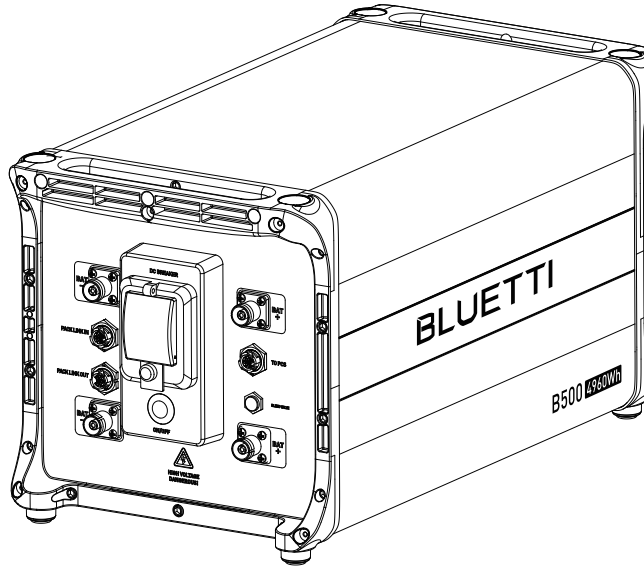
B500

User Manual V1.0

Please Read This Manual Before Use And Follow Its Guidance.
Keep This Manual For Future Reference.

BLUETTI



Thank You!

Thank you for making BLUETTI a part of your family.
From the very beginning, BLUETTI has tried to stay true to a sustainable future through green energy storage solutions for both indoor and outdoor use while delivering an exceptional eco-friendly experience for our homes and our world. That's why BLUETTI makes its presence in 100+ countries and is trusted by millions of customers across the globe.

Instruction

Notice

BLUETTI's products, services, and features are subject to the agreed-upon terms and conditions during purchase. Please note that some products, services, or features described in this manual may not be available under your purchase contract. Unless otherwise specified in the contract, BLUETTI makes no representations or warranties of any kind, express or implied, with respect to the contents of this manual.

The contents of this manual are subject to change without notice. Please get the latest version from BLUETTI official website.

If you have any questions or concerns about this manual, please contact BLUETTI customer service.

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About the Manual

Purpose

This user manual describes the installation, electrical connection, commissioning, maintenance and troubleshooting of B500 battery system. Please read and understand all instructions in this manual before use.

Target Audience

• Installation, operation, and maintenance technicians

Symbol Conventions

This manual uses the following symbols to highlight important information:

	**Danger** It indicates a hazardous situation which, if not avoided, will result in death or serious injury.
	**Warning** It indicates a hazardous situation which, if not avoided, could result in death or serious injury.
	**Caution** It indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
	**Attention** It indicates a potentially hazardous situation which, if not avoided, could cause substantial damage to property and the environment.
	**Instruction** It contains important additional information as well as useful tips for the safe, efficient, and hassle-free operation of the EP760 Hybrid Inverter

Contents

1. Safety Guideline

1.1 Safety Instructions

1.1.1. Disclaimer

Read this manual for instructions on the proper use and safety information for the unit.

Pay attention to the "Instruction", "Caution", "Warning" and "Danger" symbols in this manual, and follow the instructions carefully to avoid injury or damage.

The Safety Requirements provided herein are for illustrative purposes that include but are not limited to those listed in this manual. Actual operation shall comply with all applicable safety standards. If you have any questions, feel free to contact BLUETTI support or your local BLUETTI dealers.

To ensure a safe and reliable operation, it's crucial to carefully observe and adhere to the following conditions :

- Always operate or store the equipment in the conditions specified in this manual.
- The installation and ambient conditions must comply with the regulations in the relevant international, national or regional standards.
- Avoid unauthorized disassembly, equipment replacement, or modification of software codes.

BLUETTI shall not be liable for damages resulting from the following circumstances:

- Force majeure events such as earthquakes, fires, storms, floods, or mudslides.
- Damages caused by improper handling and installation that do not meet the requirements outlined in the manual.
- Damages resulting from inadequate storage conditions as specified in the manual.
- Hardware or data damage caused by customer negligence, improper operation, or intentional actions.
- System damage caused by third parties or customers.
- Adjustments, changes, or removal of labels in violation of this manual.
- Usage of the product in devices with high-performance UPS requirements, including but not limited to data servers, workstations, medical equipment, and others.

1.1.2 General Safety

Danger

Follow these guidelines for proper operation.

- Do not install, use and maintain the unit in adverse weather conditions such as lightning, rain, snow, and strong breezes (including but not limited to handling and operating the unit, plugging and unplugging signal connections to outdoor facilities, working at height, outdoor installations, etc.).
- Always turn off the power source before starting any electrical work.
- Do not clean the equipment with water.
- Do not disassemble, modify, tamper with, or repair the equipment on your own.
- Regularly inspect the unit and its accessories for damage.
- Use a tester to check for the presence of dangerous voltage before touching any conductor or terminal.
- If the equipment's shell is cracked during transportation or use, do not use it and contact BLUETTI support or your local BLUETTI dealers.
- Use a dry powder fire extinguisher if the equipment catches fire.
- In case of fire, EVACUATE the building or affected area immediately, activate the closest FIRE ALARM system and CALL your local emergency phone number.
- Use genuine cables and accessories provided by BLUETTI.
- Keep the unit away from heat sources or high temperatures, and do not expose it to direct sunlight.
- Do not store the equipment with flammable liquids, gases, or explosive materials.
- Make sure the place where you are using the equipment is well-ventilated and spacious.
- Do not block or cover the openings of the equipment, as this may cause irreversible damage to it.
- Use the equipment for its intended purpose and avoid stacking objects on top of it during storage or use.
- Do not move the unit during operation as the vibrations and shocks associated with movement may cause damage to the internal hardware.

- Turn off the equipment IMMEDIATELY in case of malfunction, and contact the BLUETTI support team if this manual cannot explain the malfunction adequately to you.
- Do not place the equipment on unstable or inclined surfaces.

Keep away from children and pets.

Comply with applicable laws and regulations.

Instruction

- The transportation, wiring and maintenance shall comply with all applicable laws, regulations and standards.
- User-provided materials and tools required shall meet the requirements specified in applicable laws, regulations and relevant standards.

1.1.3 Personnel Requirements

- The installation, commissioning, and maintenance should only be performed by trained professionals who follow proper safety precautions and operating practices.
- To operate BLUETTI equipment, professionals must possess the necessary qualifications and certifications required by local regulatory authorities for tasks like high-voltage operations, working at heights, and specialized equipment operations.

1.2. Installation Safety

Danger

- Avoid working with live electrical components.
- Before installation, double check the equipment for any signs of damage or defects to minimize potential risks.
- Make sure that the equipment and all associated switches are in the "OFF" position to prevent electric shock.
- Do not touch any terminal while the equipment is running, as it may pose a risk of electric shock.

Warning

- The installation should only be performed by qualified professionals or trained personnel.
- All cables should be securely connected and meet appropriate specifications.
- Do not touch the equipment, as the shell may become hot when it's running.

Attention

Handle the equipment and accessories with care during loading, unloading and transportation.

1.2.1 General Requirements

- Before starting any work, turn off and isolate all electricity to the property at the main panel.
- Take measures to prevent the electricity from turning back on while working, such as a safety tag and lockout.
- Test the circuit's voltage before proceeding to verify that the course is off.
- After installing the equipment, remove the idle package materials from the site such as cartons, foam, plastic, nylon ties, etc.
- Keep people other than the installation technicians away from the B500 battery.
- When handling equipment and accessories, pack them in their original packaging or other materials to protect them from impact.
- Seal all the wiring ports with fireproof and water-proof materials to prevent possible electric shock or other risks.
- It's prohibited to alter, damage or cover the marking and nameplate of any part of B500 battery.
- Check and make sure all safe guards, including screws and waterproof rings, are in place and properly tightened.
- Keep the B500 battery firmly secured to the ground or other solid objects, such as a wall or mounting bracket.
- Use a non-abrasive cloth to clean the equipment and accessories. Do not use water or harsh chemicals.
- Please follow the instructions to install the B500 battery.

