EP900
Energy Storage System

User Manual V2.3

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

BLUETTI

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From the very beginning, BLUETTI has tried to stay true to a sustainable future through green energy storage solutions 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.

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If you have any questions or concerns about this manual, please contact BLUETTI support for further assistance

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About the Manual

Purpose

This user manual describes the installation, electrical connection, commissioning, maintenance and troubleshooting of EP900 Home Energy Storage System (hereinafter referred to as EP900). **Please read and understand all instructions in this manual before use.**

Target Audience

- Installation, operation, and maintenance technicians
- End-user

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 EP900 home energy storage system.

Contents

Contents

1. Safety Guideline

1.1 Safety Instructions

1.1.1 Statement

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

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

The safety instructions 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.spacious.

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

- Force majeure events such as earthquakes, fires, storms, floods, or mudslides.
- Improper handling and installation that do not meet the requirements outlined in the manual.
- 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.

Attention

- This product is not intended for use with devices that have high-performance requirements for UPS (Uninterruptible Power Supply), including but not limited to data servers, workstations, medical equipment, and similar devices. Our company shall not be liable for any data loss, equipment damage, or personal injury resulting from the violation of this requirement.

1.1.2 General Requirements

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 exterior sustains minor scratches during transportation or use, be aware that these do not impact the equipment's normal operation.
- If the equipment catches fire, your personal safety is paramount. If it's safe to do so, promptly disconnect power at the main distribution box and use a carbon dioxide (CO_2), FM-200, or ABC dry powder fire extinguisher to suppress the 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 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.
- 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 the system out of the reach of children and pets.
- Do not install the system in areas prone to water accumulation.

Comply with applicable laws and regulations.

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

1.1.3 Personnel Requirements

- The installation, commissioning and maintenance should only be performed by trained professionals who obtain an electrical certification, follow proper safety precautions and operating practices.
- To operate BLUETTI equipment, professionals must possess the necessary qualifications and electrical certifications required by local regulatory authorities.

1.2 Installation Safety

Danger

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

Warning

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

Notice

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

1.2.1 General Requirements

- Before starting any work, turn off and isolate all electricity to the property at the main panel.
- Take measures to prevent the electricity from turning back on while working, such as a safety tag and lockout.
- Test the circuit's voltage before proceeding to verify that the course is off.
- After installing the equipment, remove the idle package materials from the site such as cartons, foam, plastic, nylon ties, etc.
- Keep people other than the installation technicians away from the 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.
- Position the system on the flat surface and firmly secure it to a wall or other solid objects.
- Use a non-abrasive cloth to clean the equipment and accessories. Do not use water or harsh chemicals.
- Do not make changes or modifications to the equipment's structure, installation sequence, etc.

1.2.2 Drilling Requirements

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

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

1.3 Battery Safety

1.3.1 Statement

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

- Failure to promptly charge the battery after installation and system connection, leading to over-discharge and subsequent damage.
- Inadequate maintenance as instructed in the user manual, includes irregular charging, improper capacity expansion, or prolonged periods of incomplete

charging and frequent over-discharging of the battery. If you need expansion, please contact BLUETTI support within 6 months of installation. Do not attempt this on your own.

- 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.
- Users or third parties using the battery in ways not specified in the user manual, including using batteries from other brands, using batteries with different rated capacities, or mixing the specified batteries with the aforementioned types.
- Battery damage caused by operating conditions or external power parameters that do not meet environmental requirements.

1.3.2 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.

1.3.3 General Requirements

Danger

- 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.

1.3.4 Other Requirements

Fire Emergency Measures:

- 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 components carrying dangerous voltage 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:

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

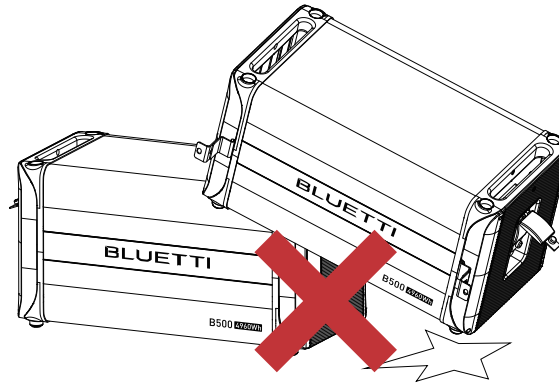


Fig. 1-1

1.3.5 Battery Disposal

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

1.4 Electrical Safety

1.4.1 General Requirements

- Make sure that all electrical connections comply with your local electrical standards.
- User-prepared cables should adhere to local laws and regulations.
- When performing electrical operations, use insulated tools for safety.

1.4.2 Grounding Requirements

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

1.4.3 Wiring Requirements

- Keep cables at least 1.18in (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 1.18in (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°C 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°C, allow it to acclimate to room temperature for a minimum of 24 hours before installation.

1.5 Maintenance Requirements

Warning

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.

  (f) Disconnect the charging power source before connecting or disconnecting battery terminals.

1.6 Transportation Requirements

All components of the EP900 home 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.

1.7 Storage Requirements

- When not using the EP900 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 3 months.

- Make sure the place where to store the system is well ventilated and spacious.
- Do not store the system in flammable or explosive environments.
- It is recommended to clean the surface frequently with a dry soft cloth.
- Keep the system out of the reach of children and pets.
- Do not stack anything on top of the equipment during storage.
- Avoid exposing the equipment to rain, humidity or direct sunlight.
- For details of storage temperature, please refer to Chapter 11. Specifications.

1.8 Handling Requirements

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

Weight	Number of people
<18kg (39.7lbs)	1
18kg-32kg (39.7lbs-70.5lbs)	2
32kg-55kg (70.5lbs-121.3lbs)	3
>55kg (121.3lbs)	4 or a cart

1.9 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.

Attention

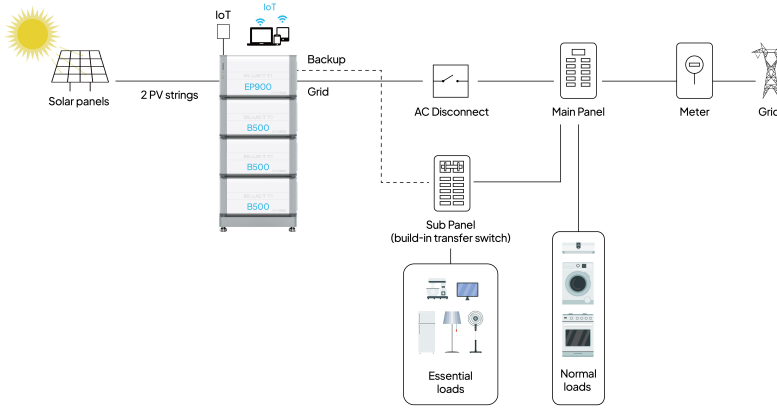
- The symbols on the box contain important information for safe operation.
- The nameplate on the side of the box contains important parameter information related to the product.

2. EP900 Home Energy Storage System

2.1 Introduction

The EP900 energy storage system consists of a grid-tied inverter (EP900), battery packs (B500), an IoT controller, and other accessories (current transformers, rapid shutdown, safety switches, cables, etc.). It seamlessly integrates with solar panels and home main panels to provide a complete home energy storage and grid-connected solar power solution.

With smart power generation and uninterruptible power supply features, the system is suitable for homes and regions with energy shortages or unstable power supply. Monitor and control it with a dedicated app - experience easy and practical power management.



Item	Description	Note
EP900 Inverter	An energy storage photovoltaic grid-connected inverter to handle photovoltaic input, grid-connected charging, and discharging.	Please refer to Chapter 3. EP900 Home Energy Storage Inverter for details.
B500 Battery	LiFePO4 battery pack to power the EP900 system.	Please refer to Chapter 4. B500 Battery for details.
IoT Controller	A component to monitor EP900 Home ESS operations.	Please refer to Chapter 5. IoT Controller for details.
Grid Communication Module	A component for utility companies to collect real-time data from inverters and regulate the power grid via WiFi. It facilitates efficient energy interconnection and maximizes benefits from energy subsidy policies.	Connects to utility company servers that comply with the IEEE 2030.5 protocol, offering plug-and-play, remote scheduling, and data monitoring features.
BLUETTI app	An application for seamless communication with the EP900 inverter, supporting both near-end (Bluetooth) or remote (WiFi) connectivity.	Please refer to EP900 Energy Storage System App User Manual for details.
CT (Current Transformers)	Components to contribute to intelligent operation management within the EP900 system.	/
Rapid Shutdown	A component to disconnect the DC input from the solar system.	/
Safety Switch	A component to protect grid-connected circuits.	/

Fig. 2-1 EP900 Home ESS Diagram

Instruction
The introduction describes the general behavior of EP900 energy storage system. The system operating mode can be adjusted on the BLUETTI APP.

2.2 Working Mode

The EP900 offers four operating modes to accommodate various energy plans. You can choose the one that best suits your home power supply configuration.

• Backup

In this mode, the EP900 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.

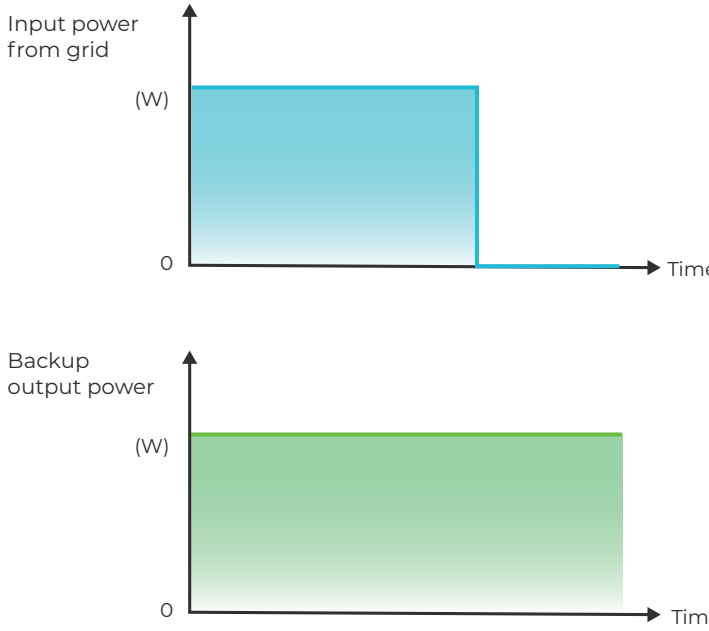
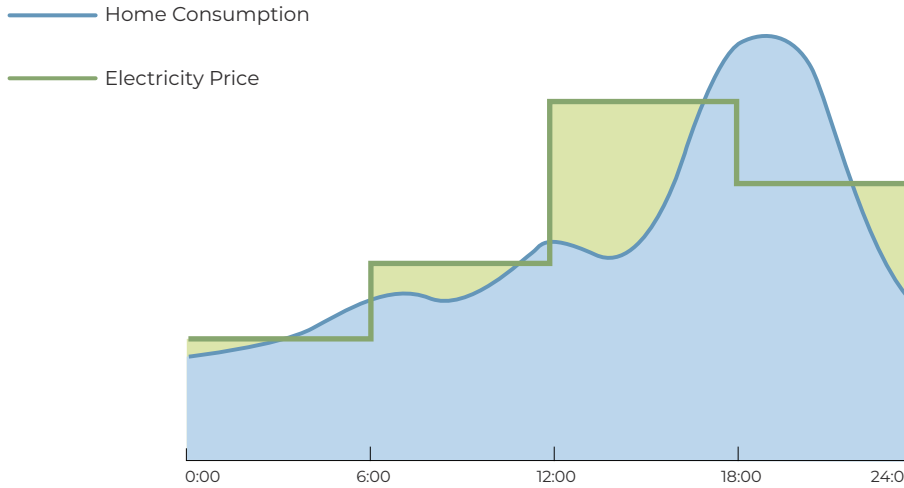


Fig. 2-2

• Time of Use

In this mode, you can customize the charge and discharge periods as well as charging power according to your specific requirements. During the charge period, the EP900 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 EP900 draws from the grid, while reserving the remaining capacity in the battery for solar energy supplement.

