

WN-24120A LiFePO4 Battery Specification

WN-24120A 锂电池组产品规格书

Specification

产品规格书

电池型号Model: WN-24120A

标称容量Nominal Capacity: 120Ah

客户名称Customer: _____

客户确认Customer Confirm: _____

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WN-24120A 锂电池组产品规格书

1 基本特性Basic features

2 外形图 Product Pic.

型号Model		WN-24120A
外壳材质 Enclosure Material		ABS
容量Capacity (0.2C5A)	标称值 Nominal	120Ah
	最小值 Mini.	120Ah
额定电压 Nominal Voltage		25.6V
最大充电电压 Max. Charge Voltage		28.4V
放电截止电压 Discharge Cut-off Volratge		20V
最大充电电流 Max. Charge Current		80A
最大放电电流 Max. Discharge Current		80A
电池长度 (Max.) Length		522mm
电池宽度 (Max.) Width		240mm
电池高度 (Max.) Height		218mm
电池重量 (Approx.) Weight		About 28kg
内阻 (Max, at 1000Hz.) Internal Resistance		≤80 mΩ
操作温度 Operating temperature	充电Charge	0°C ~ 55°C; 32°F ~ 131°F
	放电Discharge	-20°C ~ 60°C; -4°F ~ 140°F
	贮存Storage	0°C ~ 45°C; 32°F ~ 113°F



3 电芯性能 Battery cell performance

3.1 电化学性能 Electrochemical Performance

序号 No.	项目 Item	规格 Specification	测试方法 Test method
1	初始充放电能量 Initial charging/discharging energy	初始充电能量 ≥ 额定充电能量 ; Initial charging energy ≥ rated charging energy 初始放电能量 ≥ 额定放电能量 ; Initial discharging energy ≥ rated discharging energy 能量效率 ≥ 90% energy efficiency ≥ 90%	新电池状态, 参照 GB/T36276-2018 Fresh cell status ,Reference to GB/T36276-2018
2	倍率充放电性能	充电能量 (2Prc) / 充电能量 (Prc) ≥ 95%	参照GB/T36276-2018

WN-24120A LiFePO4 Battery Specification

WN-24120A 锂电池组产品规格书

	rate charging and discharging performance	<p>放电能量 (2Prd) / 放电能量 (Prd) ≥ 95%</p> <p>charging energy (2Prc) / charging energy (Prc) ≥ 95%</p> <p>discharging energy (2Prd) / discharging energy (Prd) ≥ 95%</p> <p>充电能量 (4Prc) / 充电能量 (Prc) ≥ 90%</p> <p>放电能量 (4Prd) / 放电能量 (Prd) ≥ 90%</p> <p>charging energy (4Prc) / charging energy (Prc) ≥ 90%</p> <p>discharging energy (4Prd) / discharging energy (Prd) ≥ 90%</p> <p>能量效率 ≥ 85% (2Prc/2Prd 恒功率充放)</p> <p>energy efficiency ≥ 85% (2Prc/2Prd)</p> <p>能量效率 ≥ 80% (4Prc/4Prd 恒功率充放)</p> <p>energy efficiency ≥ 80% (4Prc/4Prd)</p>	Reference to GB/T36276-2018
3	高温性能 High temperature	<p>充电能量 ≥ 初始充电能量 * 98%</p> <p>charging energy ≥ Initial charging energy * 98%</p> <p>放电能量 ≥ 初始放电能量 * 98%</p> <p>discharging energy ≥ Initial discharging energy * 98%</p> <p>能量效率 ≥ 90%</p> <p>energy efficiency ≥ 90%</p>	参照GB/T36276-2018 Reference to GB/T36276-2018
4	低温性能 Low temperature	<p>充电能量 ≥ 初始充电能量 * 80%</p> <p>charging energy ≥ Initial charging energy * 80%</p> <p>放电能量 ≥ 初始放电能量 * 75%</p> <p>discharging energy ≥ Initial discharging energy * 75%</p> <p>能量效率 ≥ 75%</p> <p>energy efficiency ≥ 75%</p>	参照GB/T36276-2018 Reference to GB/T36276-2018
5	室温能量保持与能量恢复能力 Room temp. energy retention and energy recovery capability	<p>能量保持率 ≥ 90%</p> <p>Retention rate of energy ≥ 90%</p> <p>充电能量恢复率 ≥ 92%</p> <p>Recovery rate of charging energy ≥ 92%</p> <p>放电能量恢复率 ≥ 92%</p> <p>Recovery rate of discharging energy ≥ 92%</p>	参照GB/T36276-2018 Reference to GB/T36276-2018

