

LFP Battery User Manual

Thank you for purchasing our product. Please read this manual carefully before using it, and operate it strictly in accordance with the product manual. After reading it, please keep it in a safe place for future reference.

If here is any questions please contact us immediately and we will deal with it in time.

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Warning & About operation

	Before using the product, please read the product specification, instruction manual and precautions carefully to understand the use method and application scope of the product.
	If the product is used incorrectly, the circuit is connected incorrectly, the input power or the load function parameters do not match the performance parameters marked in the product specification, etc., these phenomena are improper use. The company does not assume any responsibility for damage to the product, load and surrounding connections due to improper use.
	Batteries cannot be used outdoors in rainy and snowy weather. During daily use, keep it away from heat and high voltage, and prevent children from playing with the battery, and do not hit the battery.
	Do not short-circuit the positive and negative poles of the battery, do not disassemble the battery by yourself, and do not leave the battery in a damp place to avoid danger.
	Discarded batteries should be handled safely and properly, do not put into fire or water.
	The battery pack should be stored at ambient temperature (ambient temperature: charge 0 to 45 °C, discharge -20 to 55 °C). and should be charged to a capacity of 40%~60%. Working and storage humidity: < 90% RH. To prevent the battery from being over-discharged, a full charge must be performed once the storage time exceeds 2 months.
	The battery pack should be used under specified conditions, and battery performance over one year of storage is not guaranteed.
	The battery must meet relevant regulations during transportation, such as packaging, documentation, and labeling requirements.

5120 S Pro series Battery Series & Parallel Guidance

1. Batteries cannot be used in mixed batches, only the same batch can be used in series or parallel
2. Each battery must be fully charged before the batteries are connected in series or in parallel, and the voltage difference of the battery pack should be within 100mV
3. The maximum current of the battery system used in series or parallel is 200A (5120S Pro)
4. When the batteries are used in series or in parallel, Finally, according to the order from the last slave battery to the master battery, turn on the battery in turn, please be sure to start the master battery at last (the power cables should be as thick as possible and has good conductivity, the contact surface of the connection is large, and there is no looseness, etc.)
5. When the batteries are used in series or in parallel, the battery which connected to the positive pole of the load is used as the master battery, other batteries are slaves, and the negative pole of the last slave is connected to the negative pole of the load.

PCS Recommended charging and discharging protection threshold parameters:

- 12V system PCS recommended charging voltage for series connection is $3.55V \times 4 = 14.2V$, discharge cut-off protection voltage is $2.85V \times 4 = 11.4V$
- 24V PCS recommended charging voltage for series connection is $3.55V \times 8 = 28.4V$, discharge cut-off protection voltage is $2.85V \times 8 = 22.8V$
- 48V PCS recommended charging voltage for series connection is $3.55V \times 16 = 56.8V$, discharge cut-off protection voltage is $2.85V \times 16 = 45.6V$

If the PCS can not set the calculation of voltage accuracy to the decimal place, the unified decimal place to fix the round up, such as: 11.4V according to 11V, 45.6V according to 46V adjustment

5120 S Pro product Series parameter table

Single battery rated voltage / V	25.6V
Rated capacity of a single battery / Ah	200Ah
Single battery standard charging current / A	100A
Maximum discharge current of a single battery / A	200A
Maximum discharge power of a single battery / W	5200W
The maximum number of serial connections in the system / PCS	2
Series system maximum voltage / V	51.2V

Warranty of LFP Battery

This warranty specified below applies to LFP battery to consumer through authorized reseller. The accessories and tool kits provided are not included. If the unit suffers major failure you will be provided with a replacement unit and your warranty will be transferred to the new unit. The units must only be used with controllers or equipment which is explicitly deemed compatible by an authorized distributor.

1. Purpose

The purpose of this warranty is to define the matters related to warranty policy of products.

2. Warranty Condition

2.1 Warranty Period

The products warranty period is five (5) years or 3500 cycles @80% DOD whichever comes first. The Warranty commences from:-

- (1) The date of installation or
- (2) The 270th day after date the Product was manufactured, whichever is earlier.

This warranty period covers a capacity equivalent to 1 cycle per day.

