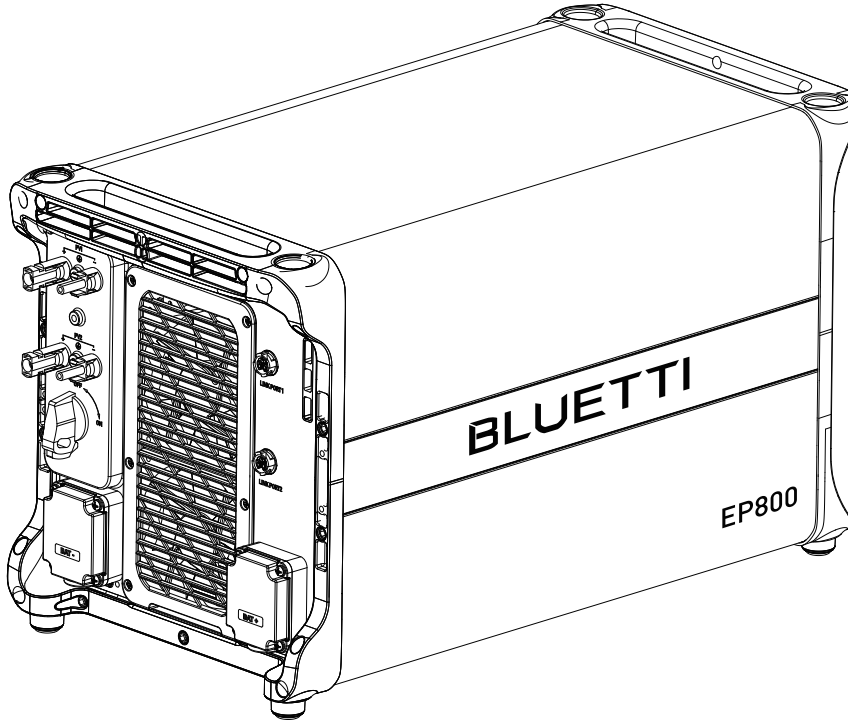
EP800
Energy Storage System

User Manual

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 EP800 energy storage system. Please read and understand all instructions in this manual before use.

Target Audience

This manual is intended for:

- Installation, operation, and maintenance technicians
- Owners of EP800 energy storage system

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 safe, efficient and hassle-free operation of the EP800 energy system.

Contents

1. Safety Guideline

1.1 Statement

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.

1.2 General Safety

Danger

Follow these guidelines for proper operation.

- Do not install, use and maintain the equipment in adverse weather conditions such as lightning, rain, snow and strong breezes (including but not limited to handling and operating the equipment, 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 equipment and its accessories for damage or deterioration.
- 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 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 equipment 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 area where you are using the equipment is well ventilated and spacious.
- Do not block or cover the vents 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 equipment during operation as the vibrations and shocks associated with movement may cause damage to the internal hardware.

- In case of malfunction, turn off the equipment immediately and contact BLUETTI support or your local BLUETTI dealers if this manual cannot adequately explain the malfunction to you.
- Do not place the equipment on an unstable or inclined surface.
- Do not insert foreign objects into any port and vent of the equipment.
- 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.

1.3 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.

1.4 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.

1.4.1 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 energy storage system.
- 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 the system.
- Check and make sure all safe guards, including screws and waterproof rings, are in place and properly tightened.
- Keep the system 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 EP800 energy storage system.

1.4.2 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.

1.4.3 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.

1.5 Battery Safety

1.5.1 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.
- Battery damage due to non-compliance with the battery operating environment or external power supply parameters.

- Use of batteries by the user or a third party beyond what is specified in the user manual. This includes, but is not limited to, the use of other brands of batteries or the use of BLUETTI batteries of different rated capacities or compliant batteries mixed with the above two.

1.5.2 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 energy storage system 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.
- If the battery exceeds its warranty period, please cease its usage and properly dispose of it according to your local regulations.

1.5.3 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
	• In case of fire, power off the system if it is safe to do so. • 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.

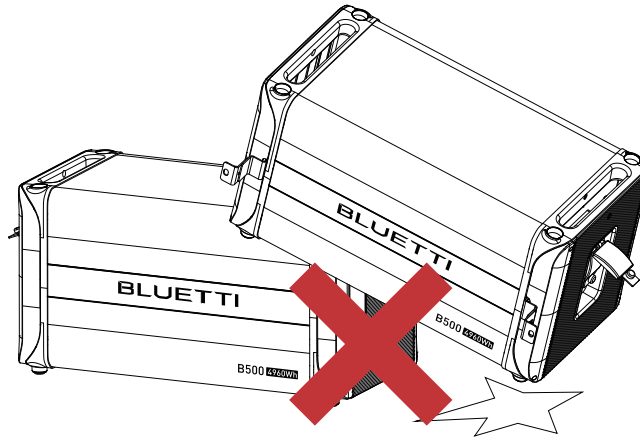


Fig. 1-1

1.5.4 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.

1.6 Electrical Safety

1.6.1 General Requirements

- Make sure that all electrical connections comply with your local electrical standards.
- Before connecting an EP800 energy storage system to your home grid, consult your national or regional electricity authority for guidance.
- 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.

1.6.2 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.

1.6.3 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.

1.7 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 system, 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.
Disconnect the charging power source before connecting or disconnecting battery terminals.

1.8 Transportation Requirements

All components of the EP800 energy storage system 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.

1.9 Storage Requirements

- When not using the system for extended periods of time, power it off and remove all electrical connections.
- Charge the system to 40%-60% SoC before storage.
- In order to keep the battery healthy, fully charge and discharge the system every 6 months.
- Make sure the place where to store the system is well ventilated and spacious.
- Do not store the system 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.
- For details of storage temperature, please refer to chapter 10-Specifications.

1.10 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

1.11 Label Description

Table 1-2 Labels and Description

Label	Name	Description
	Discharge delay	There is still residual voltage after the equipment is powered off. Please wait at least 5 minutes until the equipment is discharged.
	Electrical shock warning	The system 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 energy storage system.
	This side up	It must be transported, handled and stored in the correct orientation. The arrow always faces upwards.
	Weight	The inverter and 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. EP800 Energy Storage System

2.1 Introduction

The EP800 Energy Storage System (ESS) is a game-changer for homes in North America, revolutionizing the way we harness and utilize energy. Designed with innovation in mind, it seamlessly combines battery storage, solar power, and grid connectivity to create a dynamic and sustainable power solution. With its intuitive App control, homeowners have the power to optimize their energy usage, monitor performance, and even contribute to a greener world. The EP800 also acts as a reliable UPS, ensuring uninterrupted power supply during outages, while its expandable capacity allows homeowners to adapt and grow their energy capabilities as their needs evolve. Experience a new era of energy independence with the EP800 – where efficiency, reliability, and eco-consciousness come together in perfect harmony.

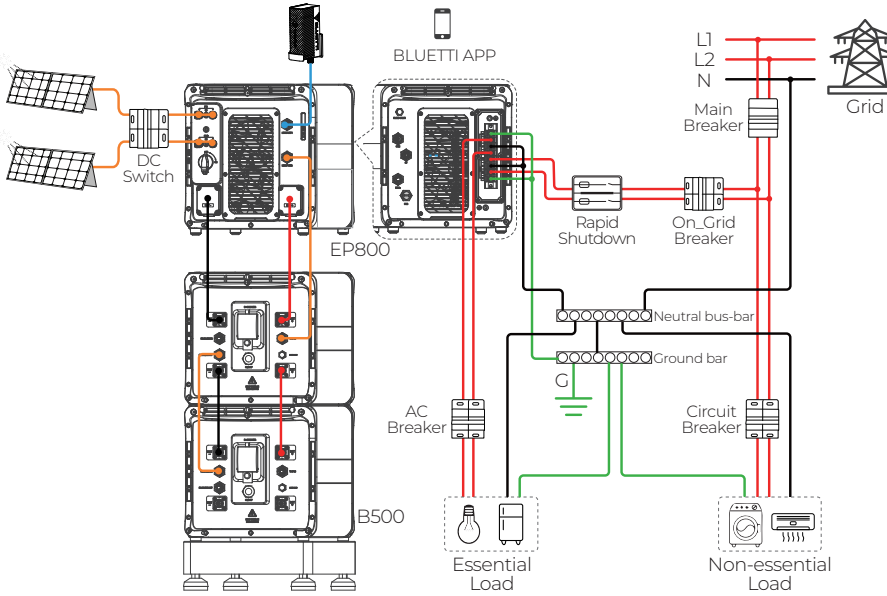


Table 2-1

Component	Description
EP800 Inverter	An energy storage photovoltaic grid-connected inverter to handle photovoltaic input, grid-connected charging, and discharging.
B500 Battery	LiFePO4 battery pack to power the EP800 ESS.
IoT Controller	A component to facilitate seamless near-end communication (Bluetooth) or remote communication (WiFi) with EP800 inverter.
BLUETTI App	An application to monitor and control the EP800 ESS.
Rapid Shutdown	A component to disconnect the DC input from the solar system and the AC input from the grid.

2.2 Working mode

The EP800 ESS offers four operating modes to accommodate various energy plans. You can choose the one that best suits your home power supply configuration.

• **Backup UPS**

In this mode, the EP800 ESS acts as a reliable home backup power source that only kicks in when the grid fails. It prioritizes charging its batteries from solar energy over the grid, making it an eco-friendly and sustainable choice for your home energy needs. With ample energy reserves, it provides a seamless power supply, perfect for areas with unreliable grids.

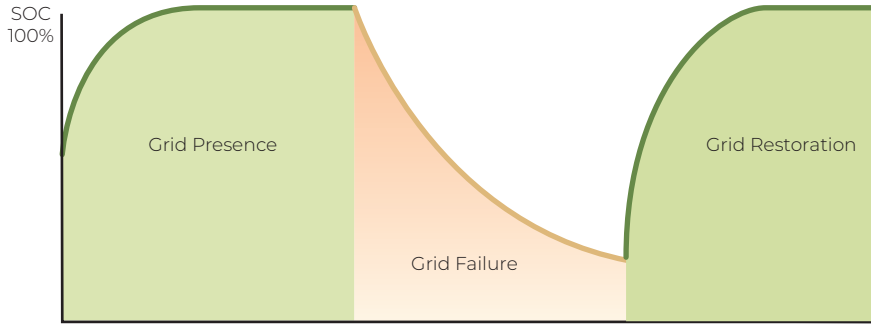
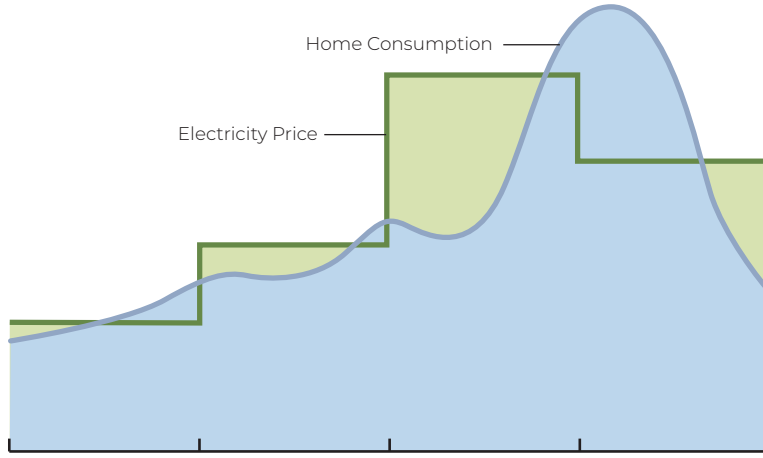


Fig. 2-2

• **Scheduled Charge & Discharge**

In this mode, you can customize the charge and discharge periods according to your specific requirements. During the charge period, the EP800 ESS will draw power from the grid, usually making use of off-peak tariff time windows (TOU) when electricity rates are lower, to replenish its energy storage.

