

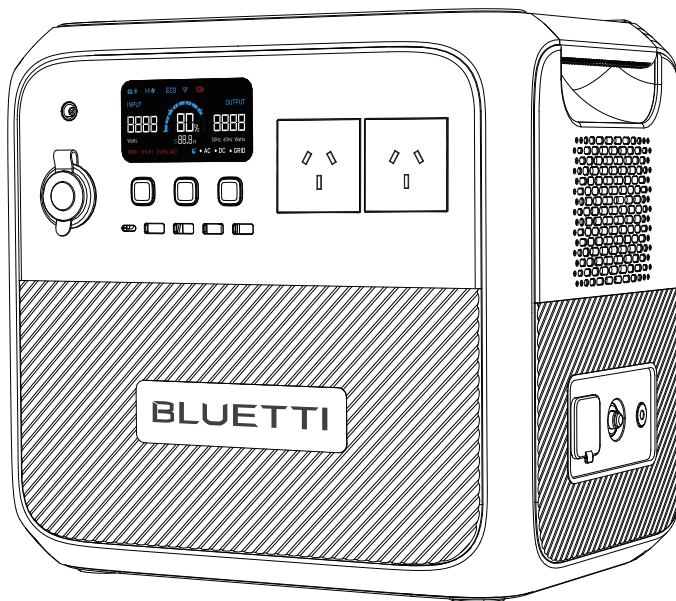
# AC180

# Portable Power Station

## User Manual

Please read this manual carefully before use and keep it for future reference.





### Warning

1. Charge the unit before first use.
2. Do not use solar panels with open circuit voltage higher than 60V. Solar input voltage range for the unit is DC 12V~60V.
3. Charge the unit when the SoC drops below 5%. If the SoC drops to 0, power off the unit and charge it for at least 30mins before restarting.
4. The unit is for off-grid use only. Do not connect its AC output to the grid.
5. If not used for more than 3 months, charge the unit to 40%~60% SoC and store it with the power off. For optimum battery life, discharge and charge the unit every 3 months.
6. This equipment has been tested and found to comply with the limits for a Class A digital device. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
7. This product must be grounded before operation.  
Connect a grounding cable (recommended 14AWG (1.5mm<sup>2</sup>) /105°C/yellow-green color) to the grounding terminal of AC180. Fasten the grounding screw (M5\*10) to fix the cable.

## Thank You!

Thank you for making BLUETTI a part of your family.

From the very beginning, BLUETTI has tried to stay true to a sustainable future through green energy storage solutions for both indoor and outdoor use while delivering an exceptional eco-friendly experience for our homes and our world. That's why BLUETTI makes its presence in 70+ countries and is trusted by millions of customers across the globe.



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# 1. Safety Instructions

Read this manual for instructions on the proper use and safety information for the unit. Follow the warnings and instructions marked on the unit and its accessories.

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

The Safety Requirements provided herein are for illustrative purposes that include but are not limited to those listed in this manual. Actual operation shall comply with all applicable safety standards.

If you have any questions, feel free to contact BLUETTI support or your local BLUETTI dealers.

## 1.1. General Safety

- Always operate or store the unit 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.
- Unauthorized disassembly, alteration of the equipment or modification of the software code is not allowed.

### **BLUETTI shall not be liable for the following circumstances:**

- Equipment damage caused by force majeure, such as earthquake, fire, storm, flood, mudslide, etc.
- Damage or loss during transportation.
- Damage caused by storage conditions that do not meet the requirements specified in this manual.
- Damage to the hardware or data of the equipment due to customer negligence, improper operation or intentional damage.
- Damage to the system caused by a third party or the customer, including handling and installation that does not meet the requirements specified in this manual.
- The product is intended for use with audio/video, information and communication technology equipment only.
- This product is not suitable for providing electrical service for equipment and machines that are highly dependent on the reliability of electrical power supply and that involve personal safety, such as atomic energy, aviation, medical, etc. Poweroak will not be held responsible for any personal safety accidents, fire accidents, equipment failures, etc. caused by using this product to supply power to the above equipment and machines.
- Damage caused by adjustment, alteration or removal of identification marks.

