蓝逆
LANNI

Lanni new energy technology (Shenzhen) Group Co., Ltd

Lithium Iron Phosphate Battery

Production specification

51.2V600Ah

$LiFePO_4$ Battery

Production type: $LiFePO_4$ Battery Pack
Production model: 51.2V 600Ah (16S2P)
Production NO.: LN-LSTL48600002
Version number : R0.4

Revision history

Edition	Revised by	Changes	Revision date:	Rewiewed by	proofread	Remark
LN 1.0	Ru Zhang	Newly increased		Meiyin Zhou	Chichi Li	

CATALOGUE

Product acceptance and introduction

Proper use and maintenance of the product can ensure long-term reliable and stable operation of your battery (or battery system).

- After receiving the product, please check whether the package is intact. If the package is damaged, the product may be damaged. If there is any damage, please contact our after-sales or sales personnel within seven working days.
- Those who do not use or maintain according to the instructions shall be deemed as waiving the warranty right. Lanni new energy technology (Shenzhen) Group Co., Ltd. and its service station have the right not to provide warranty, and will not compensate for all losses arising therefrom, but can provide corresponding paid services according to the situation.
- Please reply within seven working days after receiving the product and the product manual. If there is no reply within seven working days, our company will consider that the Customer acknowledges that this product and the product specification meet your requirements.

1 Product index

1.1 Product overview

This product is an iron lithium battery pack. The battery pack is composed of 32 pieces of 3.2V 300Ah lithium iron phosphate cells through 16 series and 2 parallel. The battery pack adopts scientific internal structure design and advanced battery production technology. It is a green energy storage power supply product with high specific energy, long life, safety and reliability, wide temperature range and other characteristics.

1.2 Product parameters

NO.	Product Name	Item	Parameters
1	Battery Cell	Cell specification and model	Lithium Iron-280Ah
2		Cell capacity	280Ah
3		nominal voltage	3.2V
4		nominal internal resistance	≤0.5mΩ
5		compound mode	16 S 2 P
6		standard of matching group	capacity difference ≤1%
7			the internal resistance extreme difference in a single section ≤ 0.2mΩ
8			Single-section voltage difference

			≤5mV
9			charge retention capacity ≥ 90%
10		nominal voltage (V)	51.2
11		nominal capacity (Ah)	600
12	**Finished product parameters**	minimum capacity (Ah)	600
13		charging stop voltage (V)	58.4
14		discharge cut-off voltage (V)	40
15		USB output voltage (V)	not have
16		USB maximum output current (A)	not have
17		maximum continuous discharge current (A)	200A
18		display screen	voltage and percentage are shown
19		standard charging current (A)	100A
20		charging is suitable for temperature	0℃～45℃
21		the discharge is suitable for temperature	-20℃～65℃
22		battery pack size	720*435*860mm
23		battery pack weight	about 235 kg
24		storage temperature range	0℃～45℃
25		storage ambient humidity (RH)	＜75%
26		communication mode	485, 232, CAN
27		bluetooth	none (can be added)
28		charge retention capacity	after charging according to 3.2 standard, hold for 28 days under standard test conditions, and then discharge with 3.3 standard, with

			the charge retention rate of 80%.
29		times of cycles	cycle life is not less than 5,000 times, capacity retention rate of 80%. (Charge according to the 3.2 standard, and hold for 0.5~1h; discharge as per the 3.3 standard, and hold for 0.5~1h, counting one cycle).
30	management system	single over voltage protection value	3.7V
31		over voltage release value	3.65V
32		single under voltage protection value	2.5V
33		under voltage release value	2.7V
34		over current protection value	300A

1.3 Product picture

2.Battery pack usage

2.1 Charging

The charging end of the battery pack is connected to the suitable charger (the charging voltage is 58.4V, do not reverse the connection) for charging.

2.2 Discharge

Note the positive and negative electrodes (as indicated by the battery case identification, do not reverse) to the matching load.

3. Battery pack test

Single battery and protective circuit parameters are only standard test data as separate accessories and for reference only.

.3.1 Battery pack test requirements

The factory time of the tested battery pack is not more than one month. If the test is not tested due to transportation and other reasons, the battery pack can be charged and discharged again after testing.

The tests included in this specification shall be conducted under standard atmospheric conditions: temperature: 15-26℃, and relative humidity: 65 ± 20%.

The standard charging voltage of the battery pack is 58.4V, the standard discharge cut-off voltage is about 40V, and the standard current is 0.2C.

3.2 Standard charging

Use the lithium-ion battery pack special test cabinet, with the standard charge voltage, standard current, constant current constant pressure charge to the current down to 0.05A.

