

# **HAME** Specification of outdoor energy storage power supply

## 产品规格书

## Product Specification

产品名称 (PN) :         储能电源 S1500F        

产品编号 (PCBA version) :         V1.1        

版    本 (version) :         V1.1        

拟    制 (Issued by) :         向阳        

日    期 (Date) :         2023/01/05        

S/N 序号	Version 版本	Revised content 更改内容	Confirmed by 确认	Verified by 审核
1	V1.0		向阳	张洋、曹龙
2	V1.1	1、更新电芯: 35Ah (磷酸铁锂) 2、更新电池包串数: 14 串 3、更新产品容量为: 1568Wh 4、更新 MPPT 充电: 2*500W 5、更新辐射测试标准: CLASS A 6、更新产品尺寸	向阳	张洋、曹龙

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## 一、应用环境 Application environment

1.1 作为储能电源，供用户户外办公，可连接手机、平板电脑、笔记本等消费类数码设备。

As an energy storage power supply for users to work outdoors, it can be connected to mobile phones, tablet computers, laptops and other consumer digital devices

1.2 户外摄影、越野爱好者野外用电、电视台的摄录设备的户外补电。

Outdoor photography, off-road lovers field electricity, TV station recording equipment outdoor power supplement

1.4 矿山、油田、地质勘探、地质灾难救援应急用电。

Mine, oil field, geological exploration, geological disaster rescue emergency use of electricity

1.5 电信部门野外检修应急用电。

Telecom department field maintenance emergency electricity

1.6 医疗设备小型微型急救仪器应急用电。

Medical equipment, small and miniature first aid instruments, emergency electricity

1.7 充电环境温度 0℃— +40℃，放电环境温度-10℃-45℃，储存环境温度-10℃— +45℃，工作环境湿度 20%— 90%RH 无冷凝现象 (无结露)，储存环境湿度：5%— 95%RH 无冷凝现象(无结露)，海拔高度≤2000 米，自然冷却。

Charging environment temperature 0 °C -- +40 °C , discharge environment temperature -10 °C -40 °C , storage environment temperature -10 °C -- +45 °C , working environment humidity 20%-90% RH No condensation (no condensation), storage environment humidity: 5%-95%RH no condensation (no condensation), altitude ≤ 2000m, natural cooling.

## 二、功能特点 Functional features

2.1 容量高、功率大，内置锂电池，备用时间长、转换效率高，容易携带。

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High capacity, high power, built-in lithium battery, long standby time, high conversion efficiency, easy to carry.

2.2 纯正弦波电压电流输出，适应各种不同负载。

Pure sinusoidal voltage and current output, suitable for different loads.

2.3 双向逆变技术，脱离适配器的冗余。

Bidirectional inverter technology, out of adapter redundancy.

2.4 具备二个 USBA 和二个 USBC 输出，具有独立的 OCP、OVP、短路保护，有 ID 自动识别和快充功能。

With two USBA and two USBC output, with independent OCP, OVP, short circuit protection, automatic ID identification and fast charging functions.

2.5 宽范围直流输入电压充电，DC7909 和输入电压范围 12~59Vdc。

Wide range of DC input voltage charging, DC7909 input voltage range of 12~59Vdc.

2.6 具备直流输出，DC5525 输出和车充输出：12V/10A

With DC output, DC5525 output and car charging output: 12V/10A 120W .

2.7 具备 LED 屏显示及欠压蜂鸣报警。

LED display and under voltage buzzer alarm.

2.8 全面的保护：输入欠压、输出过压、过载、短路、过温。

Surface protection: input under voltage, output over voltage, overload, short circuit, over temperature.

## 三、电源性能指标 Power supply performance index

3.1 双向逆变逆变器部分 Inverter output part:

产品型号 Product model	S1500F
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1	市电输入电压	100V	110V	230V
2	输入电流	15A MAX	13A MAX	6.5A MAX
3	输入功率	1500W MAX		
4	输出电压 The output voltage	100V	110V	230V
5	输出频率 The output frequency	60±3Hz	60±3Hz	50±3Hz
6	额定输出功率 Rated output	1500W		
7	输出过载保护 Output overload protection	恒功率(SPC)技术, 当功率超过额定功率时, 通过智能功率管控, 直至输出电压低于额定电压的 80%时, 关闭输出。 Smart Power Control (SPC) technology, when the power exceeds the rated power, through intelligent power control, until the output voltage is lower than 80% of the rated voltage, turn off the output.		
8	输出短路保护 Output short circuit protection	关断, 重新开机后恢复正常工作 Turn it off and restart it to work normally		
9	负载适应性 Load adaptability	关断, 重新开机后恢复正常工作 Turn it off and restart it to work normally		
10	输出电压 The output voltage	100%额定功率的阻性负载(白炽灯等), 65%额定功率的容性负载(适配器、节能灯、LED 灯具等), 60%额定功率的感性负载(风扇等)。 Resistive load of 100% rated power (incandescent lamp, etc.), capacitive load of 65% rated power (adapter, ENERGY-SAVING lamp, LED lamp, etc.), inductive load of 60% rated power (fan, etc.)		
备注 Note:				