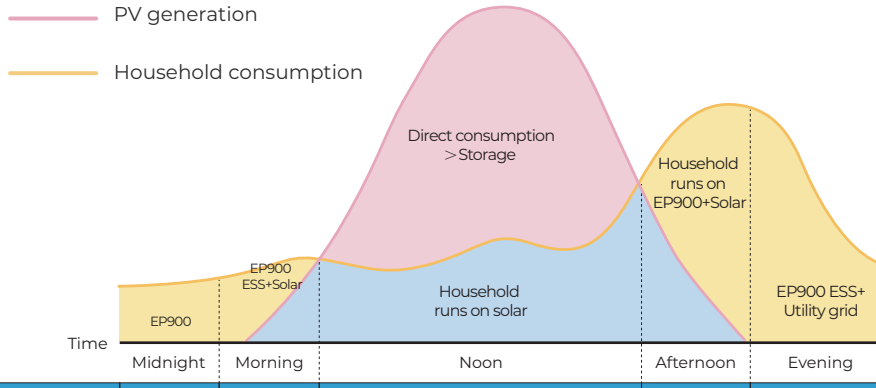


Period	Charging	Discharging	Discharging	Discharging
Power Source for Loads	Grid	EP900 / EP900 + Solar	EP900 / EP900 + Solar	EP900

Fig. 2-3

• **Self-consumption**

In this mode, the EP900 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 EP900 ensures an efficient and reliable power supply, reducing reliance on the grid and promoting energy independence.

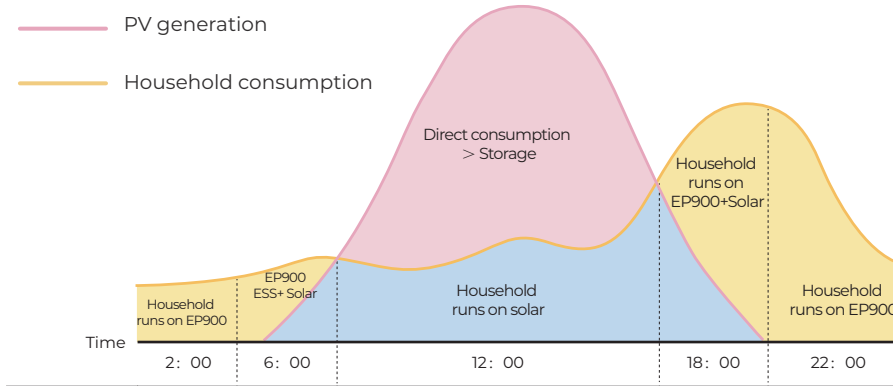


EP900 Operation Status	Discharging	Discharging	Charging	Discharging	Discharging
Power Source for Loads	EP900	EP900+Solar	Solar	EP900+Solar	EP900
PV Generation Used for	/	Loads	Loads and Batteries	Loads	/

Fig. 2-4

• **Custom**

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



Period	Charging	Discharging	Standby	Discharging	Standby
EP900 Operation Status	Charging	Discharging	Discharging	Discharging	Discharging
PV Generation Used for	/	Batteries	Loads and Batteries	Batteries	/
Power Source for Loads	/	Grid	EP900+Solar	EP900+Solar	EP900

Fig. 2-5

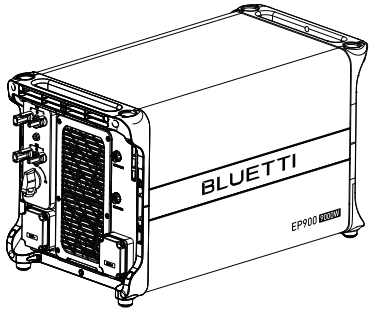
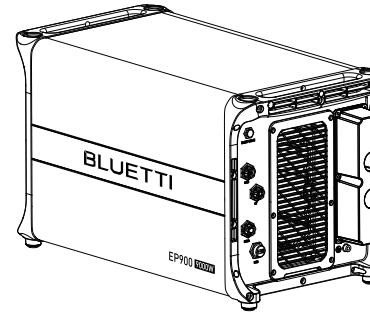
3. EP900 Home Energy Storage Inverter

EP900 inverter is an energy storage photovoltaic grid-connected inverter that can handle photovoltaic input, grid-connected charging, and discharging. It is an important part of the home energy storage system.

3.1 EP900 Inverter Overview

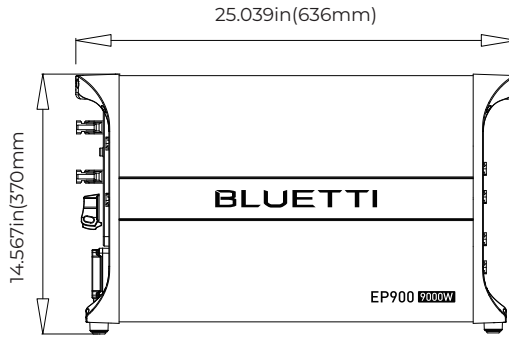
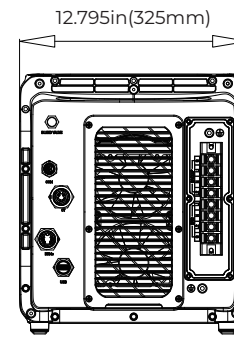
Appearance

Table 3-1

	
Left	Right

Dimensions

Table 3-2 (Unit: in/mm)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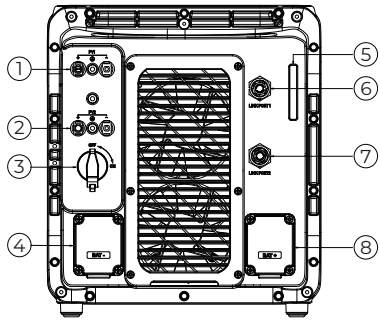
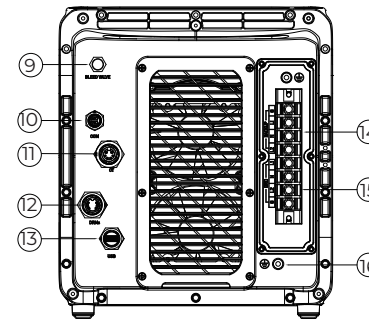
Interface

Table 3-3



Left



Right

No.	Name	No.	Name
1	PV1 Input （Max. 3000W）	9	BLEED VALVE
2	PV2 Input (Max.6000W)	10	COM Port (Grid Communication Module)
3	DC Switch	11	CT Port
4	BAT- Terminal	12	DRMs Port (Generator + Meter)
5	LED Indicator	13	USB Port
6	LINK PORT 1	14	BACKUP Terminal
7	LINK PORT 2	15	GRID Terminal
8	BAT+ Terminal	16	GND Terminal (Grounding)

3.2 LED Indicator

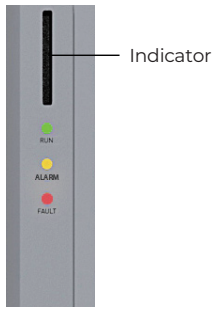


Fig. 3-1

LED / System Status	Green	Yellow	Red
Run	ON	OFF	OFF
Run +Alarm	ON	ON	OFF
Fault	OFF	OFF	ON
Alarm and fault	OFF	ON	ON

Table 3-4

3.3 Buzzer Alarm

When a fault occurs, the buzzer emits a series of 10 beeps. Each time lasts for 5 seconds with a 1-second interval between each beep.

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

Table 3-5 Fault Code

Fault Code	Description
B005	Hardware BUS Overvoltage
B006	Hardware BUS2 Overvoltage
B007	Hardware Battery Overvoltage
B008	Hardware Inverter Overcurrent
B009	Hardware Inverter 2 Overcurrent
B010	Hardware LLC1 Input Overcurrent
B011	Hardware LLC2 Input Overcurrent
B026	Hardware PV1 Failure
B027	Hardware PV2 Failure
B034	Hardware Input Overcurrent

3.4 Maintenance and Care

EP900 inverter requires regular maintenance:

- Inspect and clean the fan, fan guard, and heat sink if dust or blockages are present.
- Ensure that the fan operates without any abnormal noise.
- Check and tighten AC and DC cable connections annually using a torque wrench.

4. B500 Battery

4.1 Introduction

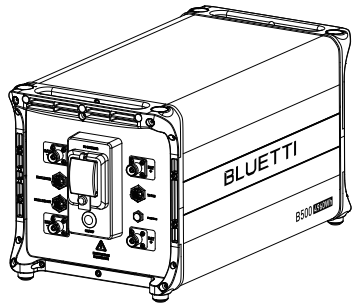
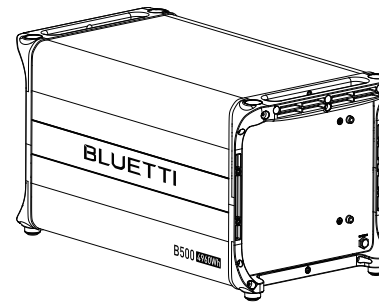
The B500 battery energy storage system is designed for residential and light commercial use. Single B500 battery pack has a capacity of 4.96kWh. The EP900 supports 4 *B500 units for a whopping 19.84kWh, enough to power a house for several days.

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

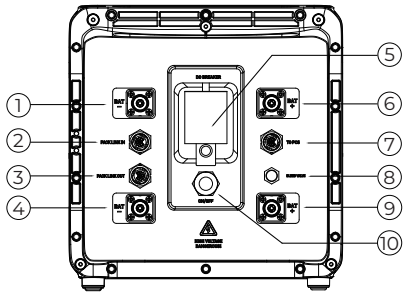
Appearance

Table 4-1

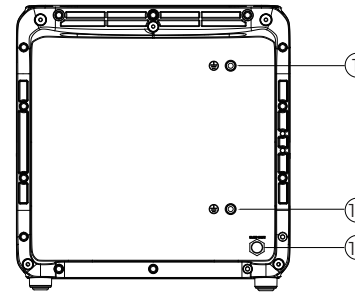
	
Left	Right

Interface

Table 4-2



Left

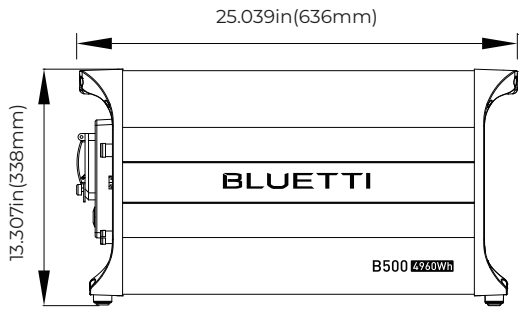
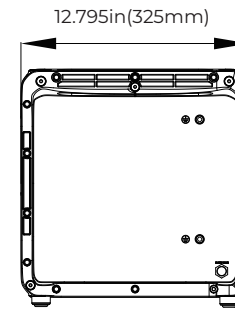


Right

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)		

Dimensions

Table 4-3 (Unit: in/mm)

	
Front	Right

4.3 LED Indicators

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 BLUETTI support or your local BLUETTI dealers. If a single indicator flashes, the B500 is in a fault condition. Please contact BLUETTI support or your local BLUETTI dealers.

4.4 Maintenance and Care

- If indicator lights are off on parallel-connected battery packs, please contact BLUETTI support or your local BLUETTI dealers.
- If there's an issue with the B500, please contact BLUETTI support or your local BLUETTI dealers.
- If the B500 is temporarily unavailable and is recovering, please wait patiently. If it lasts over 1 hour, please contact BLUETTI support or your local BLUETTI dealers.
- Do not operate the unit if the circuit breaker switches to “OFF” automatically due to a system malfunction. Please contact BLUETTI support or your local BLUETTI dealers for assistance.
- To avoid abnormal operation, do not disconnect the circuit breaker while the B500 is in normal operation.
- Do not disassemble the metal enclosure of the B500 to prevent electric shock and explosion.
- If any battery’s SoC drops to 1% without power input, turn off all battery main switches to prevent overdischarge. Restart the system when charging from the grid.

Note: SoC won’t drop to 1% when connected to the grid.

- Charge the unit immediately when the SoC drops to 5% and keep it at least at 5% for continuous operation.
- Before storing the unit, charge it to 40% to 60% SoC and cycle it fully at least every 3 months to maintain battery health.

5.IoT Controller

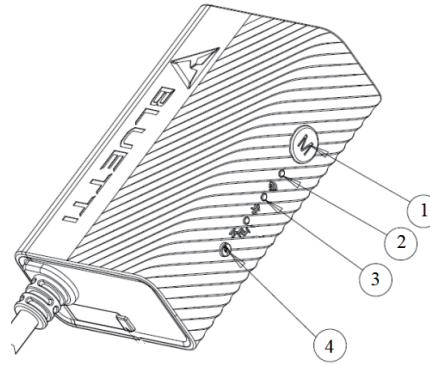
5.1 Communication Principle

The IoT controller supports WiFi and Bluetooth communication, allowing users to monitor the EP900's operating status via the app. Everything about the system, including power generation and consumption, and alarms, can be uploaded to the BLUETTI server via the WiFi network. By registering the EP900 with your BLUETTI account, you're able to monitor and control this unparalleled power plant anytime and anywhere.