3.3 Standard Discharge

Use the lithium-ion battery pack special test cabinet, with the standard current, constant current discharge to the standard discharge cutoff voltage or the battery pack cutoff.

4. Environmental requirements for battery pack use

The pack discharge ambient temperature is-20℃ ~ + 60℃ (ambient temperature> 45℃, please note ventilation and heat dissipation); the charging ambient temperature is 0℃ ~ + 45℃. The ambient humidity is less than RH 85%, when the ambient humidity is greater than 85%, pay attention to waterproof, and avoid the surface condensation of the battery pack.

5 Pay special attention to it

In order to make full use of the energy efficiency of lithium-ion battery pack and prevent battery pack leakage, heating and other accidents, please prohibit the following precautions:

- It is strictly prohibited to immerse the battery pack into the water, once into the water or water into the battery, immediately isolated treatment, and ask professional personnel to treat;

- It is strictly prohibited to charge the battery pack at high temperature more than 45℃; it is strictly prohibited to discharge or hold the battery pack at high temperature over 60℃, and stay away from fire, heater, corrosive items, etc., otherwise it may cause overheating, fire or functional failure, short life reduction, or even danger;
- No charging the battery pack below 0℃.
- It is strictly prohibited to reverse the positive and negative electrode using the battery pack, no short-circuit battery pack positive and negative electrode.
- The battery pack is strictly prohibited from being used in series or in parallel.
- It is strictly prohibited to reverse charge the battery pack and insert the positive and negative terminal of the battery pack directly into the power socket.
- It is strictly prohibited to transport or store battery packs together with conductive objects (such as hairpins, necklaces, etc.).
- Strictly prohibit knocking, throwing, trampling, falling, disassembly, impact battery pack, etc.
- It is strictly prohibited to directly weld the battery pack and puncture it with nails or other sharp tools.
- It is strictly prohibited in strong static electricity and magnetic fields, otherwise the battery pack protection circuit may be damaged.
- No overload use of the battery pack.
- It is strictly prohibit machining of the circuit board, which may damage the internal circuit and cause functional failure.
- It is strictly deform the product, which may damage the electronic components or lines and make the product unstable.
- It is must not disassemble the shell to avoid unnecessary damage.
- Battery pack is strictly prohibited to overcharge and release.
- When charging, please choose a suitable lithium ion battery pack special charger.
- With the battery pack, charge within 12 hours. If the battery pack is not charged for more than 12 hours after use, please test the battery pack voltage before charging. If the battery pack voltage value is <40V, it can not be charged , place it separately. Meanwhile, consult the technical personnel of Lanni New Energy Technology (Shenzhen) Group Co., LTD.
- If the battery pack leaks, and the liquid splashes into the eyes or skin, please do not rub it, rinse with clean water, and seek medical treatment immediately.
- Battery pack accident fire should use dry powder fire extinguisher or sand to extinguish the fire.
- If the battery pack emits odor, heat, discoloration, deformation, or any abnormality occurs in the process of use, storage, charging, immediately stop the charging, stop the use, and remove it from the device under the condition of ensuring safety.
- Scrapped battery pack terminals should be insulated paper around the electrode to reduce the safety risks in the later stage.
- Reversely connecting the positive and negative electrodes of the charging port will burn the internal circuit board. Please pay attention to the positive and negative poles.
- Products does not include the size of the outlet position, various connections, handles, wheels, heat sink and other parts.

6. Daily use and maintenance of the battery pack

6.1 Battery pack storage

The storage temperature is 0℃ ~40℃ (the best storage temperature is 15℃ ~25℃, dry storage), the battery pack performance is affected by the temperature, the most intuitive performance is the change of the battery pack capacity, which is a normal phenomenon.

Avoid condensation from temperature changes during storage, otherwise cause rust in batteries or metal parts.

6.2 Check the battery pack before use

After receiving the battery pack, should first carefully check the packaging for abnormalities and avoid impact during handling.

- Check whether the battery pack shell and accessories are damaged, leakage, missing and other bad phenomena. If there is damage or missing, please contact our company.
- Check whether the charge and discharge terminal of the battery pack is correct, measure whether the positive and negative electrodes are backconnected, and whether the voltage is within the normal working voltage range of the equipment. If there is dirt or rust at the terminal, apply a dry cloth to clean before use, otherwise poor electrode terminal contact may result.

