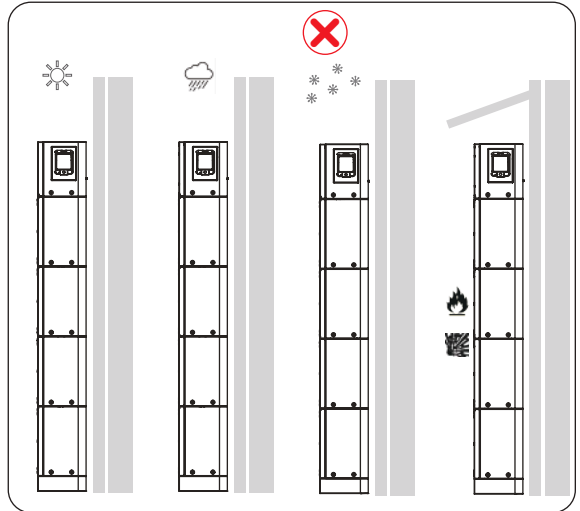
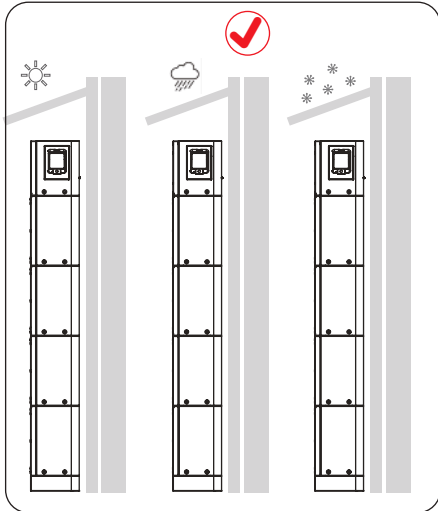


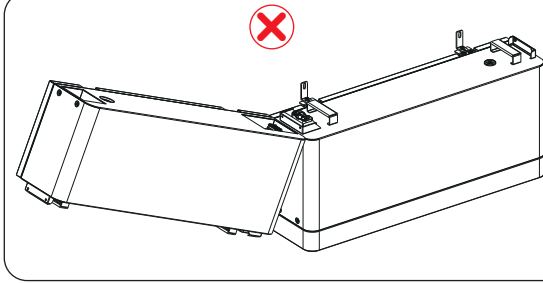
x2

3 Device Installation

3.1 Installation Requirements

Installation Environment



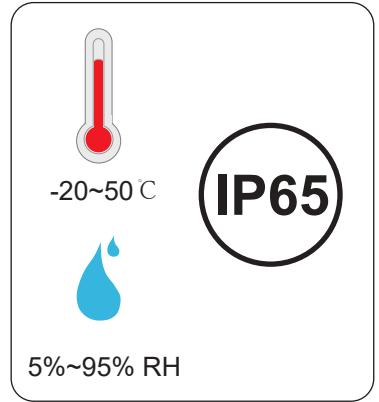
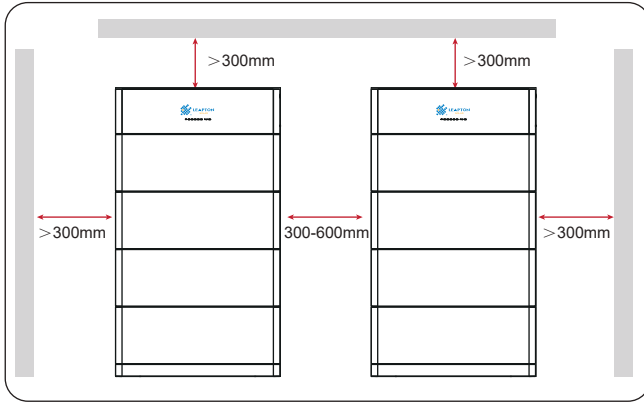
**DANGER**

If a battery pack is dropped or violently impacted during installation, internal damage may occur. Do not use such battery packs; otherwise, safety risks such as cell leakage and electric shock may arise.