### **To avoid danger, please regulate the operation in the following manner:**

- Do not install, use and maintain the unit in adverse weather conditions such as lightning, rain, snow and strong breezes (including but not limited to handling and operating the unit, plugging and unplugging signal connections to outdoor facilities, working at height, outdoor installations, etc.).
- Always turn off the power source before starting any electrical work.
- Do not clean the unit with water.

- Do not disassemble, modify, tamper with or repair the unit on your own.
- Regularly inspect the unit 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 unit's shell is cracked during transportation or use, do not use it and contact BLUETTI support or your local BLUETTI dealers.
- Use a dry powder extinguisher if the unit catches fire.
- In case of fire, EVACUATE the building or affected area immediately, activate the closest FIRE ALARM system and CALL 9-1-1 or your local emergency phone number.
- Use genuine cables and accessories provided by BLUETTI.
- Keep the unit away from heat sources or high temperatures, and do not expose it to direct sunlight.
- Do not store the unit with flammable liquids, gases, or explosive materials.
- Make sure the area where you are using the unit is well ventilated and spacious.
- Do not block or cover the vents of the unit as this may cause irreversible damage to it.
- Use the unit for its intended purpose and avoid stacking objects on top of it during storage or use.
- Do not move the unit during operation as the vibrations and shocks associated with movement may cause damage to the internal hardware.
- In case of malfunction, turn off the unit immediately and contact BLUETTI support or your local BLUETTI dealers if this manual cannot adequately explain the malfunction to you.
- Do not place the unit on an unstable or inclined surface.
- Do not insert foreign objects into any port and vent of the unit.
- Keep away from children and pets.
- This product must be grounded before operation.  
Connect a grounding cable (recommended 14AWG (1.5mm<sup>2</sup>) /105°C/yellow-green color) to the grounding terminal of AC180. Fasten the grounding screw (M5\*10) to fix the cable.



**The symbol** is intended to alert you to read the instructions before operating and maintenance in the literature accompanying the product.

- The product is intended for use with audio/video, information and communication technology equipment only.
- Connect the equipment to a socket-outlet with earthing connection by means of a power cord.
- The socket-outlet shall be installed near the equipment and shall be easily accessible.
- Disposal of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery, that can result in an explosion.
- Leaving a battery in an extremely high temperature surrounding environment that can result in an explosion or the leakage of flammable liquid or gas
- The battery subjected to extremely low air pressure that may result in an explosion or

the leakage of flammable liquid or gas

- Attention should be drawn to environmental aspects of battery disposal.
- Please refer the information on exterior bottom enclosure for electrical and safety information before installing or operating the apparatus. Please refer the information on exterior bottom enclosure for electrical and safety information before installing or operating the apparatus

### **⚠ Legal and Regulatory Requirements**

- 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.

## **1.2.Handling**

Use mechanical assistance as needed (e.g. trolleys and adjustable height workbenches).

### **Recommended number of people based on the weight of product**

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

## **1.3. Storage and usage**

- When not using the unit for over 3 months, charge it to 40% to 60% SoC to keep it in optimal condition.
- Before storing the unit, power it off and remove all electrical connections from it.
- Store the unit in a cool and dry place. The ideal temperature range is 10°C to 30°C. The unit can be safely charged and discharged at temperatures of -20°C to 40°C. However, it's NOT recommended to store the unit in harsh temperatures for extended periods of time.
- Fully cycle the unit every 6 months to maintain the battery's health.

**⚠ If the SoC drops to 0 (during operation or upon startup),** take the following actions to safely restart the unit:


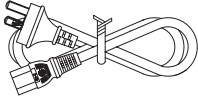

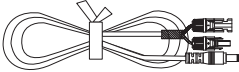




- 1)Shut down immediately.
- 2)Charging within 48 hours.
- 3)Battery should be kept at an ambient temperature of 5°C to 35°C for 24 hours before charging.

