User Manual

Blackbox Power Station

Green Energy
www.mipv.pro

Model: ES3000-PLUS

For true professionals

Index

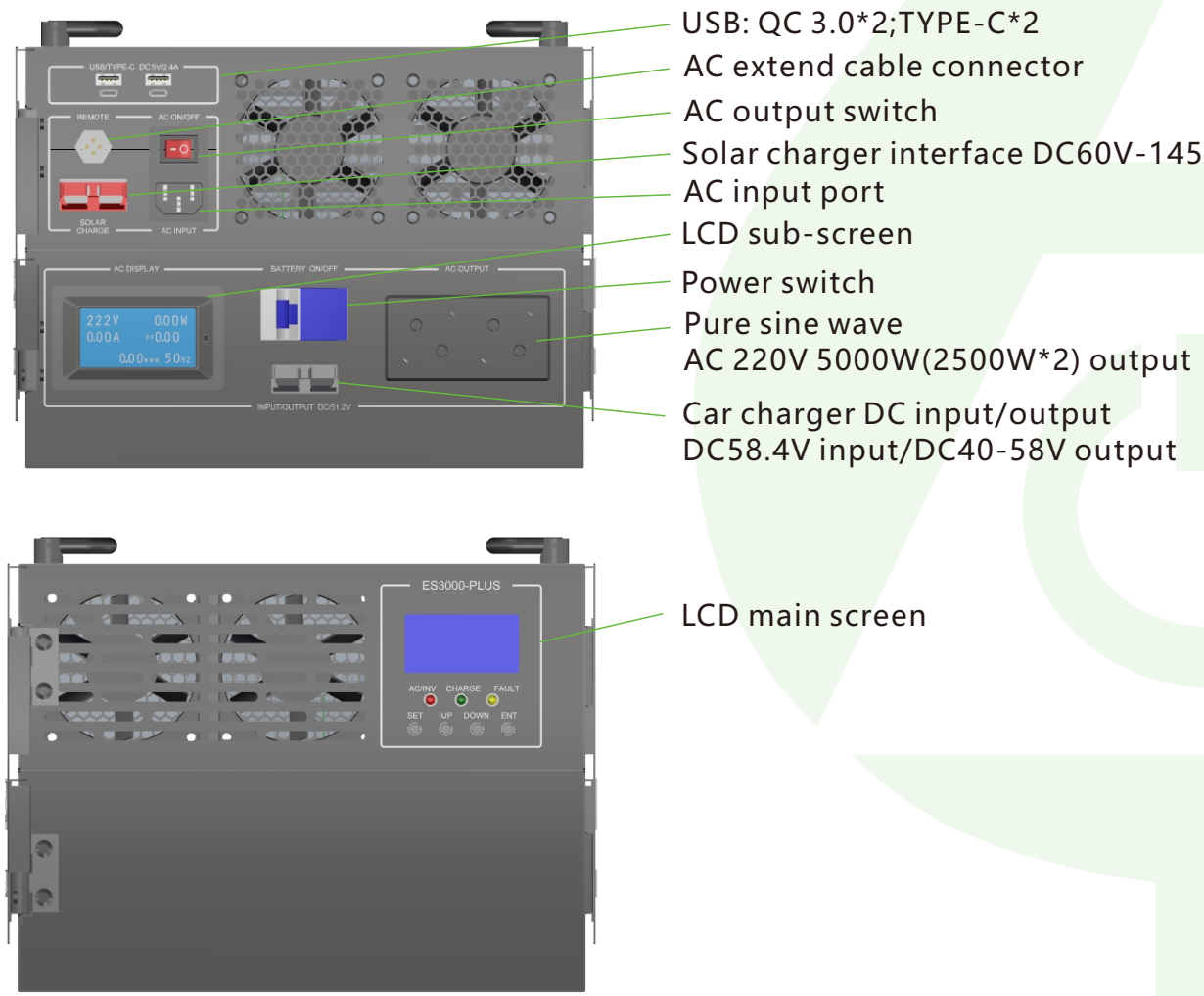
1 Product Overview

This manual introduces the characteristics, usage, precautions, safety warnings and maintenance of Blackbox Power Station.

Our product uses 51.2V(16S) LiFePO4 battery, equipped with advanced BMS and intelligent all-in-one solar charger inverter. Achieved DC transfer to AC continuously with high platform, high power, high efficiency output.

Blackbox power station adopted shockproof design, which can be widely used in energy storage and emergency usage in recreational vehicle, boat/yacht, office and house/apartment. Which can support home appliance, power tools, industry equipment and many other AC/DC loaders.

2 Product Structure



3 Basic Characteristics

★High output power, max. can reach to 5000W, continuously output 3000W;
★ The DC output port is full protocol USB + type-C interface with wide output voltage range;
★Stable AC output, all digital intelligent design of DC to AC module. Adopting advanced SPWM tech., pure sine wave output only;
★4 multiple charging methods, including AC charge, Solar charge, Car charge and hybrid charge;
★High efficiency of solar charge, using the most optimized MPPT tracking tech., to ensure the charging efficiency up to 99%;
★Dual LCD screen, which can show all the work status and data lively;
★Installed On / Off ship type switch and reverse control external extension switch to control AC output;
★Installed 100A air switch to control the whole product's power on/off;
★Using smart speed adjustable fan to provide high efficiency cooling function;
★Built-in Bluetooth can monitor the product status instantly through the mobile APP. *support both iPhone and Android smart phone.*
★Simple construction, easy to handle, environmental friendly green energy

