

BPS-2000F 产品技术规格书 BPS-2000F Product technical specification			文件编号/Document No: BG-C21-002-002-A04
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BPS-2000F 产品技术规格书

BPS-2000F Product technical specification



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1. 引言 introduction

本文件主要描述了 BPS-2000F 便携式储能电源详细技术规格，明确各种接口定义及功能。适用于该产
品的设计验证、生产管理、品质检验、采购、营销推广等环节。

This document mainly describes the detailed technical specification of BPS-2000F,a portable power station
and defines various interface definitions and functions. It is suitable for the design verification, production
management, quality inspection, procurement, marketing promotion and other links of this product.

2. 参考标准 Reference standard

IEC62133 锂电池产品安全要求 IEC62133 Safety requirements of lithium battery products
UL1642 锂电池包安全要求 UL1642 Safety requirements for lithium battery pack
UL2743 便携式电源包安全要求 UL2743 Safety requirements for portable power pack
EN55022 电磁兼容相关 EN55022 Electromagnetic compatibility correlation
IEC60950-1:2005+A1:2009+A2:2013 安规 IEC60950-1:2005+A1:2009+A2:2013 Safety regulations
UN38.3 锂电池产品运输安全要求国际海运危险货物规则 UN38.3 Safety requirements for the transportation
of lithium battery products-International Maritime Dangerous Goods Code
PSE 日本电气产品安全法 PSE Japanese electrical product safety law

3. 产品技术性能 Product technical performance

本产品为便携式储能电源，其具有 2 个交流输出口(2000W-220V-50/60Hz 或者 2000W-110V-50/60Hz)、
2 个直流(12V/10A, DC 5.5mm*2.1mm)输出口、1 个点烟器(12V/10A)输出口、2 个 USB-A(18W Max)输出
口、1 个 USB-C(PD 100W Max)输出口、1 个 USB-C(PD 60W Max)输出口、LCD 屏显示等功能。该产品包
含两个充电接口，一个安德森 30A 输入口，以及一个市电直充口。该便携式储能电源支持 UPS 功能（即
市电交流直供，市电中断自动切换逆变供电（10ms））。

This product is a portable power station with two output ports (2000W-220V or 110V, 50Hz/60Hz), two DC
(12V, DC 5.5mm*2.1mm) output ports, and one cigarette lighter (12V/10A) output port,two USB-A (18W Max)
output port, one USB-C (PD 100W Max) output port, one USB-C (PD 60W Max) output port, LCD screen display
and other functions. The product contains two charging ports, an Anderson 30A input port, and an AC direct
charging port.The portable power station supports UPS function (i.e. AC direct supply of mains power, and
automatic switching of inverter power supply (10ms) after mains power interruption).

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3.1 安德森输入参数 Anderson charging input parameter

输入额定电压	Input rated voltage	52V
输入电压范围	Input voltage range	12V--60V
最大输入电流	Maximum continuous charge current	15A MAX
最大输入功率	Maximum Input power	800W MAX
反接保护	Reverse connection protection	OK
电池组充电截止电压	Battery pack charging cut-off voltage	57.6V±5%

3.2 220V 市电直充输入参数 220V AC direct charging port input parameter

输入电压	Input voltage	180V-260V
输入频率	Input frequency	47Hz-63Hz
输入功率因素	Input power factor	≥0.92
最大输入功率	Maximum Input power	1200W

3.3 110V 市电直充输入参数 110V AC direct charging port input parameter

输入电压	Input voltage	90V-140V
输入频率	Input frequency	47Hz-63Hz
输入功率因素	Input power factor	≥0.92
最大输入功率	Maximum Input power	1200W

3.4 USB（QC3.0）输出参数 USB（QC3.0）Output port parameters

端口协议	Port protocol	Apple 2.4A、Samsung-5V-2A、DCP-1.5A、QC2.0、QC3.0、Samsung-AFC、Huawei-FCP。
输出电压	Output voltage	5V/9V/12V±5%
纹波噪音	Ripple noise	300mVp-p
输出额定电流	Output rated current	3A/2A/1.5A
输出过流保护	Output overcurrent protection	3.1-3.8A/2.1A-3.8A/1.6A-3.8A
满载工作效率	Full load efficiency	85%
输出短路保护	Output short circuit protection	OK

