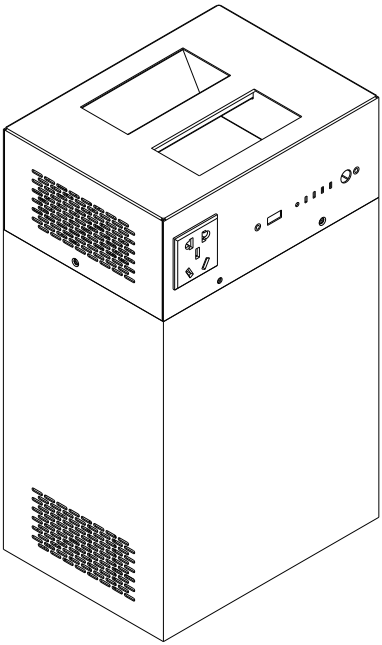
USER MANUAL

iPower Mobile Series

iBox-AD1000/500W



Please read the user manual carefully before using the product and keep it for future reference.

Intenergy

Wuxi Intenergy Co., Ltd.
Tel: +86(0)-510-88781862 Website: www.intenergy.cn
E-Mail: info@intenergy.cn
Address: No.49-1 Zhujiang Road, National High-Tech development Zone, Wuxi 2141000,JiangSu,China.

This manual is applicable to iPower Mobile Series 1004.8Wh/500W

Disclaimer

Users are expected to read this User Manual carefully and ensure they have fully understood the content before using this product. Please keep this User Manual for future reference. Any incorrect usage may result in severe injury to the user or others, damage to the product or loss of property. By using this product, the user will be deemed as having understood, recognized and accepted all the terms and contents of the User Manual, and will be responsible for any incorrect usage, and all the consequences arising therefrom. Hereby disclaims any liability for any losses due to the user's failure to use the product according to the User Manual.

Subject to compliance with laws and regulations, our company has the final right to interpret this document and all documents of and related to this product. Any update, revision or termination of the content thereof, if iPower Mobileseries,will be made without prior notice, and users must visit the official website of companyfor the latest information regarding the product.



Use indoor only.



The crossed-out wheeled bin indicates that the electrical and electronic (EE) product should not be discarded as unsorted waste but must be sent to separate collection facilities for recovery and recycling.

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1. Safety Instruction

1.1 General safety

1. Please carefully read the documents before installing, operating or maintaining the equipment.

2. The documents are subject to change due to product updates or other reasons.

3. Do not put heavy objects on the equipment.

4. Ensure that all cables and connectors are intact and dry before connecting to prevent electric shocks.

5. Use insulation tools or wear personal protective equipment when you install or operate the equipment.

6. Do not install or operate the equipment in extreme weather events such as lightning, snow, heavy rain, strong wind and so on.

7. Do not damage, smear or rip off any warning labels on the equipment.

8. Do not hit, pull, drag, squeeze or step on the equipment, or throw it into the fire, as there is risk of explosion.

9. After installing, please clean the remains of the installation, such as boxes, clipped cable ties, ripped insulation materials, etc.

10. Do not modify or repair the equipment, please contact our customer service or qualified personnel if nec iPower series.

11. Use tools and the equipment correctly to prevent personal injuries and product damage.

12. Understand the components and function of the iPower series Make sure that all electrical connections, and voltage and frequency at the connection point meet the local utility requirements.

13. If the iPower series is connect to the solar panel, the iPower series shall be grounded.

14. In order to extend the cycle life of the built-in lithium battery, please needs to be charged and discharged at least once within 6 months, there are 2 capacity LED indicator lights on for a long time.

15. The equipment may get more than 60℃(140℉) while in use. Do not touch its enclosure before it cools down. Also, always keep the equipment out of reach of children and pets.

16. The installation location should be convenient for you to pull out the connectors.

17. Make sure the iPower series is off during the whole connection proc iPower series.

1.2 Environment requirements

1.Make sure the equipment is installed, operated or stored in a well ventilated place.

2.Do not install or operate the equipment near flammable, explosive, corrosive, caustic or moist sources.

3.Do not expose the equipment to strong electromagnetic fields to avoid radio interference.

2. Explanation of Symbols

2.1 Symbols on the documentation

Symbol	Explanation
DANGER	A hazard with a high level of risk which, if not avoided, will result in death or serious injury.
CAUTION	A hazard with a low level of risk which, ifnot avoided, will result in minor injury, or damage to the device.
NOTICE	Important information that you need to pay attention to.

Symbol	Explanation
	Indicates additional information on correct use or useful tips.
	In a basic set.
	Optional (not in the box).