4 Safety Features

The blackbox power station have installed advanced BMS and intelligent all-in-one solarcharger inverter, which can ensure the life cycle and safety of battery. Inlcuding:
★Short circuit protection
★Over-current protection
★Over temperature protection
★Over-charge/over-discharge protection
★Over load protection
★Reverse charging protection

5 Safety Warning

The blackbox power station has assembled with Lithium-ion battery, which might cause heating, fire or explosion when exposed to extreme condition and get serious injury; this product can provide 220V high voltage current, please follow the warning instruction as below,

▲It is forbidden to short-circuit the positive and negative electrodes of the battery [such as directly connecting the positive (+) and negative (-) terminals with wires or other metal objects], otherwise the high current and high temperature may cause personal injury or fire;

▲Use qualified and matched LiFePO4 battery charger, specific AC charge cable and solar/car charge cable;

▲It is forbidden to pierce the battery with nails or other sharp objects. It is forbidden to hit the battery with a hammer and step on the battery. It is forbidden to hit and throw the battery or otherwise subject the battery to strong physical impact;

▲It is forbidden to immerse the battery in water for long period. When it is not in storage, it should be placed in a cool and dry environment;

▲It is forbidden to use in series, parallel or series and parallel with any other types/brand of batteries;

▲Do not connect to alternators or non-smart charging systems;

▲Keep the battery away from children;

▲It is forbidden to use or store the battery near heat and high temperature sources, such as fires, heaters, etc.;

▲It is forbidden to put batteries on microwave ovens, high-pressure containers or induction cookers;

▲ It is forbidden to use or store the battery under high temperature (such as in direct sunlight or in a very hot car), otherwise it may cause performance loss, shortened service life and function failure, and even cause the battery to overheat, catch fire or explode;

▲It is forbidden to disassemble or modify the battery in any way. The battery contains safety and protection devices. If damaged, it may cause the battery to generate heat, catch fire or explode;

▲High-quality and suitable specifications of wire and cable should be used for connection;
▲If the battery emits peculiar smell, heat, discoloration or deformation, or any abnormal phenomenon during use, charging or storage, stop using it immediately;
▲Check whether the battery is damaged, cracked, or corroded before use. If you find any damage to the battery, stop using it immediately;
▲If the battery leaks and the electrolyte gets into your eyes, please don't rub your eyes and rinse your eyes with clean water. If necessary, please go to the hospital for treatment immediately, otherwise it will hurt your eyes.

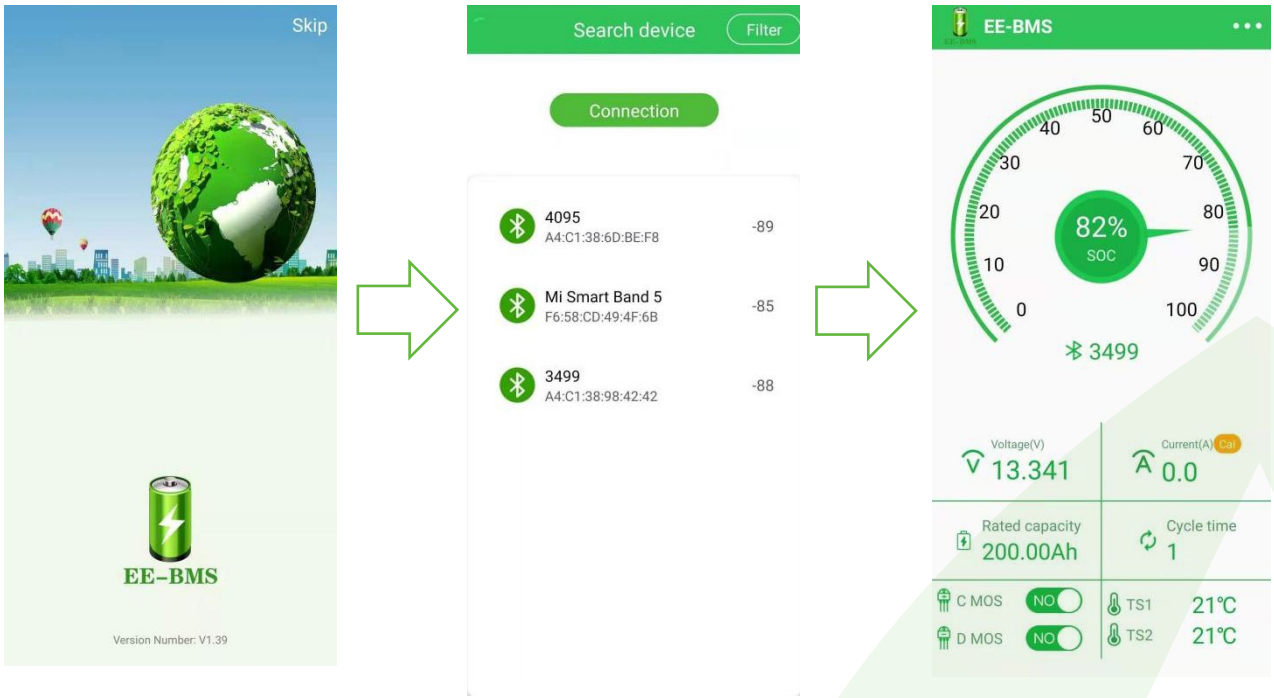
6 User Manual

6.1 Bluetooth

After receiving the product, please use Android mobile phone to http://d.zqapps.com/xpdk Web page or scan the following QR code, select the corresponding QR code to download and install the Bluetooth APP.