WN-24120A LiFePO4 Battery Specification
 WN-24120A 锂电池组产品规格书

6	高温能量保持与能量恢复能力 Retention rate of energy and Recovery rate of energy (high temperature)	能量保持率≥90% Retention rate of energy≥90% 充电能量恢复率≥92% Recovery rate of charging energy≥92% 放电能量恢复率≥92% Recovery rate of discharging energy≥92%	参照GB/T36276-2018 Reference to GB/T36276-2018
7	储存性能 Storage performance	充电能量恢复率≥90% Recovery rate of charging energy≥90% 放电能量恢复率≥90% Recovery rate of discharging energy≥90%	参照GB/T36276-2018 Reference to GB/T36276-2018
8	循环寿命 Cycle life	充电能量保持率≥90% (循环 1000 次) Retention rate of charging energy≥90% (Circular 1000 times) 放电能量保持率≥90% (循环 1000 次) Retention rate of discharging energy≥90% (Circular 1000 times) 残余容量≥标称容量×80% (循环≥4000 次) residual capacity ≥ nominal capacity × 80% (Cycle count≥4000)	参照GB/T36276-2018 Reference to GB/T36276-2018

3.2 安全性能

序号 No.	项目 Item	标准 Standard	测试方法 Testing method
1	过充测试 Over-charge performance	不爆炸、不起火 No explosion or fire	参照GB/T36276-2018 Reference to GB/T36276-2018
2	过放测试 Over-discharge performance	不爆炸、不起火 No explosion or fire	参照GB/T36276-2018 Reference to GB/T36276-2018
3	短路测试 Short-circuit performance	不爆炸、不起火 No explosion or fire	参照GB/T36276-2018 Reference to GB/T36276-2018
4	跌落测试 Drop test	不爆炸、不起火 No explosion or fire	参照GB/T36276-2018 Reference to GB/T36276-2018
5	加热测试 Heating Test	不爆炸、不起火 No explosion or fire	参照GB/T36276-2018 Reference to GB/T36276-2018

WN-24120A LiFePO4 Battery Specification
WN-24120A 锂电池组产品规格书

6	挤压测试 Crush Test	不爆炸、不起火 No explosion or fire	参照GB/T36276-2018 Reference to GB/T36276-2018
7	热失控测试 Thermal runaway test	不爆炸、不起火 No explosion or fire	参照GB/T36276-2018 Reference to GB/T36276-2018
8	低气压测试 Low pressure test	不爆炸、不起火 No explosion or fire	参照GB/T36276-2018 Reference to GB/T36276-2018

4 保护板基本参数 Basic parameters of the BMS

此保护板为全功能板，针对电池的过充、过放、过流实施有效的保护，保护 IC 采用普通保护 IC,具体保护项目及保护范围如下。This protection board is a full-function board, which implements effective protection for overcharge, over-discharge and over-current of batteries. The protection IC adopts common protection IC. The specific protection items and protection scope are as follows: capacity for recovery

序号 No	项目 Item	规格 Spec.	备注 Remark
1	过充电保护电压 Over-charge protection voltage	3.9V±50mV	
2	过放电保护电压 Over-discharge protection voltage	2.0V±100mV	
3	放电过流保护电流 Discharge over-current protection Current	600±100A	
4	过充电电压保护侦测延时时间 Overcharge voltage protection detection delay time	1000±500mS(Typical)	
5	过放电压保护侦测延时时间 Over-discharge voltage protection detection delay time	1000±500mS(Typical)	
6	放电过流保护侦测延时时间 Delay time of discharge over-current protection detection	1000mS±500 mS (Typical)	
7	输出短路保护侦测延时时间 Output short circuit protection detection delay time	300uS(Typical)	
8	过充保护解除电压 Overcharge protection voltage relief	3.6V±50mV	
9	过放保护释放电压 Release voltage of over-discharge protection	2.7V±100mV	
10	短路及过流保护恢复条件 Recovery conditions of short circuit and over-current protection	断开负载 Disconnect the load	
11	过放保护恢复条件 Recovery conditions for over-Discharge protection	断开负载 Disconnect the load	

WN-24120A LiFePO4 Battery Specification

WN-24120A 锂电池组产品规格书

12	PCB 内阻 PCB internal resistance	$\leq 10\text{m}\Omega$	
13	静态自耗电流 Static consumption current	$\leq 50\mu\text{A}$	
14	工作温度Operating temperature	-20~75°C	

注明: 以上规范中测试条件为:

温度: 20±5°C, 相对湿度:45%--75%, 大气压强:86KPa—106KPa.