Moreover, you can set the battery State of Charge (SoC) limits to regulate the amount of power that the EP800 ESS draws from the grid, allowing room in the battery for a solar complement.

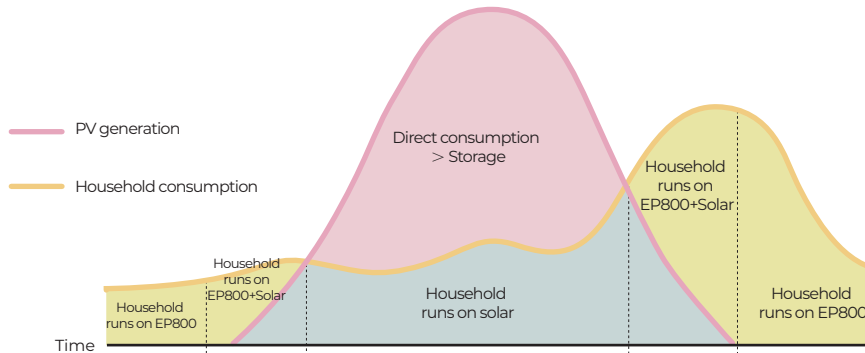


Period	Charging	Discharging	Charging	Discharging
Power Source for Loads	Grid	Grid	EP800/EP800+PV	EP800/EP800+PV

Fig. 2-3

• **Self Use (PV Priority UPS Mode)**

In this mode, the EP800 ESS prioritizes the direct consumption of solar energy to meet immediate household energy needs. Any surplus solar energy generated during the day is intelligently stored in the battery for usage during peak hours or in the event of a power outage. With such a strategy, the EP800 ESS ensures an efficient and reliable power supply, reducing reliance on the grid and promoting energy independence.

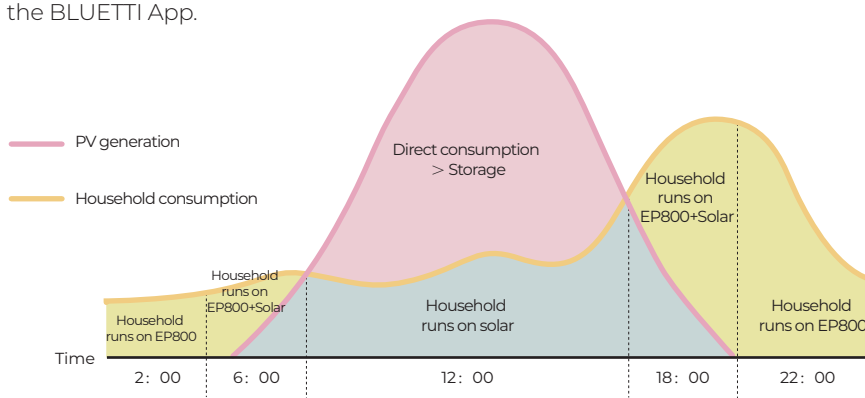


EP800 Operation Status	Discharging	Discharging	Charging	Discharging	Discharging
Power Source for Loads	EP800	EP800+PV	PV	EP800+PV	EP800
PV Generation Used for	/	Loads	Loads and Batteries	Loads	/

Fig. 2-4

• **Custom Mode**

In this mode, you can customize all of the above mode settings to your preference on the BLUETTI App.



Period	Charging	Discharging	Standby	Discharging	Standby
EP800 Operation Status	Charging	Discharging	Discharging	Discharging	Discharging
PV Generation Used for	/	Batteries	Loads and Batteries	Batteries	/
Power Source for Loads	Grid	EP800+PV	EP800	EP800+PV	EP800

3. EP800 Inverter

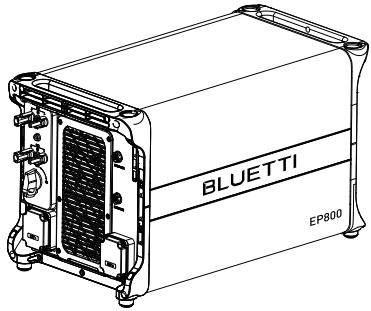
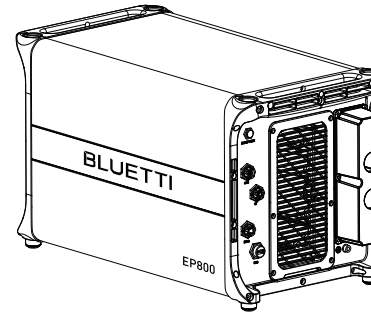
3.1 Introduction

EP800 inverter is an energy storage photovoltaic off-grid inverter that can handle photovoltaic(PV) input, grid charging, and discharging to loads. It is an important part of the energy storage system.

3.2 Inverter Overview

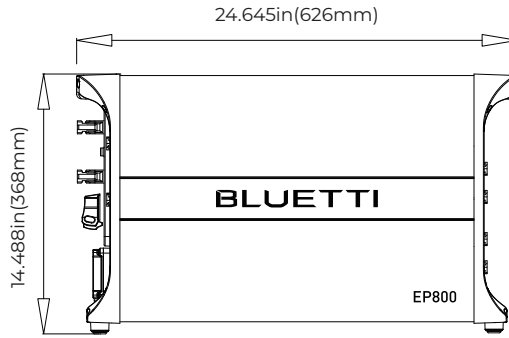
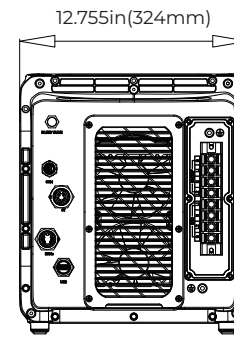
3.2.1 Appearance

Table 3-1

	
Left	Right

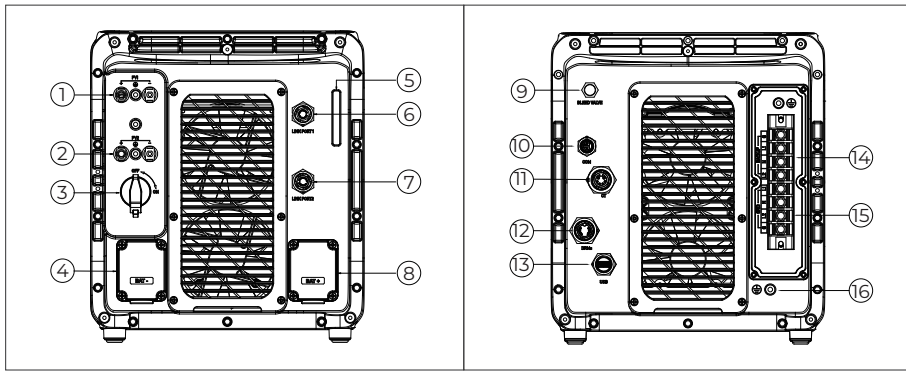
3.2.2 Dimensions

Table 3-2 (Unit: in/mm)

	
Front	Right

3.2.3 Interface

Table 3-3

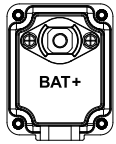
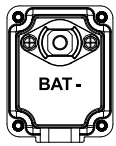
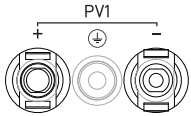
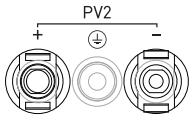
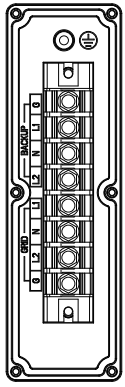


Left Right

No.	Name	No.	Name
1	PV1 Input	9	BLEED VALVE
2	PV2 Input	10	COM1 Port (NC)
3	DC Switch	11	COM2 Port (NC)
4	BAT- Terminal	12	DRMs Port (Generator Input)
5	LED Indicator	13	USB Port
6	LINK PORT1	14	BACKUP Terminal
7	LINK PORT2	15	GRID Terminal
8	BAT+ Terminal	16	GND Terminal (Grounding)

3.2.4 Interface Description

Table 3-4

Terminal	Description		Type of Cable Required	Cable specification
	BAT+: to the battery BAT+ terminal		Standard accessories	
	BAT-: to the battery BAT- terminal		Standard accessories	
	PV1+: to the positive terminal of solar panel PV1-: to the negative terminal of solar panel PV1 PE: PV1 grounding		Outdoor multi-core copper cable	Conductor cross-sectional area: 12AWG
	PV2+: to the positive terminal of solar panel PV2-: to the negative terminal of solar panel PV2 PE: PV2 grounding		Outdoor multi-core copper cable	Conductor cross-sectional area: 10AWG
	BACKUP	G	Outdoor multi-core copper cable	Conductor cross-sectional area: 6AWG
		L1		
		N		
		L2		
	GRID	L1	Outdoor multi-core copper cable	Conductor cross-sectional area: 6AWG
		N		
		L2		
		G		

3.2.5 USB

Warning

Only for USB drive access, not for USB charging.

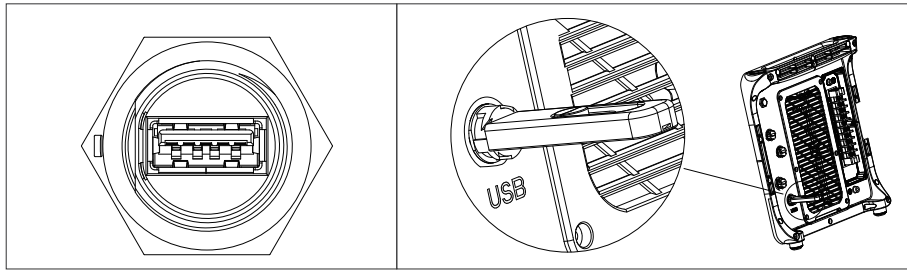


Fig. 3-1

The port is used for EP800 inverter firmware upgrade.

The USB drive should be formatted as FAT32 with no more than 32G in size.

3.2.6 DRMs Port

The EP800 ESS offers the flexibility to be upgraded for solar energy storage, allowing you to harness more power form the sun. Additionally, it features a DRM interface specifically designed to serve as a convenient ignition reserve port for diesel generators, ensuring a seamless integration of backup power solutions.