It is recommended to charge the unit via an AC source. If charging via solar energy, ensure that your solar system provides an output of more than 100W.

BLUETTI shall not be liable for any equipment damage caused by the violation of above instructions.

## 2. What's In The Box

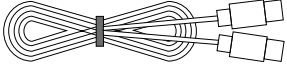
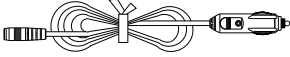


### Standard Packaging

Item	Picture	Qty.
Portable Power Station		1
AC Charging Cable (16AWG, 1800mm)		1
Car Charging Cable (16AWG, 720mm)		1
Solar Charging Cable (16AWG, 1500mm)		1
Grounding screw (M5*10)		1
User Manual		1
Warranty Card		1
Quality Certificate		1



## Optional

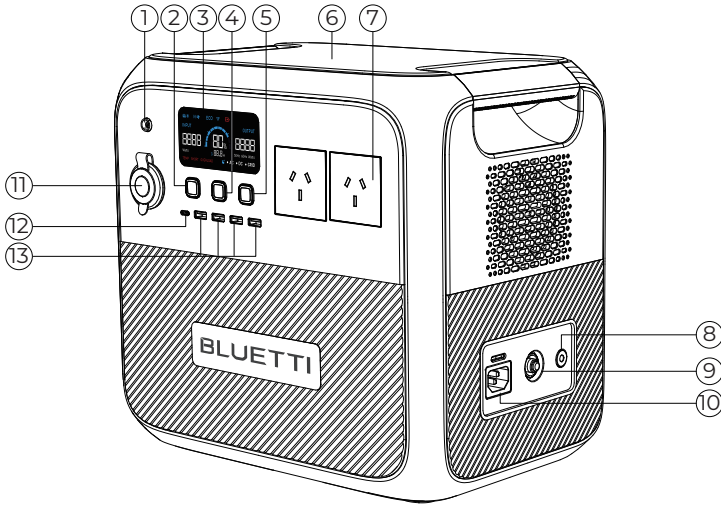
(Available on official BLUETTI website)

Item	Picture
TYPE-C Cable (5A/100W, 2m)	
Cigarette Lighter to 5521 Cable (For 12V devices with 5521 port, such as routers, cameras, etc.)	
Cigarette Lighter to Clamp Cable (Charging lead-acid battery via the cigarette lighter port)	
Lead-acid battery charging cable (DC7909)	

## 3. Product Overview

### 3.1 Diagram

BLUETTI AC180 is a portable power station with 1800W pure sine wave inverter and 1152Wh LiFePO4 battery, perfect for camping, van life and more. In addition to 2 AC output ports and 5 USB ports (4 USB-A and 1 USB-C), it also has a 12V/10A cigarette lighter port for your vehicle devices and a wireless charging pad to run compatible electronics, your phone, headphone, Bluetooth speaker, just to name a few. As for recharging, AC180 takes up to 1440W AC input and 500W DC input, so you're able to fully charge it in a few hours. It also supports BLUETTI app control - with the Bluetooth connectivity, you can monitor everything that's happening inside and optimize your power usage to your preference.



- |                         |  |
|-------------------------|--|
| ① DC Input              | ⑧ Grounding Pole(Grounding screw: M5*10) |
| ② DC Power Button       | ⑨ AC Input Fuse                          |
| ③ LCD Screen            | ⑩ AC Input                               |
| ④ Power Button          | ⑪ Cigarette Lighter Port                 |
| ⑤ AC Power Button       | ⑫ USB-C Port                             |
| ⑥ Wireless Charging Pad | ⑬ USB-A Port                             |
| ⑦ AC Output             |  |