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3.5 USB-C1 输出端口参数 USB-C1 Output port parameters

端口协议 Port protocol	Apple2. 4A、Samsung-5V-2A、DCP-1. 5A、QC2. 0 、 QC3. 0 、 Samsung-AFC 、 Huawei-FCP、 PD3. 0 100W。
输出电压 Output voltage	5V/9V/12V/15V/20V
纹波噪音 Ripple noise	300mVp-p
输出额定电流 Output rated current	5V 3A/9V 3A/12V 3A/15V 3A/20V 5A
最大输出功率 Maximum output power	100W
输出过流保护 Output overcurrent protection	3.1A-3.8A/5.1-5.8A
满载工作效率 Full load efficiency	>85%
输出短路保护 Output short circuit protection	OK

3.6 USB-C2 输出端口参数 USB-C2 Output port parameters

端口协议 Port protocol	Apple 2. 4A、Samsung-5V-2A、DCP-1. 5A、QC2. 0 、 QC3. 0 、 Samsung-AFC 、 Huawei-FCP、 PD3. 0 60W。
输出电压 Output voltage	5V/9V/12V/15V/20V
纹波噪音 Ripple noise	300mVp-p
输出额定电流 Output rated current	5V 3A/9V 3A/12V 3A/15V 3A/20V 3A
最大输出功率 Maximum output power	60W
输出过流保护 Output overcurrent protection	3.1A-3.8A
满载工作效率 Full load efficiency	>85%
输出短路保护 Output short circuit protection	OK

3.7 无线充输出参数 Magnetic charging output parameters

最大输出功率 Maximum output power	5W/7.5W/10W/15W
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3.8 DC-5521 输出端口参数 DC-5521 output port parameters

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输出电压 Output voltage	10.5V-13.4V
输出额定电流 Output rated current	10A
输出过流保护 Output overcurrent protection	10.1A-13.6A
满载工作效率 Full load efficiency	>85%
输出短路保护 Output short circuit protection	OK

3.9 点烟器输出端口参数 Cigarette lighter output port parameters

输出电压 Output voltage	10.5V-13.4V
输出额定电流 Output rated current	10A
输出过流保护 Output overcurrent protection	10.1A-13.6A
满载工作效率 Full load efficiency	>85%
输出短路保护 Output short circuit protection	OK

3.10 AC 220V 交流输出端口参数 AC 220V output port parameters

输出电压 Output voltage	220V±10%
输出电压频率 Output voltage frequency	50Hz±2Hz/60Hz±2Hz
输出波形 Output waveform	正弦波 Sine wave
额定输出功率 Rated Output Power(AC)	2000W
输出短路保护 Output short circuit protection	OK
负载适应性 Load adaptability	40%额定功率的容性负载、60%额定功率感性负载、 100%额定功率的阻性负载 Capacitive load of 40% rated power, inductive load of 60% rated power, resistive load of 100% rated power
满载工作效率 Full load efficiency	90%

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过载保护 Overload protection	2400W max
逆变过温保护 Inverter over temperature protection	80°C-90°C

3.11 AC 110V 交流输出端口参数 AC 110V output port parameters

输出电压 Output voltage	110V±10%
输出电压频率 Output voltage frequency	50Hz±2Hz/60Hz±2Hz
输出波形 Output waveform	正弦波 Sine wave
额定输出功率 Rated Output Power(AC)	2000W
输出短路保护 Output short circuit protection	OK
负载适应性 Load adaptability	40%额定功率的容性负载、60%额定功率感性负载、 100%额定功率的阻性负载 Capacitive load of 40% rated power, inductive load of 60% rated power, resistive load of 100% rated power
满载工作效率 Full load efficiency	90%
过载保护 Overload protection	2400W max
逆变过温保护 Inverter over temperature protection	80°C-90°C