Table 3-5

PIN	Category	Definition	Specifications
1	GEN COM	Single-pole & double-throw relay common terminal	External DC input limit: 30VDC / 3A. (For generator input)
2	GEN NC	Single-pole & double-throw relay normally closed output	
3	GEN NO	Single-pole & double-throw relay normally open output	
4	/	/	/
5	/	/	
6	/	/	

3.2.7 LINK PORT 1 & LINK PORT 2

Table 3-6

Interface	Function	Note
Link Port 1	Connect the IoT controller	Refer to Fig. 6-8 for details.
Link Port 2	Connect the battery pack	

3.3 LED Indicator

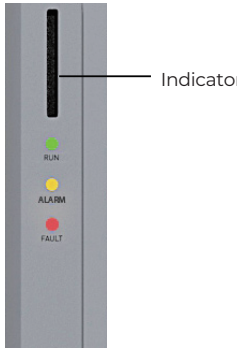


Fig. 3-2

Table 3-9

Situation	Run	Alarm	Fault
No alarm and fault	ON	/	/
Alarm	ON	ON	/
Fault	/	/	ON
Alarm and fault	/	ON	ON

3.4 Buzzer Alarm

When a fault occurs, the buzzer emits a series of 5 beeps. Each beep lasts for 2 seconds, with a 3-second interval between each beep.

Note: The buzzer alarm can be turned off in the BLUETTI App.

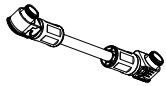
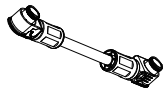
Table 3-10 Fault Code

Fault Code	Description	Troubleshooting
5.	Hardware BUS overvoltage	Turn off the inverter and wait 30 minutes to restart it. If the symptom persists, please contact the BLUETTI support team.
6.	Hardware BUS2 overvoltage	
7.	Hardware Battery overvoltage	
8.	Hardware Inverter overcurrent	
10.	Hardware LLC1 current overcurrent input	
11.	Hardware LLC2 current overcurrent input	
26.	Hardware PV1 fault	Please contact the BLUETTI support team.
27.	Hardware PV2 fault	Please contact the BLUETTI support team.
34.	Hardware Overcurrent input	Please contact the BLUETTI support team.

Please refer to chapter 11 Troubleshooting for details.

3.5 Inverter Cables

Table 3-11 Inverter Cables

Picture	Description	Interface (connect to)
	Red battery power cable (Positive)	BAT+
	Black battery power cable (Negative)	BAT-
	Generator communication cable	DRMs port

4. B500 Battery

4.1 Introduction

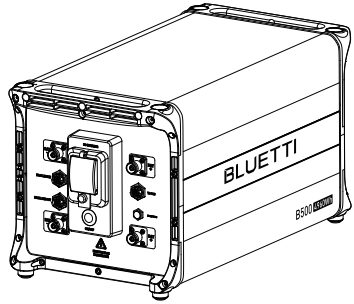
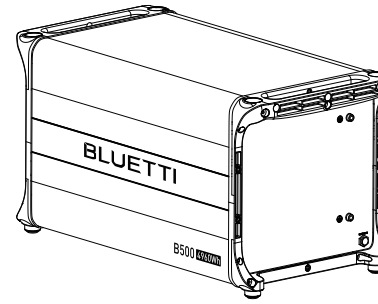
The B500 battery energy storage system is designed for residential and light commercial use. Single B500 battery pack has a capacity of 4.96kWh. BLUETTI EP800 ESS supports 4 *B500 units for a whopping 19.84kWh, enough to power a house for several days.

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 energy storage system.

4.2 Overview

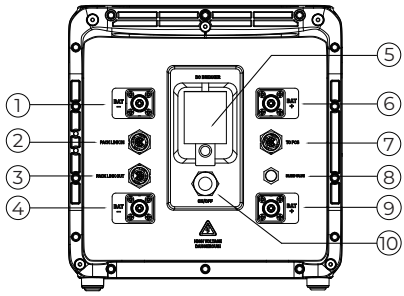
4.2.1 Appearance

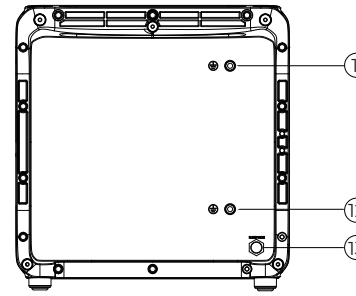
Table 4-1

	
Left	Right

4.2.2 Interface

Table 4-2

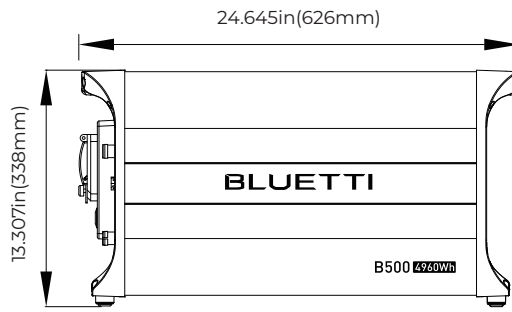




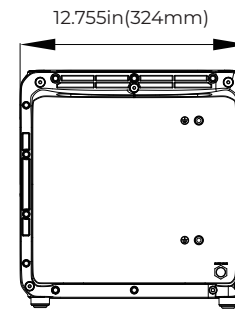
Left		Right	
No.	**Name**	**No.**	**Name**
1	BAT- terminal 1	8	Bleed valve 1
2	Pack link-in	9	BAT+ terminal 2
3	Pack link-out	10	Power button
4	BAT- terminal 2	11	Grounding port 1
5	Main switch	12	Grounding port 2
6	BAT+ terminal 1	13	Bleed valve 2
7	Inverter signal port (TO Pcs)		

4.2.3 Dimensions

Table 4-3 (Unit: in/mm)



Front



Right

4.2.4 Interface Description

Table 4-4

Interface	Description
Inverter signal port (To Pcs)	For communication between inverter and battery packs. Only the top B500 needs to be connected to the LINK PORT 2 of the inverter.
PACK LINK IN	For communication between battery packs. Connect to the PACK LINK OUT port of the upper battery when multiple B500s are stacked (except for the top B500).
PACK LINK OUT	For communication between battery packs. Connect to the PACK LINK IN port of the lower battery when multiple B500s are stacked (except for the bottom B500).
BAT+ terminal	Connect to the BAT+ terminal of another B500 or the inverter.
BAT- terminal	Connect to the BAT- terminal of another B500 or the inverter.

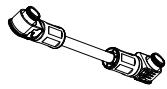
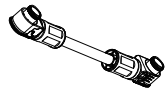
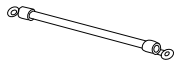
4.3 LED Indicators

Table 4-5

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.

4.5 Battery Cables

Table 4-6 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

5. IoT Controller

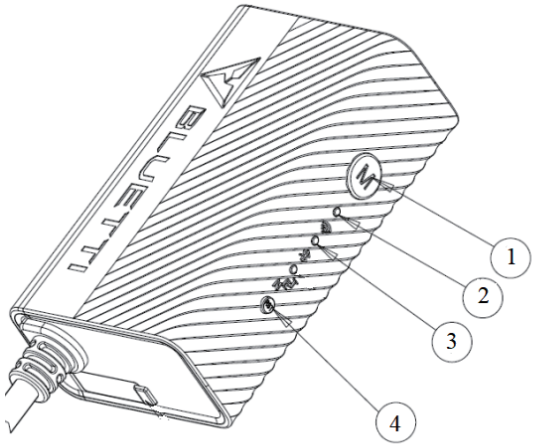
5.1 Communication Principle

The IoT controller supports WiFi and Bluetooth dual-mode communication, allowing connectivity between the EP800 ESS and BLUETTI app. Everything about the system, including power generation and consumption, alarms, and operating status, can be uploaded to the BLUETTI server via the WiFi network. By registering the EP800 ESS with your BLUETTI account, you're able to monitor and control this unparalleled power plant anytime and anywhere.

Table 5-1

Communication	Note
WiFi	Standard
Bluetooth	Standard

5.2 Overview



1.Menu Button.
To factory reset the controller, press and hold this button for about 5s till all LED indicators flash.

2. WiFi Indicator.
Flash till the controller connected to WiFi.

3. Bluetooth Indicator.
Flash till the controller connected to Bluetooth.

4.Reboot Button.
Press to reboot the controller.

5.3 Safety Instructions

- The IoT controller is ONLY applicable to BLUETTI products only.
- Do not keep the controller near heat sources or in high temperatures.
- Do not store the controller with flammable liquids, gases, or explosive materials.
- The inspection, testing, and maintenance should be performed by qualified personnel.

Warning

- Do not block or cover the openings of the controller. Keep it out of the reach of children.
- Use dry powder fire extinguisher in case of fire.

5.4 Connection and Operations

Step1: Plug the IoT cable into EP800 Link Port 1.

Step2: Turn on EP800, and the IoT controller starts up automatically.

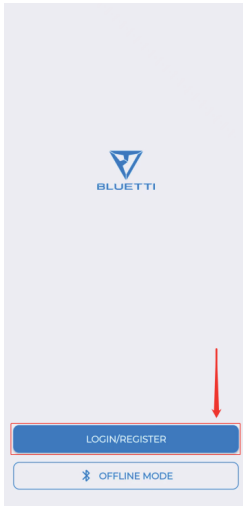
Step3: Configure the controller in BLUETTI app.

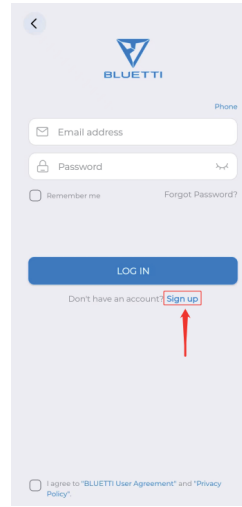
- Scan the QR code below to download the BLUETTI App, or search for “BLUETTI” in the App Store/Google Play.

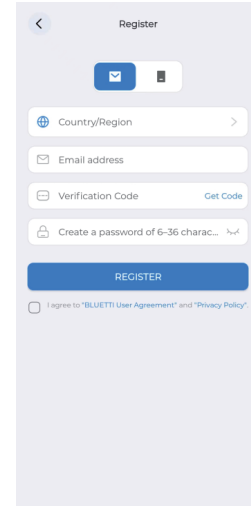
Download on the App Store

GET IT ON Google Play

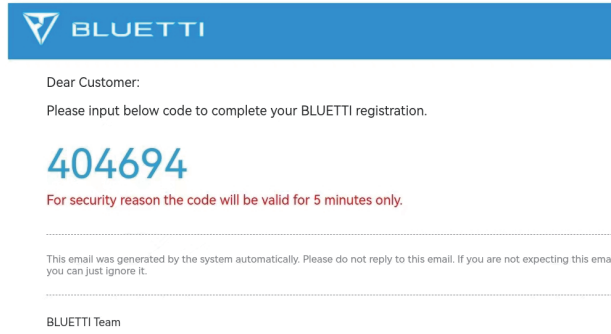
- The BLUETTI app connects to EP800 ESS via Bluetooth or WiFi. Tap “LOGIN/REGISTER” and “Sign up” to register your BLUETTI account. Fill in the necessary information to continue.







- Check your email for verification code from BLUETTI server, and fill in the code to activate your BLUETTI account.