## 3.2 USB A\*2+USBC\*2 输出部分 USB A\*2+USBC\*2 output part

1	输出端口 Output port	USBA #1	USBA #2	USBC#1	USBC#2
2	输出电压 The output voltage	5V ± 5%	5V ± 5%	5V ± 5%	5V ± 5%
		9V ± 5%	9V ± 5%	9V ± 5%	9V ± 5%
		12V ± 5%	12V ± 5%	12V ± 5%	12V ± 5%
		15V ± 5%	15V ± 5%	15V ± 5%	15V ± 5%

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				20V±5%	20V±5%
				20V@5A	15V@3A
3	额定输出 电流 Rated output current	5V@3A 9V@2A 12V@1.5A	5V@3A 9V@2A 12V@1.5A	5V@3A 9V@3A 12V@3A 15V@3A 20V@5A	5V@3A 9V@3A 12V@3A 15V@3A 20V@2.25A
4	纹波噪音 Ripple noise	≤200mV			
5	输出过流 保护 Output overcurrent protection	有 Yes			
6	输出短路 保护 Output short circuit protection	有 Yes			

### 3.3 输出部分 二个 DC5525 头和车充

1	输出端口 Output port	DC 5525*2	车充
2	输出电压 The output voltage	11~14V 典型值 13V	
3	纹波噪音 Ripple noise	≤200mV	
4	输出额定电流 Rated	10A	

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	output current	
5	输出过流保护 Output over current protection	有 Yes
6	输出短路保护 Output short circuit protection	有 Yes
7	备注: DC 与车充共享 Note: DC shares with car charger	

## 3.4 太阳能充电部分 DC7909 (12V~59V)

1	输入端口 Output port	DC7909
2	额定输入电压 The output voltage	12~59V
3	输入电压范围 Input voltage range	12~59V
4	充电电流 Charging current	10A Max.
5	充电功率 Charging POWER	双路太阳能输入 (MPPT) : 12~59V 10A 2*500W Max.
6	电池组充电截止电压 Battery string charging cut-off voltage	3.6±0.05V/cell
7	电池组充电截止电流 Battery string charging cutoff current	≤500mA

## 3.6 电池组部分 Battery pack

### 3.6.1 电芯规格 Batteries specifications:

1	产品型号 Product model	S1500F
2	电芯连接方式 Core connection mode	14 串
3	电芯规格 Batteries	电芯型号 Batteries models 93D6263(LiFePO4)
		额定电压 The rated voltage 3.2V

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	specifications	额定容量 Nominal capacity	1568Wh (电池组容量)
		最大充电电压 Maximum charging voltage	3.6V±0.05V
		最大放电电流 Maximum discharge current	70Ah
		最大充电电流 Standard charging current	35Ah
4	存储环境 Storage environment	-20°C ~ 60°C	

## 3.6.2 电池组保护电路参数 Battery string protection circuit parameters

1	产品型号 Product model	S1500F
2	电池组过充保护 Battery string overcharge protection	任意电芯超过 3.6±0.05V Any cell exceeds 3.6 ± 0.05V
3	电池组过放保护 Battery string over discharge protection	任意电芯低于 2.7±0.2V (充电可恢复正常工作) Any cell is lower than 2.7 ± 0.2V (normal operation can be restored after charging)
4	电池组过流保护 Battery string over current protection	100±20A
5	电池组短路保护 Battery string short circuit protection	400±80A
6	关机状态自耗电 Power consumption in shutdown state	≤1mA
7	电池配组	电压差 Voltage difference ≤ 3mV 内阻差 Internal resistance is poor ≤ 2mΩ



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Battery pack	容量差 Capacity is poor≤0.5%
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## 3.7 其他性能 Other performance

### 3.7.1

电池充电温度范围 Battery charging temperature range: 0~55°C

电池放电温度范围 The battery discharge temperature range: 0~60°C

电池过放保护电压 Battery over discharge protection voltage: 2.8V

电池过充保护电压 Battery overcharge protection voltage: 3.6V

### 3.7.2

显示: 充电时, 屏幕递增显示电量;放电时屏幕显示当前电量。

各个部分工作时, 对应的按键灯常亮。

Display: when charging, screen increments display electric quantity; when discharging, screen displays current electric quantity. When each part is working, the corresponding key light is steady on.

3.7.3 总输出带载: 恒功率(SPC)技术, 当功率超过额定功率时, 通过智能功率管控, 直至输出电压低于额定电压的 80%时, 关闭输出。

Total output load: Smart Power Control (SPC) technology, when the power exceeds the rated power, through intelligent power control, until the output voltage is lower than 80% of the rated voltage, turn off the output.

## 四、安全规格 Safety specifications

4.1 电源安全满足下列标准 The power supply meets the following standards:

UL62368

UL840

UL2743

UN38.3

4.2 绝缘性能 Insulation performance

4.2.1 绝缘阻抗 Insulation impedance

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初级对次级：10MΩ最小（提供 500Vdc）

Primary vs secondary: 10MΩ minimum (500Vdc)

4.2.2 绝缘耐压 Resistant to high voltage

初级对次级:2000Vac 5mA 60S

交流地和输出负极要断开。

Primary vs Secondary :2000Vac 5mA 60S

Disconnect the AC and output negative terminals.