3.12 LED 灯参数 LED light parameters

功率 Power	2-4W
工作模式 Working mode	最亮、中亮、低亮、SOS Brightest, Medium, Low, SOS

3.13 储能电池组参数 Parameters of battery pack

电芯型号 Batteries models	26700-4.6Ah
电芯连接方式 Cell connection mode	16S7P
标称电压 Nominal voltage	51.2V
电池内阻 Internal resistance of battery	10mΩ
电池容量 Battery capacity	1648.6Wh
电芯放电允许温度范围	-10°C-60°C

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Allowable temperature range of cell discharge	
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3.14 保护板性能参数 Performance of protection board

过充电压保护 Overcharge protection	3.65V±0.05V@1cell
过充解除电压 Overcharge relief voltage	3.50V±0.05V@1cell
过放电压保护 Over discharge protection	2.50V±0.05V@1cell
过放解除电压 Over discharge voltage	2.80V±0.05V@1cell
电池充电电压 Battery charge voltage	57.6V±0.2V
输出过流保护 Output over current protection	100A-130A
主回路电阻 Main circuit resistance	10mΩ
短路保护 Short circuit protection	OK
休眠电流 Dormancy current	<300uA

3.15 其他参数 Other parameters

放电高温保护 Discharge high temperature protection	65°C±5°C
放电高温解除 Discharge high temperature relief	60°C±5°C
充电高温保护 High temperature protection during charging	50°C±5°C
充电高温解除 High charging temperature relief	45°C±5°C
放电低温保护 Discharge low temperature protection	-10°C±5°C
放电低温解除 Discharge low temperature release	-5°C±5°C
充电低温保护 Charging low temperature protection	0°C±5°C
充电低温解除 Charging low temperature release	5°C±5°C
存储温度 Storage temperature	-20°C-60°C
工作湿度 Working humidity	10%-90%
工作温度 Working temperature	-10°C-40°C
存储湿度 Storage humidity	10%-90%
整机休眠电流 Sleep current	500uA

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边充边放 Filling and placing	支持 Support
产品重量 Weight	About 20kg
外形尺寸(mm) 长×宽×高 Dimensions (mm) Length×width×height	325mm*238mm*344mm± 0.5mm
整机认证 Machine certification	ROHS 2.0、UN38.3、CE

3.16 按键说明 Key Description

按键名称 KEY name	功能描述 Function description
电源开关 Power switch	总开关，长按 2S 打开/关闭整个系统。 Master switch, long press 2S to turn on/off the whole system.
DC 开关 DC switch	长按 2S 打开/关闭 DC OUT 和点烟器，受电源开关控制，不可以单独打开使用。 Press and hold for 2S to turn on/off the DC OUT and cigarette lighter, which are controlled by the power switch and cannot be turned on and used alone.
AC 开关 AC switch	长按 2S 打开/关闭 AC 输出，受电源开关控制，不可以单独打开使用。 Press and hold for 2S to turn on/off the AC OUT , which are controlled by the power switch and cannot be turned on and used alone.
LED 灯开关 LED switch	长按 2S 开关，打开默认低亮，单击中亮，高亮依次切换，打开状态下双击亮红灯 SOS 模式，双击退出 SOS,任何状态下长按关闭。 Long press the 2S switch to turn on the brightest by default, click the middle light, and switch the low light in turn, double-click the red light to turn on the SOS mode in the open state, double-click to exit the SOS, and long-press to turn off in any state.