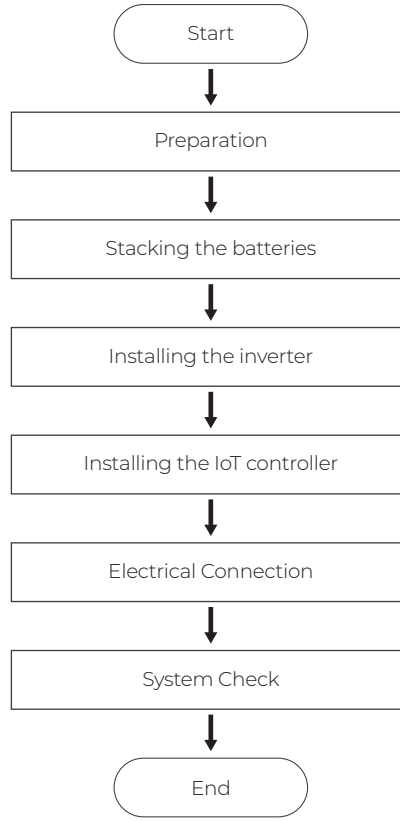


6. System Installation

Danger

- When the EP800 ESS is not activated, the grid side and off-grid side are directly connected. Therefore, it is important not to touch any exposed terminals to ensure safety.
- When the grid side is powered on, the off-grid side will also be energized with AC output. Please strictly adhere to safety operating procedures to avoid electric shock.
- Before installation, disconnect all circuit breakers for the battery pack, solar system, and the main switch of the grid to ensure safe operations.

6.1 Installation Procedure



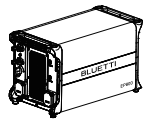
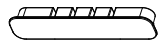
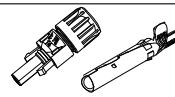
6.2 Preparation

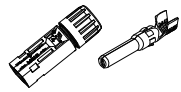
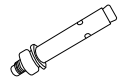
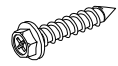
6.2.1 Check Packing List

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

EP800 Inverter Packing List

Table 6-1

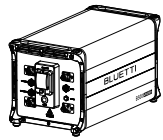
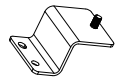
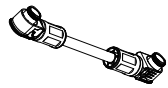
No.	Picture	Description	Qty.
1		EP800 inverter	1
2		Bracket #1	2
3		Bracket #2	2
4		M5 hex nut	2
5		Plastic cover (PV)	1
6		Plastic cover (AC, with label)	1
7		Cord organizer	2
8		AC cable protection case	1
9		Plastic housing (PV+ Input) Metal core (PV+ Input)	2

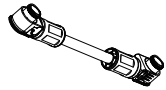
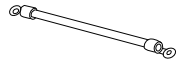
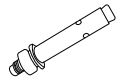
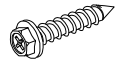
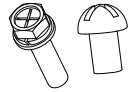
10		Plastic housing (PV- Input) Metal core (PV- Input)	2
11		MC4 wrench	2
12		Black protection cover (BAT- Input) (Pre-installed on EP800 inverter)	1
13		Red protection cover (BAT+ Input) (Pre-installed on EP800 inverter)	1
14		M4*12 screw (8 for BAT+/- protection cover, 6 for AC cable protection case, pre-installed on EP800 inverter)	14
15		M8*12 screw (For battery power cable)	2
16		M6*12 screw (For bracket, pre-installed on EP800 inverter)	2
17		M5*10 screw (4 for fixing device to the bracket, 2 for PV grounding)	6
18		M4*10 screw (For exterior trim)	10
19		M8*60 expansion bolt	2
20		Self-tapping screw, ST8×40	2
21		RNB8-6S OT terminal (AC)	7
22		RNB3.5-5S OT terminal (PV Grounding)	3

23		Red battery power cable (Positive)	1
24		Black battery power cable (Negative)	1
25		IoT Controller	1
26		Mounting bracket (IoT controller)	1
27		Expansion wall plug	2
28		M3 tapping screw (KA3*25)	2
29		DRMs communication cable (4m)	1

B500 Battery Packing List

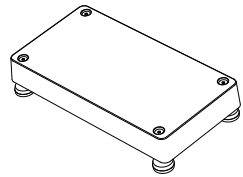
Table 6-2

No.	Picture	Description	Qty.
1		B500 Battery Module	1
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

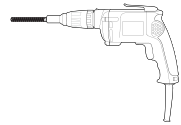
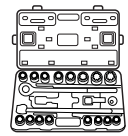
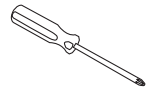
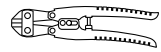
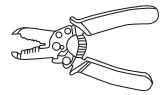
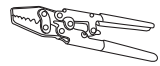
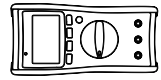
6.2.2 Base Packing List

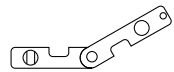
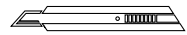
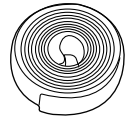
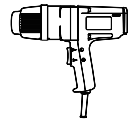
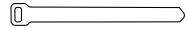
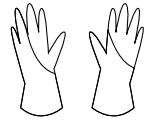
Table 6-3 Base Packing List

No.	Picture	Description	Quantity
1		Base	1

6.2.3 Required Tools

Table 6-4 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

6.3 Installation Requirements

6.3.1 Environment Requirements

- Install the EP800 ESS in a well-ventilated and spacious area to ensure good heat dissipation.
- The EP800 ESS 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 EP800 ESS away from flammable liquids, gases, or explosive materials.
- Keep away from children and pets.
- Do not install the EP800 ESS 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: -4 ℉ ~104 ℉
- Relative humidity: 5%～95% (non-condensing)
- Maximum height: 6561ft.

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.

6.3.2 Location Requirements

- The EP800 ESS 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.

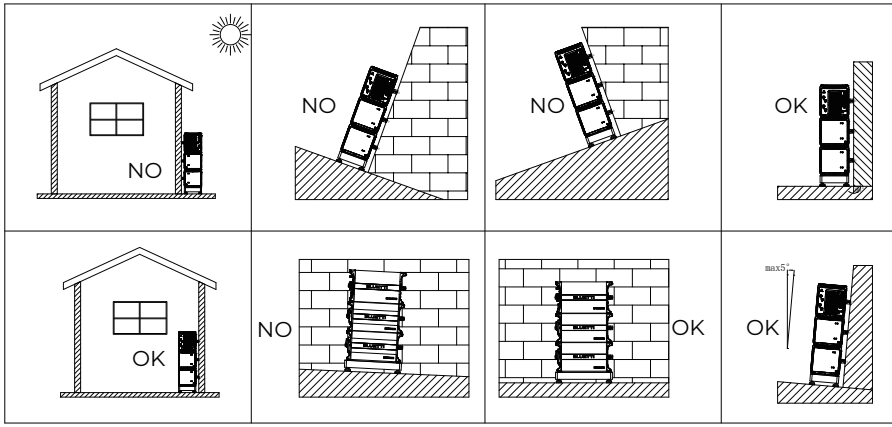


Fig. 6-2

6.3.3 Space Requirement

Danger

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

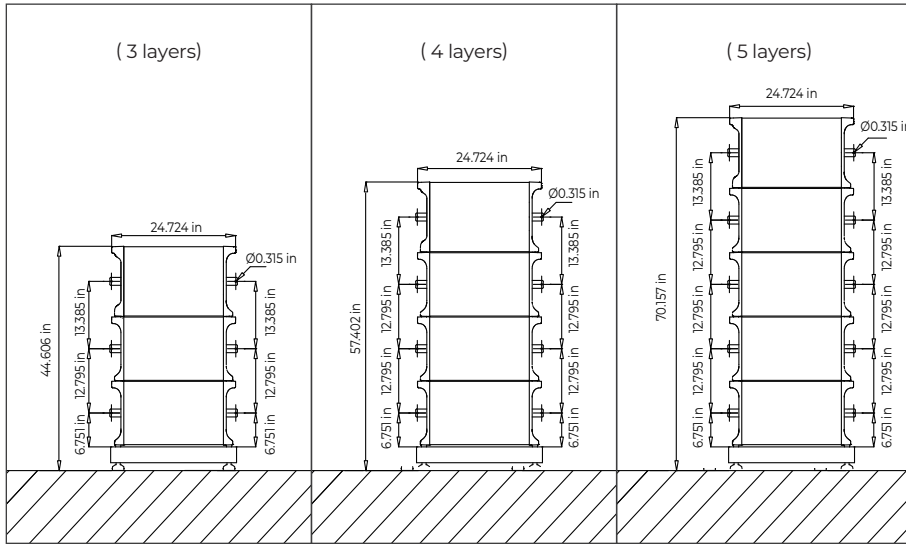


Fig. 6-3 (Unit: in)

6.4 Stacking the Units

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.

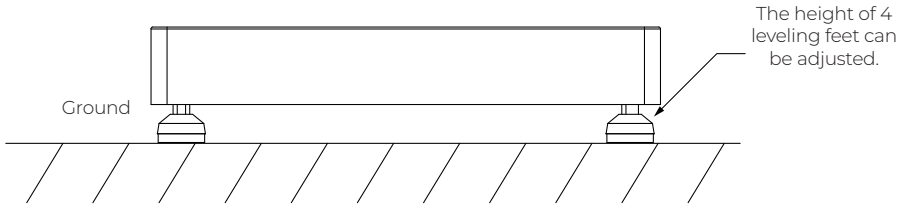


Fig. 6-4

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.

Step 6: Follow the same steps to install the EP800 inverter on top.

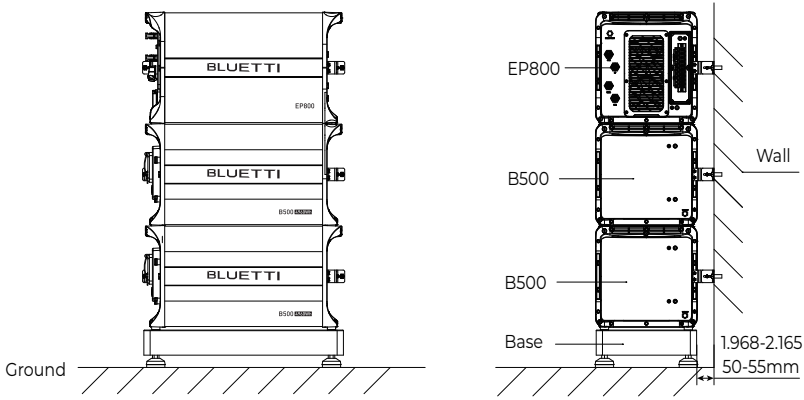


Fig. 6-5

6.5 Install the IoT controller

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

To ensure a strong and uninterrupted wireless signal, it is recommended to install the IoT controller in an open space, away from obstructions, and minimize the distance between your home WiFi router and the IoT controller.

Avoid installing the IoT controller near steel-reinforced concrete or metal walls, as these materials can interfere with WiFi and Bluetooth signals.

Step 1: Drill 2 pilot holes in the wall. Please refer to the drill position and hole size shown in Fig. 6-6-1 and Figure 6-6-2. The depth of hole is 0.94in(24mm).