2.2 Symbols on the device

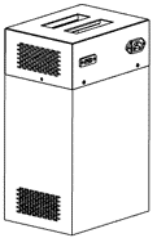
DANGER

- Do not damage, smear or cover any warning labels on the device. All labels must be visible after installation.

Symbol	Explanation
	Refer to the operation instructions.
	Caution, hot surface.
	Caution, risk of danger.

Symbol	Explanation
	Caution, risk of electric shock; energy storage timed discharge
	The position for connecting the protection ground cable
IP21	Protection rating

3. What's in the box



A
iPower
Mobile series



B
User manual



C
1.2meters long
AC input cable
(Optional according to different country and region)



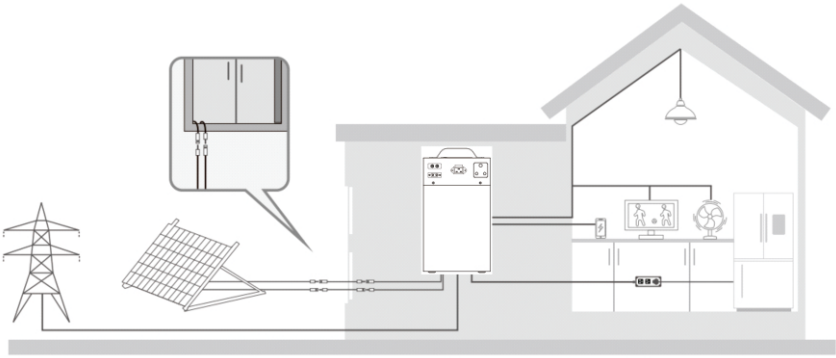
D
XT90
conversion cable

C	Used for the AC input cable connection between the iPower Mobile series, the grid and AC input. See "Connecting to the grid" for details.
D	Used for the MC4 terminal kit connection between the iPower Mobile series, the solar panel and PV input. See "Connecting solar panel" for details.

- The images of the product and components may differ from the actual product.
- If there are missing or defective components, please contact customer service.

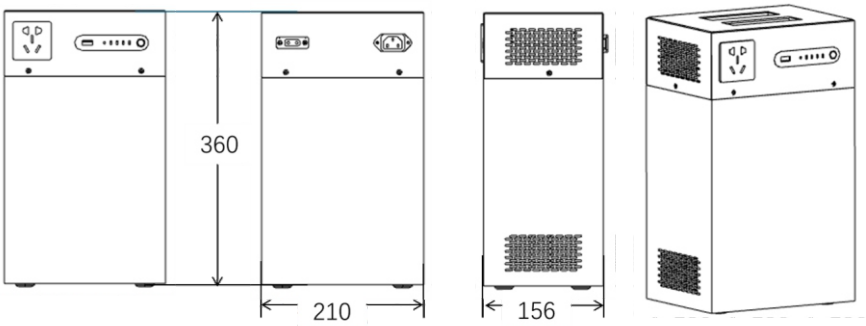
4. Overview

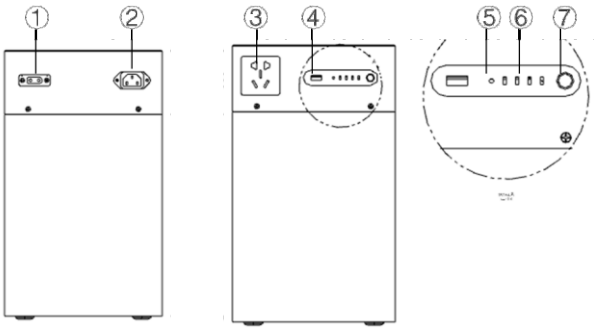
4.1 System overview



No.	Name	Description	In a basic set / Optional (not in the box)
1	Solar panel	Only 1 piece 150~550W solar panels can be connected to iPower Mobile series	
2	1.2 meters long AC input cable	Used for the connection of the AC input cable between the grid and the AC input socket	
3	iPower series	/	
4	MC4 and XT90 conversion cable	Used for connecting the solar panel with an MC4 wire	
5	MC4 positive terminal kit	Used for solar panel connecting wire connector to iPower Mobile series	
6	MC4 negative terminal kit	Used for solar panel connecting wire connector to iPower Mobile series	

4.2 Product overview





No.	Description	Remark
1	PV INPUT	Solar-Powered Charging
2	AC INPUT	AC-Powered Charging
3	AC OUTPUT	AC-Powered Devices
4	USB charger 5V1A	Device Charging for Smart phones and Similar Electronics
5	AC output status indicator	Indicator for AC Output Status
6	LED indication	Display the battery's charge level a information
7	Prower Switch	Long press series the key for 3 seconds to turn on the device, then press series the key for 3 seconds to turn o the device. to turn on the device, and press series to the “OFF” position to turn it o .