1.2.2 Anti-static Requirements

- Wear or use personal protective equipment (PPE) or clothing that is appropriate for the work; this may include items such as safety glasses or goggles, or a face shield (with safety glasses or goggles), hearing protection, dust mask, gloves, anti-static bracelet, safety boots or shoes, or rubber boots.
- If you use an anti-static bracelet for electrical connections, make sure the bracelet is properly grounded.

1.2.3 Drilling Requirements

When drilling holes in the wall or on the ground, the following safety measures should be considered.

- Wear goggles and protective gloves at all times.
- Shield and protect the equipment to prevent debris from falling into it and remove all debris after drilling.
- Drill holes on the unit are forbidden, as this may damage the equipment's electro-magnetic shielding performance. The metal shavings may cause short circuits on the circuit board.

1.3 Battery Safety

1.3.1 Statement

BLUETTI shall not be liable for equipment abnormality component damage, personal injury property loss or other damage caused by the following reasons:

- Failure to promptly charge the battery after installation and system connection, leading to over-discharge and subsequent damage.
- Repeated over-discharging of batteries due to improper maintenance or capacity expansion (e.g., mixing new and used batteries) or prolonged periods without full charging.
- Neglecting to follow the battery maintenance guidelines outlined in the user manual.
- Failure to charge the battery as required during storage, resulting in capacity loss or irreparable damage.
- Improper operation or connection errors causing battery short-circuits, damage, drops, or leaks.
- Usage of the battery in ways not specified in the user manual, including combining it with other batteries, regardless of brand or rated capacity.

- Battery damage due to non-compliance with the battery operating environment or external power supply parameters.

1.3.2 General Requirements

- Do not expose the battery to high temperatures or around heat sources, such as sunlight, fire, transformers and heaters. If the battery overheats, it may cause a fire.
- To avoid leakage, overheating or fire, do not disassemble, modify or damage the battery. For example, do not insert foreign objects into the battery or place the battery in water or other liquids.
- If any part of the battery is immersed in water, do not touch the battery to avoid electric shock. Please contact the battery recycling company for handling.
- Do not short-circuit the battery terminals. A short circuit can cause a fire.
- Never use damaged batteries or components. Improper use or misuse of damaged batteries or components can damage your device or injure yourself as a result of battery fluid leakage, fire, overheating, or explosion.
- Do not perform welding or grinding work around the battery to prevent fire caused by sparks or arcs.
- Do not store damaged batteries near undamaged ones, as damaged batteries may leak flammable liquid or gas. Only qualified professional or trained personnel is allowed to approach damaged batteries.
- The fire hazard of lithium-ion battery Hybrid Inverter is high. Before handling batteries, consider the following risks:
  (a)Battery thermal runaway may produce flammable and harmful gases such as CO and HF. Vapors from burning batteries may irritate eyes, skin and throat.
  (b)The concentration of flammable gases from battery thermal runaway may lead to deflagration and explosion.
  (c)The battery electrolyte is flammable, toxic and volatile.
- Avoid contact with spilled liquid or gas if the battery leaks chemicals or odors. Do not approach the battery and contact a professional for disposal. Professionals must wear goggles, rubber gloves, gas masks and protective clothing.
- Electrolyte is corrosive and can cause irritation and chemical burns. If you come into direct contact with battery electrolyte, do the following:
  (a)Inhalation of Vapors: Evacuate contaminated area, get fresh air immediately, and seek medical attention.
  (b)Eye Contact: Immediately flush eyes with water for at least 15 minutes, do not rub eyes, and seek medical attention immediately.

(c)Skin Contact: Immediately wash the infected area with soap and water and seek medical attention immediately.

(d)Ingestion: Seek medical attention immediately.

- Use the battery within the temperature range specified in this manual.
- Do not expose the battery to humidity or corrosives, as this may cause the battery to rust, corrode and leak chemicals.
- Do not turn the battery upside down or tilt it.
- Do not ignore warning signs on parts or products made by the manufacturer.

1.3.3 Installation Requirements

- Do not use batteries with compromised packaging.
- Make sure the battery switch is in the OFF position.
- Tighten the screws securely and conduct regular checks.
- Prevent the positive and negative terminals of the battery from touching each other or any metal objects to avoid heat generation or electrolyte leakage.
- After installing the equipment, remove unused packing materials such as foam, carton, plastic and excess cables from the equipment area.

Fire Emergency Measures

Danger

- Use carbon dioxide, FM-200, or ABC dry powder fire extinguisher.
- Remind firefighters to avoid contact with high-voltage components to prevent the risk of electric shock.
- Overheating may cause the battery to deform and leak corrosive electrolytes or toxic gas. Keep away from batteries to avoid skin irritation and chemical burns.

Battery Drop Emergency Measures

	Danger
	• If the battery pack is dropped, violently impacted or tilted during installation, internal damage may occur. So do not use such battery packs to avoid safety risks such as battery leakage and electric shock. • If the dropped battery is not obviously deformed or damaged, and there is no abnormal smell, smoke or fire, please contact a professional to transfer the battery to an open and safe place, and contact BLUETTI support. • If the battery is obviously damaged or there is an abnormal smell, smoke or fire, please evacuate immediately, and contact a professional or BLUETTI support. Professionals can use fire extinguishing facilities to extinguish the fire under safety protection.

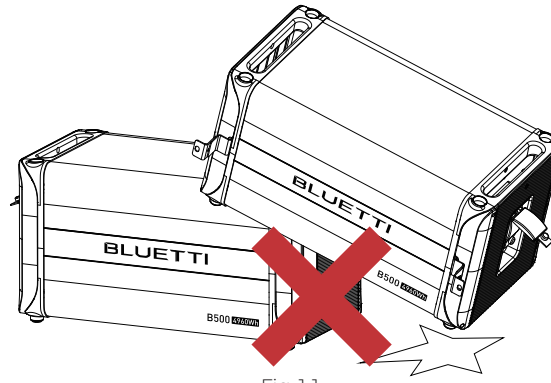


Fig. 1-1

1.3.4 Battery Disposal

- Safely and carefully dispose of used batteries by the provisions of local laws and regulations. Avoid treating batteries as regular household waste, as improper disposal can lead to environmental pollution.
- If you find a leaking or damaged battery pack, contact us immediately or an authorized battery recycling partner for expert assistance.
- If the battery pack reaches the end of its lifespan, please contact the battery recycling company for further assistance.
- To maintain battery integrity, do not expose used batteries to high temperatures or direct sunlight.
- Protect used batteries from moisture and corrosive substances to avoid potential hazards.

1.4 Electrical Safety

1.4.1 General Requirements

- Make sure that all electrical connections comply with your local electrical standards.
- User-prepared cables should adhere to local laws and regulations.
- When performing high-voltage operations, use insulated tools for safety.
- Wear anti-static gloves during work and avoid clothing that generates static electricity.

1.4.2 Grounding Requirements

- Always make the ground connection first and disconnect it last when installing or removing the equipment.
- Take care not to damage the grounding conductor.
- Before operating the equipment, always confirm that it is securely and reliably grounded.

1.4.3 Wiring Requirements

- Keep cables at least 30mm away from the heating devices or heat sources to prevent damage caused by excessive heat.
- Group cables of the same type together to minimize electromagnetic interference. Additionally, ensure that cables of different types should be laid at least 30mm apart without intertwining and crossing.
- Cables used in the PV grid-connected power generation system must be firmly connected, well insulated, and has proper specifications.
- Take necessary measures to protect cables when passing through pipes or holes.
- Safe Construction Practices:

  (a) All cable installations should be carried out in environments above 0℃ to maintain cable flexibility and integrity. Handle the cable with care, especially when working in low temperature environments.