备注 Remark:

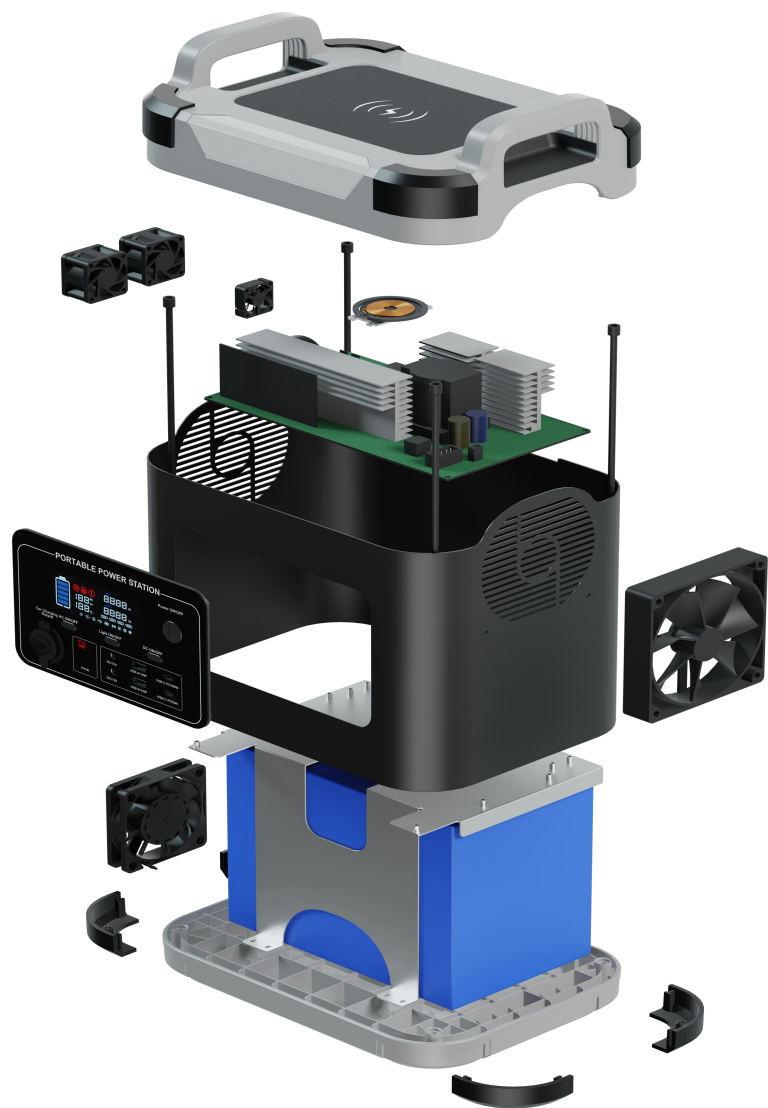
- 1.开机后系统自检输入、输出功率、电量、温控和警示等； After booting, the system self-checks input, output power, electricity, temperature control and warnings, etc.;
- 2.端口异常后，长按关闭后，再次长按开启可恢复功能； After the port is abnormal, long press to turn it off, and long press to turn it on again to restore the function;
- 3.UPS 功能 UPS FUNCTION
自动充电：接入市电自动对电池充电 Automatic charging: connect to the mains to automatically charge the battery
逆变放电：手动启动电池逆变交流输出 Manual inverter discharge: manually start the battery inverter AC output
不间断电源模式：市电交流直供，市电中断自动切换逆变供电(10ms) Uninterruptible power supply

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mode: mains AC direct supply, mains power interruption automatic switching inverter power supply (10ms)

3.17 结构爆炸图示 Structural explosion diagram

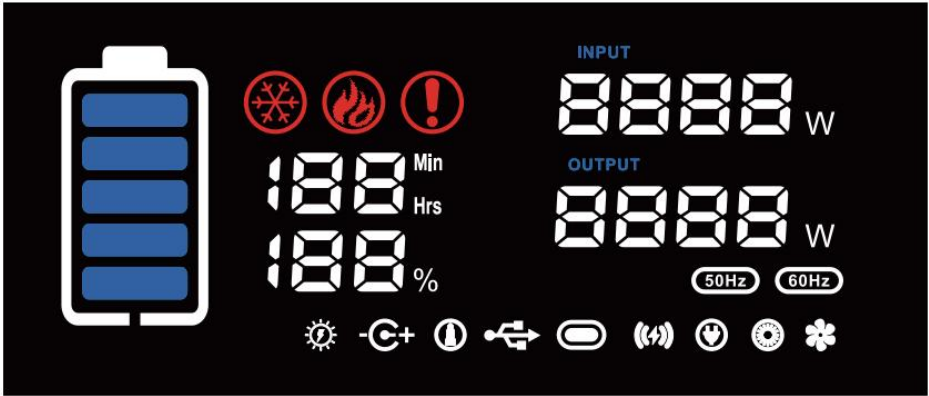


3.18 结构六面图 Structure six-sided diagram

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3.19 显示屏效果图 Screen renderings