Communication	Note
WiFi	Standard
Bluetooth	Standard

5.2 Overview

The IoT controller supports WiFi and Bluetooth communication, allowing users to monitor the EP900's operating status via the app. Everything about the system, including power generation and consumption, and alarms, can be uploaded to the BLUETTI server via the WiFi network. By registering the EP900 with your BLUETTI account, you're able to monitor and control this unparalleled power plant anytime and anywhere.



No.	Name	Description
1	Menu Button	/
2	WiFi Indicator	Flash till the controller connected to WiFi.
3	Bluetooth Indicator	Flash till the controller connected to Bluetooth.
4	Reboot Button	/

5.3 Installation

Danger

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

Step 1: Drill 2 pilot holes in the wall with an electric drill (0.197in / 5mm). Please refer to the drill position and hole size shown in Fig. 5-2-1 and Fig. 5-2-2. The depth of hole is 1.02in (26mm).

Step 2: Hammer the expansion wall plug in until it's flush with the wall. See Fig.5-2-3.

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. 5-2-4.

Step 4: Align the controllers' buckles over the U-slot and push the controllers downwards until they snap in place. See Fig. 5-2-5 and Fig. 5-2-6.

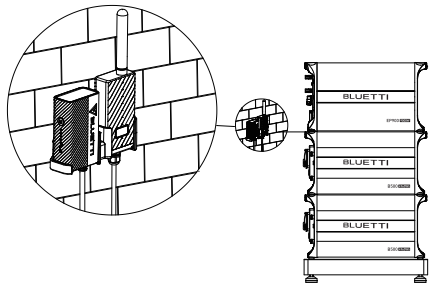


Fig. 5-2-1

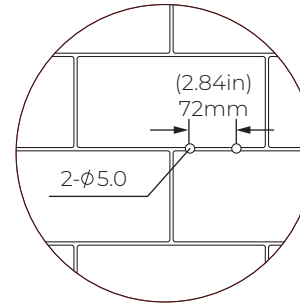


Fig. 5-2-2

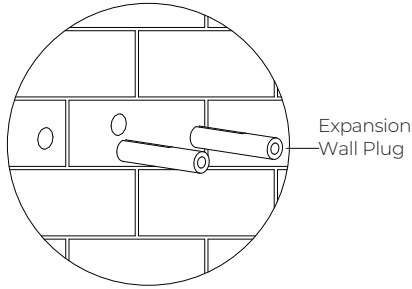


Fig. 5-2-3

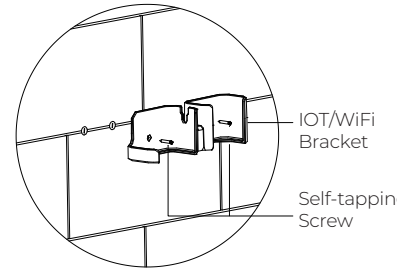


Fig. 5-2-4

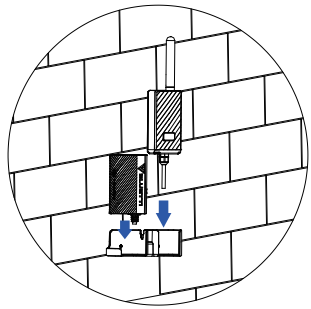


Fig. 5-2-5

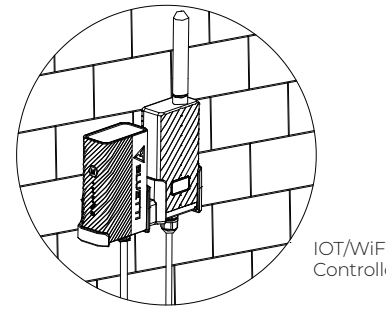


Fig. 5-6

Fig. 5-2

5.4 Safety Instructions

- The IoT controller is ONLY applicable to BLUETTI products.
- 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.

5.5 Connection and Operations

Fig. 5-3

Step 1: Plug the IoT cable into EP900 LINK PORT 1.

Step 2: Turn on EP900, and the IoT controller starts up automatically.

Step 3: Open the app to operate.

To register and log in, simply follow the steps below:

- 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 EP900 via Bluetooth or WiFi. Tap “Login / Register” and “Sign up” to register your BLUETTI account. Fill in the necessary information to continue.

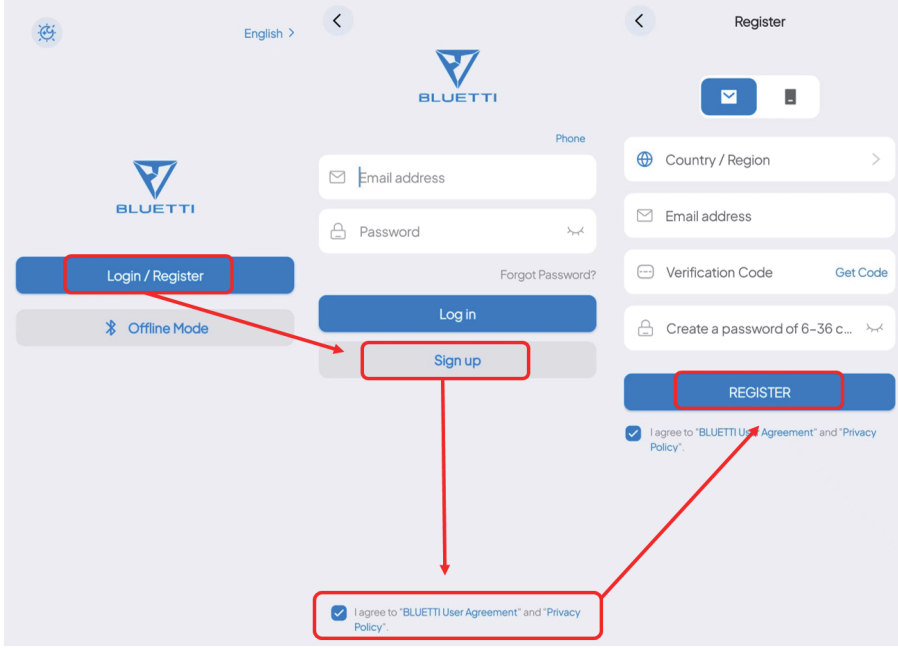


Fig. 5-4

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

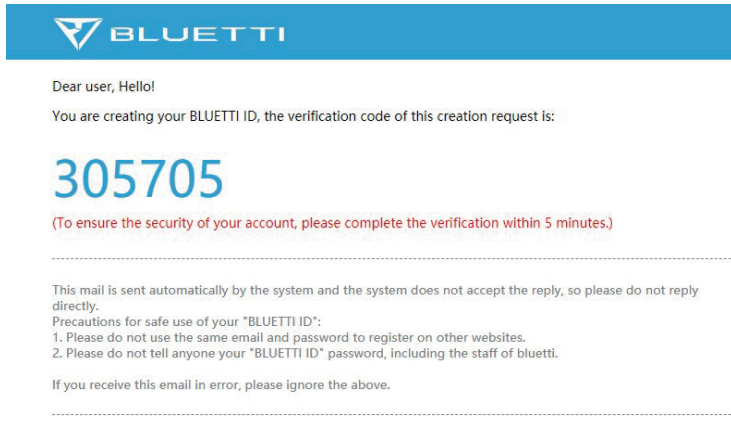


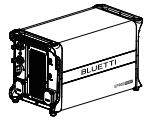
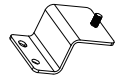
Fig. 5-5

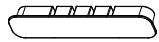
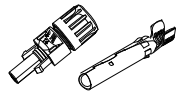
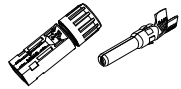
6. System Installation

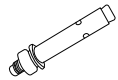
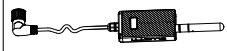
	Danger
	Disconnect all electrical connections from the product. Do not install the equipment below pipes, windows, or areas prone to water leaks and accumulation.
	Warning
	Do not block ventilation openings or heat dissipation pathways while operating to prevent overheating and fire risks.
	Caution
	Handle the equipment and accessories with care during loading, unloading, and transportation.

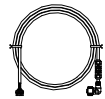
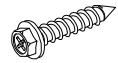
6.1 EP900 Inverter Packing List

Table 6-1

No.	Picture	Description	Qty.
1		EP900 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

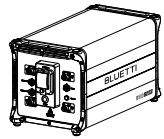
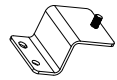
No.	Picture	Description	Qty.
7		Cord organizer	2
8		AC cable protection case	1
9		Plastic housing (PV+ Input) Metal core (PV+ Input)	2
10		Plastic housing (PV- Input) Metal core (PV- Input)	2
11		MC4 wrench	2
12		Black protection cover (BAT- Input)	1
13		Red protection cover (BAT+ Input)	1
14		M4*12 screw (8 for BAT+/- protection cover, 6 for AC cable protection case)	14
15		M8*12 screw (For battery power cable)	2
16		M6*12 screw (For bracket)	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

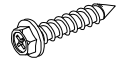
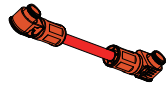
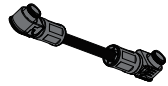
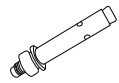
No.	Picture	Description	Qty.
19		M8*60 expansion bolt	2
20		RNB8-6 OT terminal (AC)	9
21		RNB3.5-5S OT terminal (PV Grounding)	3
22		Red battery power cable (Positive)	1
23		Black battery power cable (Negative)	1
24		IoT Controller	1
25		Mounting bracket (grid / IoT controller)	1
26		Grid communication module	1
27		Expansion wall plug	2
28		M3 tapping screw (KA3*25)	2

No.	Picture	Description	Qty.
29		CT communication cable (4m / 13ft)	1
30		DRMs + COM communication cable (4m / 13ft)	1
31		M20-6 PIN adapter	2
32		CT	2
33		Self-tapping screw, ST8×40 (for brackets)	2

6.2 B500 Battery Packing List

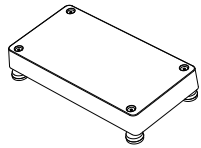
Table 6-2

No.	Picture	Description	Qty.
1		B500 Battery Module	1
2		Bracket #1	2
3		Bracket #2	2

No.	Picture	Description	Qty.
4		M5 hex nut	2
5		Self-tapping screw, ST8×40 (for brackets)	2
6		Left cover	1
7		Right cover	1
8		M4*8 screw (for fastening covers)	10
9		M5*10 screw (for brackets)	4
10		Red battery expansion cable (Positive)	1
11		Black battery expansion cable (Negative)	1
12		Communication cable	1
13		Grounding cable	1
14		M8*60 expansion bolt (for brackets)	2

No.	Picture	Description	Qty.
15		M6*12 screw (Grounding cable)	2
16		Spare screw kit	1

6.3 Base Packing List

No.	Picture	Description	Qty.
1		Base	1

6.4 Installation Requirements

6.4.1 Environment Requirements

- Install the EP900 in a well-ventilated and spacious area to ensure good heat dissipation.
- The EP900 inverter and the B500 battery both have a NEMA 4X rating and can be installed indoors and outdoors. Please note that if you place the system outside the house, use a shelter 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 EP900 away from flammable liquids, gases, or explosive materials.
- Keep away from children and pets.

- Do not install the EP900 outdoors in salt-affected areas, as the accumulation of salt may corrode the system. Salt-affected areas are those within 1640.42ft (500m) 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°F to 104°F / -20°C to 40°C.
- Relative humidity: 5%-95% (non-condensing).
- Maximum height: 6561.68ft / 2000m.

Attention

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

6.4.2 Location Requirements

- The EP900 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.