Note: the test conditions in the above specifications are:

Temperature: 20±5°C, relative humidity: 45%-75%, atmospheric pressure: 86KPa-106KPa.

5 保质期及产品责任 Warranty and product responsibility

保质期是从出厂日期（喷码）开始起 3 年；电池在闲置不使用时请 3 个月保证充一次电！

东莞市维能新能源有限公司对因没有按本规格书规定操作而导致的意外不负责任，当本规格书有一些变动时，维能新能源有限公司会通知购买方。

The warranty is 3 years from the date of shipping out from factory (code spraying); When the battery is idle and not in use, please charge it once every 3 months!

Dongguan ZWAYN New Energy Co., Ltd. is not responsible for accidents caused by failure to operate according to the provisions of this specification. When there are some changes in this specification, Dongguan ZWAYN New Energy Co., Ltd. will notify the buyer.

6 包装电池上的标识 Identification on the packaged battery

按照客户要求标识Mark according to customer requirements

7 电池使用时警告事项及注意事项 Warnings and precautions when using the battery

为防止电池可能发生泄漏,发热、爆炸,请注意以下预防措施:

To prevent possible leakage, heat generation and explosion of the battery, please pay attention to the following precautions:

WN-24120A LiFePO4 Battery Specification

WN-24120A 锂电池组产品规格书

警 告 ! Warning!

- 严禁将电池浸入海水或水中,保存不用时,应放置于阴凉干燥的环境中.

It is strictly forbidden to immerse the battery in sea water or water. When it is not in use, it should be placed in a cool and dry environment.

- 禁止将电池在热高温源旁,如火、加热器等使用和留置.

It is forbidden to use and leave the battery near heat and high temperature sources, such as fire, heater, etc.

- 充电时请选用锂离子电池专用充电器.

Please use a special charger for lithium-ion batteries when charging.

- 严禁颠倒正负极使用电池.

It is strictly forbidden to use the battery upside down.

- 严禁将电池直接插入电源插座.

It is strictly forbidden to plug the battery directly into a power socket.

- 禁止将电池丢于火或加热器中.

It is forbidden to throw the battery into the fire or heater.

- 禁止用金属直接连接电池正负极短路.

It is forbidden to use metal to directly connect the positive and negative electrodes of the battery to short-circuit.

- 禁止将电池与金属,如发夹、项链等一起运输或贮存.

It is forbidden to transport or store the battery with metal, such as hairpins, necklaces, etc.

- 禁止敲击或抛掷、踩踏电池等.

It is forbidden to knock or throw, step on the battery, etc.

- 禁止直接焊接电池和用钉子或其它利器刺穿电池.

It is forbidden to directly weld the battery and pierce the battery with nails or other sharp objects.

WN-24120A LiFePO4 Battery Specification

WN-24120A 锂电池组产品规格书

小 心 ! Be careful !

- 禁止在高温下 (炙热的阳光下或很热的汽车中) 使用或放置电池, 否则可能会引起电池过热、起火或功能失效、寿命减短.

It is forbidden to use or place the battery under high temperature (in the hot sun or in a very hot car), otherwise it may cause the battery to overheat, catch fire or function failure, and shorten the life.

- 禁止在强静电和强磁场的地方使用, 否则易破坏电池安全保护装置, 带来不安全的隐患.

It is forbidden to use it in places with strong static electricity and strong magnetic fields, otherwise it will easily damage the battery safety protection device and bring hidden dangers of insecurity.

- 如果电池发生泄露, 电解液进入眼睛, 请不要揉擦, 应用清水冲洗眼睛, 并立即送医治疗, 否则会伤害眼睛.
- If the battery leaks and the electrolyte enters your eyes, please do not rub it, rinse your eyes with clean water, and immediately send to a doctor for treatment, otherwise it will hurt your eyes.
- 如果电池发出异味, 发热、变色、变形或使用、贮存、充电过程中出现任何异常, 立即将电池从装置或充电器中移离并停用.

If the battery emits a peculiar smell, heat, discoloration, deformation, or any abnormality during use, storage, or charging, immediately remove the battery from the device or charger and stop using it.

- 如果电极弄脏, 使用前应用干布抹净, 否则可能会导致接触不良功能失效

If the electrode is dirty, wipe it with a dry cloth before use, otherwise it may cause poor contact and function failure

- 废弃之电池应用绝缘纸包住电极, 以防起火、爆炸。

Waste batteries should be covered with insulating paper to prevent fire and explosion.