

产品规格书

Product Specification

产品名称 (PN) : 储能电源 S1000 (F) 系列

产品编号 (PCBA version) : _____

版 本 (version) : V1.1

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SN 序号	Version 版 本	Revised content 更改内容	Confirmed by 确认	verified by 审 核
1	V1.0			曹龙、张洋
2	V1.1	1、DC7909 充电功率提升 2、240W; 新电芯; 逆变器使 用 SPC 技术		曹龙、张洋

HAME 储 Specification of outdoor energy storage power supply

目录

- 一、应用环境 Application environment
- 二、功能特点 Functional features
- 三、电源性能指标 Power supply performance index
 - 3.1 逆变器输出部分 Inverter output
 - 3.2、USBA #1+USBA #2 输出部分 USBA #1+USBA #2 Output
 - 3.3、USB -C (PD100W) 双向 PD 功能 Bidirectional PD output
 - 3.4、输出部分 一个 DC5525 头和车充 DC5525 head and car charger output
 - 3.5、充电部分 The charging part: 12-32V
 - 3.6、电池组部分 Battery pack
 - 3.7、其他性能 Other performance
- 四、安全规格 Safety performance
- 五、电磁兼容性 Electromagnetic compatibility
- 六、安全规格 Safety specifications
- 七、产品尺寸及重量 Product size and weight
- 八、成品图及端口定义 Finished drawing and port definition
- 九、注意事项 Matters needing attention
- 十、产品规格书的修订 Revision of product specification

HAME 储 Specification of outdoor energy storage power supply

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 产品使用温度-10℃— +40℃，充电温度：0℃-40℃，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。Product operating temperature -10℃ - +40℃, charging temperature: 0℃-40℃, storage environment temperature -10℃ - +45℃, working environment humidity 20%-90% RH no condensation phenomenon (no condensation), storage environment humidity: 5%-95% RH no condensation phenomenon (no condensation), altitude ≤2000 meters, natural cooling

HAME 储 Specification of outdoor energy storage power supply

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。

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 逆变部分为单相离线逆变器。

The inverter is a single - phase offline inverter

2.4 具备二个 USB-A 和 1 个 USB-C 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 USB-A and one USB-C output, with independent OCP, OVP, short circuit protection, automatic ID identification and fast charging functions

2.5 USB-C 支持双向 PD 功能，额定 100W。

The USB-C supports bi-directional PD with a rating of 100W

2.6 宽范围直流输入电压充电，DC 7909 输入电压 12- 30Vdc。

Wide range of DC input voltage charging, DC 7909 input voltage range of 12-30VDC

2.7 具备直流输出，DC 5525 输出和车充输出：12V/10A 120W (Max)

With DC output, DC 5525 output and car charging output: 12V/10A 120W (Max)

2.8 具备 LCD 屏显示及欠压蜂鸣报警

LCD display and undervoltage buzzer alarm

2.9 全面的保护：输入欠压、输出过压、过载、短路、过温。

Surface protection: input undervoltage, output overvoltage, overload, short circuit, overtemperature

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三、电源性能指标 Power supply performance index

3.1 逆变器输出部分 Inverter output part:

	产品型号 Product model	S1000-F		
1	输出电压 The output voltage	100V	110V	230V
2	输出频率 The output frequency	60±3Hz	60±3Hz	50±3Hz
3	额定输出功率 Rated output	1000W		
4	满载工作效率 Full load efficiency	阻性负载 ≥90%		
5	输出过载保护 Output overload protection	SPC 功率控制，当功率大于额定输出功率时，使输出恒定在额定功率，当输出电压调整到额定电压的 80%以下时，关闭输出		
6	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		
7	负载适应性 Load adaptability	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.)		
注：remark：逆变器采用 SPC (smart power control) 技术				

3.2 USB A*2 输出部分 USB A*2 Output

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1	输出端口 Output port	USBA #1	USBA #2
2	输出电压 Input voltage	5V±5%	5V±5%
		9V±5%	9V±5%
		/	
3	额定输出电流 Rated output current	5V==3A	5V==3A
		9V==2A	9V==2A
		12V==1.5A	12V==1.5A
4	纹波噪音 Ripple noise	≤200mv	
5	输出过流保护 Output over current protection	3.3A-3.8A (5V)	3.3A-3.8A (5V)
		2.3A-2.8A (9V)	2.3A-2.8A (9V)
		1.7A-2.1A (12V)	1.7A-2.1A (12V)
		关断，按键启动可恢复正常工作 Off, button start can restore normal work	
6	满载工作效率 Full load efficiency	≥85%	
7	输出短路保护 Output short circuit protection	关断，按键启动可恢复正常工作 Off, button start can restore normal work	

3.3 USBC 双向 PD 功能功能 Bidirectional PD function

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1	输入/输出端口 Input/output ports	USBC
2	输出电压 Output voltage	5V±5%
		9V±5%
		12V±5%
		15V±5%
		20V±5%
3	输出额定电流 Rated output current	5V==3A
		9V==3A
		12V==3A
		15V==3A
		20V==5A (100W)
4	纹波噪音 Ripple noise	≤200mv
5	输出过流保护 Output over current protection	5.5-6.5A
6	满载工作效率 Full load efficiency	≥85%
7	输出短路保护 Output short circuit protection	关断