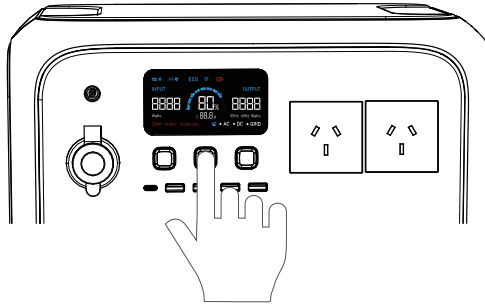
### 3.2 Specifications

Model	AC180			
Area	JP	US	CN	EU/UN/AU
Battery Capacity	1152Wh			
Cell Type	LiFePO4			
Net Weight	About 16kg/35.27lbs			
Dimensions (L*W*H)	340mm x 247mm x 317mm/13.39in×9.72in×12.48in			
Charging Temperature	0°C~40°C/32°F~104°F			
Discharging Temperature	-20°C~40°C (30°C~40°C: @1500W Max.) -4°F~104°F (86°F~104°F: @1500W Max.)			
Storage Temperature	-20°C~40°C/-4°F~104°F			
Working Humidity	10%~90%			
AC Output				
Power	1800W in total			
Voltage	100VAC	120VAC	220VAC	230VAC
Current	18A	15A	8.2A	7.8A
Frequency	50/60Hz			
DC Output				
Cigarette Lighter Port	12VDC/10A			
USB-A	USB-A: 5VDC/3A 15W in total USB-A: 5VDC/3A 15W in total			
USB-C (Type-C)	5/9/12/15/20VDC, 3A; 20VDC, 5A (Built-in eMarker chip)			
Wireless Charging	5W/7.5W/10W/15W			
AC Input				
Voltage	100VAC	120VAC	220VAC	230VAC
Max. Current	15A	15A	10A	10A
Frequency	50/60Hz			
UPS	Switching time ≤20ms Test the function before use to avoid risk of data loss.			
Power	1440W Max. @10°C~30°C/50°F~86°F			
DC Input				
Interface	DC7909			
Power	500W/10A Max.			
Voltage	12V-60VDC			

## 4. Operation

### 4.1 Buttons


BLUETTI AC180 has PWR button, AC power button and DC power button.



#### 4.1.1. Power ON/OFF

- Press the PWR button to start the AC180. When AC180 is on, press this button to turn on/off the LCD screen. Press and hold the button for more than 2 seconds to turn off the AC180.
- Press the DC power button to turn on/off the DC output (cigarette lighter, USB, wireless charging).
- Press the AC power button to turn on/off the AC output.

#### 4.1.2. Settings

- **Setting mode:** When the screen is on and the AC output is off, press and hold the AC and DC power buttons for about 2 seconds to enter Setting mode.
- **Frequency switching:** The current output frequency (50Hz/60Hz) is displayed in the lower right corner of the screen. Under Setting mode, press the AC power button to switch the frequency.
- **Power Lifting mode:** The Power Lifting mode is disabled by default. To enable it, press and hold the AC power button for about 2s in Setting Mode, or turn it on directly in the BLUETTI app. When enabled, the icon  is displayed on the screen. In this mode, the AC180 can run high drain pure resistive loads\* ( $\leq 2700W$ ) while its rated output power remains 1800W.

**Note:** The Power Lifting mode is not available when charging AC180 via an AC source like a wall outlet or generator. The AC source will bypass the inverter and supply power directly to connected AC loads.

\* Include heaters, irons or any other devices consisting of heating elements only.

- **Grid Enhancement mode:** By default, the Grid Enhancement mode is disabled. Please turn it on directly in the BLUETTI app. This mode ensures that the AC180 has a stable and continuous AC input, as it allows AC180 to adapt to voltage fluctuations and waveform distortion of an AC source.

**Note:** Turn off the Grid Enhancement mode when using AC180 as a UPS. In this mode, the UPS takes longer to switch over and may be unable to provide instant emergency power to connected devices.