4.3 LED indication description

The device panel has 5 LED indicator lights, including one AC status indicator light and four battery level indicator lights.



Indication in normal state:

State	Percentage of battery	LED1	LED2	LED3	LED4	LED5
		◎	▮	▮	▮	▮
Power off	/	OFF	OFF	OFF	OFF	OFF
AC output off	/	OFF	According to the rest of percentage of capacity			
AC output on	/	ON	According to the rest of percentage of capacity			
Charging	<20%	According to AC output status Flash	Flash	Flash	Flash	Flash
	>20% , <40%		ON	Flash	Flash	Flash
	>40% , <60%		ON	ON	Flash	Flash
	>60% , <80%		ON	ON	ON	Flash
	>80%		ON	ON	ON	ON
Discharging	<20%	According to AC output status Flash	Flash	OFF	OFF	OFF
	>20% , <40%		ON	OFF	OFF	OFF
	>40% , <60%		ON	ON	OFF	OFF
	>60% , <80%		ON	ON	ON	OFF
	>80%		ON	ON	ON	ON

Indication in abnormal state:

State	LED1	LED2	LED3	LED4	LED5
	◎	▮	▮	▮	▮
The inverter temperature is higher than 90℃。Or the battery cell temperature is higher than 60℃。	Flash 0.5sec. ON 0.5sec. OFF	According to the rest of percentage of capacity			
The battery cell temperature is below -10℃。	Slow Flash 1sec. ON 1sec. OFF	According to the rest of percentage of capacity			

4.4 Function keys

Function keys	Detailed explanation
	Long press series the key for 3 seconds to turn on the device, then press 50W the key for 3 seconds to turn off the device.

4.5 System Working Mode

State	Description
Power off	When the battery capacity is iPower Mobile series than 10%, or the battery voltage is iPower Mobile series than 2.9V, the iPower Mobile series is in low capacity protection mode and cannot be turn on.Short press series the key for 1 second to check the current battery capacity, the LED indicator will turn o after 30 seconds.
AC output off	AC output overload protection or output short-circuit protection, after a delay of 30 seconds, can press seiries the key again to turn on iPower Mobile series.After turn on iPower Mobile series, it will automatically shut down after 30 minutes of continuous no AC load and no charging current.
AC output on	The AC output adopts constant power control. When the load power is overload, the AC output voltage will automatically decrease.When the AC output voltage continues to drop below 150VAC, the overload protection will be triggered to shut down the iPower Mobile series.
DC output on	The USB socket provide a maximum of 5V1A phone charging.
Charging	When the PV voltage is higher than 10V, it will automatically start charging. Please configure the appropriate solar panel power, when the connected solar panel power is higher, the solar panel power generation will be automatically limited. When the grid and solar panel are connected at the same time, solar panel charging is priority and the remaining power is supplemented by the grid. When battery cell temperature is higher than 55℃, the charging power will be limited to 100W. When battery cell temperature is higher than 60℃ or lower than -10℃, the iPower Mobile series stops charging. When battery cell temperature is lower than 0℃ and higher than -10℃, the charging current will be limited to10A. When the cell voltage is lower than 2.5Vdc,the maximum charging current is 3A. When the cell voltage is lower than 3Vdc and higher than 2.5Vdc, the maximum charging current is 10A.
Discharging	When the battery capacity is iPower Mobile series than 10%, or the battery voltage is iPower Mobile series than 2.9V, the iPower Mobile series stops discharging. When battery cell temperature is higher than 60℃ or lower than -10℃, the iPower Mobile series stops discharging.