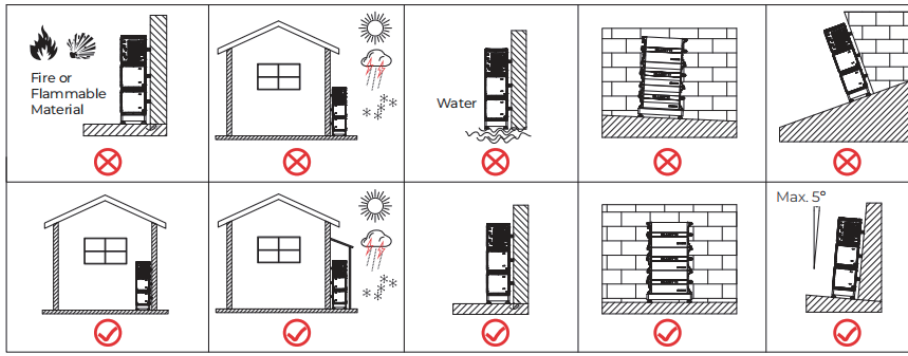


Fig. 6-1

6.4.3 Space Requirement

Danger

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

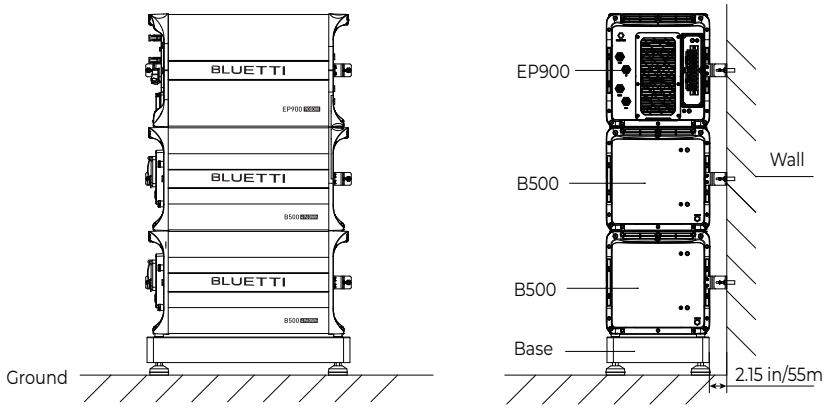


Fig. 6-2

Hole Positions

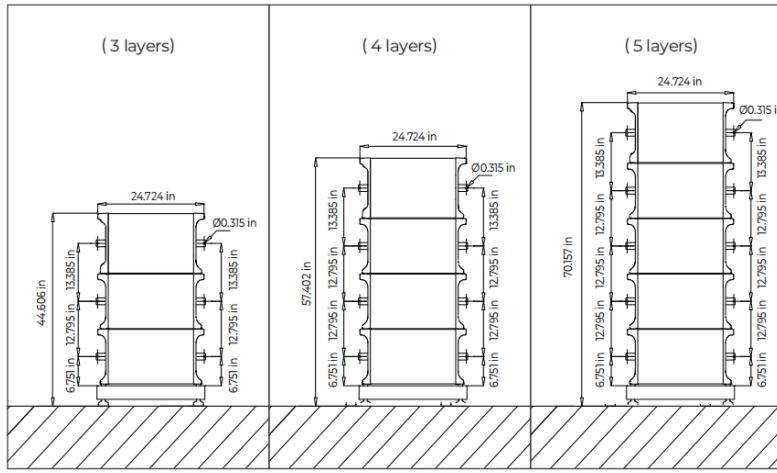


Fig. 6-3

Note: Stack up to 5 layers of equipment on the base, including the EP900 inverter. Adjust one set of installation holes for each addition or removal of a battery pack.

Layout Position

Note: The EP900 Home ESS installation requires a minimum space of 23.15m3, as shown in the specific space reference below.

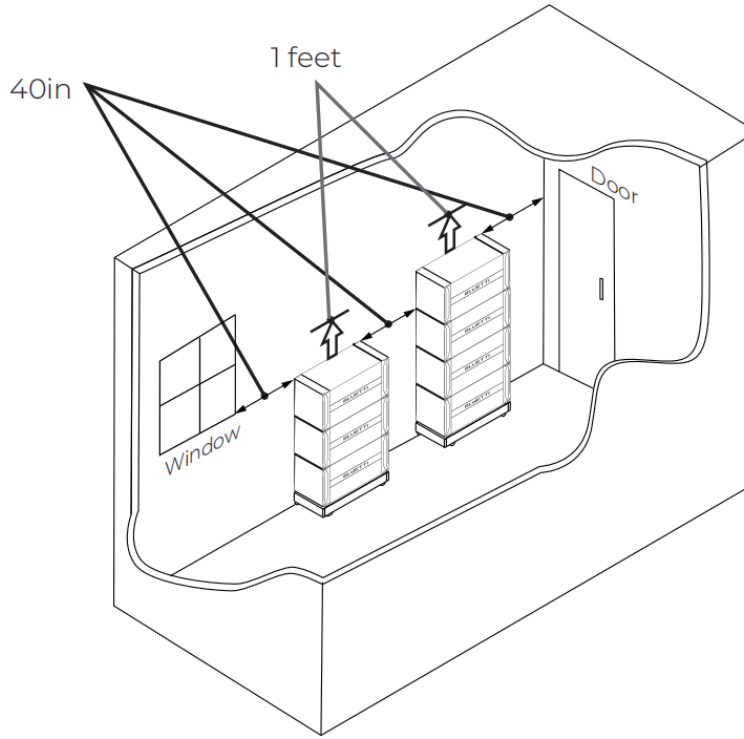
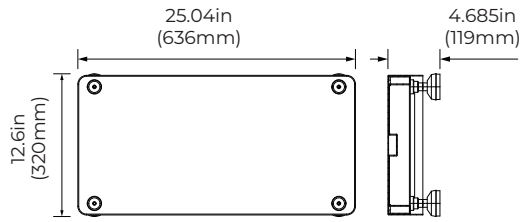
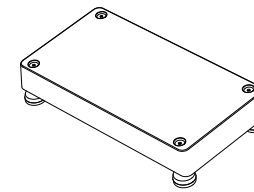


Fig. 6-4

6.4.4 Base Dimensions



Dimensions

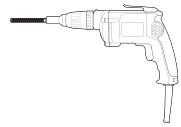
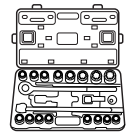
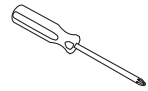
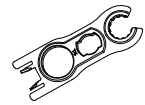
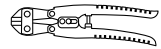
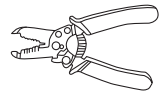
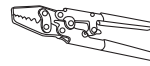
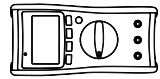


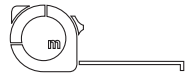
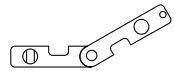
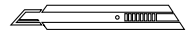
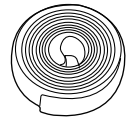
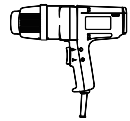
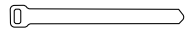
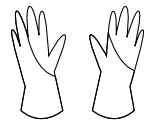
3D

Fig. 6-5

6.5 Prepare the Necessary Tools

Table 6-4

No.	Picture	Description
1		Electric drill (0.197/0.315/0.394(in))
2		Socket wrench set
3		Wrench
4		Flat screwdriver
5		Cross screwdriver (0.157in/4mm)
6		MC4 spanner
7		Cable cutter
8		Cable stripper
9		Cable Crimper
10		Multimeter (DC voltage ˜ 1000VDC)

No.	Picture	Description
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

No.	Picture	Description
21		Safety-toe shoes
22		Vacuum cleaner

6.6 Installation

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.

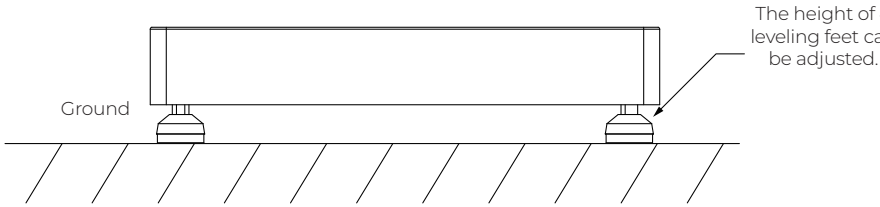


Fig. 6-6

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

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 Step 3 and 4 to secure all battery packs.

Step 6: Follow the same steps to install the EP900 inverter on top.

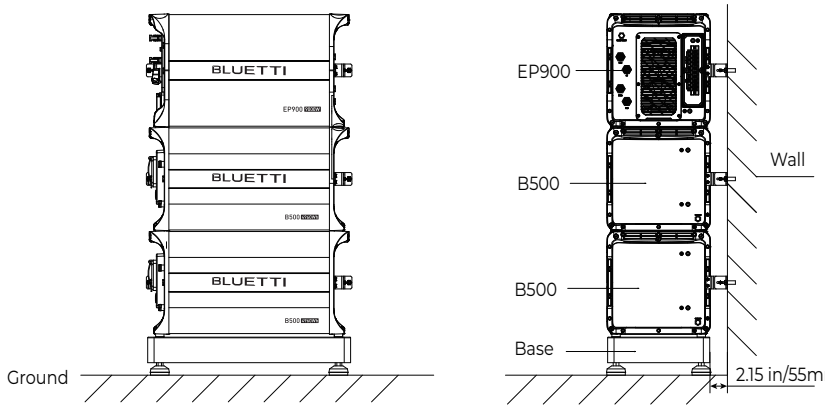


Fig. 6-7

7. EP900 Home ESS Electrical Connection

Before installation or maintenance, make sure both AC and DC sides are powered off. After disconnecting a grid-tied inverter, wait for 5 minutes to ensure complete discharge, as failure to do so may pose safety risks.

	Danger
	Before connecting DC electrical components, ensure the DC switch is turned off.
	Warning
	The installation should only be performed by authorized professionals. All cables should be securely connected, have effective insulation, and meet required specifications. Incorrect wiring may cause damage to the system.

Attention

The installation and maintenance of the inverter should only be performed by authorized professional.
When working with grid-tied inverters and batteries, wear rubber gloves, safety glasses, safety boots, and other protective clothing.

Instruction

Ensure that the PV modules connected to the EP900 have an open-circuit voltage not exceeding 550V and comply with the IEC 61730A standard.

Table 7-1 Current Parameters

Model	PV ISC (Absolute / Maximum)	Max. Input Current
EP900	15A / 30A	12.5A / 25A

7.1 B500 Battery Wiring Interface Instructions

Table 7-2

Interface	Description
Inverter signal port (PCS LINK)	For communication between inverter and battery packs. Only the top B500 needs to be connected to the LINK PORT 2 of the inverter.
Battery signal input port (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).
Battery signal output port (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.

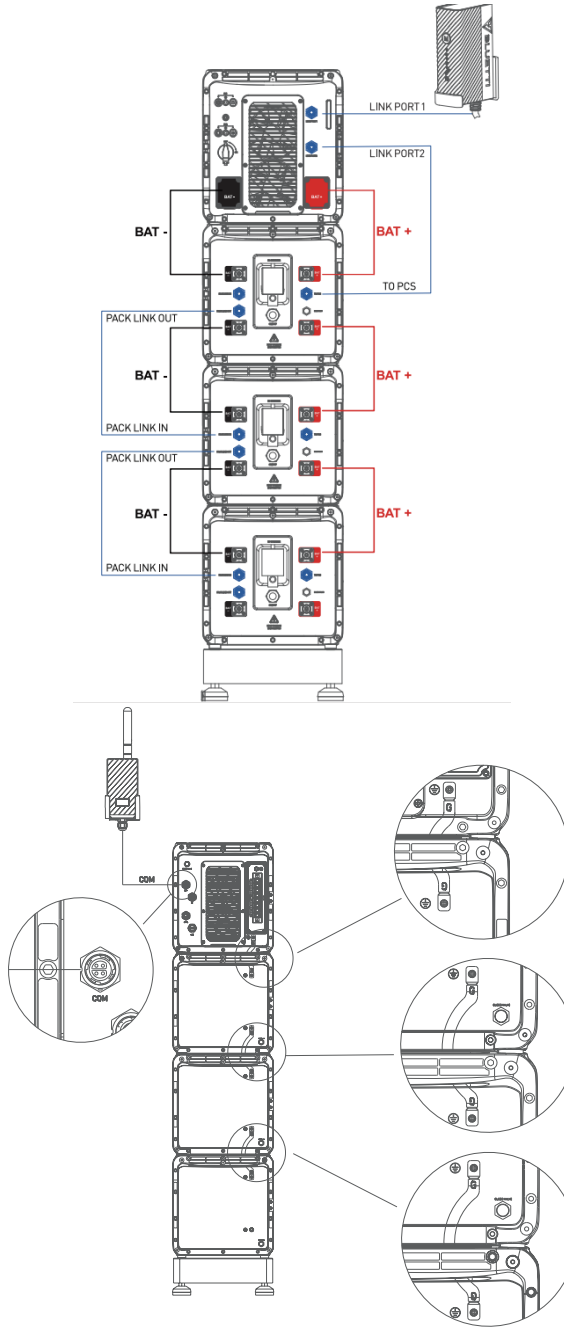
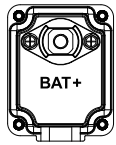
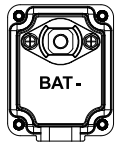
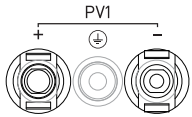
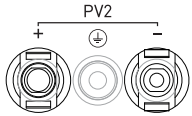
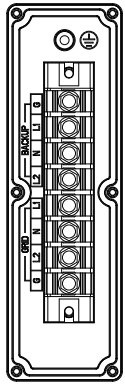

LINK PORT 1
LINK PORT2
BAT -
BAT +
TO PCS
PACK LINK OUT
BAT -
BAT +
PACK LINK IN
PACK LINK OUT
BAT -
BAT +
PACK LINK IN
COM
COM

Fig. 6-5

7.2 EP900 Inverter Wiring Interface Instructions

Table 7-3

Interface	Description		Cable type	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 G: PV1 grounding		Outdoor multi-core copper cable	Conductor cross-sectional area: 12AWG (3000W Max.)
	PV2+: to the positive terminal of solar panel PV2-: to the negative terminal of solar panel PV2 G: PV2 grounding		Outdoor multi-core copper cable	Conductor cross-sectional area: 10AWG (6000W Max.)
	BACKUP	G L1 N L2	Outdoor multi-core copper core cable	Conductor cross-sectional area: 6AWG
	GRID	L1 N L2 G	Outdoor multi-core copper core cable	Conductor cross-sectional area: 6AWG

7.3 Battery Power Cable

Step 1: Connect two B500 battery packs via the battery expansion cables - black cable for negative terminals, red for positive terminals.