Cycle:Discharge the nominal capacity of a charged battery and charge it afterwards.

Test conditions: 0.2C Charging/Discharging, @25°C 80% DOD.

Regarding Self-discharging degradation,270 days after ex-work is ensured.

If the casing, display screen, handle, and power terminal can be proved by the user and approved by authorized distributor to be non-artificial damage, authorized distributor will provide free replacement materials within one year and be responsible for the replacement.

2.2 Limitation of Warranty scope

Under this warranty, authorized distributor is responsible for either battery replacement or battery repair.

In no event will authorized distributor be liable for any consequential, incidental or punitive damages (including without limitation of loss of profit, harm to goodwill or business reputation, or delay damages) arising from or out of the Product or its installation, use, performance or non-performance, or any defect or breach of warranty, whether based on contract, warranty, negligence, strict liability, or any other method or convention.

Subject to below, authorized distributor will at its sole option, repair or replace the Products or any part thereof, if such Products are faulty or defective in manufacture or materials.

Authorized distributor will endeavor to replace any products which require to be replaced under this warranty with products of equivalent appearance, size, and functionality on a like for like basis. Replacement of products may not be brand new but with quality and specification compliant with the product specifications. Where this is not feasible, due to technological advancements, Authorized distributor will supply another type of product of at least the same value and standard, although it may be of different size, shape, color and/or capacity.

If the products are replaced within the Warranty Period, the remaining Warranty Period will be automatically transferred to the replacement products. In respect of valid claims under this Warranty, the end-user will not be charged for reasonable costs associated with the making of a warranty claim, including warranty processing costs, the cost of replacement parts and freight.

Reimbursement for necessary and reasonably incurred costs or expenses in making valid warranty claims under this Warranty may be claimed. Documentary evidence in support of such claim will be required.

2.3 Exclusions of Warranty

Damage or impairment to the Products resulting from any of following activities are NOT covered by this Warranty:

- Installation or use with any devices not approved as compatible by authorized distributor.
- Failure to install or use the battery in the way intended, or as demonstrated in the installation manual including incorrect-installation of cables and connections.
- Failure caused by charger or inverter unit.
- Incorrect transportation, storage, installation or wiring by consumer or installer;if buyer fails to use the original packing materials provided by seller during the transportation of equipment the products damage or failure shall not fall under the warranty scope of the product.
- Mistreatment of the product including incorrect installation environment, incorrect temperatures or using the units other than in the specified manner.
- Damage caused by any impact, physical trauma to the unit such as dropping or mishandling.
- Attempts to change the functionality of the unit in any way.
- Exposure of the Product to movement or shaking following installation, or temperatures of more than 50°C or below -10°C;
- Using the battery outside of the clearly stated performance criteria for the unit.

- Water ingress, corrosive gas damage or installation in dirty environments causing particles to affect performance.
- Anyone other than those authorized by authorized distributor may not modify, disassemble, repair or replace the product;
- The unit must have clearly identifiable and authentic serial number and labels on the unit.
- Products suffered any external influences including unusual physical force, electrical stress (power failure surges, inrush current, lightning, flood, fire, accidental breakage, etc)
- Extensive superficial damage to the case demonstrating impact or mishandling or poor protection of the battery.
- Product damage and defect caused by deliberately or willful act.
- Products failure is not reported to seller or our authorized service partner within 1 week of appearance.
- The product not being operated for any period of 6 months or more.
- Unusual physical or electrical stress caused by Force majeure, such as power failure surges, inrush current, lightning, flood, fire, accidental breakage, etc.;

3. Performance Warranty

We guarantees that our LFP battery will retain more than or equal to 70% of usable capacity (80% of Nominal capacity) for 5 years or 3500 cycles @80% DOD whichever comes first. The Warranty commences from:-

- (1) The date of installation or
- (2) The 270th day after date the Product was manufactured, whichever is earlier.

Capacity measurement condition (referenced IEC: 62619)

Ambient temperature: $25 \pm 2^\circ\text{C}$

Total energy/Usable energy measured under specific conditions from us 0.2CC-CV at DC side.