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4 标识、包装、运输、贮存 Identification、packaging、transportation、storage

4.1 标识 Identification

每个机器上包含下列中/英文标识：产品名称、型号、电池能量、额定功率、电芯类型、充电功率、各个输出口相关参数，工作温度，其中允许将执行标准编号、厂址、邮编和联系电话标识印刷在包装或使用说明书中。

所有标识应清晰完整、粘贴牢固、平整、不起泡、可明显辨认，不能手工填写。

Each machine contains the following Chinese / English identifications: product name, model, battery energy, rated power, cell type, charging power, relevant parameters of each output port, and operating temperature. It is allowed to print the executive standard number, factory address, postal code and contact phone number in the package or operation manual.

All identifications shall be clear, complete, firmly pasted, flat, non foaming, clearly identifiable, and cannot be filled in manually.

4.2 包装 Packaging

部件 Component		内容 Content	数量 Quantity
彩箱 Color box		2000W 彩箱 2000W Color box	件数/Quantity N=1
		1. 彩箱丝印内容是否正确; Whether the screen printing content of color box is correct; 2. 彩箱条形码贴纸是否正确 Whether the color box barcode sticker is correct 3. 彩箱是否有脏污, 破损等不良现象 Whether the color box is dirty or damaged	/
内托 EVE		珍珠棉: 含上下盖一整套 Pearl cotton: includes a complete set of upper and lower covers	件数/Quantity N=1
配件 Accessory	AC 线 AC line	AC 输入线, 线长 1.5 米 AC input line L=150cm	件数/Quantity N=1
	说明书 Instructions	匹配相应标准的说明书 Instructions matching corresponding standards	件数/Quantity N=1
包装袋 Packing bag		透明 PE 袋 Transparent bag: 650*600*0.06mm	件数/Quantity N=1
外箱 Outer box		纸箱 Carton: 405*320*435mm	件数/Quantity N=1

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1、外箱封箱胶带为透明胶带; The outer box sealing tape is transparent tape; 2、外箱上贴纸是否正确, 有无漏贴等现象; Whether the stickers on the outer box are correct and whether there are missing stickers; 3、外箱丝印内容及数量, 颜色等内容是否正确; Whether the contents, quantity, color and other contents of the silk screen printing of the outer box are correct;			/

4.3 运输 Transportation

产品应包装成箱进行运输，在运输过程中应防止剧烈振动、冲击或挤压，防止日晒雨淋，可使用汽车、火车、轮船等交通工具进行运输。

The products shall be packed into boxes for transportation. During transportation, violent vibration, impact or extrusion shall be prevented to prevent sunlight and rain. Vehicles such as automobiles, trains and ships can be used for transportation.

锂离子电池产品一般不允许使用飞机运输，特殊情况下需要使用飞机运输时，需要按照 UN38.3 要求做相关的认证。

Generally, lithium-ion battery products are not allowed to be transported by air. In special circumstances, when it is needed to be transported by air, relevant certification shall be carried out according to the requirements of UN38.3.

4.4 贮存 Storage

本产品内含锂离子电池，在贮存时，应注意电池包的电量和整机贮存环境温度、湿度。

This product contains lithium-ion batteries. When storing, pay attention to the power of the battery pack and the temperature and humidity of the whole storage environment.

电池组通常以 45%~55%荷电状态储存在环境温度为 25°C±5°C、相对湿度不大于 75%的清洁、干燥、通风的室内，应避免与腐蚀性物质接触，应远离火源及热源。

The battery pack is usually stored in a clean, dry, and ventilated room with an ambient temperature of 25°C±5°C and a relative humidity of not more than 75% at 45% ~ 55% charged state. Avoid contact with corrosive substances and keep away from fire sources. And heat source.