The iphone mobile system can scan the following two-dimensional code, according to its operating system,select the corresponding QR code to download and install the Bluetooth APP.

When the installation is finished, turn on the Bluetooth function of the mobile phone, open the APP., press"Search" and click the Bluetooth number corresponding to the bluetooth code on the product to enter its interface to view the battery status. The interface is as follows:



Note: the battery MUST get a fully charge and discharge cycle then you can get an accurate battery capacity

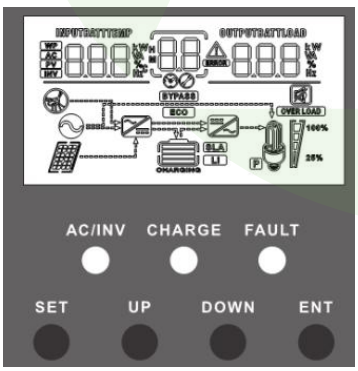
6.2 Pre-use check

When the customer receives the product, first check whether the product is damaged, cracked, or corroded; connect to Bluetooth, check whether the battery is in normal condition on the mobile phone APP., and ensure that there is no damage during transportation. If there is any abnormality, please stop installation and opertation immediately then notify us.

6.3 LCD main screen indication

6.3.1 LCD main screen panel

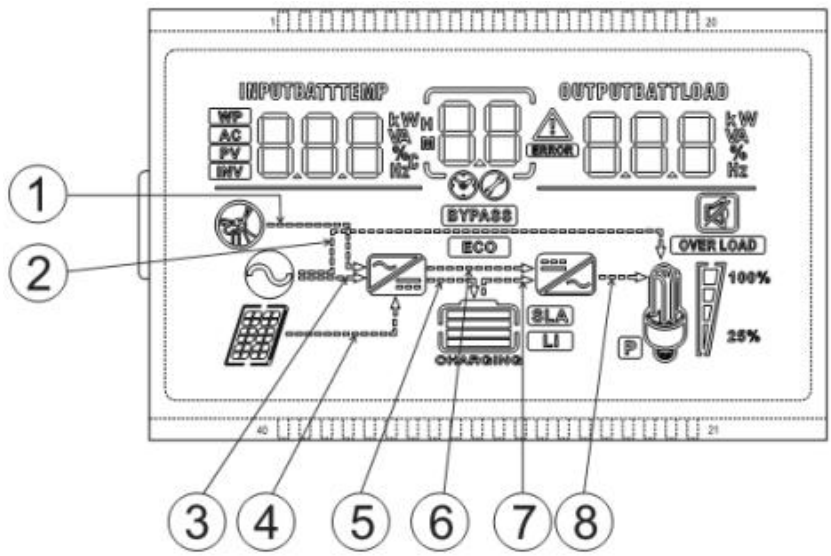
LCD main screen panel including
1* LCDscreen,
3* indication lights,
and 4* operation buttons .



Operation buttons introduction	
Function buttons	Description
SET	Enter/Exit Settings menu
UP	Previous choice
DOWN	Next choice
ENT	Confirm/Enter Optionsunder the settings menu

Indicators introduction		
Indicators	Color	Description
AC/INV	Yellow	Steady on: Mains output
		Flash: Inverter output
CHARGE	Green	Flash: Battery charging
		Steady on: Charging completed
FAULT	Red	Steady on: Fault state

6.3.2 LCD main screen introduction



Icons	Functions	Icons	Functions
	Indicates that the AC input terminal has been connected to the grid		Indicates that the inverter circuit is working
	Indicates that the AC input mode in APL mode (wide voltage range)	BYPASS	Indicates that the machine is in the Mains Bypass mode
	Indicates that the PV input terminal has been connected to the solar panel	OVER LOAD	Indicates that the AC output is in an overload state

	Indicates that the machine has been connected to the battery: indicates that the remaining battery is 0%~24%; indicates that the remaining battery is 25%~49%; indicates that the remaining battery is 50%~74%; indicates that the remaining battery is 75%~100%.		Indicates the percentage of AC output loads: indicates that the load percentage is 0%~24%; indicates that the load percentage is 25%~49%, indicates that the load percentage is 50%~74%, indicates that the load percentage is ≥75%
LI	Indicates that the battery type of the machine is a lithium battery		Indicates that the buzzer is not enabled
SLA	Indicates that the current battery type of the machine is a lead-acid battery		Indicates that the machine has an alarm
CHARGING	Indicates that the battery is in charging state	ERROR	Indicates that the machine is in a fault condition
	Indicates that the AC/PV charging circuit is working		Indicates that the machine is in setup mode
	Indicates that the AC output terminal has an AC voltage output		The parameters displayed in the middle of the screen: 1. In the non-setup mode, the alarm or fault code is displayed. 2. In the setup mode, the currently set parameter item code is displayed.
Parameters display on the left side of the screen: input parameters			
AC	Indicates AC input		
PV	Indicates PV input		
INV	Indicates inverter circuit		
WP	This icon is not displayed		
	Display battery voltage, battery charge total current, mains charge power, AC input voltage, AC input frequency, PV input voltage, internal heat sink temperature, software version		
Parameters display on the right side of the screen: Output parameters			
	Indicates output voltage, output current, output active power, output apparent power, battery discharge current, software version; in setup mode, displays the set parameters under the currently set parameter item code		
Arrow display			
①	The arrow is not displayed	⑤	Indicates the charging circuit charging the battery terminal
②	Indicates the grid supplying power to the load	⑥	The arrow is not displayed
③	Indicates grid supplying power to the charging circuit	⑦	Indicates the battery terminal supplying power to the inverter circuit
④	Indicates PV module supplying power to the charging circuit	⑧	Indicates the inverter circuit supplying power to the load

6.4 Real-time data viewing

On the LCD main screen, press the "UP" and "DOWN" buttons to scroll through the real-time data of the machine.