Step 2: Hammer the expansion wall plug in until it's flush with the wall. See Fig. 6-6-3.

Step 3: Fix the mounting bracket onto the wall and use the cross screwdriver to fasten 2 self-tapping screws into the wall plugs. See Fig. 6-6-4.

Step 4: Align the controller's buckle over the U-slot and push the controller downwards until it snaps in place. See Fig. 6-6-5 and Fig. 6-6-6.

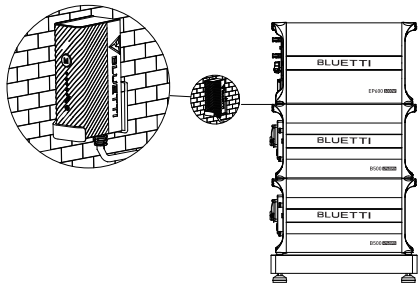


Fig. 6-6-1

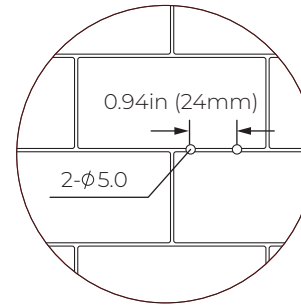


Fig. 6-6-2

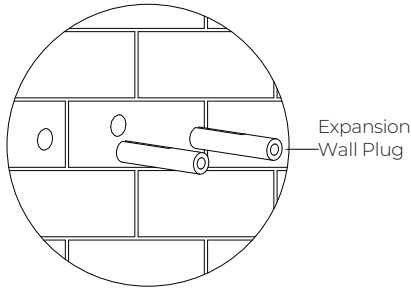


Fig. 6-6-3

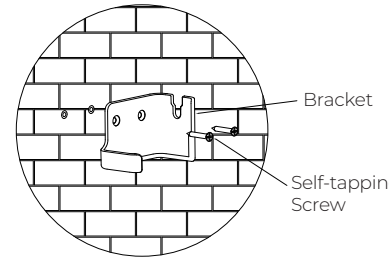


Fig. 6-6-4

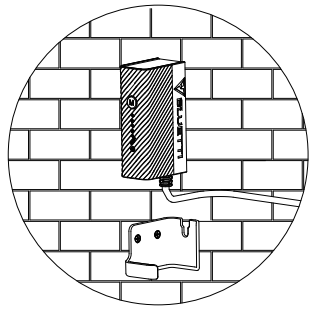


Fig. 6-6-5

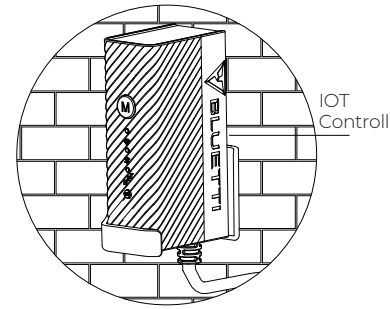


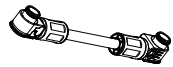
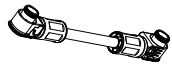
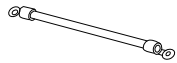
Fig. 6-6-6

Fig. 6-6

6.6 Electrical Connection

6.6.1 Cables

Table 6-5 Cables

Picture	Cable
	Red battery power cable (Positive)
	Black battery power cable (Negative)
	Communication cable
	Red battery expansion cable (Positive)
	Black battery expansion cable (Negative)
	Grounding cable

6.6.2 Connection Procedure

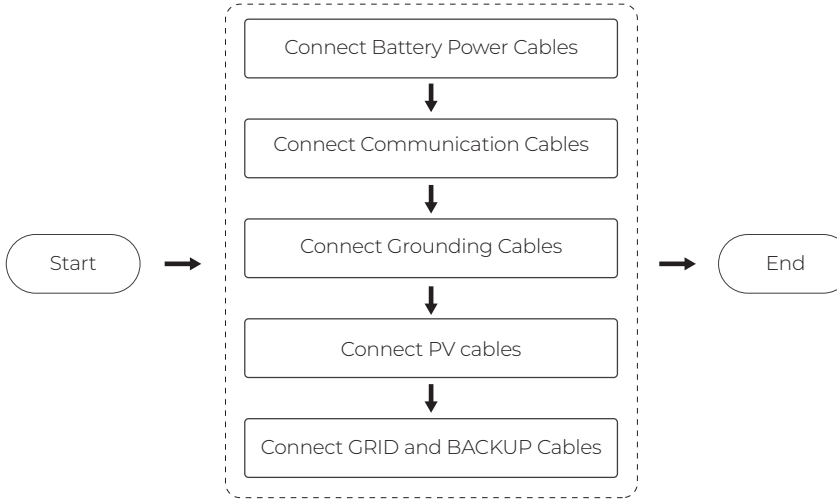


Fig. 6-7

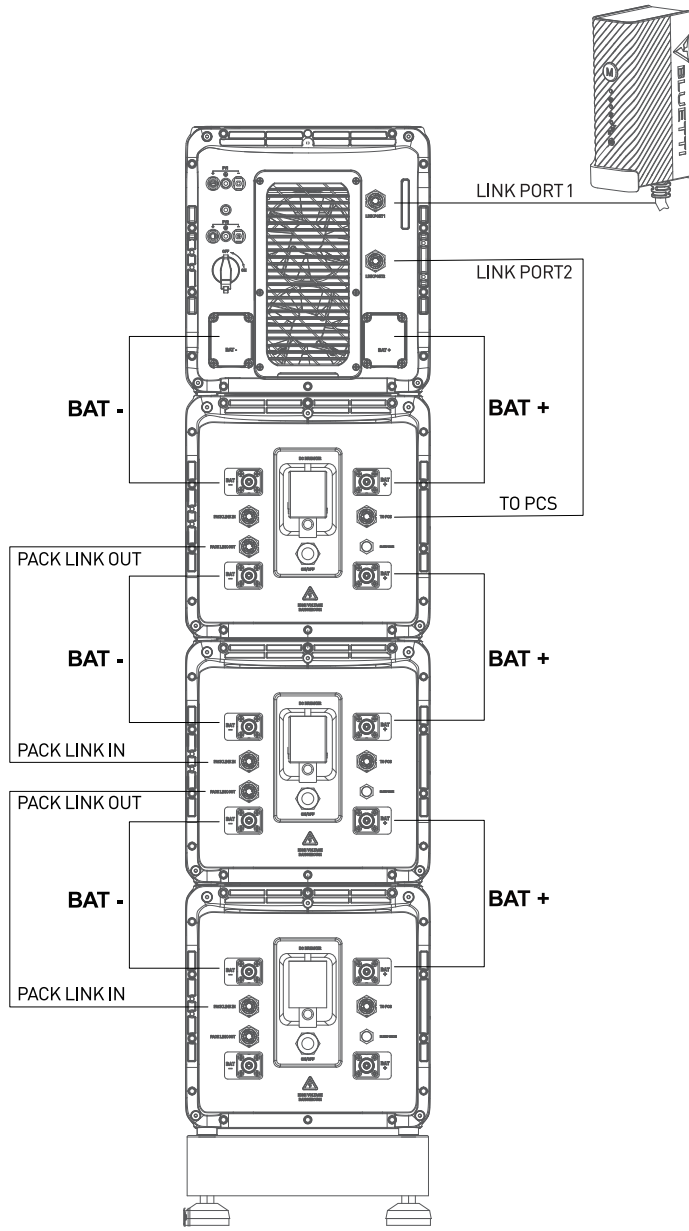
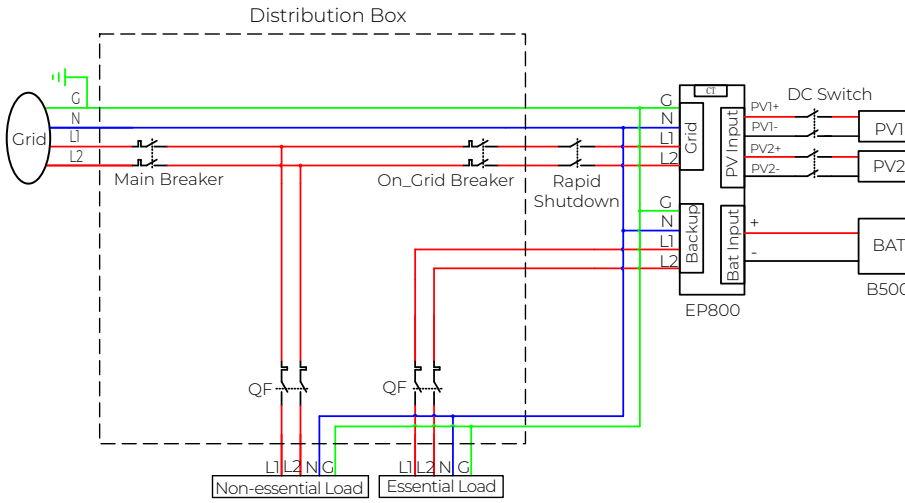

LINK PORT 1
LINK PORT2
BAT -
BAT +
TO PCS
PACK LINK OUT
BAT -
BAT +
PACK LINK IN
PACK LINK OUT
BAT -
BAT +
PACK LINK IN

Fig. 6-8



6.6.3 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 6-9-1 and 6-9-2.

Step 2: Connect the top B500 to EP800 inverter via the battery power cables - black cable for negative terminals, red for positive terminals. See "③" "④" of Figure 6-9-1and 6-9-2.

- Fix the black battery power cable to the EP800 inverter BAT- terminal with M8 screws.
- Secure the black protection cover with M4 screws. See Figure 6-9-3.
- Connect the other end of the cable to the B500 BAT- terminal.
- Repeat to connect the red battery power cable. See Figure 6-9-4.

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

Step 3: Check that the cables are properly connected.