  (b) If the cable has been stored below 0℃, allow it to acclimate to room temperature for a minimum of 24 hours before installation.

1.5 Maintenance Requirements

Danger

The equipment generates high voltage during operation, which can cause electric shock leading to severe injury, property damage, or even death. Please strictly follow the safety instructions provided in the user manual and adhere to relevant electrical safety codes.

To ensure your safety while maintaining the B500 battery, please follow the following steps:

Step1: Disconnect the power grid.

Step2: Disconnect the battery and solar systems.

Step3: Wait at least 30 minutes until the equipment is discharged.

- Follow the anti-static requirements to prevent electric shock and other potential hazards.
- For any maintenance needs, please contact your local authorized service center.
- Place temporary warning signs or erect fences to prevent unauthorized access to the maintenance site.
- To ensure personal safety and proper equipment usage, establish a reliable grounding connection before use.
- Wear personal protective equipment (PPE) during operation. If there is a possibility of personal injury or equipment damage, stop operation immediately, and take appropriate protective measures.
- Use tools correctly to avoid injury or damage to equipment.
- Do not touch energized equipment.
- Do not clean the electrical components inside and outside the cabinet with water.
- Do not stand, lean on or sit on top of the equipment.
- Do not damage the equipment modules.
- When the battery fails, avoid touching the battery and be careful of high temperature.
- Do not disassemble or damage the battery. The released electrolyte is harmful to your skin and eyes. Avoid contact with electrolyte.
- Batteries can cause electric shock and high short-circuit current. When using batteries, please note the following:
  (a)Remove any metal objects, such as watches and rings, from yourself.
  (b)Use tools with insulated handles.
  (c)Wear rubber gloves and boots.
  (d)Avoid the metal objects to short circuit battery terminals.
  (e)Do not place tools or metal parts on top of the battery.
  (f)Disconnect the charging power source before connecting or disconnecting battery terminals.

Maintenance checklist(Performed once every six months)

Inspection items	Inspection methods
Switch gear and battery module	Check the following items. In case of nonconformity, take corrective actions immediately: · Check whether there are flammable objects around the battery module. · Check whether the battery module is reliably fixed on the wall, and whether any fixing point is corroded. · Check the switch gear and battery module for damage, paint peeling, oxidation, etc.
Wire and cable layout	The inspection must not be carried out until all internal devices of the battery module are powered off! In case of nonconformity found in inspection, take corrective actions immediately: · Check the cable layout for short circuit and compliance with the specifications. If case of any abnormality, take corrective actions immediately. · Check the battery module for internal seepage of water. · Check whether the cables are loose, and tighten them according to the aforesaid torque.
Grounding	Check whether the grounding is correct.
Function inspection	Check whether the current, voltage and temperature in the BLUETTI app of the battery system are within the operating ranges.

1.6 Transportation Requirements

All components of the B500 battery leave the factory in optimum electrical and mechanical state. It's necessary to use original or appropriate packaging to ensure the product safety during transportation. When you receive the product, inspect for any kind of damage and note the damage on the delivery receipt. The shipping company will be responsible for any damage or loss of the product during transportation. If necessary, please contact us for further assistance.

1.7 Storage Requirements

- When not using the B500 battery for extended periods of time, power it off and remove all electrical connections.
- Charge the B500 battery to 40%-60% SoC before storage.
- In order to keep the battery healthy, fully charge and discharge the B500 battery every 6 months.
- Make sure the place where to store the B500 battery is well ventilated and spacious.
- Do not store the B500 with flammable liquids, gases, or explosive materials.

• You're strongly recommended to clean the surface frequently with a dry soft cloth.
• Keep away from children and pets.
• Do not stack anything on top of the equipment either in storage or in use.
• Avoid exposing the equipment to rain, humidity or direct sunlight.

1.8 Handling Requirements

Table 1-1 Recommended Number of People Based on the Weight of Product

Weight	Number of people
<18kg	1
18kg~32kg	2
32kg~55kg	3
>55kg	4 or a cart

1.9 Label Description

Table 1-2 Labels and Description

Label	Name	Description
	Electrical shock warning	The B500 battery generates high voltage during operation. The installation, commissioning, and maintenance should only be performed by qualified professionals or trained personnel.
	Warning	Be careful. Hazards may occur during operation.
	Read instruction	Please read the instruction carefully before operating the B500 battery.
	This side up	It must be transported, handled and stored in the correct orientation. The arrow always faces upwards.
	Weight	The battery packs are quite heavy and need to be carried by several people.

Attention

- The symbols on the box contain important information for safe operation. The nameplate on the side of the box contains important parameter
- information related to the product.

2. B500 Battery

2.1 Features

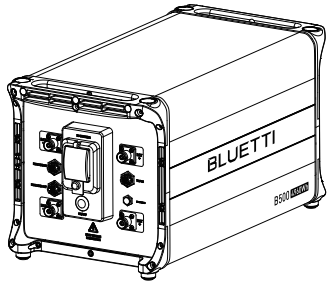
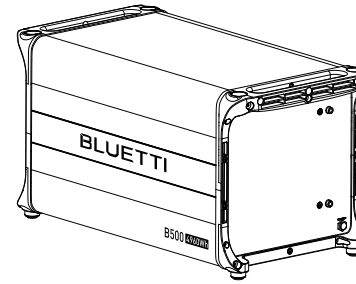
The B500 battery is designed for residential and light commercial use. Single B500 battery pack has a capacity of 4.96kWh.

The B500 comes with a reliable battery management system (BMS) with a multi-stage architecture that provides real-time detection of the battery pack's voltage, current and temperature, protecting the system from overvoltage, under-voltage, overcurrent, overtemperature and undertemperature. At the same time, the redundancy design provides unprecedented safety and stability for the B500 battery.

2.2 Battery Overview

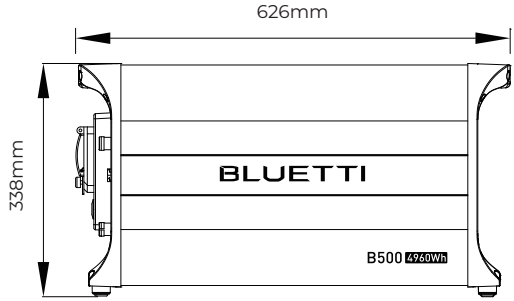
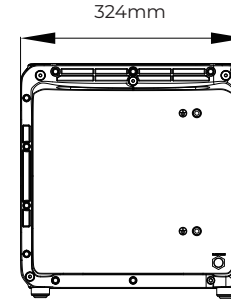
2.2.1 B500 Appearance

Table 2-1

	
Left	Right

2 .2.2 Dimensions

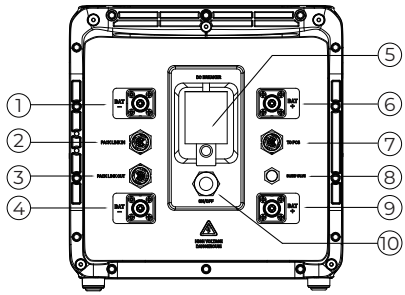
Table 2-2 (Unit: mm)