5. Assembly

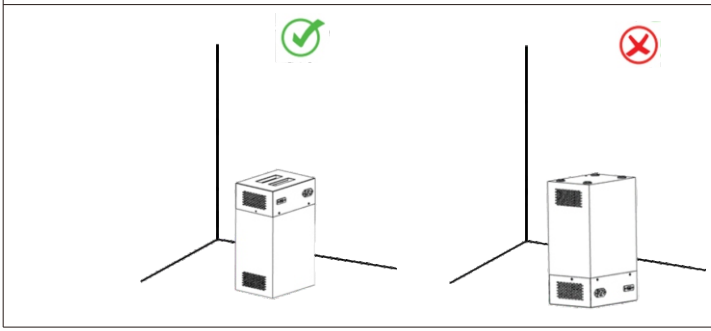
5.1 Pre-assembly

NOTICE

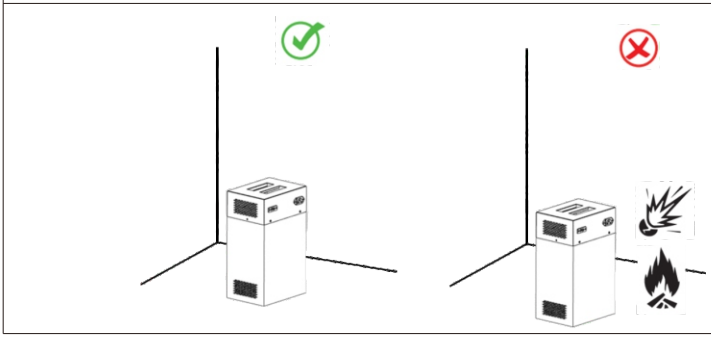
- This user manual only provides the cable connection method and the method for the iPower Mobile series for installing the solar panel, please refer to the instructions for the solar panel and its accessories
- If you wish to verify the solar system, complete the assembly on a sunny day.

Select a location for the iPower Mobile series

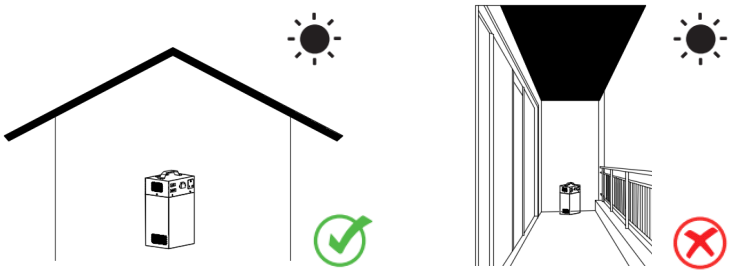
When placing the iPower Mobile series device on a desktop for use, it is strictly prohibited to invert the equipment chassis (place it upside down). The device must always maintain its designed normal orientation.



Do not place or install the iPower series in an area where flammable or explosive materials are stored.



The IP rating of the iPower Mobile series is IP21, hence, it can be installed either indoors.



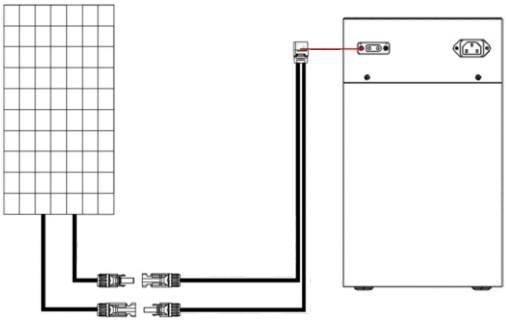
5.2 PV Connection

NOTICE

- Turn off the iPower Mobile series before connecting to the solar panel. This will ensure the iPower Mobile series can be securely disconnected during maintenance and fully protected from over current of PV input.
- Only 1 piece solar is allowed to be connected, with a range of 150~550W

Please follow below steps to implement PV input connection

1. Turn off the iPower Mobile series before connecting the solar panel input .
2. Please follow the printing text on the MC4 PV plug to connect the solar panel .
3. Only 1 piece glass PV module can be connected.
4. When connecting, it is mandatory to clearly identify the positive and negative terminals. Incorrect wiring will result in equipment damage due to reverse polarity.



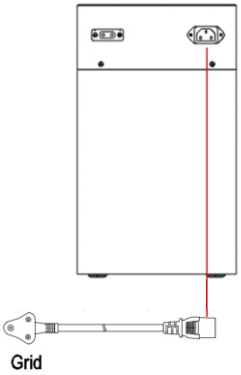
5.3 Grid Connection

NOTICE

- Turn off the iPower Mobile series before connecting to the grid. Avoid loose sockets that may cause sparks from AC input.
- The AC input must be connected to the ground wire.

Please follow below steps to implement grid connection

1. Turn off the iPower Mobile series before connecting the grid .
2. Use power supply cable acc iPower Mobile series to connect to grid, the grid socket needs to be grounded.



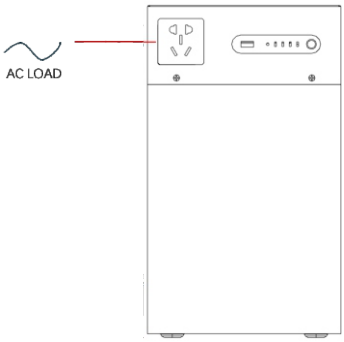
5.4 AC Output Connection

NOTICE

- The AC output must be connected to the ground wire.