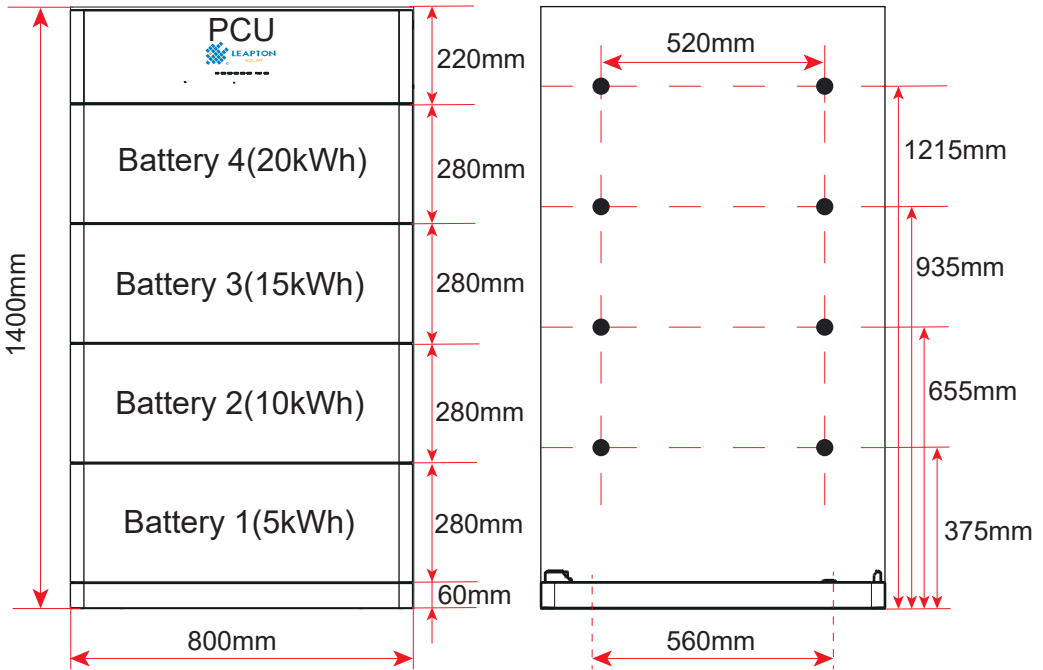
Installation Environment Requirements

- The installation and use environment must meet relevant international, national, and local standards for lithium batteries, and are in accordance with the local laws and regulations.
- Ensure that the battery is not accessible to children and away from daily working or living areas, including but not limited to the following areas: studio, bedroom, lounge, living room, music room, kitchen, study, game room, home theater, sunroom, toilet, bathroom, laundry, and attic.
- When installing the battery in a garage, keep it away from the drive way. It is recommended that the battery be mounted on the wall higher than the bumper to prevent collision.
- When installing the battery in a basement, keep good ventilation. Do not place flammable or explosive materials around the battery. It is recommended that the battery be mounted on the wall to avoid contact with water.
- Install the battery in a dry and well-ventilated environment. Secure the battery on a solid and flat surface.
- Install the battery in a sheltered place or install an awning over it to avoid direct sunlight or rain.
- Install the battery in a clean environment that is free from sources of strong infrared radiation, organic solvents, and corrosive gases.
- For areas prone to natural disasters such as floods, debris flows, earthquakes, and typhoons/hurricanes, take corresponding precautions for installation.
- Keep the battery away from fire sources. Do not place any flammable or explosive materials around the battery.
- Keep the battery away from water sources such as taps, sewer pipes, and sprinklers to prevent water seepage.
- Do not install the battery in a position where it is easy to touch as the temperature of the chassis and heat sink is high when the battery is running.
- To prevent fire due to high temperature, ensure that the vents and the cooling system are not blocked when the battery is running.
- Do not expose the battery to flammable or explosive gas or smoke. Do not perform any operation on the battery in such environments.
- Do not install the battery on a moving object, such as ship, train, or car.
- In backup power scenarios, do not use the battery for the following situations: a. Medical devices substantially important to human life. b. Control equipment such as trains and elevators, which may cause personal injury. c. Computer systems of social and public importance. d. Locations near medical devices. e. Other devices similar to those described above.
- Do not install the battery outdoors in salt-affected areas because it may corrode. A salt-affected area refers to the region within 500 meters from the coast or prone to sea breeze. The regions prone to sea breeze vary with weather conditions (such as typhoons and monsoons) or terrains (such as dams and hills).