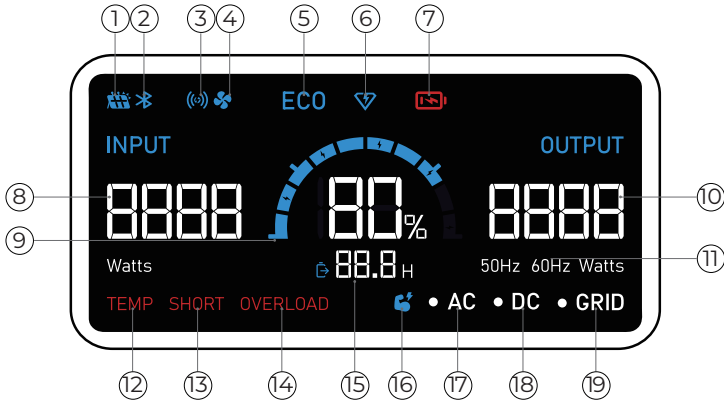
- **ECO mode:** When operating on ECO mode, the AC/DC output will automatically turn off if the AC180 is bearing low or no load for a while.

When enabled, the ECO icon is displayed on the screen. Under Setting mode, press the DC power button turn it

Output	Power	Duration
AC output	15W-30W	1, 2, 3, 4 hours
DC output	5W-10W	1, 2, 3, 4 hours

- Press the AC and DC power buttons at the same time to exit Setting mode.  
**Note:** If you do not perform any operation in 1 minute, AC180 will exit Setting mode automatically and no changes will be saved.
- **Check the error code:** Press the AC and DC power buttons at the same time for about 2 seconds, and then hold the AC power button to check the current error code (e.g. E001).

## 4.2. LCD Screen



- ① DC Input
- ② Bluetooth
- ③ Wireless charging
- ④ Fan
- ⑤ ECO Mode
- ⑥ Turbo charging
- ⑦ Low voltage alert
- ⑧ Input power
- ⑨ Battery capacity
- ⑩ Output power
- ⑪ AC frequency
- ⑫ Temperature anomaly alert
- ⑬ Short circuit alert
- ⑭ Overload alert
- ⑮ Remaining time indicator
- ⑯ Power Lifting mode
- ⑰ AC indicator
- ⑱ DC indicator
- ⑲ AC input connected

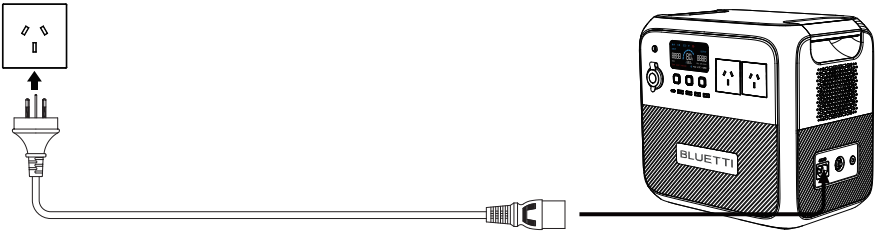
LCD Instructions	
Startup	LCD lights up
Shutdown	LCD lights off
Overload	<b>OVERLOAD</b> flashes
Short circuit	<b>SHORT</b> flashes
Charging	displays
Turbo Charging	displays
ECO mode enabled	<b>ECO</b> displays
Battery low	displays
Abnormal temperature	<b>TEMP</b> flashes
AC Input	<b>• GRID</b> displays
DC Input	displays
Bluetooth connected	displays
AC output enabled	<b>• AC</b> displays
DC output enabled	<b>• DC</b> displays
Power Lifting mode enabled	displays

### 4.3 Charging

AC180 supports four charging methods: AC, solar, car(cigarette lighter) and generator.

#### 4.3.1. AC Charging (Wall Outlet)

Simply plug the AC180 into the standard wall outlet and start charging.