If you suspect authorized distributor verification, the Product must be tested by an EU certified origination or a third-party certification testing agency accredited by authorized distributor. Meanwhile, the cost of any 3rd party evaluation service charge should be bear by yourself, unless your claim is proven to be valid, in which case authorized distributor will be responsible for the testing costs.

4. Warranty Policy

If on arrival the product is not of acceptable quality the customer is entitled to have the goods repaired or replaced.

5. About Service Products/Parts

Service product or accessory could be used as new or refurbished condition and guaranteed which performance is equal to or higher than replaced device.

If the product is no longer sold in the market, authorized distributor would replace it with different kind of product with equal or higher functions and performances, or the residual annual depreciation value of the buyer paid price within the time limit for performance guarantee.

6. Claim Policy

Whether to repair or replace the product will be determined by authorized distributor in its sole discretion.

Claims under this warranty must be made from authorized distributor whom the product was purchased. Meanwhile, you must notify your distributor of a claim by:

- Give a call or E-mail to your distributor;
- Contract with hotline or Email us directly.

within 48 hours of a faulty discovered.

The following items must be included:

- The original purchase receipt or equal valid document;
- Description of the alleged defect(s) to your distributor after service hot line or send email to us;
- The product's serial number and the initial installation date.

If you suspect that the battery is faulty, you should return the device to your distributor, and the user will be responsible for the logistics cost of returning the product. After inspection by designated experts, if the product is deemed to be faulty, we will issue a replacement or repaired equipment, and the user will be responsible for the logistics cost of returning the equipment to us (based on standard acceptable logistics costs). If the product has been tested without failure, the user should bear the cost of testing and testing in addition to the reasonable logistics cost.

7. OutOfWarranty

In the event the Product is out of warranty, we may (in its discretion) provide certain after-sales service to Original Buyer, but all the costs and expenses, such as parts, labour costs and travel expenses, shall be borne by Original Buyer. To request such after-sales service Original Buyer must provide sufficient information about any defects, to enable our Partner to determine whether such

defects are capable of repair.

8. Warranty Restriction

Unless otherwise specified herein, to the extent permitted by applicable law, the Warranty Letter and above remedies shall be exclusive and replace all other guarantees and remedies, oral or in writing, expressed or implied. To the extent permitted by applicable law, we expressly reject any and all legal or implied warranty, including but not limited to warranties of merchantability, fitness for a particular purpose and hidden or potential defects. If we cannot abandon implied warranty as prescribed by applicable law or the guarantee specified by applicable laws, all of such guarantees and warranties shall limit to implied warranty as prescribed by applicable law or the scope within applicable laws and shall be under mandatory application according to applicable law. No distributor, agent or staff of us and / or our Authorized Service Partner is authorized to make any revision, extension or addition to the quality Warranty. The legality and enforceability of remaining clauses herein shall not be affected or damaged if any of clauses herein is adjudged to be illegal or unenforceable. Unless otherwise specified herein, to the maximum range permitted by applicable law, we will not be liable for any direct, indirect, special, accidental or derivative losses caused by the purchase or use of Products and its system, including but not limited to the loss of use, loss in income, actual or expected loss in revenue (including contract revenue losses), loss of the use of money, loss of anticipated savings, loss of business, loss of opportunity, loss of goodwill, loss of reputation, personal injury or damage loss, or the indirect or derivative loss or damage (including any expense arising from the replacement of equipment and property, resumption of production, etc.) caused by any reasons.

LIABILITY FROM ANY CAUSE WHATSOEVER SHALL IN NO EVENT EXCEED THE AMOUNT OF THE PURCHASE PRICE PAID BY PRODUCT OWNER TO AUTHORIZED DISTRIBUTOR FOR SUCH PRODUCT GIVING RISE TO THE LIABILITY. EXCEPTED FROM THIS IS LIABILITY ON THE GROUNDS OF CULPABLE INJURY TO LIFE, PHYSICAL INJURY OR INJURY TO HEALTH AND THE MANDATORY LIABILITY FROM INTENT OR GROSS NEGLIGENCE.

9. Miscellaneous

This Warranty shall form part of the purchase contract in respect of the Products and shall be complied with by all parties involved.