Page	Parameters on the left side of the screen	Parameters in the middle of the screen	Parameters on the right side of the screen
1	INPUT BATT V (Battery input voltage)	Fault code	OUTPUT LOAD V (Output load voltage)
2	PV TEMP ℃ (PV charger heatsink temperature)		PV OUTPUT KW (PV output power)
3	PV INPUT V (PV input voltage)		PV OUTPUT A (PV output current)
4	INPUT BATT A (Input battery current)		OUTPUT BATT A (Battery output current)
5	INPUT BATT KW (Battery input power)		OUTPUT BATT KW (Battery output power)
6	AC INPUT Hz (AC input frequency)		AC OUTPUT LOAD Hz (AC output frequency)
7	AC INPUT V (AC input voltage)		AC OUTPUT LOAD A (AC output load current)
8	INPUT V (For maintain)		OUTPUT LOAD KVA (Load apparent power)
9	INV TEMP ℃ (AC charge or battery discharge heatsink temperature)		INV OUTPUT LOAD KW (Load active power)
10	APP software version		Bootloader software version
11	Model PV Voltage Rating		Model PV Current Rating
12	Model Battery Voltage Rating		Model Output Power Rating

6.5 Setup parameters description

Buttons operation instructions: Press the "SET" button to enter the setup menu and exit the setup menu. After entering the setup menu, the parameter number [00] will flash. At this point, press the "UP" and "DOWN" buttons to select the code of parameter item to be set. Then, press the "ENT" button to enter the parameter editing mode, and the value of the parameter is flashing. Adjust the value of the parameter with the "UP" and "DOWN" buttons. Finally, press the "ENT" button to complete the parameter editing and return to the parameter selection state.

Parameter no.	Parameter name	Settings	Description
00	Exit setting menu	[00] ESC	Exit the setup menu
07	Max charger current	[07] 80A default	230Vac Max charger current (AC charger+PV charger). Setting range: 0~120A;
			120Vac Max charger current (AC charger+PV charger). Setting range: 0~100A;
12	Battery over discharge voltage (delay off)	[12] 42V default	Over-discharge voltage; when the battery voltage is lower than this judgment point, delay the time set by parameter [13] and turn off inverter output. Setting range is 40V~48V, with a step of 0.4V. It is valid for user-defined battery and lithium battery.
13	Battery over discharge delay time	[13] 5S default	Over-discharge delay time; when the battery voltage is lower than the parameter [12], the inverter output will be turned off after the time set by this parameter is delayed. The setting range is 5S~55S, with a step of 5S. It is valid for user-defined battery and lithium battery.
14	Battery under voltage alarm	[14] 44V default	Battery undervoltage alarm point; when the battery voltage is lower than the point, an undervoltage alarm is given, and the output is not turned off; the setting range is 40V~52V, with a step of 0.4V. It is valid for user-defined battery and lithium battery.
15	Battery discharge limit voltage	[15] 40V default	Battery discharge limit voltage; when the battery voltage is lower than the point, the output is turned off immediately; the setting range is 40V~52V, with a step of 0.4V. It is valid for user-defined battery and lithium battery.
22	Power saving mode	[22] DIS default	Power saving mode disabled.
		[22] ENA	After the power saving mode is enabled, if the load is null or less than 50W, the inverter output is turned off after a delay for a certain period of time. When the load is more than 50W, the inverter automatic restart.
23	Restart when over load	[23] DIS	Automatic restart when overload is disabled. If an overload occurs and the output is turned off, the machine will not restart.
		[23] ENA default	Automatic restart when overload is enabled. If an overload occurs and the output is turned off, the machine will restart after a delay of 3 minutes. After it reaches 5 cumulative times, the machine will not restart.

24	Restart when over temperature	[24] DIS	Automatic restart when over temperature is disabled. If an over-temperature shutdown occurs, machine will not restart to turn the output on.
		[24] ENA default	Automatic restart when over temperature is enabled.If an over-temperature shutdown occurs, the machine will restart when the temperature drops.
25	Alarm enable	[25] DIS	Alarm is disabled
		[25] ENA default	Alarm is enabled
28	Max AC charger current	[28] 60A default	AC Out 230Vac Setting range 0~60A
		[28] 40A default	AC Out 120Vac Setting range 0~40A
35	Battery undervoltage recovery point	[35] 52V default	When the battery voltage is under voltage, the battery voltage needs to recover more than this set value before the inverter starts the output
36	Max PV charger current	[36] 60A default	Max PV charger current. Setting range: 0~60A
37	Battery fully charged recovery point	[37] 52V default	After the battery is fully charged, it needs to be lower than this set voltage before it can be recharged

6.6 Protection function

No.	Protections	Description
1	PV current/power limiting protection	When charging current or power of the PV array configured exceeds the PV rated, it will charge at the rated.
2	PV night reverse-current protection	At night, the battery is prevented from discharging through the PV module because the battery voltage is greater than the voltage of PV module.