Step 2: Connect the top B500 to EP900 inverter via the battery power cables - black cable for negative terminals, red for positive terminals.

• Fix the black battery power cable to the EP900 inverter BAT- terminal with M8 screws.

• Secure the black protection cover with M4 screws. See Fig. 7-2-2.

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

• Repeat to connect the red battery power cable. See Fig. 7-2-3.

Recommended torque: Less than 6N m(53 to 58 in-lbs)for M8 screws

1.2N m(11 to 16 in-lbs) for M4 screws.

Step 3: Connect the top B500 to EP900 inverter via the battery power cables - black cable for negative terminals, red for positive terminals.

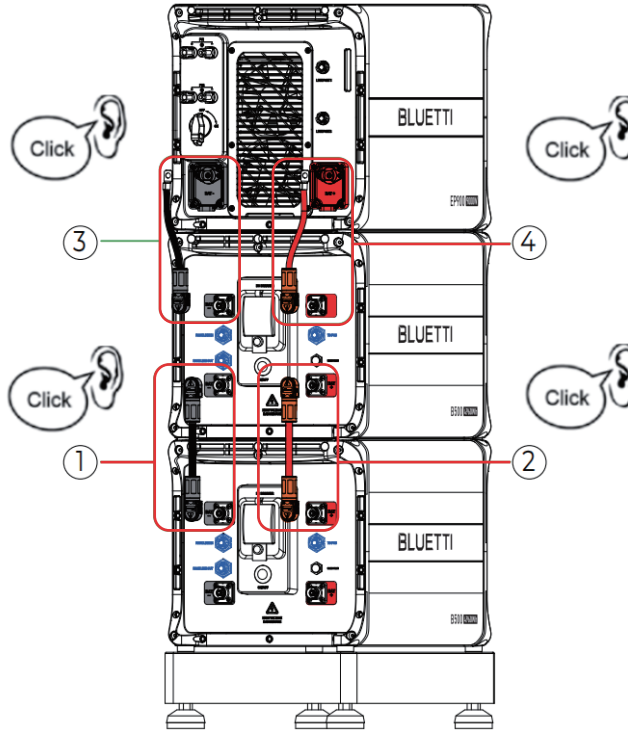
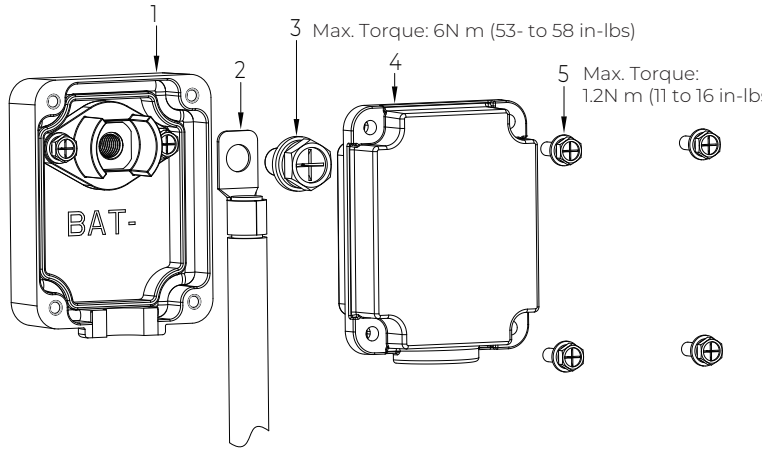
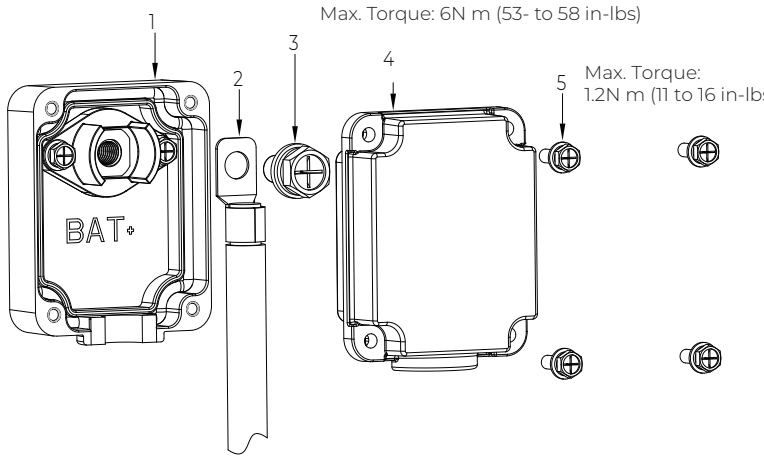


Fig. 7-2-1



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

Fig. 7-2-2



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

Fig. 7-2-3

7.4 Communication Cable

Step 1: To achieve communication between two B500 battery packs, a communication cable is required. Plug one end of the cable to the B500's PACK LINK IN port, and the other to the upper B500's PACK LINK OUT port. See Fig. 7-3 ①.

Step 2: For communication between the EP900 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 EP900 inverter. See Fig. 7-3 ②.

Step 3: Connect the IoT controller to the LINK PORT 1 of the EP900 inverter. See Fig. 7-3 ③.

Note: For how to integrate multiple B500s to the EP900, please refer to Fig. 7-1.

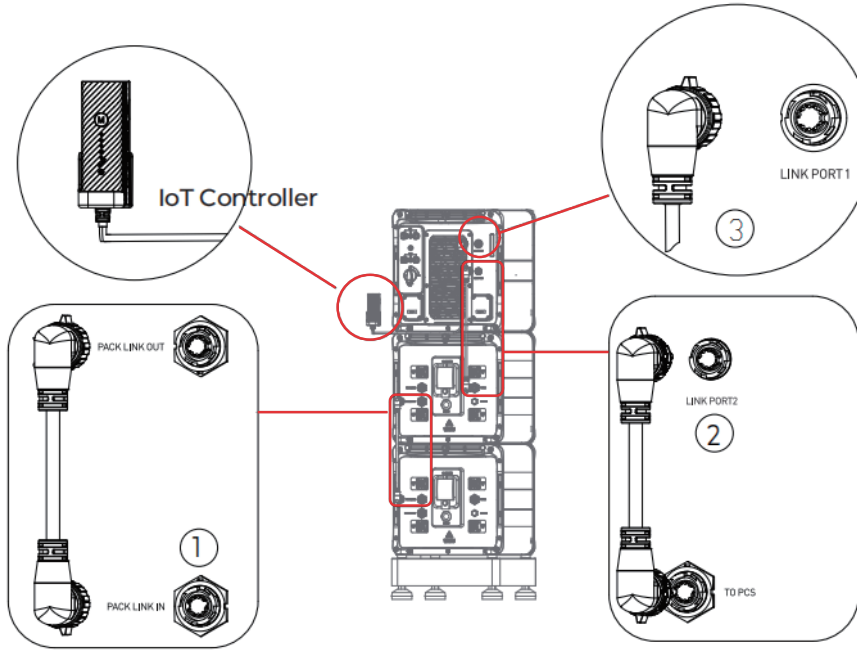


Fig. 7-3

7.5 Grounding Protection (G)

7.5.1 PV Grounding Protection

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.

Prerequisite: Prepare the ground cable (recommended to use 12AWG outdoor power cable and RNB3.5-5S OT terminals).

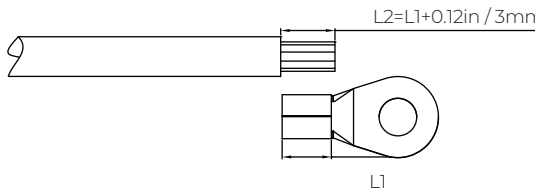
Step 1: Strip the insulation layer of the ground cable with a cable stripper to a proper length. See Fig. 7-4-1.

Step 2: Insert the exposed core wires into the OT terminal and crimp them with a crimper, as shown in Fig. 7-4-2.

Step 3: Fix the OT terminal with M5 screws at the position shown in Fig. 7-4-3. Recommended torque: 3N m(26.55 in-lbs).

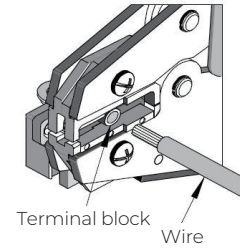
Note:

- 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 0.12in/3mm longer than L1

Fig. 7-4-1



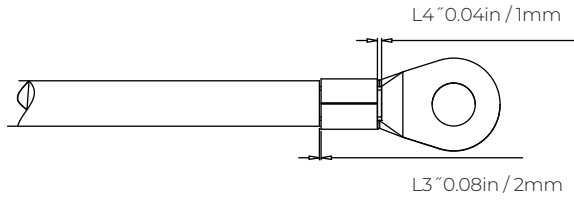


Fig. 7-4-2

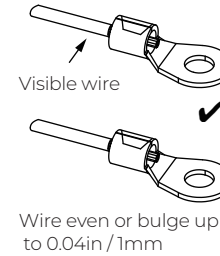
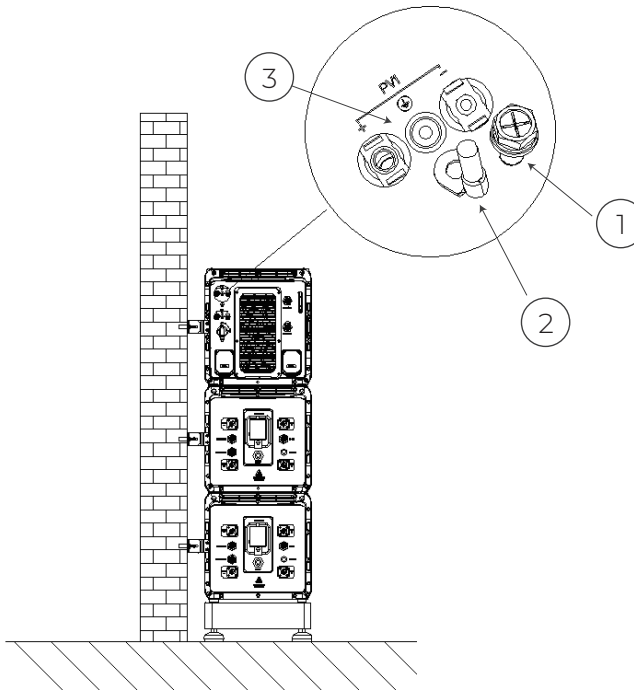


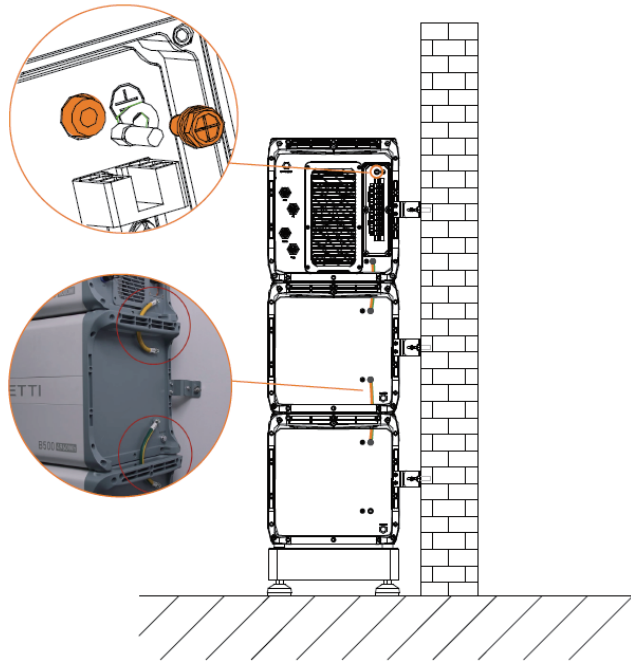
Fig. 7-4-3



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

Fig. 7-4-4

7.5.2 Systems Grounding Protection



7.6 PV Cable

	Danger
	Do not connect two PV circuits in parallel. Ensure proper orientation of PV1 and PV2 cables.
	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 12AWG and 10AWG outdoor power cables. Disconnect the cable connector from the EP900 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. 7-5-1.