6.3 Notes for battery pack installation

- Clean up the installation position of the battery pack to ensure that there is no dust, metal foreign bodies or other foreign bodies. Fireworks are strictly prohibited during installation to avoid short circuit of the battery pack and prevent equipment damage or personnel injury.
- The battery pack is in place, the battery pack is placed in the installation position, the battery pack should be installed in a well-ventilated, dry, clean environment, should not be installed in the possible submerged places, the battery pack should avoid the use and storage of near flammable and explosive items.
- Earthquake absorption and fixation should be done between the battery pack and the warehouse to avoid mechanical damage to the battery pack.
- Hold the electrical wire terminal to the battery pack terminal, and do not press too hard or exceed the specified torque, otherwise the terminal damage may be caused.
- Installation to check whether the terminal fastening is in place, whether there is debris on the surface of the battery pack, use dry cloth to clean the battery pack packaging, do not use electrostatic tools to clean the battery pack packaging, do not use volatile oil and other organic solvents, otherwise it will damage the battery pack packaging or even make the battery pack packaging cracking.
- Takes care to ensure that the positive (+)and negative (-) polar connection of the terminals is correct. Otherwise, it may cause a fire or cause damage to the battery pack and electrical appliances.
- Equipment trial run, observe any abnormal of equipment and battery pack.

6.4 Working requirements for the battery pack

- The charging current shall not exceed the specified maximum charging current. Charging with higher than the specified current may affect the service life of the battery pack, or cause damage to the internal circuit, or even cause danger.

- The discharge current shall not exceed the specified maximum discharge current, and using higher than the specified current to discharge may affect the service life of the battery pack or damage the internal circuit, or even cause danger.
- When the battery pack is insufficient, it should be charged in time, which is beneficial to prolong the life of the battery pack. If not charged in time, the battery pack is left without power for a long time, which will affect the service life of the battery pack.
- The lithium-ion battery pack is beneficial to improve the cycle life. It is recommended that more than 10% of the nominal capacity is left when users discharge and not more than 95% of the nominal capacity when charging.

6.5 Daily maintenance of the battery pack

- Long absence of an battery may be in an overdischarge state due to its self-discharge characteristics. To prevent overdischarge, the battery should be regularly charged and discharged, to maintain its voltage within a certain range (58.4 V). The battery pack shall be charged and discharged at least once within 3 months (the battery pack with communication function shall charge and discharged at least once within a month, and the SOC / capacity calibration needs to be calibrated. The calibration method is to fully charge the battery pack with the charger and discharge it to the battery pack protection.
- Cannot clean the battery pack housing using an organic solvent.
- Battery packs are consumables and have a limited life span. When the battery pack capacity is lower than the use requirements, please replace the battery pack in time to avoid the loss due to insufficient capacity.
- In order to prevent the safety problems caused by the failure of the protection function of the BMS, do not charge for a long time. The battery should be taken out after it is full. In addition, the battery must be attached to the original charger when charging, and operate and use according to the instructions, otherwise it may damage the battery or even be dangerous.
- The shallow charging of battery can ensure the economical use of the battery pack. Overcharging and overdischarging may cause the battery pack overheating, fire or function failure, shorter life, and even danger.
- Battery pack switch, power display panel, output / entry interface for loss components, can provide paid after-sales service.
- Lithium batteries at the end of their life should be recycled and treated in accordance with local laws.

7. Other technical indicators

For matters not covered in this specification and other related parameters, please contact our sales personnel or technical personnel.We will provide you as much as possible, thank you for your understanding. You are welcome to visit our website or call the customer service hotline for more product information.

8 Special Statement (User to Know)

Before the purchase and use of the product, the user should comprehend the particularity and the risk of incorrect use of lithium battery products, must read the product manual carefully, and be operated by people with the ability of use and application technology of the product. The technical performance, safety performance and quality standards of this product label refer to the technical guarantee that can only be realized in accordance with the correct operation specifications when the users meet the technical requirements, environmental requirements and skill requirements. Due to the wrong method, wrong connection mode, wrong power supply adaptation and load function parameters, which are inconsistent with the marked performance parameters of the product specification, it may cause damage to the product and the person and property of the user. Product damage or other loss caused by improper use of users is not a product quality problem, and the Company shall not bear relevant responsibilities. The R & D center of the company will continue to improve and upgrade the technology, performance, operation and other aspects of the product, please timely pay close attention to the company's website or call the company's sales engineer, to obtain the latest information of the product. The product shall meet the following management standards and conditions (not limited to): the product is strictly prohibited to be used to any use violating local national laws and regulations; it is strictly prohibited to be used in areas that violate the use environment and place of lithium batteries; it is strictly prohibited to use, charge and store in key areas of fire safety, such as residential buildings and densely populated areas. This product is strictly prohibited to use, charge and store beyond the specified technical standards. It is strictly prohibited to illegally dismantle, modify and integrate the product in any way. This product shall not be stored together with any inflammable and explosive articles and any other similar products.