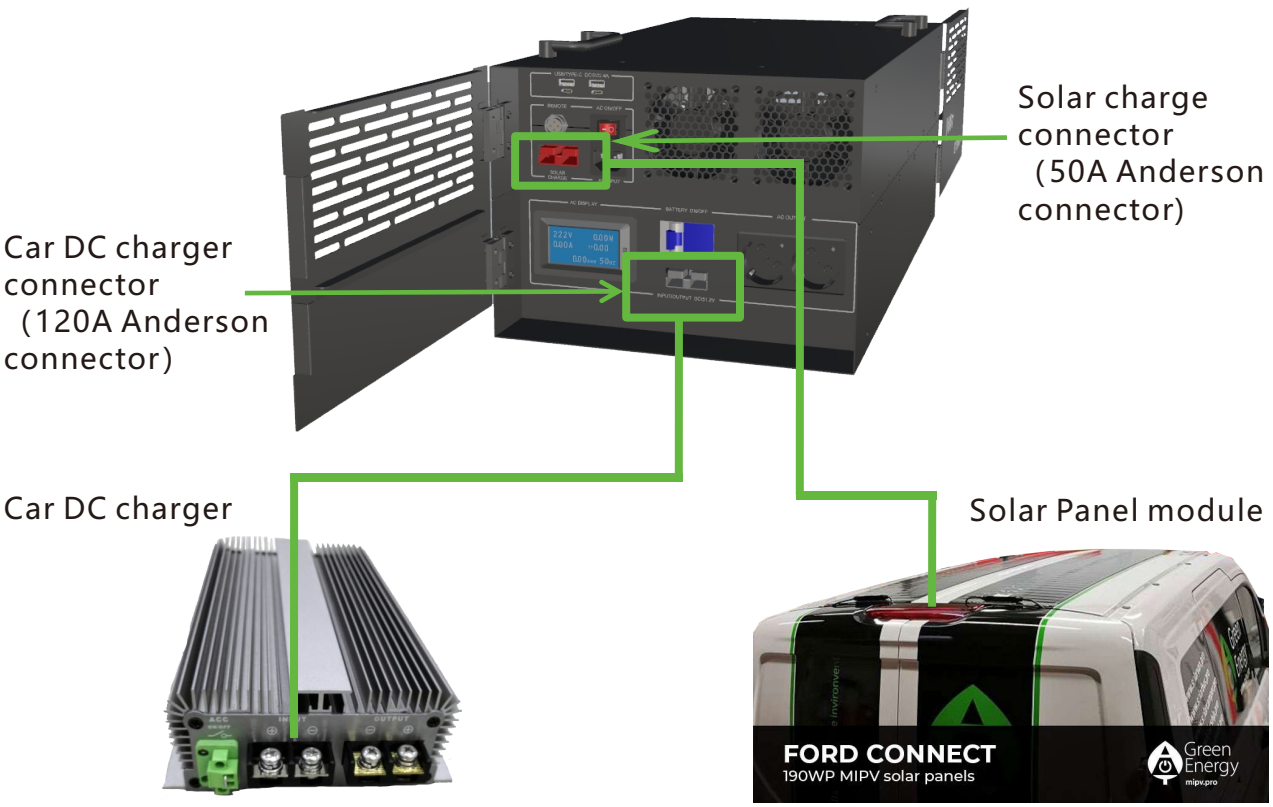
3	Mains input over voltage protection	When the mains voltage exceeds 280V (230V model) or 140V (120V model), the mains charging will be stopped and switched to the inverter mode.
4	Mains input under voltage protection	When the mains voltage is lower than 170V (230V model / UPS mode) or 90V (120V model or APL mode), the mains charging will be stopped and switched to the inverter mode.
5	Battery over voltage protection	When the battery voltage reaches the overvoltage disconnection point, the PV and the mains will be automatically stopped to charge the battery to prevent the battery from being overcharged and damaged.
6	Battery low voltage protection	When the battery voltage reaches the low voltage disconnection point, the battery discharging will be automatically stopped to prevent the battery from being over-discharged and damaged.
7	Load output short circuit protection	When a short-circuit fault occurs at the load output terminal, the AC output is immediately turned off and turned on again after 1 second.
8	Heat sink over temperature protection	When the internal temperature is too high, the all-in-one machine will stop charging and discharging; when the temperature returns to normal, charging and discharging will resume.
9	Overload protection	Output again 3 minutes after an overload protection, and turn the output off after 5 consecutive times of overload protection until the machine is re-powered. For the specific overload level and duration, refer to the technical parameters table in the manual.
10	PV reverse polarity protection	When the PV polarity is reversed, the machine will not be damaged.
11	AC reverse protection	Prevent battery inverter AC current from being reversely input to Bypass.
12	Bypass over current protection	Built-in AC input overcurrent protection circuit breaker.
13	Battery input over current protection	When the discharge output current of the battery is greater than the maximum value and lasts for 1 minute, the AC input would switched to load.
14	Battery input protection	When the battery is reversely connected or the inverter is short- circuited, the battery input fuse in the inverter will blow out to prevent the battery from being damaged or causing a fire.
15	Charge short protection	When the external battery port is short-circuited in the PV or AC charging state, the inverter will protect and stop the output current.