Installation Space



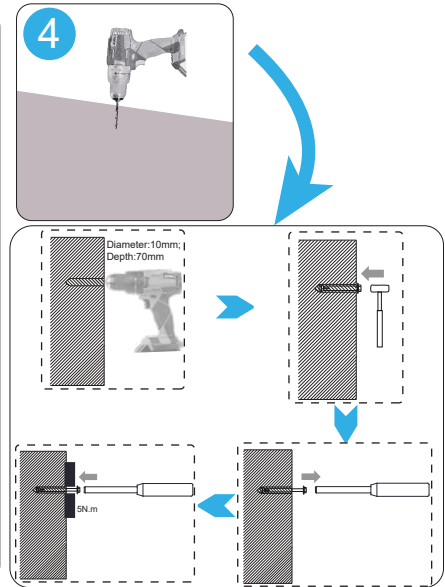
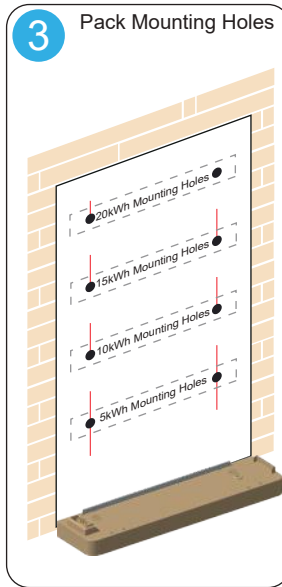
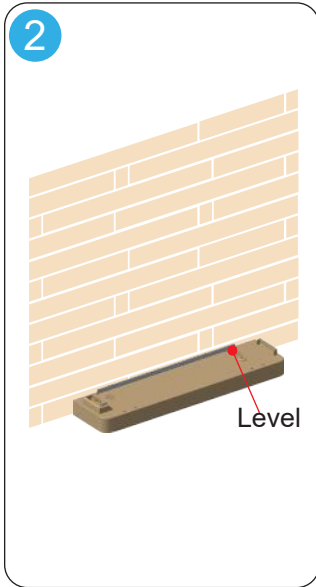
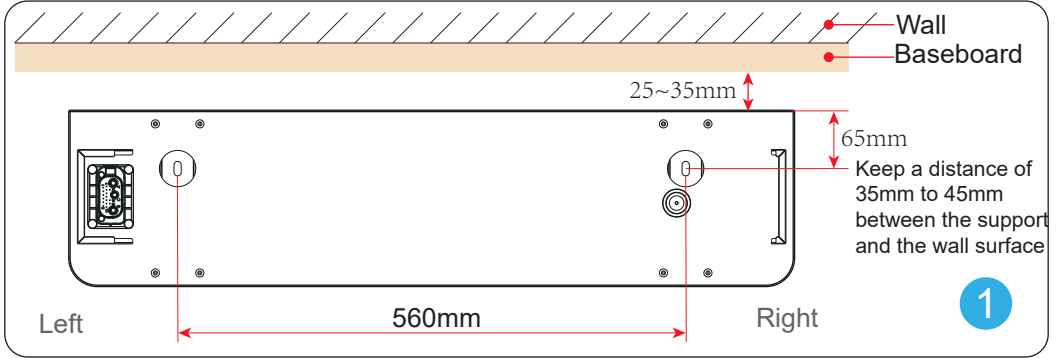
Installation Space



DANGER

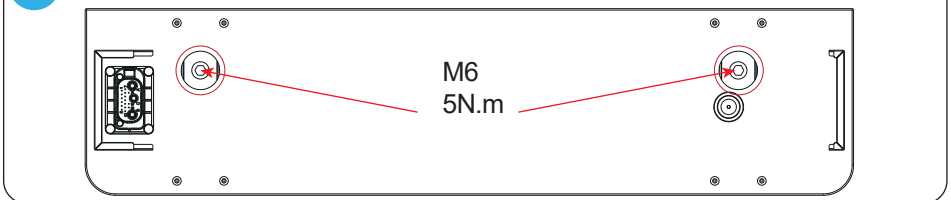
Avoid drilling holes in the water pipes and cables buried in the wall.

3.2 Installation the Base Support



The M6x70 expansion bolts delivered with the battery are mainly used for solid concrete walls and concrete floors. If other types of walls and floors are used, ensure that the walls and floors meet the load-bearing requirements (one battery module weighs 55 kg) and select the bolts by yourself.

5 Secure the Base Support

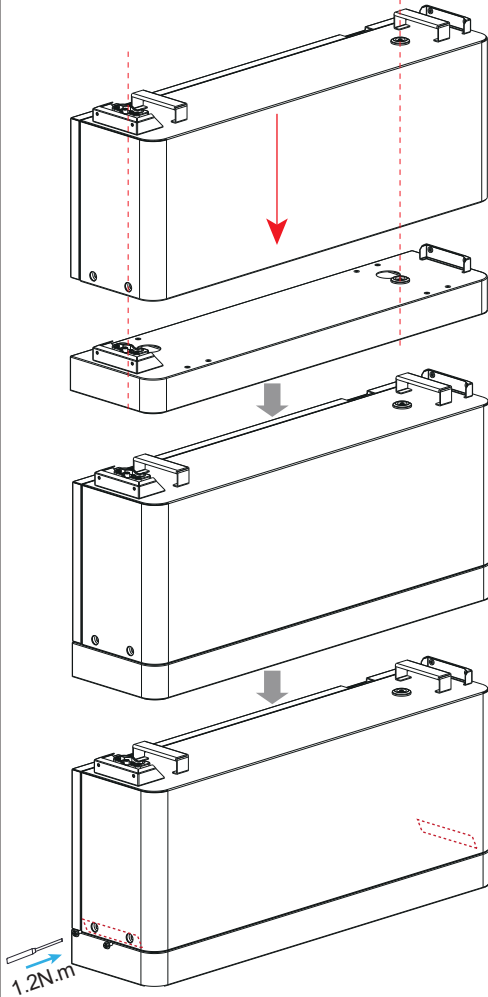


3.3 Installing Battery

NOTICE

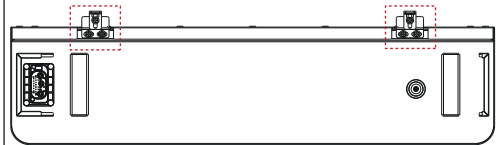
- The following describes how to install the battery expansion modules for a 20kWh model.
- The installation of battery for 5kWh, 10kWh and 15kWh models is the same. One battery expansion module is installed for a 5kWh model, two battery expansion modules are installed for a 10kWh model, three battery expansion modules are installed for a 15kWh model.