从制造厂家出货之日起，建议用户每储存 3 个月按下面的方法对锂电池进行一次维护：

From the date of delivery, it is recommended that the user should maintain the lithium battery every 6 months according to the following methods:

在 25°C±5°C环境温度下，充电（光伏充或车充或适配器充）至截止，然后放电（建议使用交流输出，给一些家用电器供电）至停止输出，最后充电至电池包规定的储存荷电状态 45%~55% SOC，以延长电池的使用寿命。

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At 25°C±5°C temperature, charge (photovoltaic charge or vehicle charge or adapter charge) to full, then discharge (AC output is recommended to supply power to some household appliances) to empty, and finally charge to 45%~55% SOC, so as to extend the service life of battery.

注：当机器因电池包电压过低而关机，用户必须在 30 天内对电池进行充电，否则电池将有损坏的风险。**Note: when the machine is shut down due to low battery pack voltage, the user must charge the battery within 30 days, otherwise the battery will be damaged.**

5 使用规程及安全说明 Operating procedures and safety instructions

5.1 使用注意事项 Precautions for use

1、使用该产品时，请控制在额定功率范围内使用。

When using this product, please control the use within the rated power range.

2、请使用原装适配器对该产品进行充电，切勿私自更换适配器。

Use the original adapter to charge the product, do not replace the adapter without permission.

5.2 使用说明 Instructions

1、使用电池前，请仔细阅读规格书。

Please read the specification carefully before using the battery.

2、在使用过程中，应远离热源、高压，切勿摔打。

During use, keep away from heat source and high pressure, and do not make it fall.

3、切勿将电池正负极短路，切勿自己拆装电池，也勿让电池放在受潮处，以免发生危险。

Do not short circuit the positive and negative poles of the battery, do not disassemble the battery by yourself, and do not put the battery in the damp place, so as to avoid danger.

4、长期不用时，请将电池储存完好，让电池处于半荷电状态。请用不导电材料包裹电池，以避免金属直接接触电池，造成电池损坏，将电池保存阴凉干燥处。

When not in use for a long time, please store the battery in good condition and keep the battery in a half-charged state. Please wrap the battery with non-conductive material to avoid direct metal contact with the battery, causing damage to the battery. Keep the battery in a cool and dry place.

5、废弃电池请安全妥当处理，不要投入火中或水中。

Waste batteries should be handled safely and properly. Do not put them into fire or water.

6、如果将电池用于其他设备，请与供应商咨询，不得擅自将本电池包用于其他系统。

If the battery is used for other equipment, please consult with the supplier, and do not use the battery pack for other systems without authorization.

5.3 危险警告 Danger Warning

1、禁止拆装产品内部的电池

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It is forbidden to disassemble the battery inside the product

电池内部具有保护机构和保护电路可以避免发生危险。不合适的拆装会损坏保护功能，将会造成让电池发热、冒烟、变形或燃烧。

The protection mechanism and protection circuit inside the battery can avoid danger. Improper disassembly and assembly will damage the protection function and cause the battery to heat, smoke, deform or burn.

2、禁止让产品内部的电池短路

Do not short circuit the battery inside the product

不要将电池的正负极用金属连接，也不要将电池组与金属片放在一起存储和移动。如果电池被短路，将会有超大电流流过，将会损坏保险丝。

Do not connect the positive and negative electrodes of the battery with metal, do not store and move the battery pack together with the metal sheet. If the battery is short circuited, there will be a large current flow, which will damage the fuse.

3、严禁加热和焚烧产品内部的电池

It is strictly forbidden to heat and burn the battery inside the product

加热和焚烧电池将会造成电池隔离物的溶化、安全功能丧失或电解质燃烧，过热就会使电池发热、冒烟、变形或燃烧。

Heating and burning the battery will cause the dissolution of the battery insulator, loss of safety function or electrolyte burning. Overheating will cause the battery to heat, smoke, deform or burn.