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. 7-5-2.

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. 7-5-3 and Fig. 7-5-4.

Step 5: Use a multimeter to confirm the positive and negative poles. See Fig. 7-5-5. The positive and negative connectors can then be inserted into the PV input of EP900 inverter. See Fig. 7-5-6.

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. 7-5-7, and press down to remove the connectors.

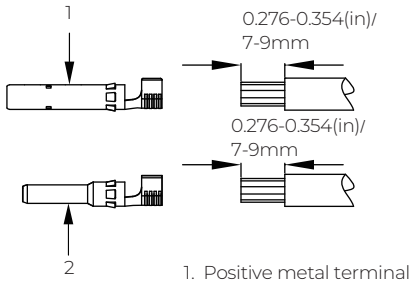


Fig. 7-5-1

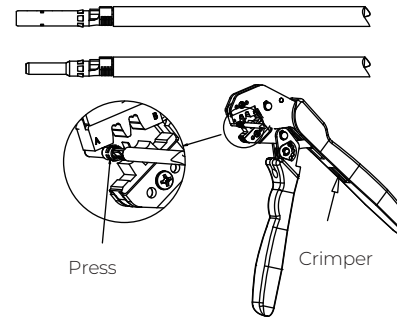
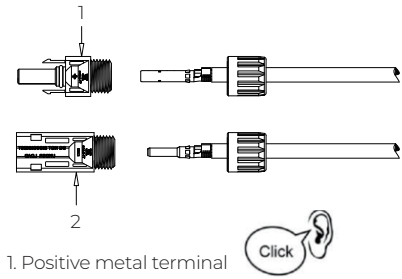


Fig. 7-5-2



1. Positive metal terminal
2. Negative metal terminal

Fig. 7-5-3

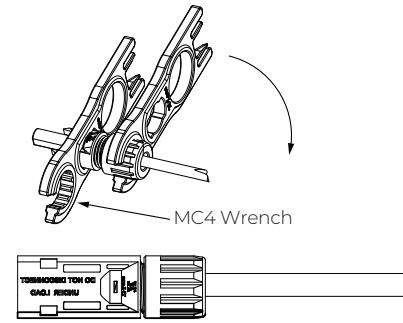


Fig. 7-5-4

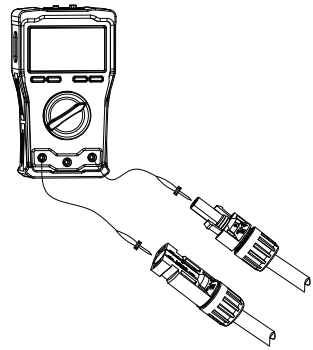


Fig. 7-5-5

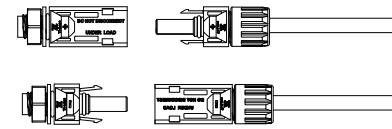


Fig. 7-5-6

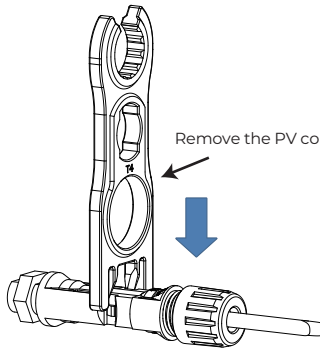


Fig. 7-5-7

7.7 GRID and BACKUP Cables

Prerequisite: Prepare neutral, live, and grounding wires (recommended colors: white, red ,black, green; use 6AWG outdoor power cables).

NOTE: Please connect the Ground cable first， before connect other cables !

Step 1: Select the appropriate type and size of cables (see table 7-2). Strip the cables with a length of 0.8 inches, as shown in Fig. 7-6-1.

Step 2: When opening the junction box, inspect the terminal strip and connection label as shown in Fig. 7-6-2.

Step 3: Connect the 6AWG BACKUP cable as labeled (G, L1, N, L2) in the BACKUP section of the junction box. Secure it using an H3 hex screwdriver, as shown in Fig. 7-6-3.

Step 4: Connect the 6AWG GRID cable as labeled (L1, N, L2, G) in the GRID section of the junction box. Secure it using an H3 hex screwdriver, as shown in Fig. 7-6-3.

Step 5: Attach the PG waterproof connector to the AC cable protection case. Tighten the hexagon nut at the bottom with a socket tool, as shown in Fig. 7-6-4.

Step 6: Thread the DRMs communication cable through a PG connector, emerging from the upper hole of the case, as shown in Fig. 7-6-5.

Step 7: Thread the CT communication cable through a PG connector, emerging from the lower hole of the case, as shown in Fig. 7-6-6.

Step 8: Pull out the BACKUP and GRID cables and securely fasten the protection case to the junction box using M4*12 screws, as shown in Fig. 7-6-7.

Step 9: Slide the PG connector compression nut onto the hose and thread the BACKUP and GRID cables through the hose. Tighten the nut to the protection case as shown in Fig.7-6-8.

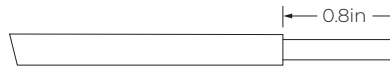


Fig. 7-6-1

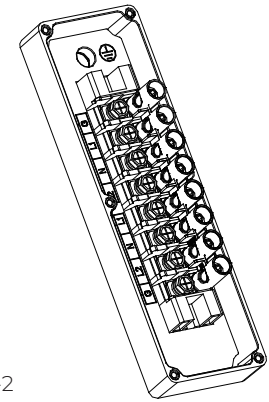


Fig. 7-6-2

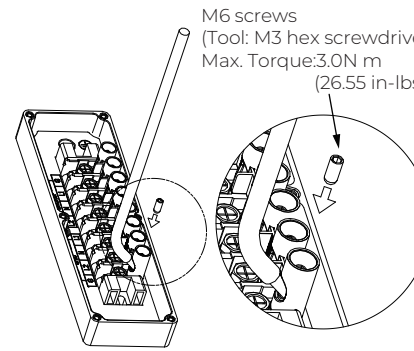
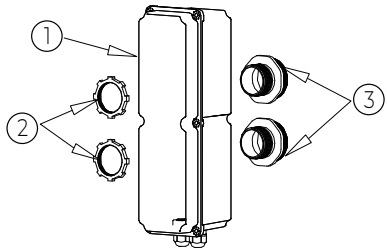
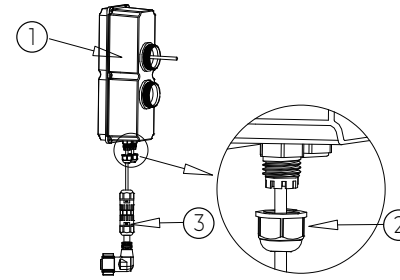


Fig. 7-6-3



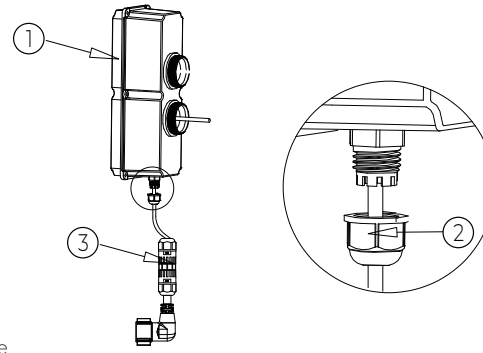
1. AC cable protection case
2. Hose connection nut
3. Waterproof conductor(3/4 inch)

Fig. 7-6-4



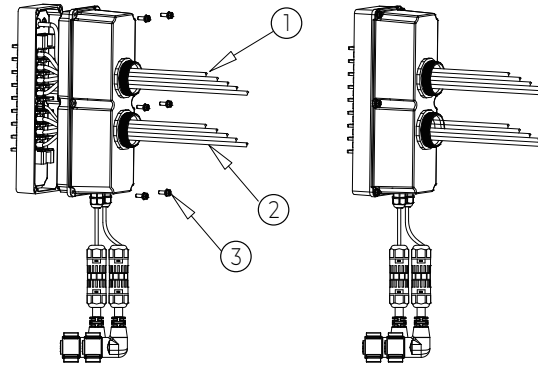
1. AC cable protection case
2. Hose connection nut
3. DRMs communication cable

Fig. 7-6-5



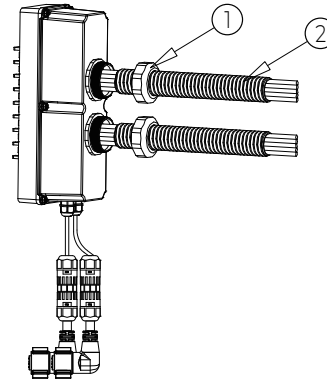
1. AC cable protection case
2. Hose connection nut
3. CT communication cable

Fig. 7-6-6



1. BACKUP cables & DRMs communication cable
2. GRID cables & CT communication cable
3. M4*12 screws, Max. Torque: 1.2N m(10.62 in-lbs)

Fig. 7-6-7



1. PG connector compression nut
2. Hose

Fig. 7-6-8

Fig. 7-6 Load Cable Connection

7.8 Battery Terminal

Step 1: Use a cross screwdriver to remove the positive and negative terminal protection covers of the battery, see Fig. 7-7-1 and Fig. 7-7-2.

Step 2: Connect two B500 battery packs via the battery expansion cables - black cable for negative terminals, red for positive terminals.

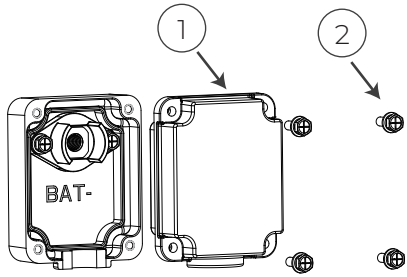
• Fix the black battery expansion cable to the B500's BAT- terminal with M8 screws.

• Secure the black protection cover with M4 screws. See Figure 7-7-3.

• Repeat to connect the red battery expansion cable. See Figure 7-7-4.
Recommended torque: 6N m (53.10 in-lbs)for M8 screws

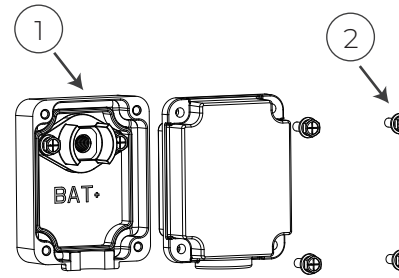
1.2N m(10.62in-lbs) for M4 screws.

Step 3: The battery packs are properly connected.



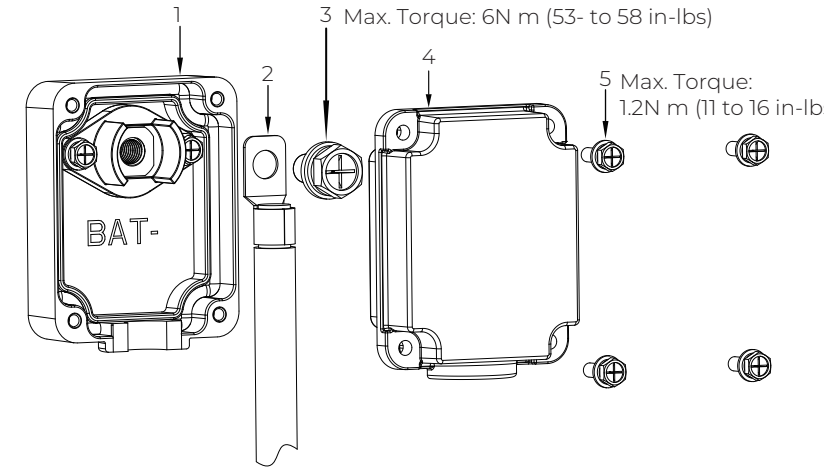
1. Black protection cover (BAT-)
2. M4*12 screws

Fig. 7-7-1



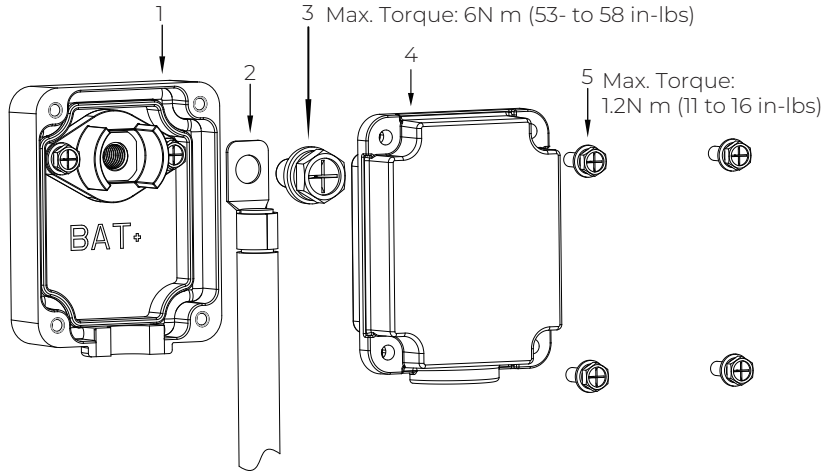
1. Red protection cover (BAT+)
2. M4*12 screws

Fig. 7-7-2



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

Fig. 7-7-3



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

Fig. 7-7-4

Figure 3-6 BAT+ and BAT- connection

7.9 Other Ports

7.9.1 USB

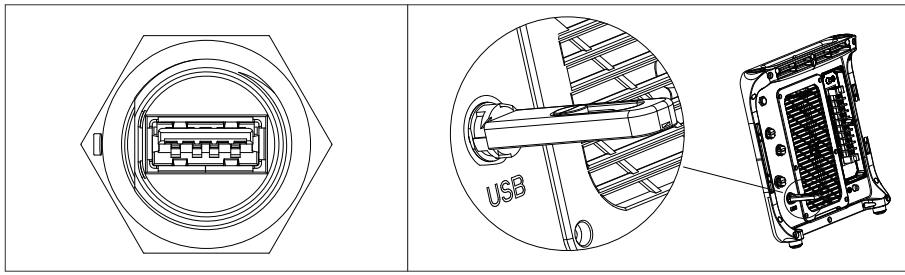


Fig. 7-8

The port is used for EP900 inverter firmware upgrade.