3.4 输出部分 一个 DC5525 头和车充(12V10A) Output part a DC5525 head and car charge (12V10A)

1	输出端口 Output port	DC	车充
2	输出电压 The output voltage	12±20% V	
3	纹波噪音 Ripple noise	≤300mV	
4	输出额定电流 Rated output current	10A	
5	输出过流保护 Output over current protection	10.5-15A	
6	满载工作效率 Full load efficiency	≥85%	
7	输出短路保护 Output short circuit	自恢复	

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	protection	
8	备注: DC 与车充共享 12V10A Note: DC shares 12V10A with car charger	

3.5 充电部分 (32V) Input port

1	输入端口 Input port	DC7909
2	输入电压 Input voltage	30V
3	DC 输入 DC Input	30V 8A 240W MAX
4	太阳能输入 Solar input	17-24V 10A 240W MAX (MPPT)
5	充电电流 Charging current	当 30V 输入时, 输入电流 ≤ 8A When 32V input, the input current is less than or equal to 8A
6	电池组充电截止电压 Battery string charging cut-off voltage	21.6V ± 0.02V
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	S1000-F	
2	电芯连接方式 Core connection mode	6 串 (40Ah)	
3	电芯规格 Batteries specifications	电芯型号 Batteries models	6 串 6series of series (40Ah)
		额定电压 The rated voltage	3.2V
		额定容量 Nominal	768Wh

HAME 储 Specification of outdoor energy storage power supply

		capacity	
		最大充电电压 Maximum charging voltage	3.6V±0.05V
		最大放电电流 Maximum discharge current	40Ah
		标准充电电流 Standard charging current	20Ah
4	存储环境 Storage environment		-10℃-60℃

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

1	产品型号 Product model	S1000-F
	电池组过充保护 Battery string overcharge protection	任意单节电芯电压大于 3.6±0.05V Any single cell voltage is greater than 3.6±0.05V
	电池组过放保护 Battery string over discharge protection	任意单节电芯电压小于 2.8±0.05V Any single cell voltage is less than 2.8±0.05V
	电池组过流保护 Battery string over	80±5A

HAME 储 Specification of outdoor energy storage power supply

	current protection	
	电池组短路保护 Battery string short circuit protection	320±20A
	关机状态自耗电 Power consumption in shutdown state	≤3mA
	电池配组 The battery with group	电压差 ≤3mV 内阻差≤2mΩ 容量差≤0.5%

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℃

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

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, LCD 递增显示电量; 放电时 LCD 显示当前电量。

各个部分工作时对应的按键灯常亮。

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

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

初级对次级: 10M Ω 最小 (提供 500VDC)

Primary vs secondary: 10M ω 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

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 B

*GB9254, CLASS B

*FCC PART15 CLASS B

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

HAME 储能 Specification of outdoor energy storage power supply

六、工作环境

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)

- * 10-55Hz, 49.0m/s² (5G), 3minutes period, 60minutes each along X, Y and Z axis.

6.6 Impact (冲击耐受)

- * 196.1m/s² (20G), 11ms, once each X, Y and Z axis.

七、产品尺寸及重量

7.1 2D 视图 (单位: mm 公差: ±0.3mm)

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尺寸: L340*W178*H230 MM

7.2

S1000 重量: $8.5 \pm 0.5\text{Kg}$

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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 Function Port Definition:

序号 number	名称 category	定义 define	备注 Remark
1	DC OUT 按钮 button	控制点烟器及 DC 口输出 Control cigarette lighter and DC output	短按开启/关闭 Press to turn on/off
2	屏幕按钮	控制屏幕点亮/熄灭	短按开启关闭

HAME 储 Specification of outdoor energy storage power supply

	Screen button	Control screen light/off	Press to turn on/off
3	AC button 按钮	控制 AC 口输出 Control AC output	短按开启关闭 Press to turn on/off
4	点烟器输出口 Cigarette lighter outlet	车载标准点烟器 On-board standard cigarette lighter	共享 Share 12V10A 120W
5	DC 输出口 output	标准 DC5525 输出接头 Standard DC5525 output connector	
6	DC output 输入口	DC 7909 标准接口 DC 7909 standard interface	
7	屏幕 Screen	显示产品输入输出电量等信息 Display input and output power information	
8	交流输出口 Ac	AC #1	

HAME 储 Specification of outdoor energy storage power supply

	output interface		
9	交流输出口 Ac output interface	AC #2	
10	输入/输出口 Input/output ports	Type-c #1	
11	USB output 输出口	USBA #1output 输出口	
12	USB button 按键	控制 USB 口输出 Control USB output	
13	USB output 输出口	USBA #2 output 输出口	

HAME 储 Specification of outdoor energy storage power supply

九、注意事项 Matters needing attention

- 请勿放在高温环境中或火边烘烤，或在太阳底下暴晒；
- 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；

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- 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

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