6.7 Operation Introduction

When finishing parameter setup and debugging, and the product appearance is well, consumers can check the battery status through app. then install and use.

6.7.1 Installation

1) Determine the installation position and the space for heat dissipation. when installing the all- in-one solar charge inverter, ensure that there is enough air flowing through the heat sink, and space of at least 200mm to the left and right air outlets of the inverter shall be left to ensure natural convection heat dissipation. Ger away from high temp. High heat environment.
2) To connect the solar panel with cable firmly, please make sure the polarity correctly, then connect the Anderson connector(50A-smaller one) onto our “Solar Charge” port.
3) To connect the DC car charger, make sure the polarity correctly, then connect the Anderson connector(120A-bigger one) onto our car charge port: “INPUT/OUTPUT DC 51.2V”.



6.7.2 Charge

Please full charge the power station before using, you can charge by AC input, PV input or DC car charger input. We would suggest to charge through AC grid for first charge. Please make sure the connector is firmly connected with product, and make sure the power supply is matched with our product. It may cause damage on the power supply and power station(such as charge voltage higher than specific voltage, may damage the BMS and MPPT; DC charge voltage is 58.4V, MPPT input voltage is 60V-145V)

6.7.2.1 PV Solar and AC charging

Turn the main power switch, AC output switch or AC output extension switch of ES3000 -PLUS to the "on" position (the buzzer will sound three "beeps" when starting up, and the buzzer will stop sounding when the main display and auxiliary display are on after about 30 seconds). After connecting PV solar charging module or AC mains plug, the charging mode of ES3000-PLUS can be started, It starts charging in about 40 seconds.

6.7.2.2 On board DC charger charging

Turn the main power switch of ES3000-PLUS to the "on" position (the main display and the auxiliary display will not light up), connect the on-board DC charger, and then start the charging of ES3000-PLUS products, about 40 seconds later.

6.7.3 Discharge

1） QC3.0 USB outlets and Type C outlets

Turn on the power switch, connect the loader through QC3.0 USB + Type C outlets, connect firmly then it can charge to your digital products.

QC3.0 USB outlets+Type C outlets

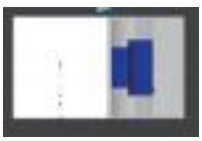
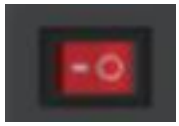
Application:




2）AC output

To connect the AC power cord into AC output socket of blackbox power station, make sure it is correct and firmly connected. Then turn on the power switch and AC output switch or AC extend controller switch, the LCD main screen will show the working status and parameters. Then the electrical appliance will start to work, LCD sub-screen will show the real-time AC output voltage, output current, output frequency and power factor, and you can also get the data from APP.

To turn on each switch upon following sequence:

Application Switch

Power switch **AC output switch**

Please pay attention:

a. The rated output power of Blackbox power station is 3000W, the max. output is 5000W, we suggest the work time of 5000W should be less than 5min.;

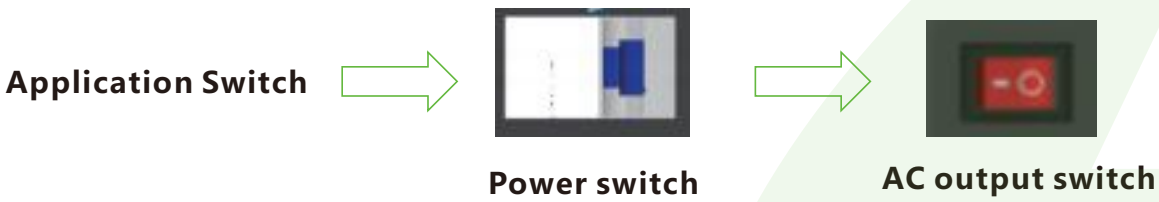
b. AC output socket * 2, the loader connect on each socket should be less than 2500W;

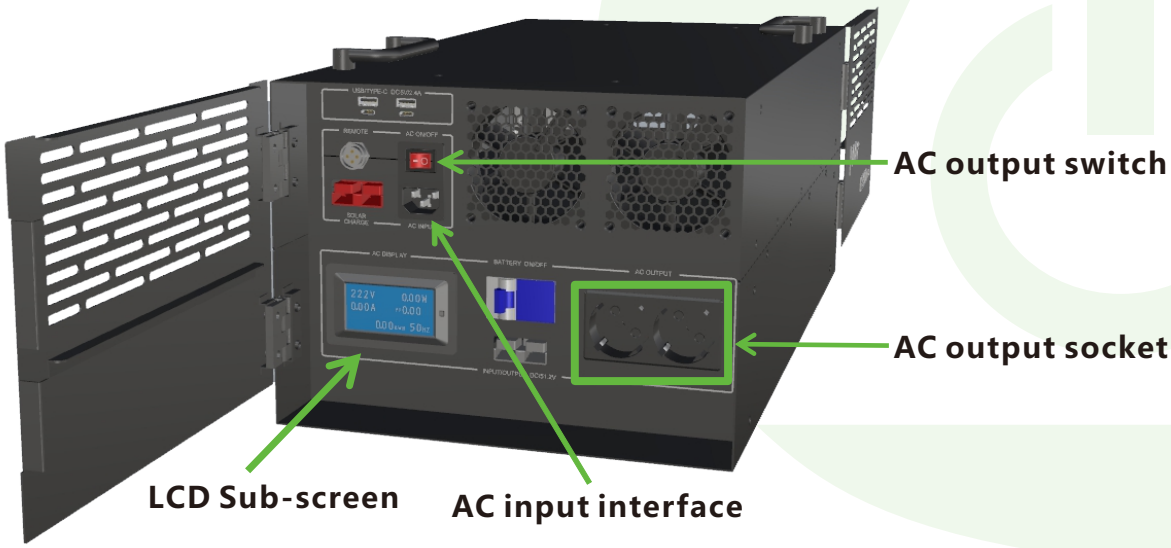
c. When using an inductive load (like power tool), the start current will be quite large, that may activate over-load protection;