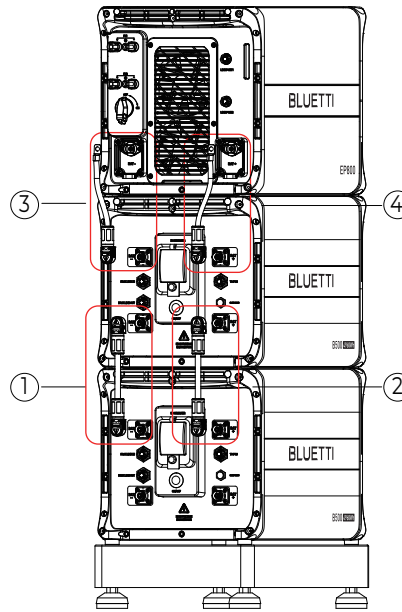


Figure 6-9-1

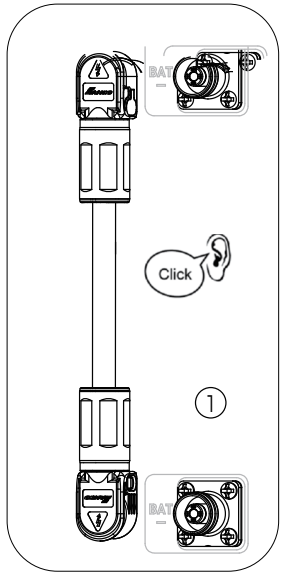


Figure 6-9-2

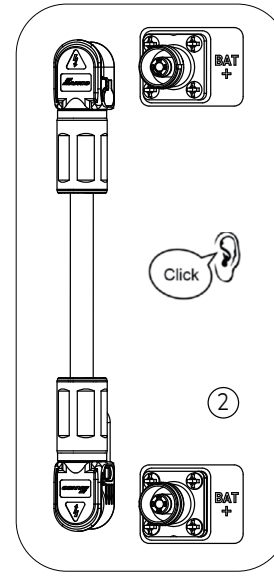


Figure 6-9-2

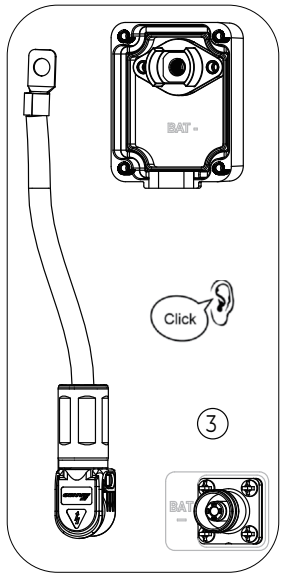


Figure 6-9-2

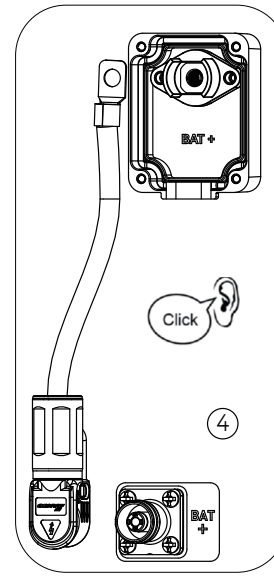
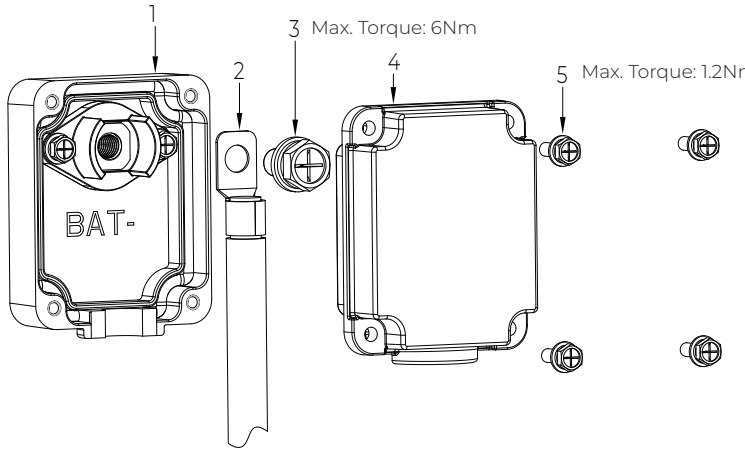
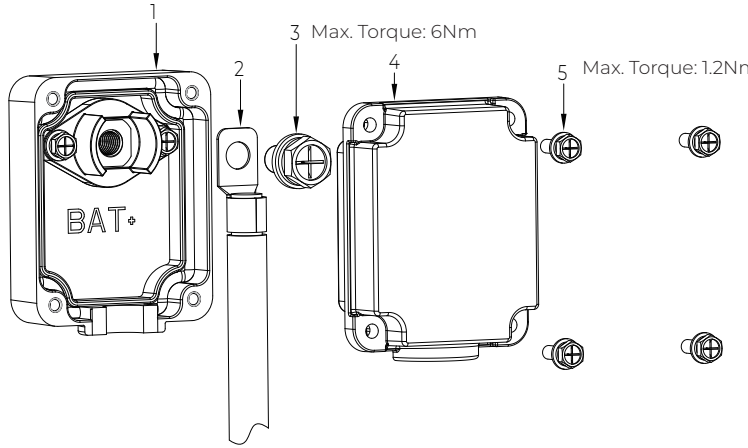


Figure 6-9-2



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 6-9-3



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 6-9-4

6.6.4 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 Fig. 6-10 "①".

Step2:

For communication between the EP800 inverter and B500 battery packs, plug one end of the communication cable to the top B500's inverter signal port (TO Pcs), and the other to the Link Port 2 of the EP800 inverter. See Fig. 6-10 "②".

Step3:

Connect the IoT controller to the EP800 inverter. See Fig. 6-10 "③".

Note: For how to integrate multiple B500s to the EP800 ESS, please refer to Fig. 6-8.

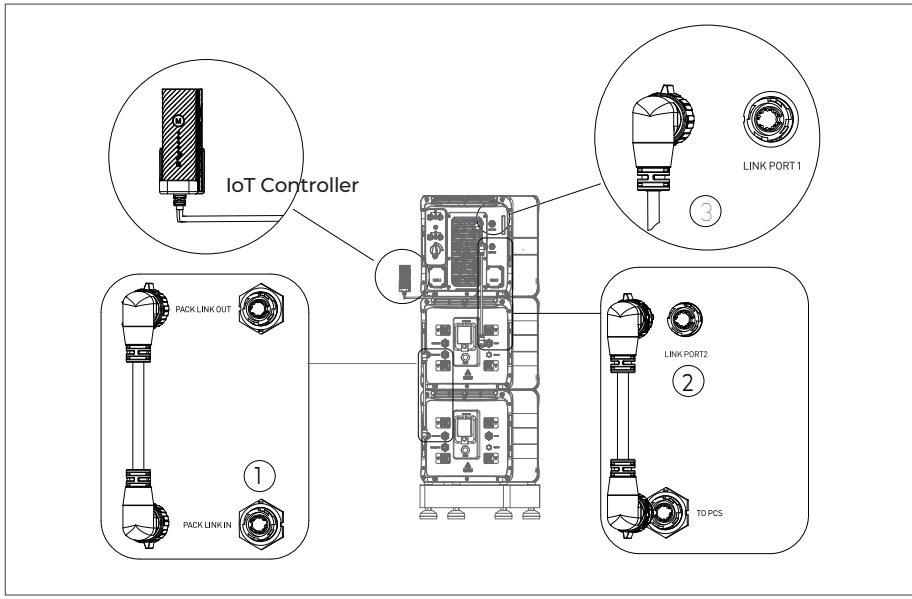


Figure 6-10

6.6.5 Connect Grounding Cables

	Danger
	The positive and negative terminals of the PV (photovoltaic) system inverter should not be grounded, as it may lead to inverter failure. However, it is important to ground all non-current carrying metal parts, including brackets, distribution boxes, inverter enclosures, battery pack enclosures, and other relevant components.

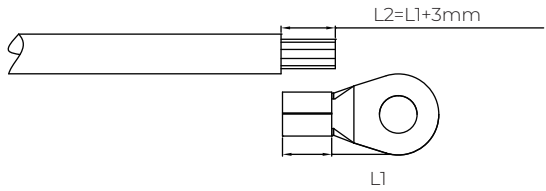
Step 1: It is recommended to use a 12AWG outdoor power cable and RNB3.5-5S OT terminals. Strip the insulation layer of the ground cable with a cable stripper to a proper length. See Fig. 6-11-1.

Step 2: Insert the exposed core wires into the OT terminal and crimp them with a crimper, as shown in Fig. 6-11-2.

Step 3: Fix the OT terminal with M5 screws at the position shown in Fig. 6-11-3. Recommended torque: 3Nm

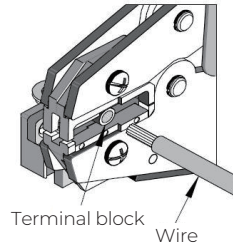
Note: L3 is the length between the insulation of the cable and the crimped part. L4 is the length between the crimped part and core wires protruding from the crimped part.

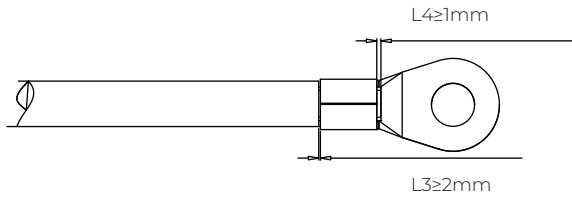
The cavity formed after crimping the conductor crimp strip shall wrap the core wires completely. The core wires shall contact the terminal closely.



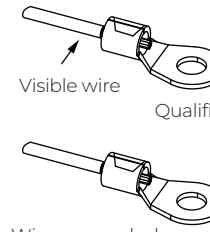
L2 is 3mm longer than L1

6-11-1

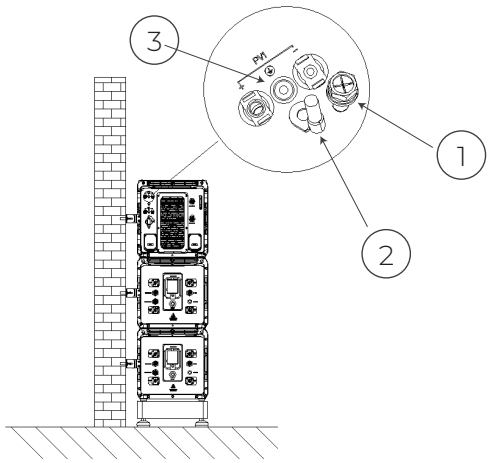




6-11-2



6-11-3



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

Figure 6-11-3 Grounding Connection

6.6.6 Connect PV cable

Attention

Before removing the PV input positive and negative connectors, make sure the DC switch on the inverter has been set to “OFF”.

Step 1: It is recommended to use a 12AWG outdoor power cable. Disconnect the cable connector from the EP800 positive and negative connectors. (You’re strongly recommend to distinguish the positive and negative connectors with different colors.)

Step 2: Use wire strippers to peel off the insulation layer of the positive and negative power cables. For the specific stripping length, refer to Fig. 6-12-1.

Step 3: Insert the positive and negative power cables into the positive and negative metal terminals separately. Crimp them tightly to ensure that the cable can not be pulled out. See Fig. 6-12-2.

Step 4: Insert the crimped positive and negative power cables through the locking nut and into the corresponding plastic housing until you hear a click, which indicates that the metal core has been snapped into place, and then tighten the locking nut. See Fig. 6-12-3 and Fig. 6-12-4.

Step 5: Use a multimeter to confirm the positive and negative poles. See Fig. 6-12-5.

The positive and negative connectors can then be inserted into the PV input of EP800 inverter. See Fig. 6-12-6.

If you need to remove the PV positive and negative connectors from the inverter, use a removal crimper to insert the bayonet as shown in Fig. 6-12-7, and press down to remove the connectors.

