
产品规格书

PRODUCT SPECIFICATION

产品名称 (Product Name) : 储能电池组 Powerpack

规格型号 (Model) : XPC-48V

版本号 (Rev. No) : A/0

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2. 产品概述 (Product Description)

2.1. 本产品由公司自主设计研发的户用储能箱产品系列之一，产品用于电能储存给 家庭、商用、UPS 等用电设备提供能源。

The product belongs to one of the series of household energy storage products that are independently designed and developed . It is used for energy storage and energy supply to household, commercial、UPS and other electrical equipment.

2.2.产品具备循环寿命长、软件及硬件多重保护、外观精美、易安装等特点，配套离网逆变器、并网逆变器、混合逆变器广泛应用于储能系统。

This product enjoys many merits: long cycle life, high safety standard from software protection to strong housing, exquisite looks, and easy installation, etc. It is widely used in energy storage system with off-grid inverters, grid-connected inverters and hybrid inverters.

3. 产品功能说明 (Product Function Description)

3.1 产品规格 (Product Specifications)

项目 (Items)	条件 (Condition)	规格 (Specification)
3.1 额定容量 (Nominal Capacity)	标准充放电 (Standard charge/discharge)	50.0Ah
3.2 标称电压 (Nominal Voltage)	标称值 (Average)	48V
3.3 内阻 (Internal Impedance)	半充电态, 1KWH 交流阻抗下 (at 1KHz after 50% charge)	≤20mΩ
3.4 标准充电 (详见 4.1) (Standard Charging) (Refer to 4.1)	恒流 (Constant current) 恒压 (Constant voltage) 终止电流 (End current (Cut off))	20A 54.75V 1A
3.5 充电电压 (Charging Voltage)	/	54.75V
3.6 最大持续充电电流 (Max. Continuous Charge Current)	25±3°C	25A
3.7 标准放电 (详见 4.2) (Standard Discharging) (Refer to 4.2)	恒流 (Constant current) 终止电压 (End voltage (Cut off))	25A 37.5V
3.8 最大持续放电电流 (Max Continuous Discharge Current)	25±3°C	50A
3.9 循环寿命 (Cycle Life)	0.2C, 80% DOD, 25 ± 3°C 25±3°C	2000 times
3.10 工作温度 (Operating Temperature)	充电 Charge	0°C~ 60°C
	放电 Discharge	-20°C~ 60°C
3.11 储存温度 (Storage Temperature)	1 个月 (1 month)	-20°C~ 45°C
	3 个月 (3 month)	-20°C~ 35°C
	6 个月 (6 month)	-20°C~ 25°C
3.12 重量 (Weight)	/	~18Kg
3.13 通信功能 (Communication Function)	/	

4. 电气规格 (Electrical Specification)

本产品规格书规定的测试条件为：温度 $25 \pm 2^\circ\text{C}$ ，相对湿度 45%~85%。

(Unless there is special requirement, the test shall be done under temperature of $25 \pm 2^\circ\text{C}$ and with relative humidity of 45~85%.)