	
Front	Right

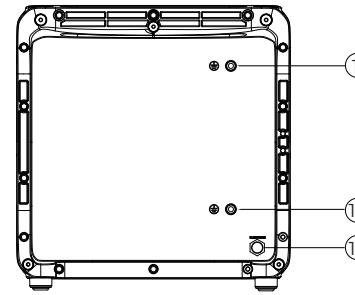
2.3 Battery Interface

2.3.1. B500 Interface

Table 2-2



Left



Right

No.	Name	Decisive Voltage Classification	No.	Name	Decisive Voltage Classification
1	BAT- terminal 1	DVC-C	8	Bleed valve 1	Not applicable
2	Pack link-in	DVC-A	9	BAT+ terminal 2	DVC-C
3	Pack link-out	DVC-A	10	Power button	Not applicable
4	BAT- terminal 2	DVC-C	11	Grounding port 1	Not applicable
5	Main switch	Not applicable	12	Grounding port 2	Not applicable
6	BAT+ terminal 1	DVC-C	13	Bleed valve 2	Not applicable
7	Inverter signal port (TO Pcs)	DVC-A			

2.3.2. Interface Description

Table 2-4

Interface	Description
⑦ Inverter signal port(PCS LINK)	For communication between inverter and battery packs. Connect to the LINK PORT 2 of EP760 inverter via the battery communication cable.
②Battery pack signal input port (PACK LINK IN)	For communication between battery packs. Connect to the battery pack signal output port of the upper battery via the communication cable when multiple B500s are stacked.
③Battery pack signal output port (PACK LINK OUT)	For communication between battery packs. Connect to the battery pack signal input port of the lower battery via the communication cable when multiple B500s are stacked.
⑨BAT+ terminal	Connect to the BAT+ terminal of another B500 or EP760 inverter.
④BAT- terminal	Connect to the BAT- terminal of another B500 or EP760 inverter.

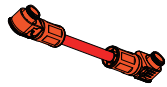
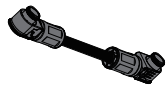
2.4 LED Indicators

Table 2-5

Light	Description	Note
OFF	B500 is not started.	Can operate the circuit breaker.
ON	B500 is running.	Can not operate the circuit breaker.
Flash at 0.5Hz	B500 is shutting down.	Can not operate the circuit breaker.
Flash at 1Hz	B500 is not running.	If all indicators are flashing, the battery module is temporarily unavailable and is restoring, please wait patiently. If it lasts for more than 1 hour, please contact an authorized dealer or our company. If a single indicator flashes, the B500 is in a fault condition. Please contact an authorized dealer or our company.

2.5 Battery Cables

Table 2-6 Battery Cables

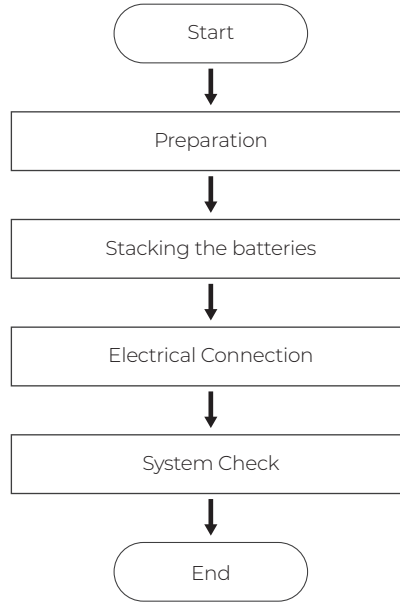
Picture	Description	Interface (connect to)
	Communication Cable	LINK PORT 2 of the inverter
	Red battery expansion cable (Positive)	BAT+ terminal 2
	Black battery expansion cable (Negative)	BAT- terminal 2
	Grounding Cable	Grounding port

3. System Installation

Danger

Before installation, disconnect all circuit breakers for the battery pack, solar system, and the main switch of the grid to ensure safe operations.

3.1 Installation Procedure



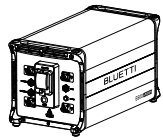
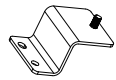
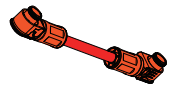
3.2. Installation Preparation

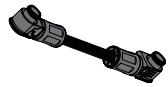
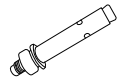
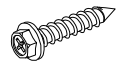
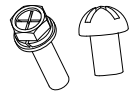
3.2.1. Packing Lists

Upon receiving the package, we kindly ask you to carefully inspect and verify the presence of all components and accessories included.

B500 Battery Packing List

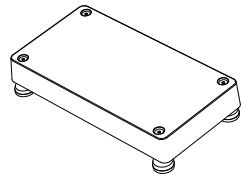
Table 3-1

No.	Picture	Description	Qty.
1		B500 Battery Module	2
2		Bracket #1	2
3		Bracket #2	2
4		M5 hex nut	2
5		Left cover	1
6		Right cover	1
7		M4*8 screw (for fastening covers)	10
8		M5*10 screw (for brackets)	4
9		Communication cable	1
10		Red battery expansion cable (Positive)	1

11		Black battery expansion cable (Negative)	1
12		Grounding cable	1
13		M8*60 expansion bolt (for brackets)	2
14		Self-tapping screw, ST8×40	2
15		M6*12 screw (Grounding cable)	2
16		Spare screw kit	1

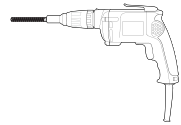
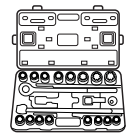
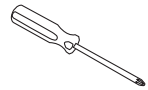
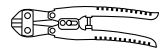
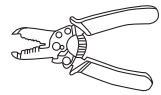
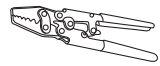
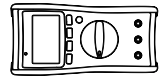
3.2.2 Base Packing List

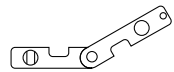
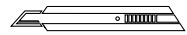
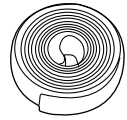
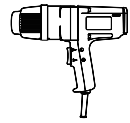
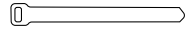
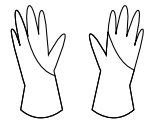
Table 3-2 Base Packing List

No.	Picture	Description	Quantity
1		Base	1

3.2.3 Required Tools

Table 3-4 Required Tools

No.	Picture	Description
1		Electric drill (5/8/10mm)
2		Socket wrench set
3		Torque wrench
4		Flat screwdriver
5		Cross screwdriver (4mm)
6		MC4 spanner
7		Cable cutter
8		Cable stripper
9		Cable Crimper
10		Multimeter (DC voltage ≥ 1000VDC)

11		Marker
12		Measuring tape
13		Level ruler
14		Box cutter
15		Heat shrink tubing
16		Heat gun
17		Cable tie
18		Anti-static gloves
19		Protective goggle
20		Mask
21		Safety-toe shoes

22		Vacuum cleaner

3.3 Installation Requirements

3.3.1 Environment Requirements

- Install the B500 battery in a well-ventilated and spacious area to ensure good heat dissipation.
- The B500 battery has an IP65 rating and can be installed indoors and outdoors. Please note that if you place the system outside the house, use a cabinet to protect it from direct sunlight, as this may cause a degradation in system performance.
- The enclosure and heat sink are very hot while the inverter is working, therefore do NOT install the inverter in places where you might touch inadvertently.
- Keep the B500 battery away from flammable liquids, gases, or explosive materials.
- Keep away from children and pets.
- Do not install the B500 battery outdoors in salt-affected areas, as the accumulation of salt may corrode the system. Salt-affected areas are those within 500 meters from the coast or susceptible to sea breezes. Salt accumulation is influenced by seawater, sea breeze, precipitation, air humidity, topography and forest cover of adjacent sea areas.
- Do not install the system in low-lying areas where water tends to accumulate. Otherwise, water may leak into the equipment and result in system failure.
- Ambient temperature range: -20℃～50℃
- Relative humidity: 5%～95% (non-condensing)
- Maximum height: 2000m.

Attention

If the battery pack is dropped, violently impacted or tilted during installation, internal damage may occur. So do not use such battery packs to avoid safety risks such as battery leakage and electric shock.