- 1** Align the first battery module with the support on the base support.

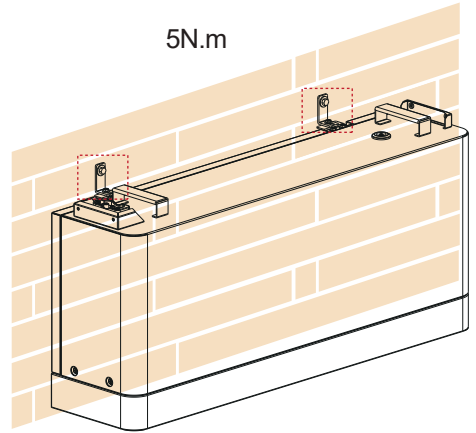


Tighten the four screws on both sides

- 2** Secure the first battery module to the wall.



5N.m

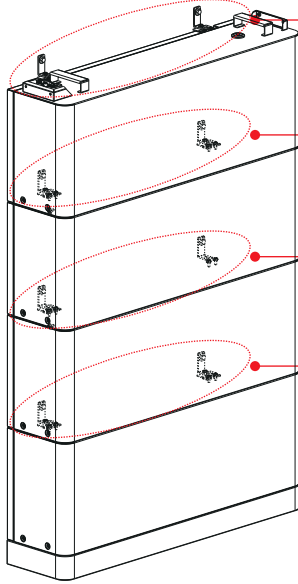


You can adjust the two connecting pieces vertically to align with the screw holes.

NOTICE

You need to secure the left and right screws on both sides first.

3

**NOTICE**

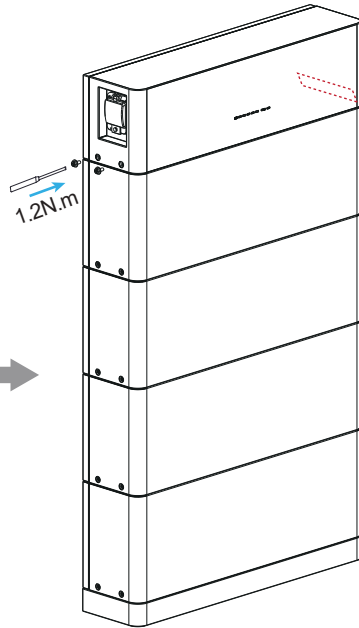
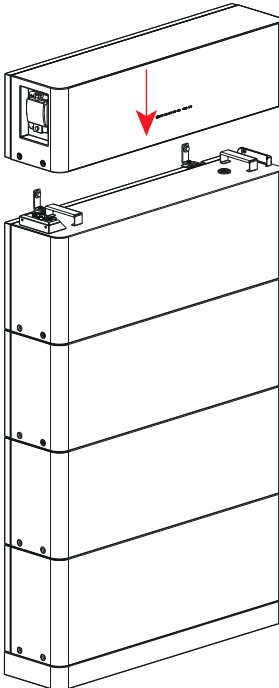
The top battery module must be secured to the wall.

Secure the battery modules in the middle to the wall. (Optional)

Install the remaining battery modules and power control unit from bottom to top. **After installing a module, secure the left and right mounting holes, and then install secure the battery to the wall.**