Please follow below steps to implement AC output connection

1. Turn off the iPower Mobile series before connecting the grid.
2. Connect 1 set load device, or use a power strip.



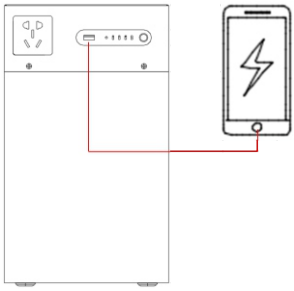
5.5 DC Output Connection

NOTICE

- DC Power JACK 5.5*2.1mm only DC12V devices can be connected.
- The maximum power of a single DC interface is 60W, and the total power 0f double DC interface is 60W.

Please follow below steps to implement DC output connection

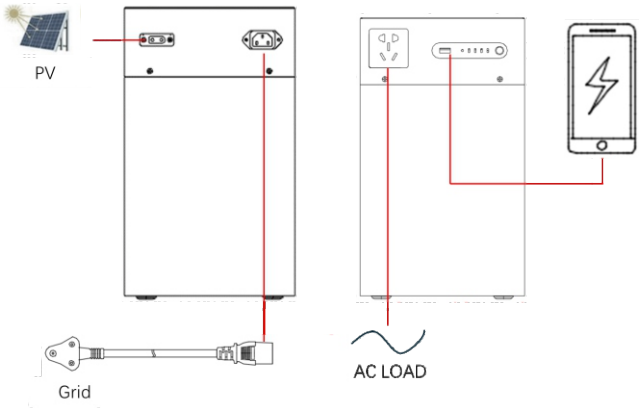
1. Please select DC 5V device connection.



5.6 Whole System Connection

NOTICE

- When the built-in lithium battery cell needs to be checked, engineers can open the cover plate for operation.
- During transportation or static storage, install the waterproof cover in place. It has water proof, dust proof and insulation functions.



6. Troubleshootin

If the system LED indicator blinks, warning or errors occur. Please follow the instructions the table below to deal with the problem. If it is not eliminated, please contact the customer service, Do not attempt to repair the iPower Mobile series.

LED indicator	Warning Event	Suggestion
Flash 0.5sec. ON 0.5sec. OFF	1. The inverter temperature is higher than 90℃。 2. Or the battery cell temperature is higher than 60℃。	1. Check whether the cooling fan is working properly. 2. Place iPower Moible series in a cool and ventilated environment. 3. Reduce or remove AC load devices.
Slow Flash 1sec. ON 1sec. OFF	1. The battery cell temperature is below -10℃。	1. Place iPower Mobile series in a room at normal temperature to work.

7. Specifications

Model	iPower Mobile Series/iBox-AD1000		
AC Input/Output			
Rated AC Output Power	300W	500W	1000W
Output Voltage Waveform	Pure Sine Wave		
Output Voltage	185 ~ 230VAC , 50Hz		
Nominal Input Voltage	230Vac		
Low Loss Voltage	90Vac ± 7		
Low Loss Return Voltage	100Vac ± 7		
High Loss Voltage	280Vac ± 7		
High Loss ReturnVoltage	270Vac ± 7		
Max.AClnput Voltage	300Vac		
Nominal input Frequency	45 ~ 65Hz		
AC Charging Power	300W Max.	500W Max.	1000W Max.
PV input			
Commonly used module power	150 to 550W , 1pcs		
MPPT voltage range	10~50Vdc		
Start-up voltage	15Vdc		
Maximuminput voltage	55Vdc		
Maximuminput power	300W Max.	400W Max.	550W Max.
DC Output			
UsB Charger	5V1.5A , 1pcs		
Battery Cell			
Capacity	896 Wh	1004.8Wh	2009.6Wh
Nominal Battery Voltage	3.2Vdc	3.2Vdc	3.2Vdc
Typical Capacity	280Ah	314Ah	314Ah
Max.Charge Current	130A	130A	220A
Max.Discharge Current	130A	130A	220A
Operation Voltage Range	2.8Vdc ~ 3.6Vdc		
Others			
Placed	Indoors		
Ingress Protection	IP21		
OperatingTemperature	-10℃~+50℃(14F~+122°F)5%~95%		
Humidity	Relative Humidity(Non-condensing,		
Altitude	≤2000 m		
Dimension	210*360*156mm	210*360*156mm	240*360*225mm
Net Weight	10kg	12kg	21kg