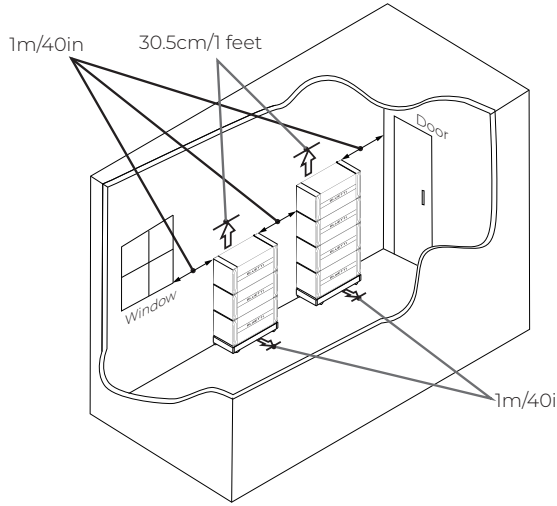


Figure 3-1 Space Requirement

3.3.2 Location Requirements

- The B500 battery should be installed on a firm, flat, level base.
- Do not install the system on flammable materials.
- Consider the weight and placement of components to ensure adequate structural support.

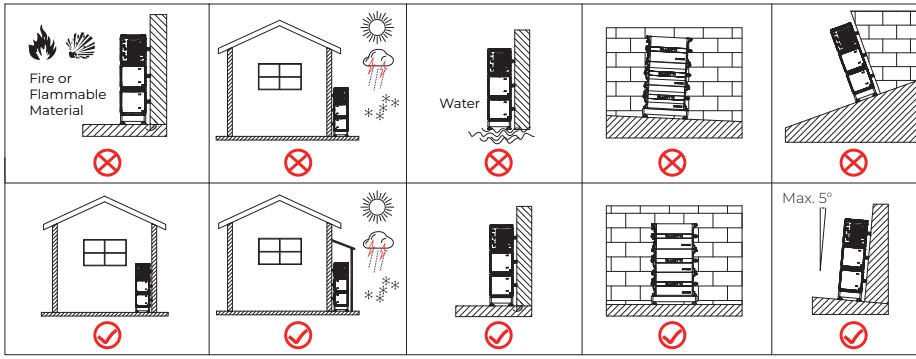


Figure 3-2 Installation Angle

3.3.3 Space Requirement

Danger

Make sure to check for any cables or pipes before drilling into the wall.

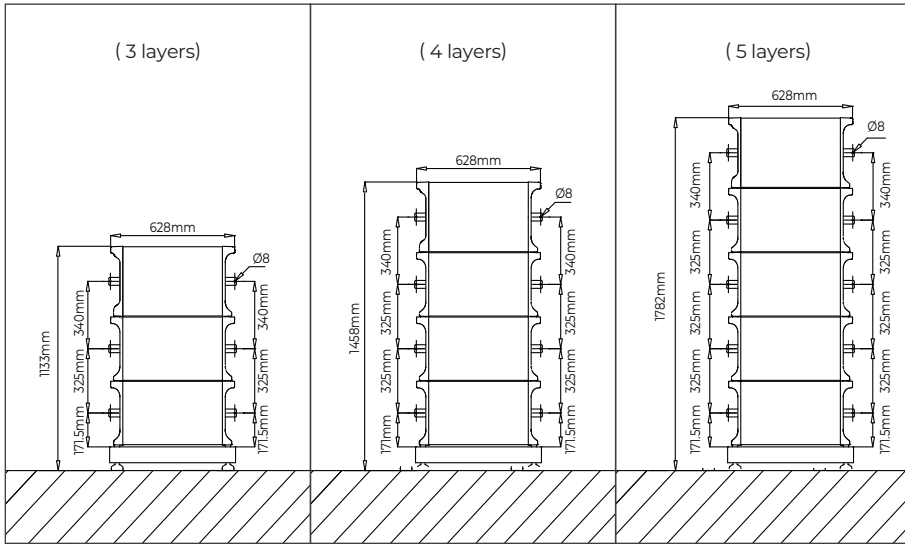


Figure 3-3 (Unit: mm)

3.4 Stacking the B500 battery

Step 1: Place the base on the ground and adjust the height of leveling feet so that the base stands stably on the ground. Don't forget to tighten the nuts to secure the leveling feet.

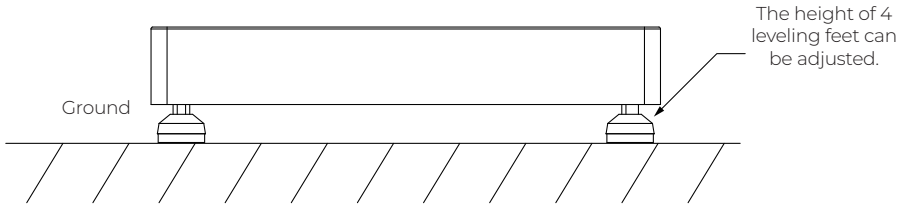


Figure 3-4

Step 2: Mark the drilling positions with tape and marker. Drill holes with an electric drill and insert M8 expansion bolts.

Note: If you are working with a wooden wall, simply mark the positions and use M8 self-tapping screws to secure the unit directly onto the wall.

Step 3: Move the B500 battery pack to the base. Two people are required to transport the B500. Align the bumps on the battery with the notches on the base to secure the battery in place.

Step 4: Fix 2 brackets #1 to two sides of B500 with 4 M5*10 screws. Put the bracket #2 through the compression rivet screw of bracket #1 and M8 expansion bolts. Secure the connection with M8 and M5 nuts.

Step 5: Repeat Step3 and 4 to secure all battery packs.

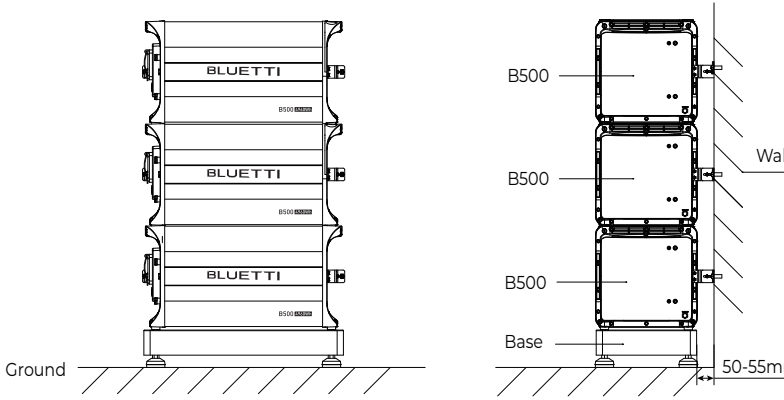
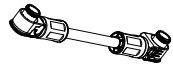
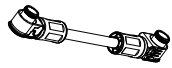
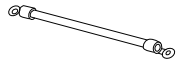
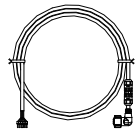