AC180 supports Turbo/Standard/Silent charging modes. It's set to standard charging by default, while the Turbo and silent modes can be enabled in BLUETTI app. BLUETTI's AC charging mode guide is as follows:

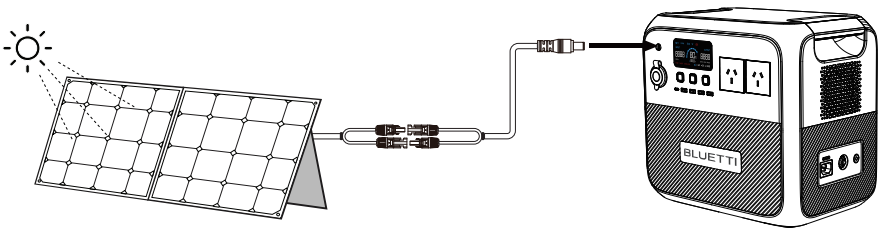
- 1) Turbo charging comes in handy when you need AC180 to be replenished in short time.
- 2) Standard charging is more friendly to AC180's battery.
- 3) Silent charging gives you quiet, low-power operation for long battery life.

#### 4.3.2.Solar Charging

Connect the solar panels (in series or parallel) to AC180 via the solar charging cable.

**Note:** Please make sure your solar panels comply with:

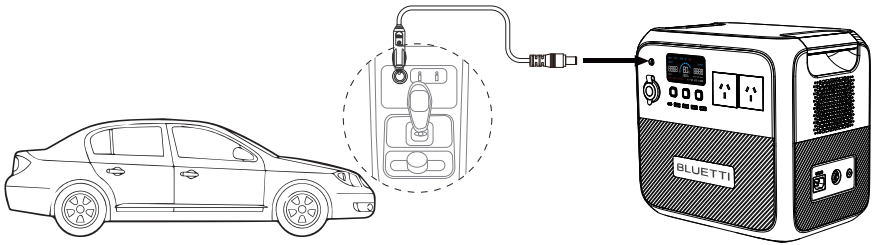
Voc: 12V-60V    Input Current: 10A Max.    Input Power: 500W Max.



**Warning:** The open circuit voltage of solar panels cannot exceed 60V, otherwise it will damage the device(Note:It's not covered in the warranty)

### 4.3.3.Car Charging

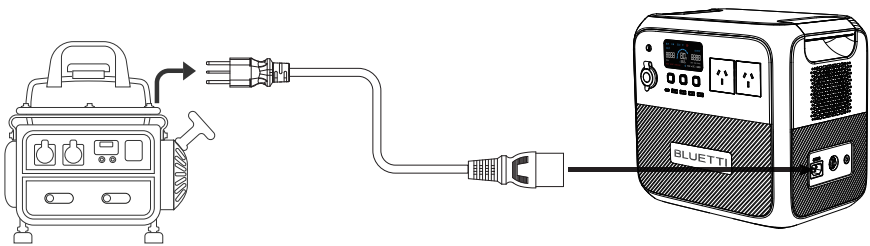
Connect the AC180 to vehicle's 12V/24V cigarette lighter port via the car charging cable.



**Warning:** Cigarette lighter must be completely plugged in, otherwise it may cause safety risks.

### 4.3.4.Generator Charging

Connect the AC180 to generator via the AC charging cable.



## 4.4 Discharging

The operation time of AC180 is subject to many factors, such as ambient temperature, discharge rate, battery capacity, altitude, load characteristics, etc.

### 4.4.1.AC Output

AC180 has 4 AC output ports (2 ports for EU version), providing a total of up to 1800W AC power. It also can handle a surge of 2700W.

### 4.4.2.DC Output

- 12V/10A cigarette lighter port
- USB-C (PD 100W)
- USB-A (30W in total, 15W Max.)
- Wireless charging pad (15W Max.)



### 4.4.3. Estimated Operation Time

Depending on the connected power loads, there are two different scenarios to calculate the operation time of AC180.

- If the AC180 is applied to a high power load, such as a 600W coffee maker.

$$\text{Operation time (estimated)} = \text{Battery capacity (Wh)} \times \text{DoD} \times \eta \div (\text{load power})$$

- If applied to a small power load like a 40W refrigerator.

$$\text{Operation time (estimated)} = \text{Battery capacity (Wh)} \times \text{DoD} \times \eta \div (\text{load power} + \text{self-consumption of AC180})$$

**Note:**

- 1) The self-consumption of AC180 is about 15W.
- 2) Load power and operation time are measured in watts and hours.
- 3) DoD refers to depth of discharge. AC180 works at 90% DoD for longer battery life.  $\eta$  is the conversion efficiency of the inverter, which is larger than 85% for AC180.  
E.g. If you have a 40W refrigerator, you can run it for about 17 hours.  
Operation time =  $1152\text{Wh} \times 90\% \times 85\% \div (40\text{W} + 15\text{W}) \approx 17$  hours.