4、避免在热源附近使用电池

Avoid using batteries near heat sources

不要在火源、烤炉附近或超过 80℃的环境中 使用电池，过热将会导致电池内部短路，使电池发热、冒烟、变形或燃烧。

Do not use the battery near the fire source, oven or in the environment over 80℃. Overheating will lead to internal short circuit of the battery, causing the battery to heat, smoke, deform or burn.

5、禁止浸泡产品使内部的电池被弄湿

Do not soak the product to wet the internal battery

不要弄湿电池，更不能将电池投入水中，否则会造成电池内部保护电路和功能丧失及发生不正常的化学反应，电池有可能发热、冒烟、变形或燃烧。

Do not wet the battery, and do not put the battery into water. Otherwise, the internal protection circuit and function of the battery will be lost and abnormal chemical reaction will occur. The battery may be heated, smoking, deformed or burned.

6、禁止带电拆机

No live dismantling

产品工作时，内部有高压，拆机前一定要先关机，确保所有的输出接口都没有电压。

When the product is working, there is high voltage inside. It must be shut down before dismantling to ensure that all output interfaces have no voltage.

7、禁止破坏电池

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Do not damage the battery

禁止用金属凿入电池、锤打或摔打电池或其他方法破坏电池，否则会造成电池发热、冒烟、变形或燃烧，甚至会发生危险。

It is forbidden to chisel the battery with metal, hammer or drop the battery or damage the battery by other means, otherwise it will cause the battery to heat, smoke, deform or burn, and even cause danger.

8、禁止在产品内部的电池主体上直接焊接

Direct welding on the battery body inside the product is prohibited

过热将会造成电池隔离物的溶化、安全保护功能丧失，使电池发热、冒烟、变形或燃烧。

Overheating will cause the dissolution of the battery insulator and the loss of safety protection function, which will make the battery heat, smoke, deform or burn.

9、不要直接触及漏液电池

Do not touch the leaking battery directly

渗漏的电解液会造成皮肤不适，万一电解液进入眼睛，尽快用清水冲洗，并迅速送医院处理。

Leakage of electrolyte will cause skin discomfort. In case of electrolyte entering eyes, rinse with water as soon as possible and send to hospital for treatment.

5.4 危险类型 Types of Hazards

客户知悉在电池使用和操作过程中存在以下潜在的危险：

The customer should be aware of the following potential hazards during battery use and operation:

1、操作者在操作时可能会受到化学品、电击或者电弧的伤害。尽管人体对遭受直流电与交流电的反应不同，但是高于 50V 的直流电压与交流电对人体的伤害都是比较严重的，因此客户必须在操作中采取保守的姿势以避免电流的伤害。

Operators may be injured by chemicals, electric shocks or electric arcs during operation. Although the human body responds differently to direct current and alternating current, DC voltage and alternating current higher than 50V are more serious to the human body. Therefore, customers must take a conservative posture during operation to avoid current damage.

2、存在来自电池中的电解液的化学风险。

There is a chemical risk from the electrolyte in the battery.

3、在操作电池和选择个人防护装备时，客户及其雇员必须考虑到以上潜在的风险,防止发生意外短路，造成电弧、爆炸或热失控。

When operating the battery and selecting personal protective equipment, the customer and its employees must take into account the above potential risks to prevent accidental short circuit and cause arc, explosion or heat out of control.

4、产品工作时，内部有高压，用户必须在操作中采取保守的行为以避免高压伤害。

When the product works, there is high pressure inside. The user must take conservative actions in operation to avoid high pressure injury.

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6 其他 others

- 6.1 本公司保有对规格书修改和解释的权利。
BetterPower reserve right to revise and interpret the specification;
- 6.2 未尽事宜由供求双方讨论决定。
Anything not mentioned in this specifications,customer and BetterPower should discuss to get a solution;
- 6.3 对未按规格书操作（人为导致短路烧坏）所造成的意外，本公司不承担任何责任。
BetterPower does not undertake any responsibility for the accidents caused by actions not matching With specifications(Man-made short circuit to burn out).