Figure 3-5

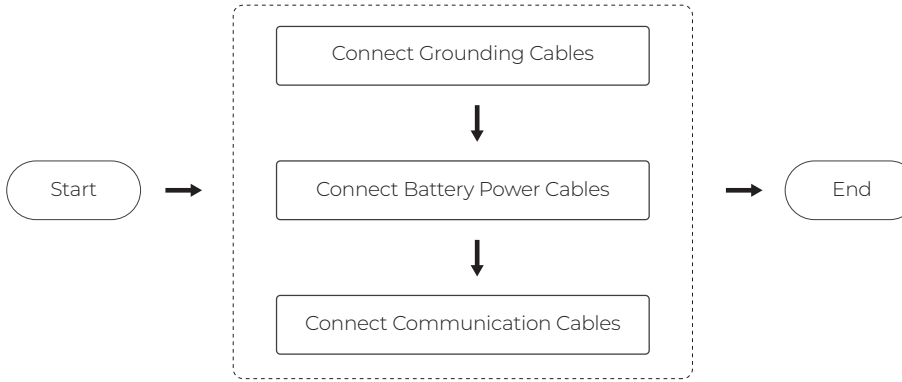
3.5 Electrical Connection

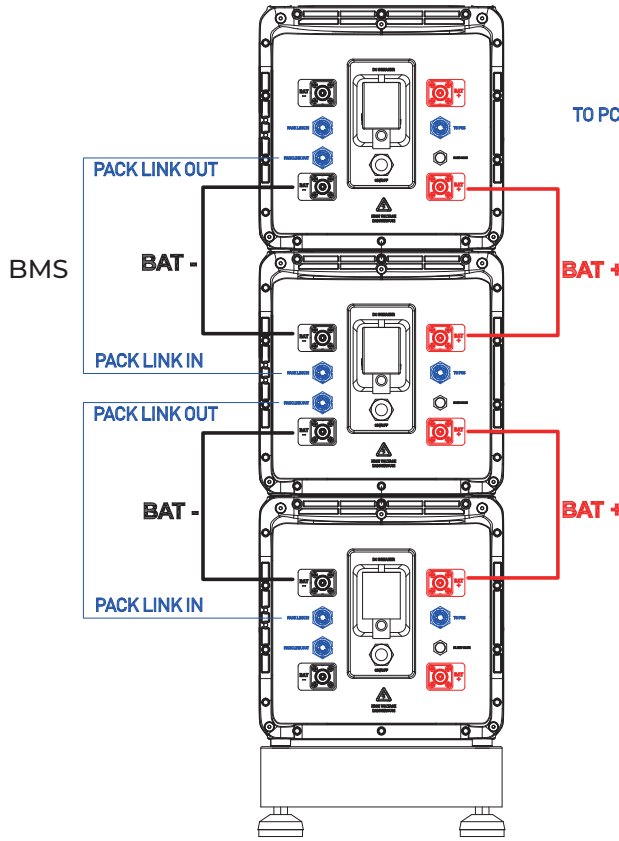
3.5.1 Cables

Table 3-5 Cables

Picture	Cable
	CT communication cable
	Communication cable
	Red battery expansion cable (Positive)
	Black battery expansion cable (Negative)
	Grounding cable
/	Outdoor multi-core copper cable
	COM communication cable

3.5.2 Connection Procedure





3.5.3 Connect Battery Power Cables

Step 1: Connect two B500 battery packs via the battery expansion cables - black cable for negative terminals, red for positive terminals. See "①" "②" of Figure 5-9-1 and 5-9-2.

• Secure the black protection cover with M4 screws. See Figure 5-9-3.

• Connect the other end of the cable to the B500 BAT- terminal.

• Repeat to connect the red battery power cable. See Figure 5-9-4.

Recommended torque: Less than 6Nm for M8 screws, 1.2Nm for M4 screws.

Step 2: Check that the cables are properly connected.

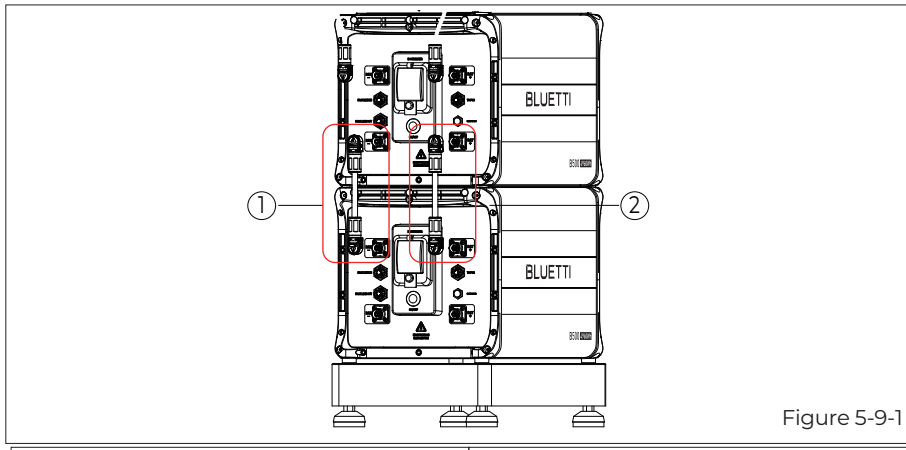


Figure 5-9-1

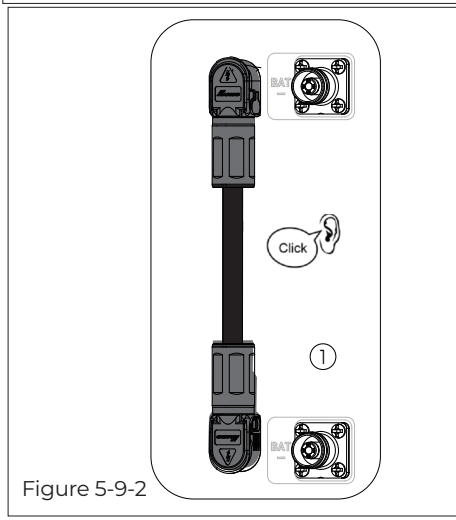


Figure 5-9-2

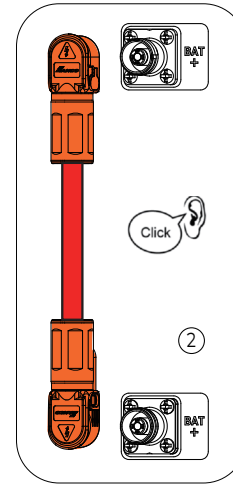
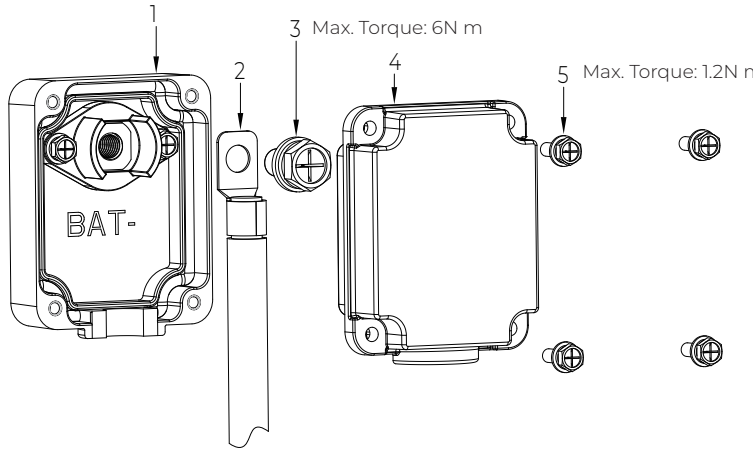
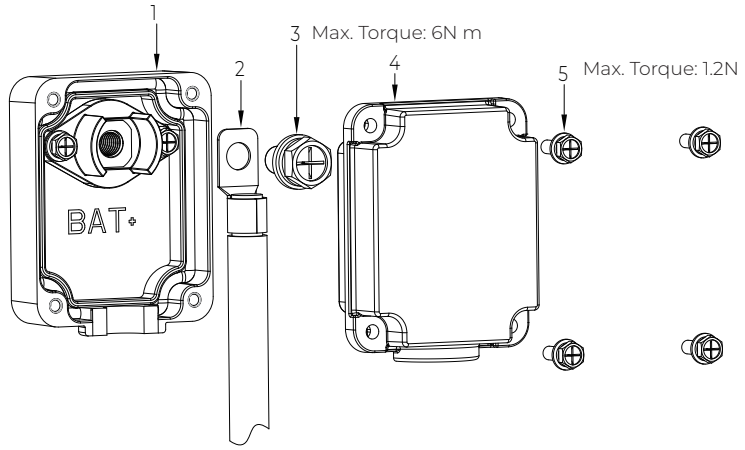


Figure 5-9-2



1. Inverter BAT- terminal (Black)
2. Black battery power cable (BAT-)
3. M8*12 screws
4. Black protection cover (BAT-)
5. M4*12 screws

Figure 5-9-3



1. Inverter BAT+ terminal (Red)
2. Red battery power cable (BAT+)
3. M8*12 screws
4. Red protection cover (BAT+)
5. M4*12 screws

Figure 5-9-4

3.5.4 Communication Cable

Step1:

To achieve communication between two B500 battery packs, a communication cable is required. Plug one end of the cable to the B500 Link-in port, and the other to the upper B500's Link-out port. See Figure 5-10 "①".