d. When the LCD main display screen displays 48V, it will display the [01] fault code, and the buzzer will send out a continuous "beep... Beep" sound, indicating that the product has insufficient power, so it should stop using and supplement power; If it is still in use (we do not recommend it), es3000plus will automatically shut down and stop output when the display voltage on the main LCD screen drops to 42V;

e. In the process of use, the LCD main display screen will automatically turn off after 5 minutes of operation (it does not affect the work of the product). You can re-light up the LCD main display screen by pressing any key of "up, down, ENT" on the panel;
f. When the ES3000-PLUS product is not in use, please turn the main power switch and AC output switch to the "off" position to avoid power consumption;
g. As the output voltage is AC 220 V, please prevent high voltage electric shock;
h. If there is any fault in the process of use, please carry out troubleshooting according to the fault code displayed on the LCD main display. If the fault can not be eliminated, please turn off the switch of electrical appliance first, then turn off the AC output switch (or AC output extension switch) and turn off the main power switch (that is, turn the main power switch to the "off" position), and then check, remove and restore the fault.

To turn off each switch upon following sequence:

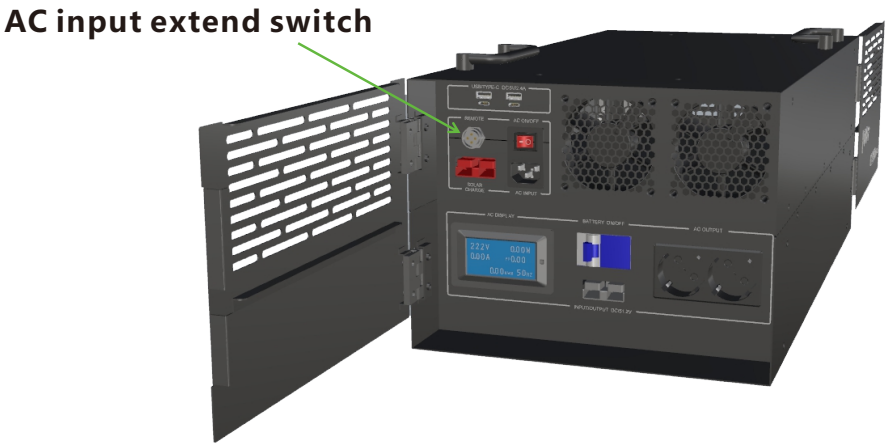




The prodct can supply power to home appliance, power tool and industry equipment as below, (for reference).

3）AC extend control switch

This extend control switch has the same function as AC output switch, which means you can turn on the AC power with the extend control switch as below.



6.8 Transportation

Individual package and prevent short-circuit;
Do not stack more than 6 layers or upside down;
Maximum transportation temperature does not exceed 65℃;
The product belongs to UN3481, which contains lithium battery. It must comply with the relevant regulations during transportation.

6.9 Storage

Suggested State of charge(SOC): 30%~50%
Please disconnect the battery from the equipment load before storage to eliminate any potential load that may be discharged.
The battery should be stored in a cool, dry, ventilated and clean environment, its temperature should be (-20~65)℃, and its humidity should be (65±20)%
The battery is charged at least once every 3 months to prevent over-discharge.
When removing the battery before using it, please charge the battery fully.
Do not expose the battery to extreme temperatures above 65°C.

6.10 Maintenance

Cables and terminals are kept clean and free from any corrosion, dirt or deposits. It can be wiped clean with a dry cloth.

When conditions permit, please store the battery in an environment with a temperature of (25±5)℃ and a humidity of (60±15)%.

The battery is stored at (30~50)% SOC.

The battery is charged and discharged according to product specifications.

6.11 Troubleshooting

If there are any problems during battery operation, please refer to the following instructions or contact us for help:

6.11.1 Fault Code:

Fault code	Fault name	Whether it affects the output or not	Description
【01】	BatVoltLow	Yes	Battery undervoltage alarm
【02】	BatOverCurrSw	Yes	Battery discharge average current overcurrent software protection
【03】	BatOpen	Yes	Battery not-connected alarm
【04】	BatLowEod	Yes	Battery undervoltage stop discharge alarm
【05】	BatOverCurrHw	Yes	Battery overcurrent hardware protection
【06】	BatOverVolt	Yes	Charging overvoltage protection
【07】	BusOverVoltHw	Yes	Bus overvoltage hardware protection
【08】	BusOverVoltSw	Yes	Bus overvoltage software protection
【09】	PvVoltHigh	No	PV overvoltage protection
【10】	PvBuckOCSw	No	Buck overcurrent software protection
【11】	PvBuckOCHw	No	Buck overcurrent hardware protection
【12】	bLineLoss	No	Mains power down
【13】	OverloadBypass	Yes	Bypass overload protection
【14】	OverloadInverter	Yes	Inverter overload protection
【15】	AcOverCurrHw	Yes	Inverter overcurrent hardware protection