**Note:** Low temperature and excessive loads could greatly impact the battery capacity and reduces its normal operation time.

### 4.5 BLUETTI App

Scan the QR code below or search "BLUETTI" in the App Store or Google Play to download the BLUETTI app.



AC180 supports Bluetooth connection. Once connected, the AC180 can be accessed and controlled on a mobile phone or other smart devices. For more details, please refer to BLUETTI APP INSTRUCTIONS.

# 5. Appendix

## 5.1 FAQs

**Q1:** How do I know whether my devices will work well with this product?

**A:** Please evaluate the total constant load of your devices. If it doesn't exceed the Max. output power of AC180 (1800W), you can use this power station to run your devices.  
*Note:* Some devices with built-in motor/compressor may start at 2-4 times the rated power, which can easily overload the AC180.

**Q2:** Can I use third-party solar panels to charge this product?

**A:** Yes, you can. Make sure your solar panels have an open circuit voltage of 12V-60V and have the MC4 connectors. Please do NOT mix different types of solar panels.  
*Note:* Time required for one full charge depends on weather condition, the sunshine intensity and the angle of solar panels.

**Q3:** Can it charge and discharge at the same time?

**A:** A: Yes. It supports pass-through charging. AC180 comes with the premium LiFePO4 battery and proprietary Battery Management System to ensure that it can charge and discharge at the same time.

**Q4:** What is ECO mode and can I turn it off?

**A:** ECO mode helps save power, and you can turn it on or off on the screen. When operating on ECO mode, the AC/DC output will automatically turn off if the AC180 is bearing low or no load for a while. You can set the power threshold of AC output and DC output to 15-30W /5-10W, respectively, for 1, 2, 3, or 4 hours.

**Q5:** Why is the charging power often too low?

**A:** AC180 has a built-in intelligent BMS that automatically adjusts the charging power in response to the battery temperature and SoC, thus protecting the battery and extending its service life.

**Q6:** Can I make the AC180 less noisy when charging?

**A:** Yes. Select "Silent" for AC charging in the BLUETTI app. Please refer to 4.3.1 AC Charging for more details.

**Q7:** When should I use the Grid Enhancement mode?

**A:** This mode is handy when charging the AC180 via an unstable AC source, such as an unreliable grid or generator.  
E.g. If you change the generator's output while charging the AC180, the voltage dip will also cause the charge to fail.

## 5.2 Troubleshooting

Error Code	Error Description	Troubleshooting
E001	Inverter overload	Check if the power of connected devices is too high.
E003	Inverter short circuit	Check if the connected devices are damaged.
E065	Cigarette lighter output short circuit	Check if the power of connected devices is too high.
E068	Cigarette lighter overtemperature	Wait a few minutes and try again.
E085	Charging temperature too high	Wait for the battery to cool down before charging.
E086	Charging temperature too low	Recommended charging temperature: 0°C~40°C.
E087	Discharging temperature too high	Wait for the battery to cool down before discharging.
E088	Discharging temperature too low	Recommended discharging temperature: -20°C~40°C.
E033	PV Input overvoltage	Ensure the PV input voltage is in the range of 12V~60VDC.
Others		Contact BLUETTI technical support.

## 5.3 Abbreviations

- MPPT: Maximum Power Point Tracking
- SoC: State of Charge
- UPS: Uninterruptible Power Supply
- AC: Alternating Current
- DC: Direct Current
- PV: Photovoltaic (Solar Panels)
- DoD: Depth of Discharge

**For more information, please visit:**

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Nanshan, Shenzhen, China

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