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

Warning
Operation by professional personnel. For USB drive access only, not for USB charging.

7.9.2 DRMs Port (Generator + Meter)

Table 7-4

PIN	Category	Definition	Specifications
1	GEN COM (Red)	Single-pole & double-throw relay common terminal	External DC input limit: 30VDC / 3A. (For generator input)
2	GEN NC (Black)	Single-pole & double-throw relay normally closed output	
3	GEN NO (Green)	Single-pole & double-throw relay normally open output	
4	INS GND (White)	Signal ground	/
5	485-A3 (Yellow)	A: RS485 differential signal +	Connect to meter A2
6	485-B3 (Orange)	B: RS485 differential signal -	Connect to meter B2

Note: Pin 4, 5, and 6 are for communication with the electric meter. Refer to the meter's user manual for wiring details..

7.9.3 LINK PORT 1 & LINK PORT 2

Table 7-5

Interface	Function	Note
Link Port 1	Connect the IoT controller	Refer to Fig. 7-2 for details.
Link Port 2	Connect the battery pack	

7.9.4 Grid Communication Module

Table 7-6

PIN	Definition	Function
485-A5	A: RS485 differential signal +	Connect to WiFi
485-B5	B: RS485 differential signal -	Connect to WiFi
INS_12V	WiFi power source	/
INS_GND	WiFi power source grounding	/

Note: Refer to Section 5.3 for installation instructions of the grid communication module and IoT controller.

7.9.5 CT Port

Table 7-7

PIN	Definition	Function	Remarks
1	CT-L1+ (Red)	CT output positive terminal	Connect to the Phase L1 CT in the grid.
2	CT-L1- (Black)	CT output negative terminal	
3	CT-L2+ (Red)	CT output positive terminal	Connect to the Phase L2 CT in the grid.
4	CT-L2- (Black)	CT output negative terminal	
5	NC	/	/
6	NC	/	

Step1: Rotate the M20 6-pin connector cap counterclockwise and take it off.

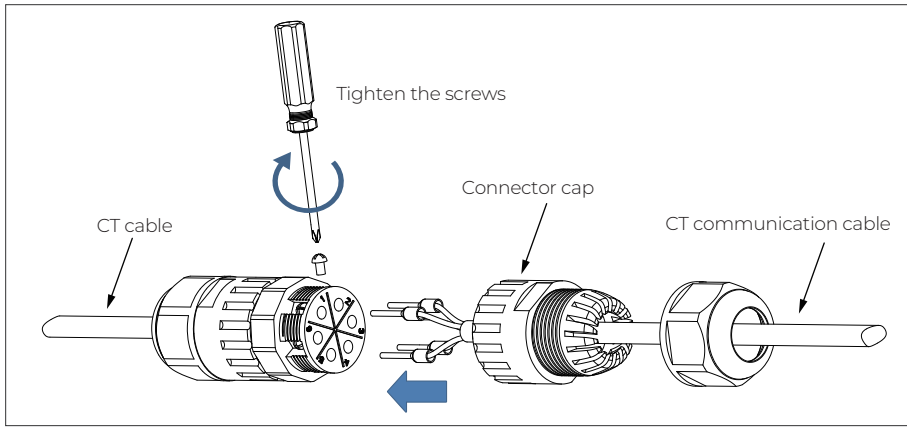
Step2: Put the CT communication cable through the connector cap. Identify the connector pins and connect the signal wires according to the table below.

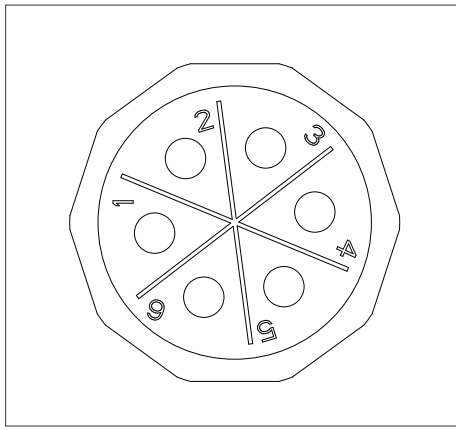
Pin	1	2	3	4	5
Wire	Red	Black	Green	White	N/A

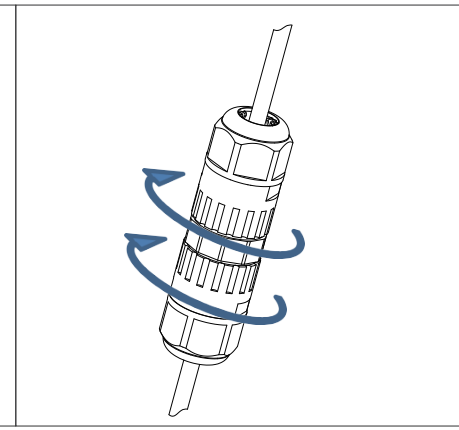
Step3: Tighten the screws with a screwdriver.

Step 4: Make sure the cables are secured until they can't be pulled out.

Step 5: Tighten the connector cap and nut clockwise.


Tighten the screws
CT cable
Connector cap
CT communication cable


1
2
3
4
5
6



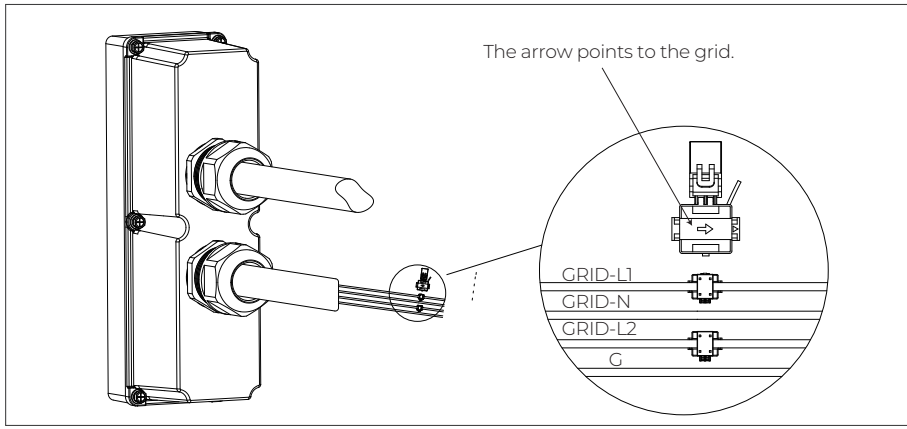

The arrow points to the grid.
GRID-L1
GRID-N
GRID-L2
G

Fig. 7-9

Follow the diagram below for the correct CT direction from the grid-tied inverter to the grid.

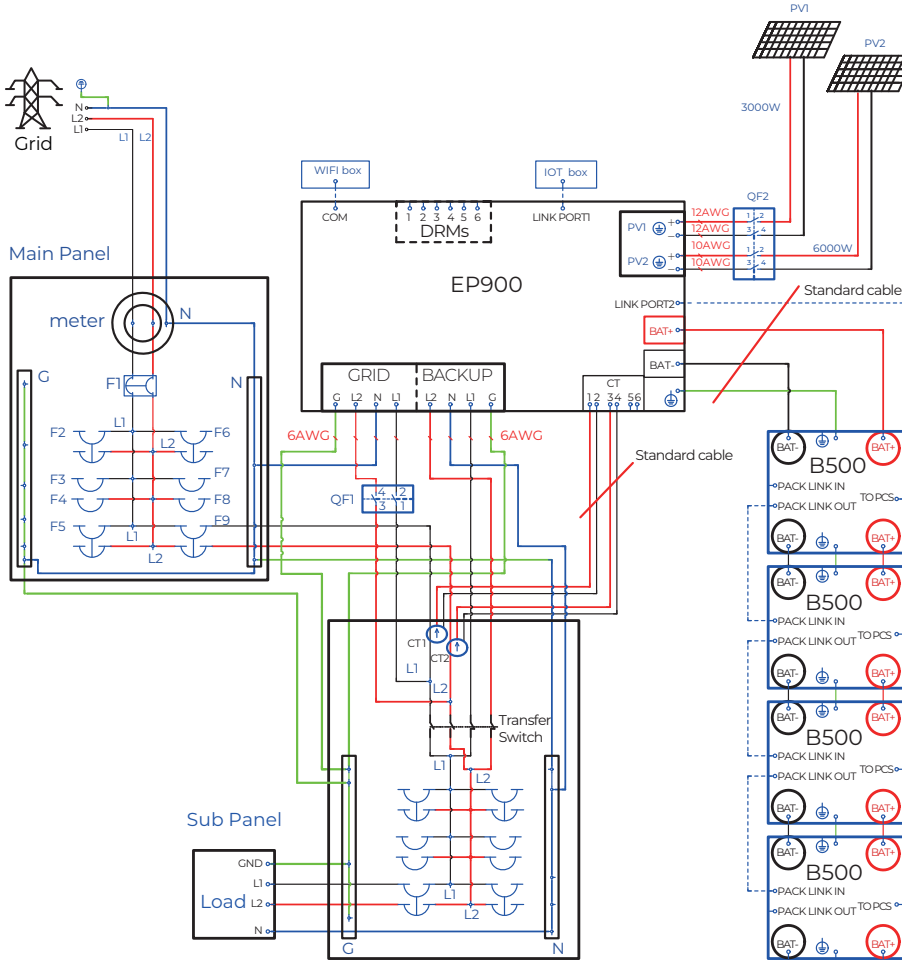


Fig. 7-10 Partial backup system 1

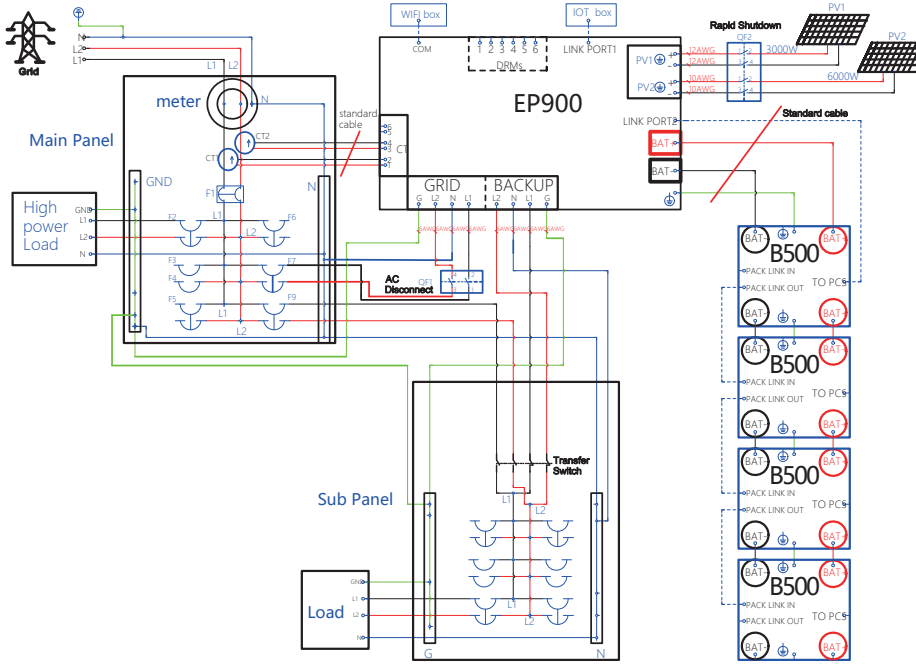


Fig. 7-11 Partial backup system 2

8. System Check

8.1 Preliminary Check

Check the followings before first use.