4

Secure the PCU to the battery



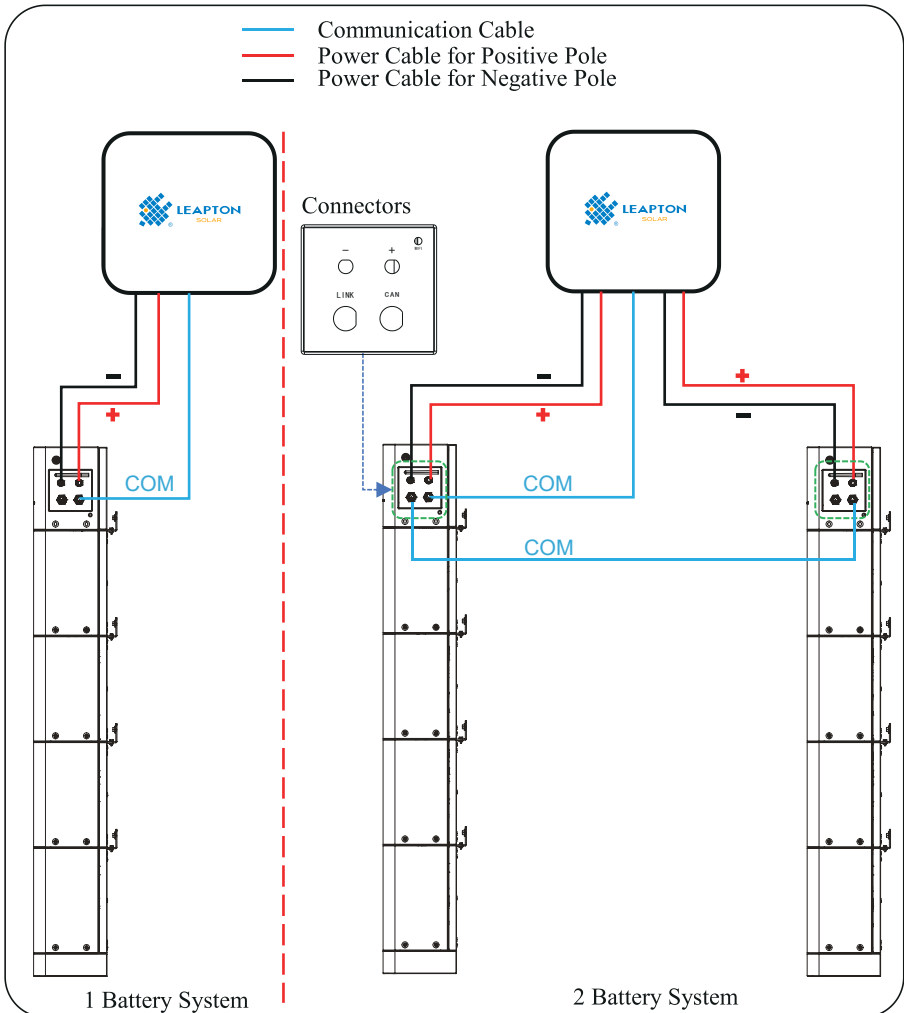
Tighten the four screws on both sides

4 Electrical Connection

DANGER

- Connect cables in accordance with local installation laws and regulations.
- Before connecting cables, ensure that the air switch on the PCU is set to OFF. Otherwise, the high voltage of the battery may result in electric shocks.

4.1 Wiring Diagram for battery system

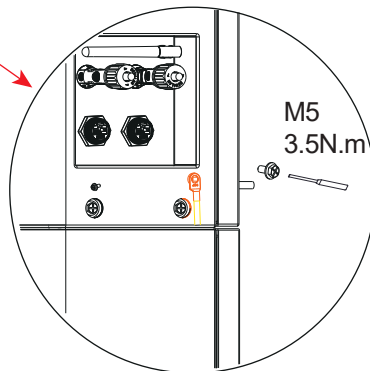
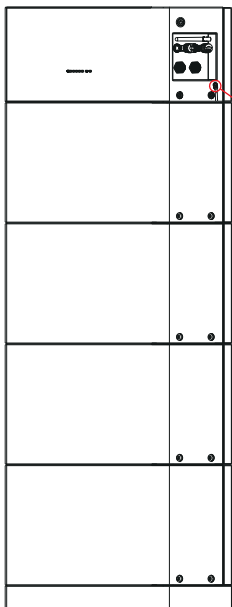
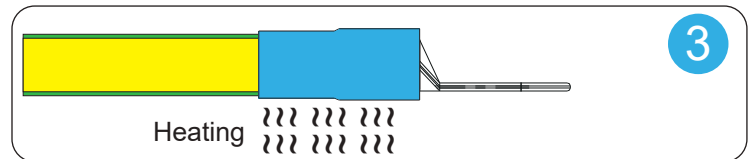
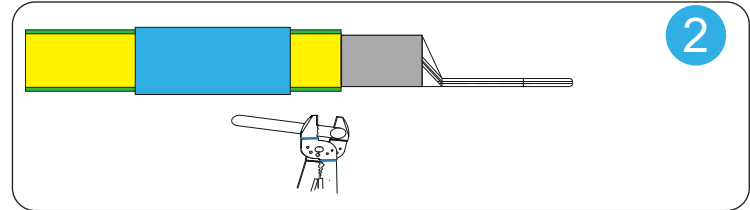
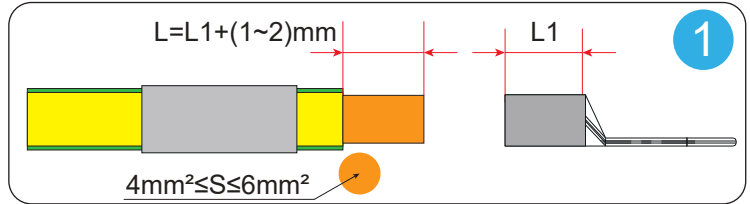


4.2 Connecting the PE Cable

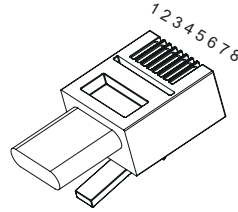
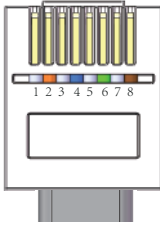
NOTICE

If the PE cable in the delivables cannot match the installation environment. The PE cable can be prepared by the customer. Recommended specifications:

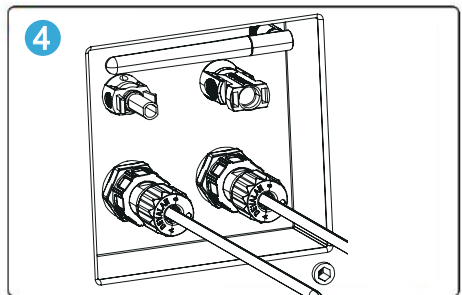
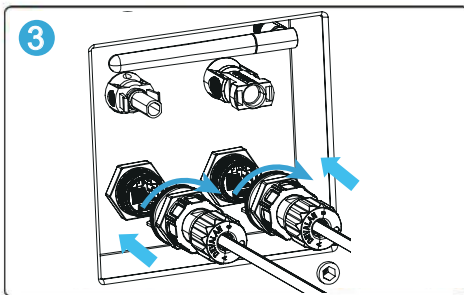
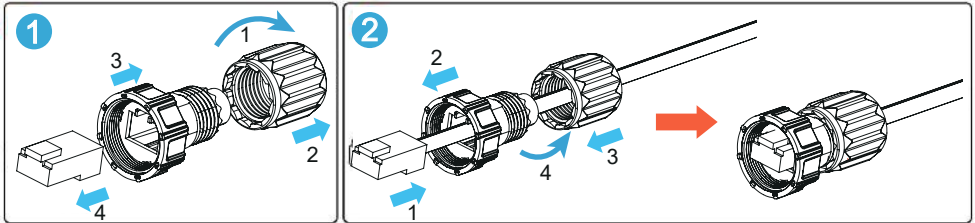
- Type: single-core outdoor copper cable
- Cross-sectional area: 4-6mm



4.3 Connecting the Communication Cable

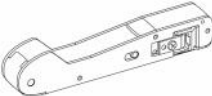

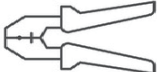




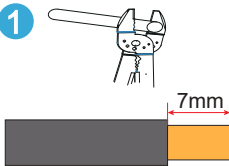
PIN	CAN	LINK	Description
1	CAN_GND2	CAN_GND2	BMS communication for battery system parallel connection
2	Addr_IN	Addr_OUT	
3	CANH2	CANH2	
4	CAN3H	/	Connects to the invert BMS communication port to communication with the invert
5	CAN3L	/	
6	CANL2	CANL2	BMS communication for battery system parallel connection
7	/	/	/
8	/	/	/



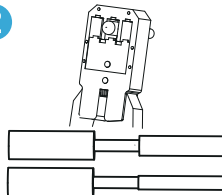
4.4 Connecting the Power Cable

Tools:

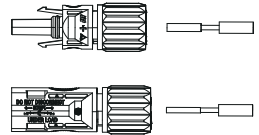
Crimp tool for cold forming contact (for 10mm ² contact)	
Crimping die for cold forming contact (for 10mm ² contact)	
Strip tool for 6mm ² PV cable	
Wrench tool for D4 Cable connector	
Open-end back cap spanner for D4	

1


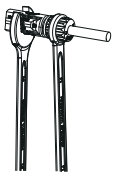
Strip the insulating layer of cable. $L=7\pm 0.5\text{mm}$;
 $S=10\text{mm}^2$;
 Be attention and not to cut off the wire core.

2


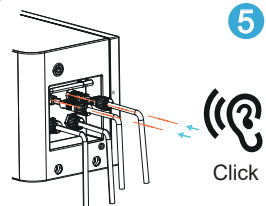
Rivet terminal. Ensure the concentricity of metal parts and cable at same level, crimped metal parts and cable pull tension $\geq 310\text{N}$.

3


Push the riveted pin into the insulator until they engage. Pull lightly on the lead to check that the metal part has engaged.

4


Install the cable gland. First screw it by hands, then lock tightly by plastic spanner (pls refer the gap sheet for detailed gap from page one). Ensure the concentricity of cable and cable gland when screw cable gland. Cable gland is detachable, original factory plastic spanner can assembly in site, but not suitable for mass quantity assembly.