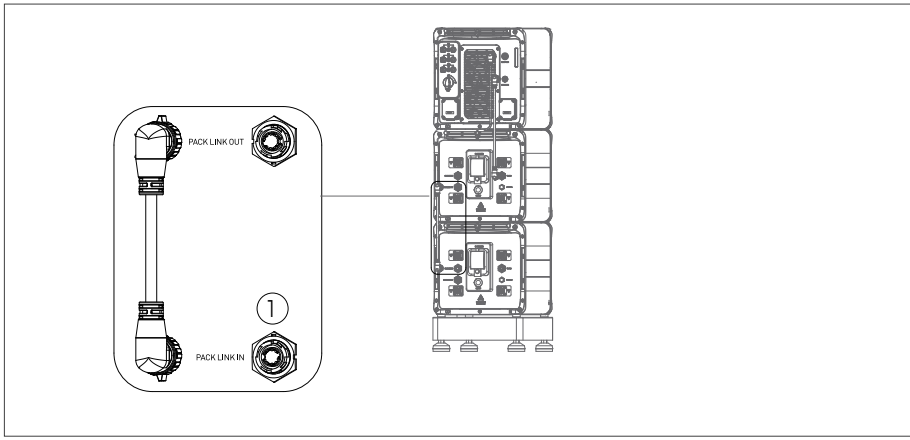
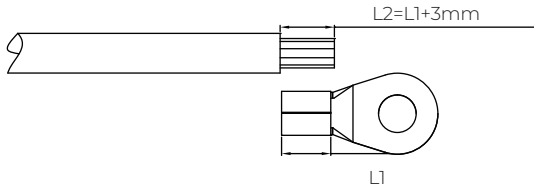
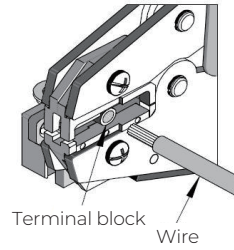


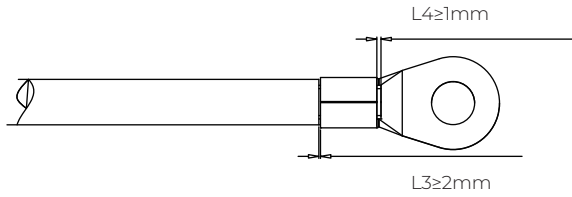
Figure 5-10



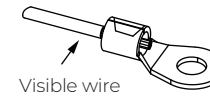
L2 is 3mm longer than L1

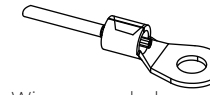
5-11-1





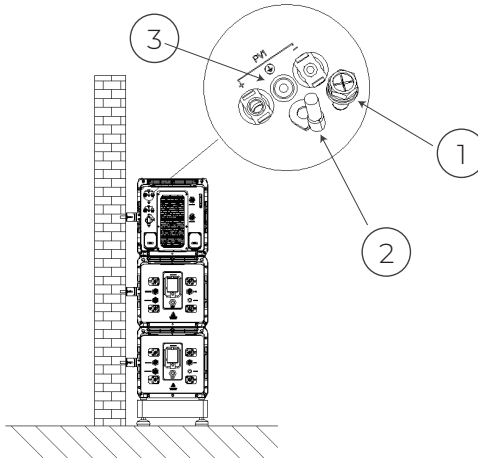
5-11-2





Wire even or bulge up to 1mm

5-11-3



1. M5×10 screws
2. OT terminal
3. PV grounding pole

Figure 5-11-3 Grounding Connection

4. System Check

4.1 Preliminary Check

Check the followings before first use.

- Confirm that all components of the system are installed according to specific requirements.
- Make sure the PV+/PV- and BAT+/BAT- cables are connected with correct polarity and proper voltage.
- Switch off all AC and DC circuit breakers.
- Circuit breakers should be selected according to the requirements of this manual and local regulations.
- Make sure grid and load cables are held firmly in place.
- All safety signs and warning labels shall be firmly attached and clearly visible when needed.

4.2 Commissioning/Startup

Step 1: Switch on the DC circuit breakers on inverter.

Step 2: Switch on the DC circuit breakers on B500 battery packs. Press and hold the power button on any B500 till the indicator on the button light up green.

Step 3: Wait for about 40 seconds till the inverter indicator keeps steady green.

Step 4: Switch on the AC circuit breakers connected to the inverter GRID terminal.

Step 5: Power on the system via BLUETTI App. For details, please refer to BLUETTI App Instructions.

Step 6: Check the output voltage of BACKUP terminal.

Step 7: Switch on the AC circuit breakers connected to the inverter BACKUP terminal.

Step 8: Check the inverter system status through the App.

4.3 Decommissioning/Shutdown

Step 1: Turn off the AC power on BLUETTI App.

Step 2: Switch off the AC circuit breakers connected to the inverter GRID and BACKUP terminals.

Step 3: Switch off the inverter PV breaker.

Step 4: Press the power button on any B500 till the indicator on the button flashes green.

Step 5: The indicator continues to flash.

Step 6: When the indicator is off, B500 battery packs turn off.

Step 7: Switch off main switches for all B500 and the inverter powers off.

Warning

There is still residual voltage after the ESS is powered off, which may cause electric shock or burns. Please wait at least 30 minutes before operating the system.

5. Monitoring and setting

5.1 Download the App

Scan the QR code below to download the BLUETT App, or search for "BLUETT!" in the App Store or Google Play.

Supported operating systems: iOS 11.0 or above, Android 8.0 or above.

5.2 Binding

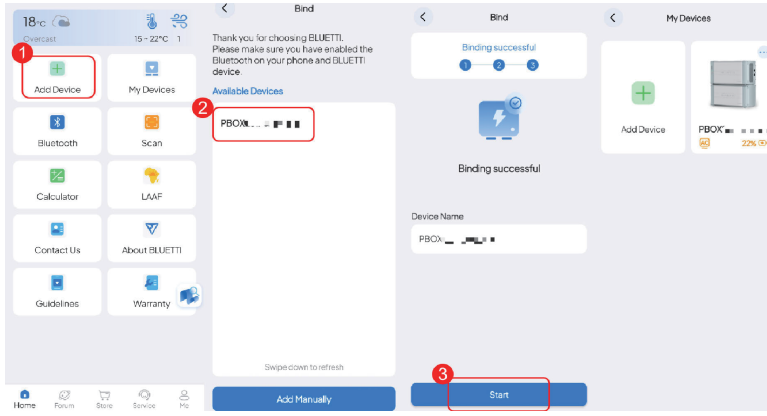
5.2.1 Bluetooth

1. Tap Add Device on the Home page, or tap My Devices > Add Device > Add Manually.

2. On the Bind page, select your device from the Available Devices list, and tap OK to complete the binding.

3. You can view the bound devices on the My Devices page.

Note: Make sure you've enabled Bluetooth and location service (e.g. GPS) on your phone. If you can't find your device, get closer and Swipe down to refresh the list (recommended range: 5m).



5.2.2 Serial Number

1. Tap Add Device on the Home page.

2. At the bottom of the Bind page, tap Add Manually.

3. Enter the device model and serial number.

4. Tap OK to complete the binding.

5.2.3 QR Code

1.Tap the Scan on the Home page, or tap My Devices > Add Device > Scan.