## 五、电磁兼容性 Electromagnetic compatibility

5.1 EMI（电磁干扰）

The power supply shall meet the following Standards:

电源电磁干扰满足下列规则：

Radiated Emission：（辐射干扰度）

\*EN55022, CLASS A

\*GB9254, CLASS A

\*FCC PART15 CLASS A

5.2 EMS（电磁抗扰）

The power supply shall meet the following Standards:

电源电磁抗扰满足下列规则：

1) ESD（静电抗扰度）

\*GB17626.2-1998/IEC61000-4-2

2) EFT（脉冲群抗扰度）

\*GB17626.4-1998/IEC61000-4-4 1KV

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## 六、工作环境 Operating environment

### 6.1 Temperature （环境温度）

- \* Charging temperature: 0°C to +40°C.
- \* discharge temperature: -10°C to + 40°C
- \* Storage temperature: -10°C to +45°C.

### 6.2 Humidity （环境湿度）

- \* Operating: From 20% to 90% relative humidity (non-condensing).
- \* Storage: From 5% to 95% relative humidity (non-condensing).

### 6.3 Altitude （海拔高度）

- \* Operating: to 2000m.
- \* Storage: to 2000m.

### 6.4 Cooling Method （自然方式）

- \* Ventilation cooling&FAN cooling . 自然冷却&风扇冷却

### 6.5 Vibration （振动耐受）

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\* 10-55Hz, 49.0m/s<sup>2</sup>(5G), 3minutes period, 60minutes each along X, Y and Z axis.

## 6.6 Impact (冲击耐受)

\* 196.1m/s<sup>2</sup>(20G),11ms, once each X, Y and Z axis.

## 七、产品尺寸及重量 Product size and weight

### 7.1 2D 视图

(尺寸: 360\*260\*307 单位: mm 公差: ±0.3mm) 中规、日规、美规

(尺寸: 360\*260\*307 单位: mm 公差: ±0.3mm) 欧规



### 7.2 重量 weight:

S1500F: 17.7kg

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## 八、产品图及端口定义 Product drawing and port definition



### 8.1 功能口定义:

序号 Number	名称 Category	定义 Define	备注 Remark
1	DC 输入 DC Input	DC7909	
2	AC 输入 AC Input	AC Input	
3	点烟器输出口 Car output	车载标准点烟器 car with standard cigarette lighter	共享
4	DC 按键 DC button	控制 DC 输出	

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		Control DC output	
5	屏幕按键 screen button	点亮/关闭屏幕 Light off screen	
6	AC 按键 AC button	控制 AC 输出 Control AC output	短按开启/关闭 Short press to turn on/off
7	AC 输出口 AC output		
8	USB-A 输出 output *2	USB-A 输出口 USB-A output	
9	USB 按键 USB button	控制 USB 输出 Control USB output	短按开启/关闭 Short press to turn on/off
10	USB-C 输出 output *2	USB-C 输出口 USB-C output	USB-C#1 PD100W USB-C#2 PD45W
11	DC 输出 output *2	DC5525*2	共享

## 九、注意事项 Attention Matters

- 请勿放在高温环境中或火边烘烤，或在太阳底下爆晒；

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- Do not bake in high temperature or near fire, or burst in the sun;
- 请勿置于水中或在室外淋雨；
- Do not put in water or in the rain outside;
- 请勿在使用环境范围以外的环境使用；
- Do not use it in an environment outside the scope of use;
- 当应用逆变器时，请消费者使用获得官方认证许可的电气和电子设备；
- When applying inverters, consumers should use officially certified electrical and electronic equipment;
- 禁止用钉子或其它尖锐物体刺穿电源壳体，禁止锤击或脚踏电源；
- Do not use nails or other sharp objects to Pierce the power supply housing, do not hammer or pedal the power supply;
- 禁止以任何方式分解电源；
- Do not disassemble the power supply in any way;
- 如果电源发出异味、发热、变形、变色或出现其它任何异常现象时不得使用；
- If the power supply emits peculiar smell, heat, deformation, discoloration or any other abnormal phenomenon shall not be used;
- 如果电源泄漏或发出异味，应立即将其从接近明火处移开；
- If the power supply leaks or gives off an odor, remove it immediately from the vicinity of an open flame
- 如果设备长期不用，将电源放置在凉爽、干燥的地方并每隔 3~6 个月对其进行充放电，否则，会影响电源的性能、缩短电源的使用寿命。
- If the device is not used for a long time, place the power supply in a cool and dry place and charge and discharge it every 3~6 months. Otherwise, the performance of the power supply will be affected and the service life of the power supply will be shortened.

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## 十、产品规格书的修订 Revision of product specification

本公司有权对本产品规格书进行修订，并可能不再另行通知。

The Company reserves the right to amend this product specification without prior notice.