【17】	InvShort	Yes	Inverter short circuit protection
【19】	OverTemperMppt	No	Buck heat sink over temperature protection
【20】	OverTemperInv	Yes	Inverter heat sink over temperature protection
【21】	FanFail	Yes	Fan failure
【22】	EEPROM	Yes	Memory failure
【23】	ModelNumErr	Yes	Model setting error
【26】	RlyShort	Yes	Inverted AC Output Backfills to Bypass AC Input
【29】	BusVoltLow	Yes	Internal battery boost circuit failure

6.11.2 Handling measures for part of faults

Faults	Handling measures
No display on the screen	Check if the battery air switch or the PV air switch has been closed; if the switch is in the "ON" state; press any button on the screen to exit the screen sleep mode.
Battery overvoltage protection	Measure if the battery voltage exceeds rated, and turn off the PV array air switch and Mains air switch.
Battery undervoltage protection	Charge the battery until it returns to the low voltage disconnection recovery voltage.
Fan failure	Check if the fan is not turning or blocked by foreign object.
Heat sink over temperature protection	When the temperature of the device is cooled below the recovery temperature, normal charge and discharge control is resumed.
Bypass overload protection, inverter overload protection	① Reduce the use of power equipment; ② Restart the unit to resume load output.
Inverter short circuit protection	① Check the load connection carefully and clear the short-circuit fault points; ② Re-power up to resume load output.
PV overvoltage	Use a multimeter to check if the PV input voltage exceeds the maximum allowable input voltage rated.
Battery missed alarm	Check if the battery is not connected or if the battery circuit breaker is not closed.

6.11.3 Battery parameter

Item	Description	Spec.
1	Rated voltage	51.2V
2	Rated capacity	40Ah
3	Rated energy	2048Wh
4	Rated output energy	3000W（continuous output）
5	Max. output energy	5000W（less than 5 min.）
6	Over-load protection	(102%<load<125%) ±10%: alarm and turn off after 5 min.; (125%<load<150%) ±10%: alarm and turn off after 10 sec.; Load>150% ±10%: alarm and turn off after 5 sec.;
7	AC rated output voltage	220V
8	AC output frequency	50Hz
9	AC output wave	Pure sine wave
10	AC inverter efficiency	≥90%
11	Expected life time	≥3 years or accumulative energy≥3200kWh
12	DC charge voltage	58.4V
13	PV input voltage	(60-145）V
14	Work temp.	Charge:（0 ~ 45）℃; Discharge:（-20 ~ 60）℃
15	Standard charge current	20A
16	Max. Charge current	60A
17	Standard discharge current	40A
18	Max. Continuous discharge current	100A
19	Charge over-temp. protection	60℃
20	Discharge over-temp. protection	75℃
21	Charge low-temp. protection	-5℃
22	Short-circuit protection	Yes
23	Over-load protection	Yes
24	Over-current protection	Yes
25	Reverse charge protection	Yes
26	Bluetooth monitor	Yes
27	Total weight	About 31kg
28	Dimension	580*298*245mm
29	No-load power	≤3W
30	Storage	Temp.:（-20±60)℃, Humidity:（65±25)%RH; Suggest to charge every three months.

7 Packing List

Item	Product or Accessories	Qty.	Remarks
1	Blackbox power station	1 set	
2	AC power cord- Euro type (16mm², 1.8m)	1 set	
3	AC extend switch and cable (3.0m)	1 set	
4	50A Anderson connector	1 set	
5	120A Anderson connector	1 set	
6	Car charge booster	0 set	
7	User manual	1 pcs	E-file

8 Warranty

8.1 Disclaimer

Green energy won't be responsible for the damage caused by the reason as following:
Force majeure includes fire, typhoon, flood, earthquake, war and terrorism;
Intentional or accidental misuse, abuse, neglect or improper maintenance, use under abnormal conditions;
Improper installation of peripheral equipment, improper operation, etc. cause malfunction;
Disassemble or modify the product without Green Energy's express or written consent.

8.2 Warranty

Green Energy promises that this battery will have no quality problems within 3 years of use according to the product manual (or the accumulative output power does not reach 3200kWh). Within its normal service life, if the product fails or has quality problems, Green Energy will carry out a warranty.
Caused by poor product maintenance, improper charging, improper use, polarity reversal, improper installation, improper storage and overheating, physical damage, fire, frostbite, water damage, disassembly, modification or port damage, etc., are not covered by the warranty .

8.3 Warranty Card

Product	ES3000-PLUS		
Product code		Warranty period	year month
Distributor			
Add.:			
Customer name		Purchase date	
Customer add.			
Contact No.			

Warranty terms:

1. Within three months from the date the product is sold, if there is a performance failure, the product itself and the outer packaging must be intact, and the product of the same model can be replaced, except for human-made damage.
2. The product is guaranteed for three years(or the accumulative output power not reach 3200kWh) from the date of sale, and the accessories are not covered by the warranty.
3. The warranty service is only valid under normal use.
4. All human-made damage, self-disassemble or modification, improper use and appearance damage, etc. are not covered by the warranty.
5. The product warranty card is required during the warranty period. If this card is not provided or the card is altered privately, the company has the right to refuse the warranty.

9 FCC Statement

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules.
Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

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

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

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
This equipment should be installed and operated with a minimum distance of 20cm between the radiator and any part of your body.

NOTES:

NOTES:

ENG-V1.0