- Confirm that all components of the system are installed according to specific requirements.
- Make sure the Ground, 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.

8.2 Power on

Step 1: Switch on the DC circuit breakers on B500 battery packs.

Press and hold the power button of any battery pack for 3 seconds and the green indicator on the button lights up

Step 2: Wait for 40 seconds until the green indicator of the inverter is always on.

Step 3: Switch on the AC circuit breakers connected to the EP900 grid port

Step 4: Switch on the DC switch on EP900.

Step 5: Power on the system via the BLUETTl app. For details, please refer to App manual.You can check the EP900 system status through the app.

Step 6: Check the voltage of BACKUP port

Step 7: Switch on the AC circuit breakers connected to the EP900 load port.

8.3 Firmware Upgrade

8.3.1 USB Upgrade

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 EP900.

Step 4: Power on EP900.

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

Step 6: The buzzer beeps after the firmware is updated successfully. Please unplug the USB drive, or EP900 will report a USB Format Error.

Step 7: Pair EP900 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 BLUETTI support.

* Please contact BLUETTI support for further assistance.

Table 8-1

Error Description	Solution
USB Upgrade Failed.	Please contact BLUETTI support.
USB Format Error	1. Make sure the USB is formatted as FAT32 with no more than 32GB 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 BLUETTI support.

8.3.2 OTA Upgrade

The EP900 Home ESS also supports OTA firmware upgrade. For details, please refer to “Firmware Upgrade” in the EP900 Energy Storage System BLUETTI App User Manual.

8.4 Power off

Warning

There is still residual voltage after the EP900 is powered off, which may cause electric shock or burns. Please wait at least 30 minutes before operating the system.

Step 1: Turn off the System Switch 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 B500s and the system powers off.

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: Please turn off the Breaker of the entire EP900 energy storage system first. Disconnect all electrical connections to the inverter, such as signal cable, DC input cable, power cable, AC output 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. Troubleshooting

Table 10-1

No.	Error Description	Solution
B001	BUS Overvoltage	Turn off the inverter and wait 30 minutes to restart it. If the symptom persists, please contact BLUETTI support.
B002	BUS2 Overvoltage	
B003	BUS Undervoltage	
B004	BUS2 Undervoltage	
B005	Hardware BUS Overvoltage	
B006	Hardware BUS2 Overvoltage	
B007	Hardware Battery Overvoltage	
B008	Hardware Inverter Overcurrent	
B009	Hardware Inverter2 Overcurrent	
B010	Hardware LLC1 Input Overcurrent	
B011	Hardware LLC2 Input Overcurrent	
B012	/	
B013	Auxiliary Power Undervoltage	
B014	DC Component Exception	
B015	Relay Failure	
B016	PV Connection Error	/
B017	PV1 Overcurrent	Turn off the inverter and wait 30 minutes to restart it. If the symptom persists, please contact BLUETTI support.
B018	PV2 Overcurrent	
B019	/	/
B020	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.
B021	PV2 Voltage High	
B022	/	/
B023	PV1 ISO Failure	Check the insulation resistor between solar array and grounding for a short circuit.
B024 -B025	/	/

No.	Error Description	Solution
B026	Hardware PV1 Failure	/
B027	Hardware PV2 Failure	/
B028-B030	/	/
B031	Phase Sequence Error	Check if the grid connection meets the installation requirements.
B032	Fan Failure	Check if the inverter fan operates well.
B033	Zero Drift Abnormal (Sampling zero abnormal)	Turn off the inverter and wait 30 minutes to restart it. If the symptom persists, please contact BLUETTI support.
B034	Hardware Input Overcurrent	
B035	DC Input Voltage Low	Check if the DC voltage is too low.
B036	DC Input Voltage High	Check if the DC voltage is inconsistent with the battery specifications.
B037-B039	/	/
B040	Inverter Overload	Check if the inverter is overloaded.
B041	L2 Inverter Overload	
B042	/	/
B043	L1 Inverter Output Failure	/
B044	L2 Inverter Output Failure	/
B045	/	/
B046	/	/
B047	Communication Failure	Turn off the inverter and wait 30 minutes to restart it. If the symptom persists, please contact BLUETTI support.
B048	/	/
B049	DSP Communication Interrupted	Turn off the inverter and wait 30 minutes to restart it. If the symptom persists, please contact BLUETTI support.
B050	BMS Communication Interrupted	Check that the external communication terminals are connected correctly and restart the device. If the symptom persists, please contact BLUETTI support.
B051	IoT Communication Interrupted	

No.	Error Description	Solution
B052	Zero Drift Abnormal-ARM	Turn off the inverter and wait 30 minutes to restart it. If the symptom persists, please contact BLUETTI support.
B053	RTC Read and Write Abnormal	
B054	/	
B055	Operating Ambient Environment	Please make sure use the system within specific temperature range. Restart the inverter. If the symptom persists, please contact BLUETTI support.
B056	Temperature 1 Abnormal	
B057	Temperature 2 Abnormal	
B058	Temperature 3 Abnormal	
B059	Temperature 4 Abnormal	
B060	BMS Charge Protection	Check the details on BLUETTI app.
B061	BMS Discharge Protection	
B062	BMS System Failure	
B063-B096	/	/
B097	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 BLUETTI support.
B098	Grid Voltage Low	
B099	Grid Frequency High	
B100	Grid Frequency Low	
B101	/	
B102	Grid Loss	
B103	PV1 Voltage Low	Check the PV setup for proper working condition. Solar panels may get a low voltage under improper working conditions.
B104	PV2 Voltage Low	
B105	/	/
B106	/	/
B107	DSP_Debug CAN Communication Failure	/
B108	DSP_Debug RS485 Communication Failure	/
B109	Grid-tied reconnection abnormal	/

No.	Error Description	Solution
B110-B128	/	/
B129	EEPROM Read and Write Anomaly	Please reconfigure the settings on BLUETTI app. If the symptom persists, please contact BLUETTI support.
B130-B133	Reserved	
B134	USB Format Error	The USB is formatted as FAT32 with no more than 32GB in size. Check if the upgrade files exist or expire.
B135	USB Upgrade Abnormal	Turn on the inverter again. If the symptom persists, please contact BLUETTI support.
B136	Arcing Detection Abnormal	
B137	USB Communication Abnormal	
B138	USB No Upgrade File	
B139	CT Connection Direction Error	Check that the CT connection direction and phase sequence are correct. If the symptom persists, please contact BLUETTI support.
B140	Meter communication Failure	Check whether the meter is powered and whether the communication cable between the meter and the EP900 energy storage system is connected normally. If the problem persists, please contact technical support.
B141	Arc pulling module self-test failure	Turn on the inverter again. If the symptom persists, please contact BLUETTI support.
B142	Arcing Module Communication Failure	Turn on the inverter again. If the symptom persists, please contact BLUETTI support.
B143	Data Clearing	Turn on the inverter again. If the symptom persists, please contact BLUETTI support.
B144	WiFi Module Communication Loss	
B145	WiFi Module Network Configuration Failure	
B146-B149	/	/
B150	Battery Charging Prohibited	Turn on the inverter again. If the symptom persists, please contact BLUETTI support.
B151	Battery Discharging Prohibited	

11. Specifications

Table 11-1

AC (Grid-tied)		
Item	Description	Note
Rated Output Power (240V)	9000W	If only two B500 units are connected, the max. output is 7600W
Wiring	L1/L2/N/G	/
Rated Voltage	120VAC / 240VAC	/
Voltage Range	105V-132V / 211V-264V	/
Rated Output Current	37.5A rms	/
Input Frequency	60Hz	/
Input Frequency Range	55Hz-65Hz	/
Max. Input Apparent Power	13920VA	Bypass + Grid Charging If only two B500 units are connected, the max. input is 6000W.
Max. Input Current	58A	Bypass + Grid Charging
Power Factor (PF)	0.9 leading - 0.9 lagging adjustable	/
Current THD (Rated Power)	<3%	/
On and Off-Grid Switching Time	<10ms	/
Round-trip Efficiency	>85% (AC / AC)	Grid - Battery - Grid
Protection	Anti-islanding protection Output overcurrent protection Short-circuit protection	PV connected to the battery side, no residue current detection.

AC (Off-Grid)		
Item	**Description**	**Note**
Rated Output Power	9000W	If only two B500 units are connected, the max. output is 7600W.
Output Voltage	120V/240V	/
Output Frequency	60Hz	/
Inversion Efficiency	94.4% Peak	/
Output Voltage THD	<3%	Purely resistive load
Overload	13500VA (10s), 9900VA (10min)	/
Protection	Output overcurrent protection Short-circuit protection Over temperature protection	/

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

General	
Item	**Description**
Relative Humidity	5%-95%
Static Power	18W
Standby Power	36W
Operating Temperature	-4°F to 122°F / -20°C to 50°C
Noise	˙50dB (A)
Cooling	Forced air cooling
Protection Grade	NEMA 4X
Working Altitude	＜6561.68ft / 2000m
Dimensions (L × W × H)	25.0 × 12.8 × 14.6in / 636 × 325 × 370mm
Net Weight	92.59lbs / 48kg
Communication	USB / WiFi / Bluetooth
Warranty	10 years

Compliance and Certification	
Item	**Description**
System	UL9540
Inverter	UL1741
Grid Connections	IEEE1547, IEEE2030.5 California Rule 21
Emissions	FCC Part 15 Class B
Transient Protection	IEEE C62.41 Class B
Others	NEMA 4X, CEC Efficiency, California Proposition65

Table 11-2

Battery		
Item	Parameter	Note
Battery Type	LiFePO4	/
Battery Voltage	99.2V	3.2V×31
Rated Capacity	4960Wh	Charging: 0.5C / 3.6V / 0.05C (77°F / 25°C) Discharging: 0.5C / 2.5V (77°F / 25°C)
Usable Capacity	4464Wh	90% DoD Charging: 0.5C (77°F / 25°C) Discharging: 0.5C (77°F / 25°C)
Cell Overvoltage Protection	3.7V	/
Cell Undervoltage Protection	2.5V	/
Max. Input Voltage	108.5V	3.5V×31
Min. Output Voltage	86.8V	2.8V×31
Max. Input Current	25A	The continuous input current is affected by temperature and SoC.
Max. Output Current	50A	The continuous output current is affected by temperature and SoC.
Short-circuit Protection	Yes	/
Discharging Overtemperature Protection	141.8°F / 61°C	/
Discharging Overtemperature Recovery	127.4°F / 53°C	/
Discharging Low Temperature Protection	-7.6°F / -22°C	/
Discharging Low Temperature Recovery	-0.4°F / -18°C	/
Charging Overtemperature Protection	132.8°F / 56°C	/
Charging Overtemperature Recovery	116.6°F / 47°C	/

Charging Low Temperature Protection	30.2°F / -1°C	/
Charging Low Temperature Recovery	33.8°F / 1°C	/
Charging Strategy	BMS Orders	CC/CV

General			
Item		Description	Note
Noise		<25dB	
Number of Battery in Parallel		Up to 4 batteries supported.	The system output decreases when only two B500 units are connected.
Working Temperature	Charging	32 °F to 104 °F / 0 °C to 40 °C	/
	Charging	-4 °F to 104 °F / -20 °C to 40 °C	The inverter connects to the grid
	Discharging	-4 °F to 104 °F / -20 °C to 40 °C	/
Storage Temperature		-4 °F to 104 °F / -20 °C to 40 °C / At least one charge cycle per month. 32 °F to 95 °F / 0 °C to 35 °C / At least one charge cycle every six months.	/
Working Humidity		5%-95%, relative humidity	/
Working Altitude		˙2000m / 6561.68ft	/
Cooling		Forced air cooling	/
Protection Grade		IP65	/
Installation		Up to 4 batteries stacked on the ground.	/
Net Weight		127.86lbs / 58kg	/
Compliance		UL9540, IEC62619, UL1973, UL9540A, UN38.3, IEC60529, IEC60730-1, FCC Part 15 Class B	/

* Please contact us for more details.

For more information, please visit:

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