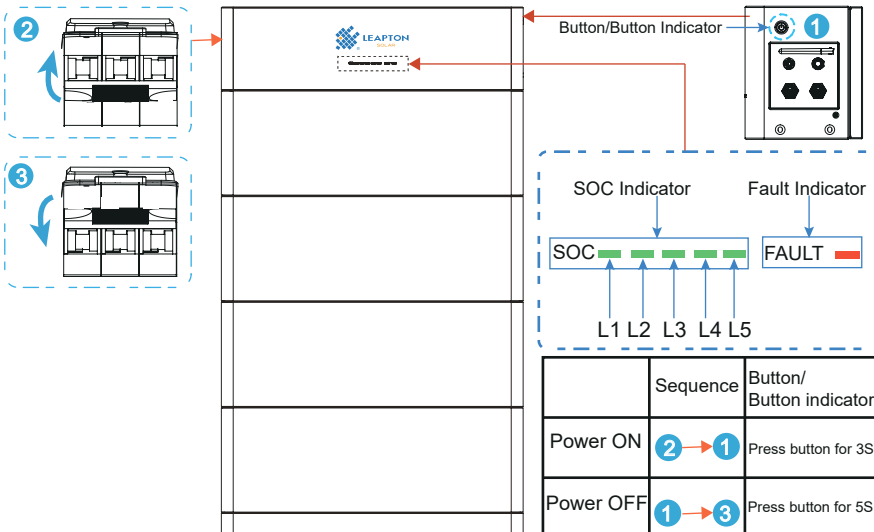
5


5 Verifying the Installation

















NO.	Acceptance
1	The battery is installed correctly and securely.
2	The cables are routed properly as required by the customer.
3	Cable ties are secured evenly and no burr exists.
4	The ground cable is connected correctly and securely.
5	The battery switch and all switches connected to the battery are OFF.
6	The DC input power cables and signal cables are connected correctly and securely.
7	Idle terminals and ports are locked by watertight caps.
8	The installation space is proper, and the installation environment is clean and tidy.

6 Power ON and OFF

6.1 Battery System ON and OFF



6.2 Indicator Status

Type	SOC Indicator	FAULT Indicator	Meaning
Running indication	SOC 	FAULT 	Power on
	SOC 	FAULT 	Power off
	According to the fault referring to the table 4.2	Steady red	Battery system alarm
	According to the SOC, Steady green	Blinking red	Communication Fault between battery system and PCS
SOC Indicator	SOC 	FAULT 	0% SOC, Power OFF
	SOC 	FAULT 	0~20% SOC, Power OFF
	SOC 	FAULT 	20~40% SOC, Power OFF
	SOC 	FAULT 	40~60% SOC, Power OFF
	SOC 	FAULT 	60~80% SOC, Power OFF
	SOC 	FAULT 	80~100% SOC, Power OFF

6.3 Download APP

Method 1: Search for Leapton Air on App Store or Google play and download the latest installation package;

Method 2: Access <https://leapton.inteless.com> using the mobile phone or PC browser and download the latest installation package.

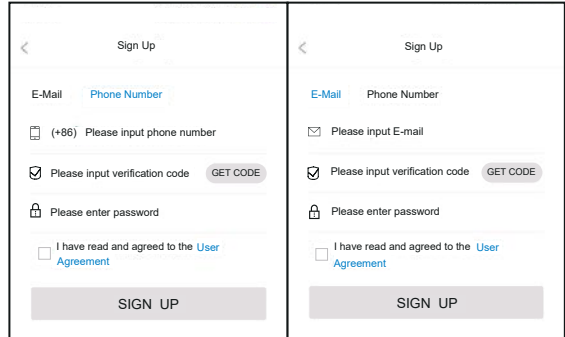
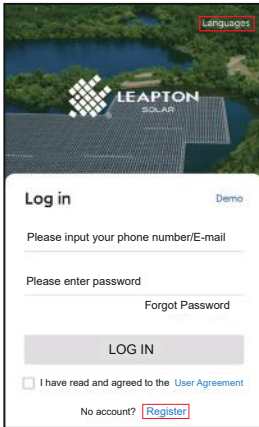


Method 3: Scan the following QR code on the PCU and download the latest installation package.

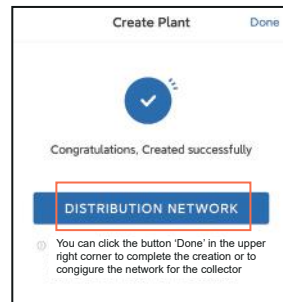
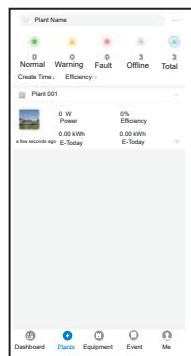
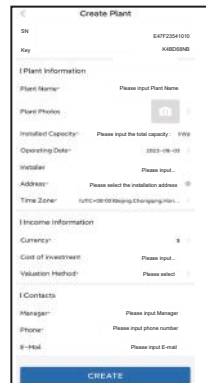