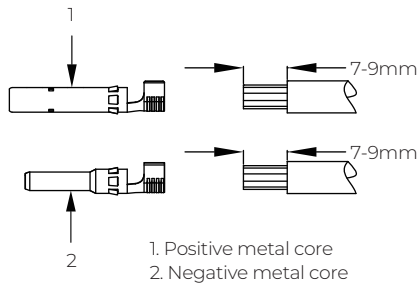


Figure 6-12-1

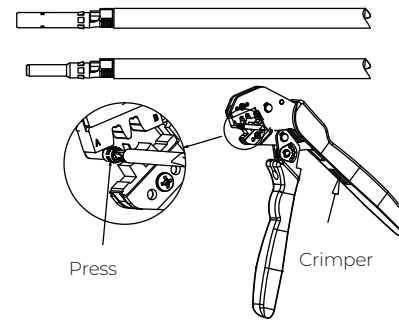
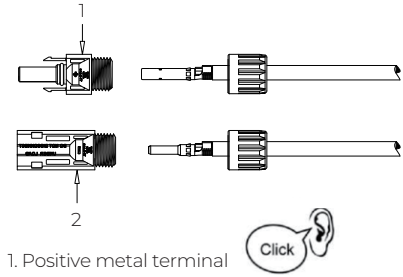


Figure 6-12-2



1. Positive metal terminal
2. Negative metal terminal

Figure 6-12-3

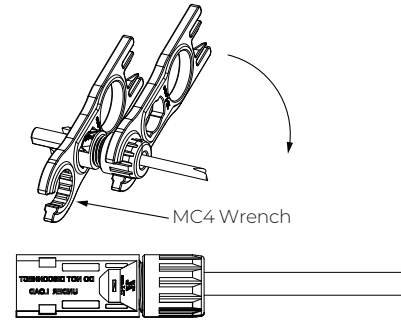


Figure 6-12-4

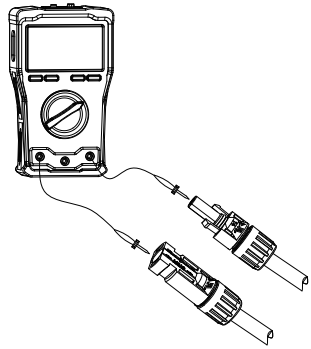


Figure 6-12-5

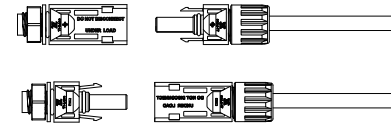


Figure 6-12-6

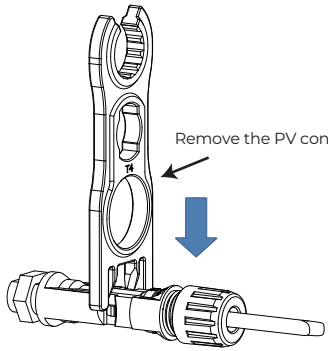


Figure 6-12-7

6.6.7 Connect GRID and BACKUP Cables

Step 1: Prepare neutral wire, fire wire and grounding wire (White, black, yellow-green 8AWG outdoor power cables and RNB8-6 OT terminals are recommended.).

Strip the cables according to Fig. 6-13-1.

Step 2: Insert the exposed core wires into the OT terminal and crimp them with a crimper, as shown in Fig. 6-13-2.

Step 3: Fix the terminals to the inverter BACKUP and GRID areas with a cross screwdriver as shown in Fig. 6-13-3 and Fig. 6-13-4.

Step 4: Attach the PG waterproof connector to the AC cable protection case. Tighten the hexagon nut at the bottom of the connector with a socket tool, as shown in Fig. 6-13-5.

Step 5: Pass the DRMs cable through the PG conductor, as shown in Fig. 6-13-6.

Step 6: Pull out the BACKUP and GRID cables and securely fasten the protection case to the inverter using M4 *12 screws, as shown in Fig. 6-13-7.

Step 7: To complete the installation, pass the fitting through the waterproof hose and insert the BACKUP and GRID cables into the hose. Tighten the fitting to the protection case as shown in Fig. 6-13-8.

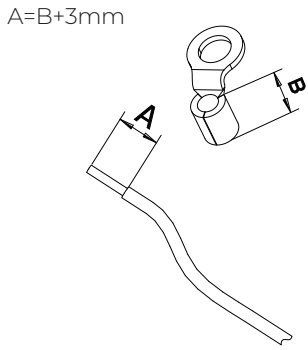


Figure 6-13-1

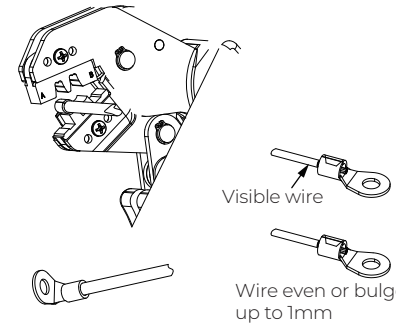


Figure 6-13-2

M6 Screws
Max. Torque: 3.0Nm

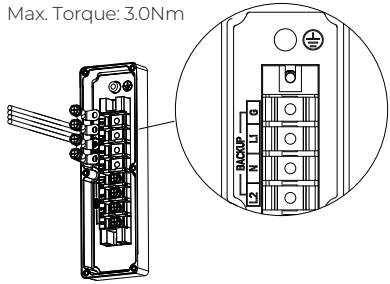


Figure 6-13-3

M6 Screws
Max. Torque: 3.0Nm

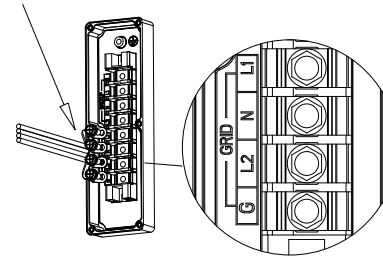
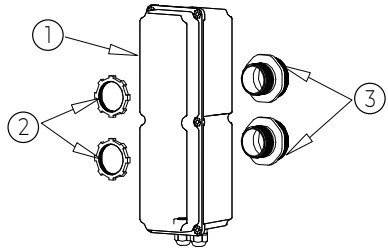
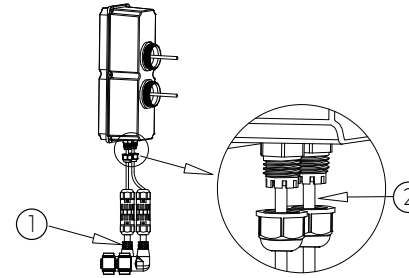


Figure 6-13-4



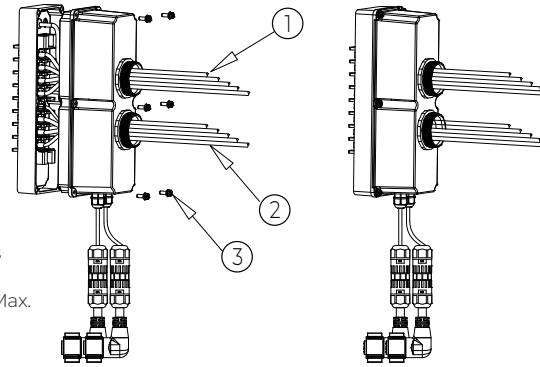
① AC cable protection case
② Hose connection nut
③ Waterproof conductor

Figure 6-13-5



① AC cable protection case
② Hose connection nut

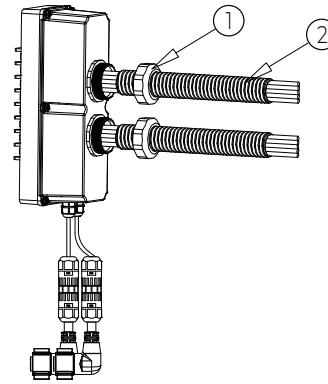
Figure 6-13-6



① BACKUP cables
② GRID cables
③ M4 *12 screws, Max. Torque: 1.2Nm

Figure 6-13-7

Fig. 6-13 Load cable connection



① Waterproof hose fitting
② Waterproof hose

Figure 6-11-8

7. System Check

7.1 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.

7.2 Power On

Step 1: Switch on the DC circuit breakers on EP800.

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 EP800 system status through the app.

7.3 Power Off

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 system powers off.

Warning

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

8. System Maintenance

8.1 USB firmware upgrade

The EP800 inverter supports firmware upgrades via a USB drive to optimize its performance and avoid failures caused by firmware errors.

Step 1: Connect the USB drive to a USB port on your computer.

Step 2: Download the upgrade file*, unzip and store it on the USB drive.

Step 3: Connect the USB drive to the USB port on EP800.

Step 4: Power on EP800.

Step 5: The firmware upgrade starts automatically once the upgrade files are detected.

Step 6: The buzzer beeps once after the firmware is updated successfully. Please unplug the USB drive, or EP800 will report a USB Format Error.

Step 7: Pair EP800 ESS with BLUETTI app, then you can check the firmware version in System information>> Firmware version. If any of the following occurs, please try the solutions provided. If the symptom persists after 5 attempts, contact the BLUETTI support team.

* Please contact our company for further assistance.

Table 8-1

Error Description	Troubleshooting
USB Upgrade Failed.	Please contact the BLUETTI support team.
USB Format Error	1.Make sure the USB is formatted as FAT32 with no more than 32G in size. 2.Check if the upgrade files exist or expire. Please download the latest upgrade files.
Firmware version not updating or abnormal.	Please download the latest upgrade files. If the symptom persists, contact the BLUETTI support team.

8.2 OTA firmware upgrade

The EP800 ESS also supports OTA firmware upgrade. For details, please refer to “Firmware Upgrade” in the BLUETTI APP Instructions.

9. System Disposal

9.1 Remove the inverter

When the inverter is no longer in use, it must be disposed of properly.

Step 1: Power off the system.

Step 2: Disconnect all electrical connections to the inverter, such as signal cable, DC input cable, power cable, AC input cable, grounding cable, etc.

Step 3: Remove the inverter and related parts.

9.2 Recycle the inverter and 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.Out of warranty or severely degraded in performance.

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

10. Specifications

AC Port

AC (Grid-tied)		
Item	Description	Note
Wiring	L1/L2/N/G	
Rated Voltage	120VAC / 240VAC	
Voltage Range	110V-126V / 220V-252V	
Input Frequency Range	55Hz-65Hz	
Maximum Input Apparent Power	12000VA	Bypass + Grid Charging
Maximum Input Current	50A	Bypass + Grid Charging
Maximum Input Power	7680W	
Power Factor (PF)	1.0	Grid Charging
Current Total Harmonic Distortion (THD)	<3%	Grid Charging
On and Off-Grid Switching Time	<20ms	
Grid Charging Efficiency	>94% Peak	

AC (Off-Grid)		
Item	Description	Note
Rated Output Power	7680W	
Output Voltage	120V/240V	
Output Current	32A	
Output Frequency	60Hz	
Inversion Efficiency	94% Max.	
Output Voltage THD	<3%	Pure resistive load
Crest Factor (CF)	3:1	
Maximum Number of Parallel Units	2	
Overload	100%-110% of rated power, 10min; 110%-150% of rated power, 10s.	
Protection	Output overcurrent protection Output short-circuit protection Over temperature protection	

DC Port

PV Input		
Item	Description	Note
Maximum Input Power	9000W	
MPPT Channel	2	3000W+ 6000W
Array In Series	1+2	
Maximum Input Voltage	550V	
MPPT Voltage Range/Rated	150V～500V/360V	
Single MPPT Maximum Input Current	12.5A/25A	
Single MPPT Maximum Short-circuit Current	15A/30A	
MPPT Efficiency	99.9%	
PV Inversion Efficiency	96.0% Peak	PV Input
Protection	Reverse polarity protection Insulation resistance detection Arcing detection	