2.Scan the QR code on your device.

5.3 Connection

5.3.1 Bluetooth Connection

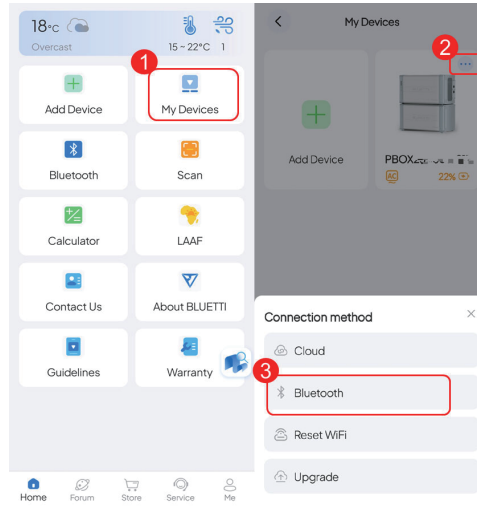
Note: Make sure your device is powered on with Bluetooth enabled, and you've enabled Bluetooth and location service (e.g. GPS) on your phone. For a stable connection, keep your phone and device close together (recommended range: 5m). If you can't find your device, get closer and Swipe down to refresh the list.

1. Tap My Devices on the Home page.

2. Tap in the upper right corner of the device you want to connect.

3. Tap Bluetooth to connect.

4. You'll be directed to the operation status page upon successful connection.



5.3.2 Cloud Connection

To get started, you need to configure the network first.

Note:

- Place your device within the range of an available WiFi network. Also,double-check that your mobile device has a strong and stable network signal.
- The BLUETTI products support 2.4GHz WiFi only.

Configure the network

If you have connected your device via Bluetooth, please follow the steps below:

1. Tap ⚙ in the upper right corner of the operation status page to enter the setting page.
2. Tap Network settings.
3. Change the configuration in the pop-up and SAVE it.

If you need to change to another WiFi network, please follow the steps below:

1. Go to the My Devices page and tap ••• in the upper right corner of the device you want to connect.
2. Tap Reconfigure WiFi.
3. Fill in the related network information and SAVE it.

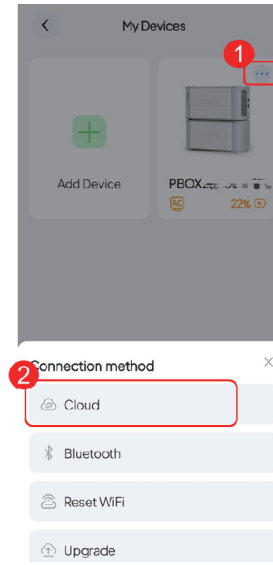
5.3.3 Connect to the device

Once the app is connected to the device via WiFi, you can manage your device

from anywhere at any time, as long as your mobile phone has internet access and your device maintains a stable WiFi connection.

1. Go to the My Devices page, and tap ••• in the upper right corner of the device you want to connect.
2. Tap Cloud to connect.
3. The app will jump to the operation status page when the connection is successful.

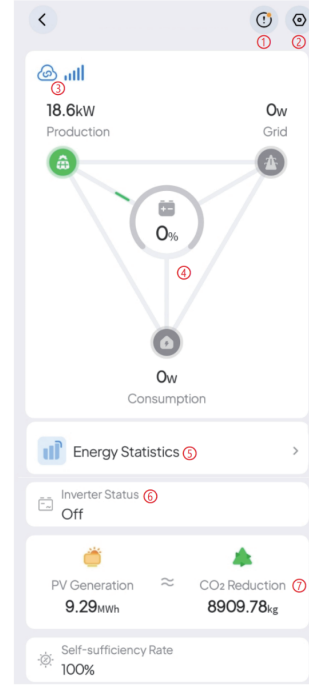
Note: If you've set the default connection mode as Cloud, you can also establish a WiFi connection by directly tapping on the device image.



5.4 Real-time Monitoring

The app shows you important details like the current battery level, energy flow status, and other key metrics so you can keep track of how your battery is doing. Additionally, in case of any malfunctions or alarms, you can view real-time alerts so that you can take immediate action to deal with any issues in a timely manner.

5.4.1 Operation Status



Connect the app to your battery via Bluetooth or WiFi, and you'll be directed to the operation status page. Please refer to Binding for details

①Tap to check the current alarm(s) and alarm history.

② Tap to check and change system settings, like System Switch, Working Mode, Device Sharing, Advanced Settings, etc.

③Bluetooth / WiFi connection successful.

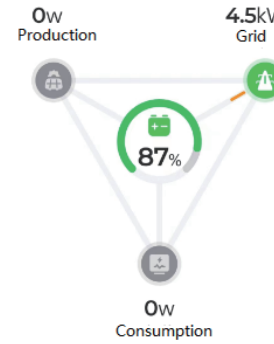
④Energy Flow Status Please refer to Energy Flow Status for details.

⑤ Energy Statistics Tap to view the energy data by day, month, year, or up to the current date. Please refer to Energy Statistics for details.

⑥Inverter Status Please refer to Inverter Status for details.

⑦PV Generation & CO2 Reduction Check out the total solar energy generated and carbon emissions saved by the battery over time

5.4.2 Energy Flow Status



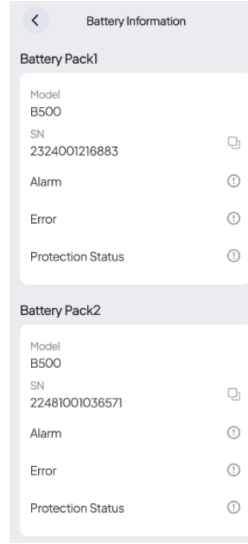
The animation gives you a simple way to understand how energy is flowing

87% SoC (State of Charge). It indicates the remaining battery level. Tap to check the battery fault and protection status, as shown below.

: PV generation. It shows how much power the Inverter is drawing from your rooftop solar or solar panel(s). Tap to view more details

: Grid charging or feeding. It shows how much power the inverter is drawing from or feeding back into the grid. Tap to view more details

: Load consumption. It shows how much power is supplying to your household appliance. Tap to learn more about where the power is going.



6. System Disposal

5.1 Recycle the B500 Battery Pack

When the battery pack reaches the end of its lifespan, it must be safely and carefully disposed of by the provisions of local laws and regulations.

Please contact our company for further assistance if the battery pack is

a. Leaked or damaged.

b. Severely degraded in performance.

c. To be replaced or not intended for further use.

7. Specifications

Battery parameters		
Item	Rating	Note
Type of battery	$LiFePO_4$	
Cell capacity	50Ah	
Battery capacity	50Ah	1P31S
Battery Voltage	99.2V	3.2V×31
Rated capacity	4960Wh	25℃, Charge 0.5C/3.6V/0.05C Discharge 1.0C/2.5V
Available capacity	4464Wh	90%DOD，25℃， 0.5Ccharge， 1.0C discharge
Over voltage protection for single cell	3.7V	
low-voltage protection for single cell	2.5V	
Max. charge voltage	108.5V	3.5V×31
Lowest discharge voltage	86.8V	2.8V×31
Max. Charge current	25A	
Max. Discharge current	50A	
DC-DC RTE	95.8%	
IP Degree	IP65	
Dimension（L×W×H）	L636mm×W325mmmm×H338mm	
Weight	58Kg	
Work temperature	-20°C-50°C	

8. FAQs (Frequently Asked Questions)

Q1: What should I do if the SoC readings are inaccurate?

A1: If you notice significant momentary fluctuations in the SoC, try performing two complete charge and discharge cycles on your inverter. This will help recalibrate the system and restore accurate SoC readings.

For more information, please visit:

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