6.4 Battery Deployment

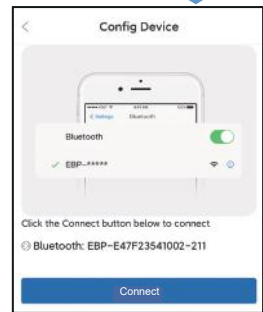
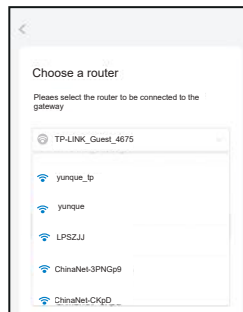
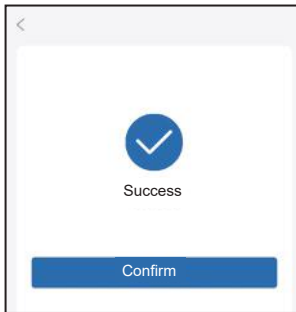
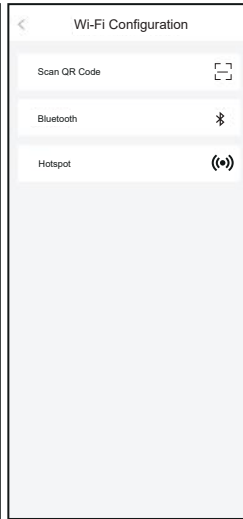
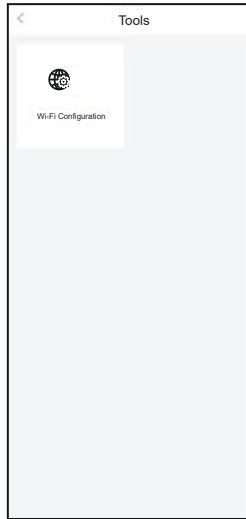
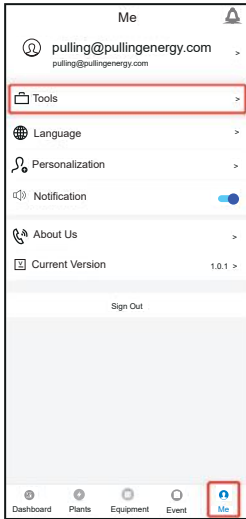
1 Account registration and fill in the information



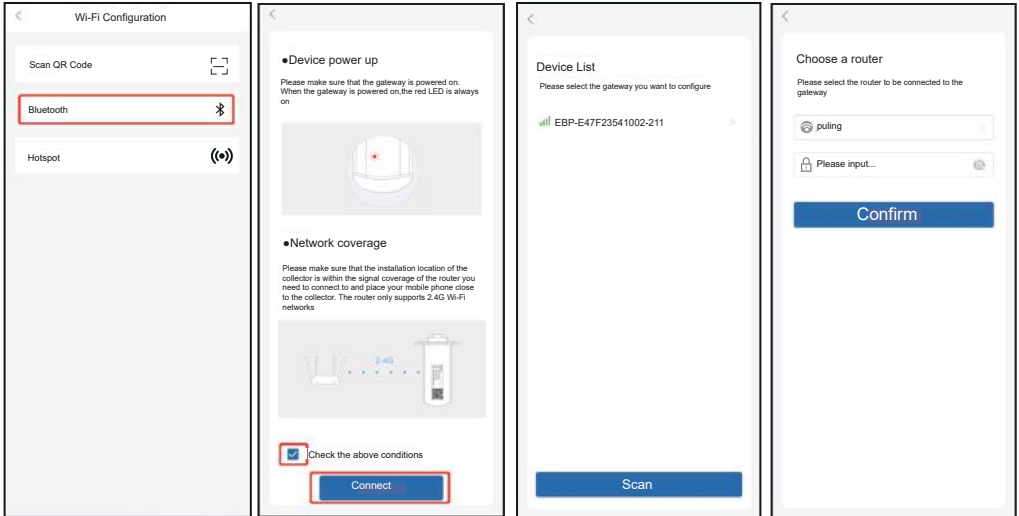
2 Create plant




3


Equipment network- Connect the collector with QR


3

Equipment network- Connect the collector with bluetooth

Wi-Fi Configuration


Scan QR Code 

Bluetooth 

Hotspot 


•Device power up

Please make sure that the gateway is powered on.
When the gateway is powered on, the red LED is always on



•Network coverage

Please make sure that the installation location of the collector is within the signal coverage of the router you need to connect to and place your mobile phone close to the collector. The router only supports 2.4G Wi-Fi networks




Check the above conditions

Connect

Device List


Please select the gateway you want to configure


 EBP-E47F23541002-211

Scan

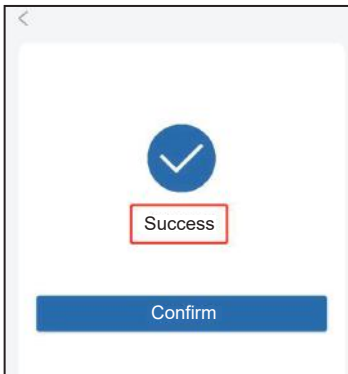
Choose a router


Please select the router to be connected to the gateway

 puling

 Please input...

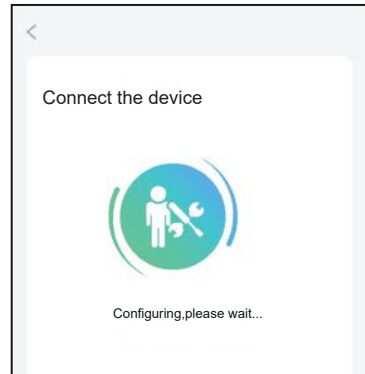
Confirm






Success

Confirm



Connect the device



Configuring, please wait...

Suzhou Lepton Energy Co., LTD

No. 9, Sunshine Avenue, Yushan High Technology Industry Zone, Changshu City, Jiangsu
Province, 215500 PR.China

FAX : 862-512-88800068 website : <https://www.leptonpv.com>