项目 (Items)	测试方法 (Test Condition)	标准 (Criteria)															
4.1 标准充电 Standard Charge	<p>标准充电是指电池在环境温度 $25 \pm 3^\circ\text{C}$ 下，以 20A 恒电流充电至电压 54.75V，恒电压 54.75V 充电至截止电流 1A（用锂离子电池专用充电器，电压精度 $\pm 0.05\text{V}$），停止充电，总充电时间不超过 6 个小时。</p> <p>(The standard charge means charge the battery in temperature below $25 \pm 3^\circ\text{C}$ with initial charge current of 20A and with constant voltage of 54.75V, then charge with constant voltage of 54.75V and with floating current taper to 1A cut-off (Charger should be exclusively using lithium ion rechargeable battery, with an accuracy of $\pm 0.05\text{V}$) for at most 6 hours.)</p>	/															
4.2 标准放电 Standard Discharge	<p>电池以标准充电后，以电流 25A 放电至终止电压 37.5V，停止放电。如果没有特别说明，电池充放电间隔时间为 30 分钟。</p> <p>(Charge in accordance with the standard and then discharge to voltage 37.5V with discharge current of 50A. The gap time for charge and discharge is 30 minutes)</p>	最小容量 (Minimum Capacity) $\geq 50.0\text{Ah}$															
4.3 放电特性 Discharge Character	<table border="1" data-bbox="359 1189 1214 1402"> <thead> <tr> <th data-bbox="359 1189 646 1290">放电电流 (Discharge current)</th> <th colspan="4" data-bbox="646 1189 1214 1290">放电温度 (Discharge Temperature)</th> </tr> <tr> <th data-bbox="359 1290 646 1350">50A</th> <th data-bbox="646 1290 786 1350">-10$^\circ\text{C}$</th> <th data-bbox="786 1290 927 1350">0$^\circ\text{C}$</th> <th data-bbox="927 1290 1067 1350">25$^\circ\text{C}$</th> <th data-bbox="1067 1290 1214 1350">40$^\circ\text{C}$</th> </tr> </thead> <tbody> <tr> <td data-bbox="359 1350 646 1402"></td> <td data-bbox="646 1350 786 1402">$\geq 50\%$</td> <td data-bbox="786 1350 927 1402">$\geq 60\%$</td> <td data-bbox="927 1350 1067 1402">$\geq 95\%$</td> <td data-bbox="1067 1350 1214 1402">$\geq 95\%$</td> </tr> </tbody> </table> <p>电池按 4.1 规定充电。按上表的温度进行放电，放电容量比最小容量需满足上述要求，电池必须先在该试验温度中放置 4 个小时。</p> <p>(Batteries shall be charged according to 4.1 and discharged in accordance with the above mentioned temperature. The discharge capacity shall meet the standard. Batteries shall be stored for 4 hours at the test temperature</p>	放电电流 (Discharge current)	放电温度 (Discharge Temperature)				50A	-10 $^\circ\text{C}$	0 $^\circ\text{C}$	25 $^\circ\text{C}$	40 $^\circ\text{C}$		$\geq 50\%$	$\geq 60\%$	$\geq 95\%$	$\geq 95\%$	At -10 $^\circ\text{C}$: Discharge Capacity $\geq 50\%$ At 0 $^\circ\text{C}$: Discharge capacity $\geq 60\%$ At 25 $^\circ\text{C}$ Discharge capacity $\geq 95\%$ At 40 $^\circ\text{C}$ Discharge capacity $\geq 95\%$
放电电流 (Discharge current)	放电温度 (Discharge Temperature)																
50A	-10 $^\circ\text{C}$	0 $^\circ\text{C}$	25 $^\circ\text{C}$	40 $^\circ\text{C}$													
	$\geq 50\%$	$\geq 60\%$	$\geq 95\%$	$\geq 95\%$													

5. BMS 参数 (BMS Parameter)

序号 No.	项目 (Item)		标准 (Criterion)
1	功耗 Power Consumption	低功耗模式 Low power consumption mode	$\leq 100\mu\text{A}$
2	过充电保护 Over charge Protection	过充电检测电压 Over charge detection voltage	3.75V
		过充电恢复电压 Over charge release voltage	3.38V
3	过放电保护 Over discharge protection	过放电检测电压 Over discharge detection voltage	2.2V
		过放电恢复电压 Over discharge release voltage	2.7V
4	过流保护 Over current protection	充电过流检测电流(检测时间) Charging overcurrent detection current (detection time)	50A (1S)
		放电过流检测电流 1(检测时间) Discharging overcurrent detection current 1 (detection time)	60A (1S)
		放电过流检测电流 2(检测时间) Discharging overcurrent detection current 2 (detection time)	$\geq 70\text{A}(100\text{ms})$
5	温度保护 Temp. Protection	检测温度 Detection temperature	$65\pm 2^{\circ}\text{C}$

6. 产品寿命 (Produce Life) 产品设计寿命为 5 年。

The design life of this product is 5 years.

7. 运输 (Shipping) 运输过程应防止电池剧烈震动，撞击，暴晒，受潮。

During transportation, please keep the battery from acutely vibration, impacting, over-exposure to the sun and drenching.

8. 储存 (Storage)

8.1 储存环境要求：温度 $25 \pm 2^{\circ}\text{C}$ ，相对湿度 45%~85%

Storage environment requirement : under temperature of $25 \pm 2^{\circ}\text{C}$ and relative humidity of 45~85%

8.2 储能箱每 6 个月必须充电一次，每 9 个月必须完成一次充放电工作。

This power box must be charged every six months, and a complete charging and discharging work must be down in every nine months.

9. 注意事项 (Cautions)

*安装调试需专业电力人员。

The installation and debugging should be operated by professional electric personnel.

*请勿将手或者异物深入产品内部。

Please do not stick your hands or other objects deep into the interior of the product.

*非专业人员请勿私自打开产品。

Please do not open the product without a professional around.

*请勿机械损坏产品 (穿孔、变形、剥离等)。

Please do not mechanically damage the battery module of the energy storage cabinet (perforation, deformation, peeling, etc.).

*请使用干粉灭火器作灭火剂。

Please use dry powder extinguisher as extinguishing agent.

*请勿使产品接触异常金属或导体。

Please do not let the storage cabinet battery module contact abnormal metals or conductors.

*短路后请勿继续使用产品。

Please do not use the product after a short circuit.

*请勿将产品暴露在易燃或有害的化学物质或蒸汽中。

Please do not expose the energy storage cabinet to flammable or hazardous chemicals or vapors.