Battery		
Item	Description	Note
Battery Model	B500	
Number of Parallel Units	2-4	
Maximum Input Power	9000W	When there are only two units connected, the input power is lower.
Charging Strategy	BMS Orders (CC/CV)	

General

AC (Grid-tied)		
Item	Description	Note
Relative Humidity	5%-95%	
Static Power	18W	
Standby Power	75W	
Operating Temperature	-4°F~104°F/-20℃~40℃	
Noise	≤50dB (A)	
Cooling	Forced air cooling	
Protection Grade	IP65/NEMA 4X	
Working Altitude	≤6561ft/2000m	
Dimensions (L*W*H)	24.645inx12.755inx14.488in /626mm × 324mm × 368mm	
Net Weight	97lbs/44kg	
Communication	USB / WiFi / Bluetooth	
Warranty	10 years	

Product Compliance and Certification

Compliance and Certification	
System	UL9540
Inverter	UL1741
Battery	UL1973, UL9540A
Shipping	UN38.3
Emissions	FCC Part 15 Class B, ICES
Others	NEMA 4X,California Proposition 65

11. Troubleshooting

No.	Error Description	Troubleshooting
1.	BUS Overvoltage	Turn off the inverter and wait 30 minutes to restart it. If the symptom persists, please contact the BLUETTI support team.
2.	BUS2 Overvoltage	
3.	BUS Undervoltage	
4.	BUS2 Undervoltage	
5.	Hardware BUS overvoltage	
6.	Hardware BUS2 overvoltage	
7.	Hardware Battery Overvoltage	
8.	Hardware Inverter Overcurrent	
9.	Hardware Inverter2 Overcurrent	
10.	Hardware LLC1 Input Overcurrent	
11.	Hardware LLC2 Input Overcurrent	
12.		
13.	Auxiliary Power Undervoltage	
14.	DC Component Exception	
15.	Relay Failure	
16.	PV Connection Error	
17.	PV1 Overcurrent	Turn off the inverter and wait 30 minutes to restart it. If the symptom persists, please contact the BLUETTI support team.
18.	PV2 Overcurrent	
19.	Reserved	
20.	PV1 Voltage High	Check if the total voltage of solar panels exceeds the limit. Reduce the number of solar panels, and the inverter resumes operation after calibration.
21.	PV2 Voltage High	
22.	Reserved	
23.	PV1 ISO Failure	Check the insulation resistor between solar array and grounding for a short circuit.
24.	PV2 ISO Failure	
25.	Reserved	

26.	Hardware PV1 Failure	
27.	Hardware PV2 Failure	
28.-30.	Reserved	
31.	Phase Sequence Error	Check if the grid connection meets installation requirements.
32.	Fan Failure	Check if the inverter fan operates well.
33.	Zero Drift Anomaly	Turn off the inverter and wait 30 minutes to restart it. If the symptom persists, please contact the BLUETTI support team.
34.	Hardware Input Overcurrent	
35.	DC Input Voltage Low	Check if the DC voltage is too low.
36.	DC Input Voltage High	Check if the DC voltage is inconsistent with the battery specifications.
37.	DC Input Overcurrent	
38.	LLC Output Overvoltage	
39.	LLC2 Output Overvoltage	
40.	Inverter Overload	Check if too much lectrical load is connected to the inverter.
41.	L2 Inverter Overload	
42.		
43.	L1 Inverter Output Failure	
44.	L2 Inverter Output Failure	
45.	L3 Inverter Output Failure	
46.	Overtemperature Protection	
47.	Communication Failure	Turn off the inverter and wait 30 minutes to restart it. If the symptom persists, please contact the BLUETTI support team.
48.	Reserved	
49.	DSP Communication Interrupted	Turn off the inverter and wait 30 minutes to restart it. If the symptom persists, please contact the BLUETTI support team.

50.	BMS Communication Interrupted	Check that the external communication terminals are connected correctly and restart the device. If the symptom persists, please contact the BLUETTI support team.
51.	IOT Communication Interrupted	
52.	Zero Drift Anomaly-ARM	Turn off the inverter and wait 30 minutes to restart it. If the symptom persists, please contact the BLUETTI support team.
53.	RTC Read and Write Anomaly	
54.	Excessive Inverter Leakage Current	
55.	Operating Ambient Temperature Anomaly	Please make sure use the system within specific temperature range. If the symptom persists, please contact the BLUETTI support team.
56.	Temperature 1 Anomaly	
57.	Temperature 2 Anomaly	
58.	Temperature 3 Anomaly	
59.	Temperature 4 Anomaly	
60.	BMS Charge Protection	Check the details on BLUETTI app.
61.	BMS Discharge Protection	
62.	BMS System Failure	
63.-64.	Reserved	
65.	PV Overvoltage	
66.	LLC Output Voltage Low	
67.	BUS Soft Start Anomaly	
68.	Parallel Configuration Error	
69.	Parallel Communication Loss	
70.-96.		
97.	Grid Voltage High	If it occurs occasionally, the grid may go through abnormal working conditions. The inverter recovers after the grid resumes. If it occurs many times, check if the grid voltage and frequency support the inverter input specifications. Check the inverter AC circuit breaker and connections. If the voltage and frequency are beyond the range, please contact the BLUETTI support team.
98.	Grid Voltage Low	
99.	Grid Over Frequency	
100.	Grid Low Frequency	
101.	Grid Oscillation	
102.	Grid Failure	

103.	PV1 Voltage Low	Check the PV setup for proper working condition, and that voltage is within inverter PV input voltage range.
104.	PV2 Voltage Low	
105.		
106.	Generator Voltage Anomaly	
107.-128.		
129.	EEPROM Read and Write Anomaly	Please reconfigure the settings on BLUETTI app. If the symptom persists, please contact the BLUETTI support team.
130.	Grid Overvoltage - ARM	
131.	Grid Undervoltage - ARM	
132.	Grid Overfrequency - ARM	
133.	Grid Underfrequency - ARM	
134.	USB Format Error	Please make sure that the USB is formatted as FAT32 with no more than 32G in size.
135.	USB Upgrade Failure	Turn on the inverter again. If the symptom persists, please contact the BLUETTI support team.
136.	Arcing Detection Anomaly	
137.	USB Communication Anomaly	
138.	USB No Upgrade File	Check if the upgrade files exist or expire. Please download the latest upgrade files.
139.-140.		
141.	Arc pulling module self-test failure	Turn on the inverter again. If the symptom persists, please contact the BLUETTI support team.
142.	Arc pulling module communication failure	Turn on the inverter again. If the symptom persists, please contact the BLUETTI support team.
143.	Data Clearing in Progress	
144.-145.		
146.	Excessive Relay Switching Today	
147.	Excessive Relay Switching at the Moment	

12. FAQs (Frequently Asked Questions)

Q1: Why can't I connect to the EP800 energy storage system via Bluetooth?

A1: (1) Check if the IoT controller is installed correctly and working properly (top light always on, bottom two lights flashing alternately).
(2) Make sure that the app has access to the Bluetooth on your phone.
(3) Turn on Bluetooth on your phone.
(4) Make sure the app has access the location on your phone.

Q2: Why can't I remotely connect to the EP800 energy storage system?

A2: (1) Check if the IoT controller is installed correctly and working properly (top light always on, bottom two lights flashing alternately).
(2)Make sure that the EP800 energy storage system is configured with WiFi.
(3)Double-check if you entered the correct password.
(4)Check if the WiFi is operating in the 2.4GHz frequency band.

Q3: Why is there no output from the BACKUP?

A3: (1) Check if the "AC Switch" on the app is turned on.
(2) If the B500 batteries have no power and are not charging from the grid or solar system, the output will be automatically turned off.

Q4: How long does it take to start the EP800 energy storage system?

A4: A: The startup time may vary slightly depending on the startup method, but it should not exceed 3 minutes.

Q5: Can I connect a solar system that exceeds the PV input limits of EP800 ESS? Will the EP800 ESS automatically adjust the input current?

A5: It depends on the voltage of your solar system. The EP800 ESS can handle a solar system with a voltage range of 150V-500V and supports up to 2 PV inputs with a total power of 9000W (3kW + 6kW). It automatically adjusts the input current within these limits, with a maximum current limit of 12.5A.

Q6: Can household appliances be run on solar power while the solar panels are charging the batteries?

A6: Yes, the EP800 ESS prioritizes solar power for running household appliances, and any extra energy is used to charge the battery. If you enable the "Feed to Grid" in the app, any surplus can be sent back to the grid.

Q7: How does the EP800 ESS power my household appliances? Does it use solar power first and then switch to grid power when needed?

A7: The EP800 ESS prioritizes solar energy for running household appliances. If there is not enough solar power available, the EP800 ESS will combine solar power with battery storage to run your appliances. If there is still not enough power to meet demand, the EP800 ESS will draw power from the grid.

Q8: What size solar system do I need to charge the EP800 ESS?
Please ensure that your solar system meets the following specifications:

A8: (1) Open circuit voltage: 150V-500V
(2) Maximum input power: 9000W (PV1: 3000W, PV2: 6000W)
(3) With the same connector (MC4).

Q9: Why isn't my solar system able to charge the EP800 ESS?

A9: (1)Make sure that the PV switch of the EP800 ESS is in the "ON" position.
(2)Check the connections of the solar panel and the PV input cables.
(3)Check if any PV-related error messages are reported in the App.

Q10: How can I upgrade the EP800 ESS firmware?

A10: Connect to the BLUETTI App via Bluetooth and follow the App instructions to upgrade the firmware.

Q11: What if the B500 battery pack's circuit breaker keeps tripping?

A11: Please don't manually reset it. Contact BLUETTI Support for assistance.

Q12: Why can't my EP800 ESS charge from the grid?

A12: To enable grid charging, go to the advanced settings in the app and turn on the “Charge from Grid” option. Don't forget to set the charging schedule to optimize the process.

Q13: What should I do if the SoC readings are inaccurate with sudden fluctuations?

A13: If you notice significant momentary fluctuations in the SoC, try performing two complete charge and discharge cycles on your EP800 ESS. This will help recalibrate the system and restore accurate SoC readings.

13. FCC Warning

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

FCC RF Exposure Warning Statement:

This equipment.complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment shall be installed and operated with minimum distance 20cm between the radiator & body

Please note that changes or modifications of this product is not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

IC

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

(1) This device may not cause interference.

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) L' appareil ne doit pas produire de brouillage;

(2) L' appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d' en compromettre le fonctionnement.

Radio Frequency Exposure Statement for IC

This equipment complies with IC exposure limits set forth for an uncontrolled environment. This equipment shall be installed and operated with minimum distance 10cm between the radiator & body.

Cet équipement est conforme aux limites d'exposition IC définies pour un environnement non contr?lé. Cet équipement doit être installé et utilisé avec une distance minimale de 10cm entre le radiateur et la carrosserie.

CAN ICES-3 (B) / NMB-3 (B)

This Class B digital apparatus complies with Canadian ICES-003.

(Cet appareil numérique de la Classe B conforme à la norme NMB-003 du Canada).

For more information, please visit:

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Just Power On