

■ ■ Product User Manual

Please read the manual carefully before operation



Safety Precautions



Please observe the following safety rules when using batteries. Abuse of batteries can lead to overheating, bulging and fire of batteries and cause serious damage.

- * DO **NOT** disassemble or modify the battery.
- * DO **NOT** short circuit positive and negative terminals.
- * DO **NOT** puncture, drop, crush, burn, penetrate, shake, or strike the battery.
- * DO **NOT** expose to the environment, this battery is not sealed . Please keep the battery away from water, heat sources, sparks, and hazardous chemicals.
- * DO **NOT** dispose of the battery as household waste. Please use recycling channels in accordance with local, state, and federal regulations.
- * Only charge the battery with a battery charger or charge controller that is compatible with lithium iron phosphate batteries.
- * If the battery shuts off due to low state of charge, please disconnect the battery from your equipment to eliminate parasitic loads and charge the battery as soon as possible.
- * Please wear proper protective equipment when working on the battery.
- * Please use insulated tools when working on battery.
- * Please keep the battery out of the reach of young children.
- * Please use suitable handling equipment for safe transportation of the battery.

Package Contents



①

Aolithium LiFePO4 Battery



②

User Manual



③

Aolithium Catalogue

Bluetooth APP Installation



You can install Bluetooth App through two channels to view battery information:

-Scan the QR code on the battery, download and install it. (If there is no QR code on the battery, it means that the battery does not support the Bluetooth APP to view battery information);

-Search for "aolithium" in Google Play store or Apple Store, download and install it.

Typical Applications



Batteries < 500 Wh Suitable for:

Fish Finders, Flashers, Ice Fishing, Solar Lighting, Hiking , Romotics, and More.

Batteries ≥ 500 Wh Suitable for:

RVs, Golf Carts, Home Energy Storage, Solar Storage, Emergency Power, and More.

Battery Specifications

	12V-10Ah	12V-12Ah	12V-20Ah	12V-33Ah	12V-100Ah	Bluetooth 12V100Ah
Nominal Characteristics						
Nominal Voltage/V	12.8					
Nominal Capacity /Ah(25°C, 0.2C)	10	12	20	33	100	100
Energy	128 Wh	153 Wh	256 Wh	422 Wh	1280 Wh	1280 Wh

Mechanical Characteristics						
Weight	2.87 lb	3.30 lb	5.73 lb	9.92 lb	24.69 lb	
Dimensions LxWxH	5.94x3.90x3.93 in		7.36x3.03x6.69 in	7.67x5.12x6.54 in	12.00x6.85x7.40 in	
Terminal	F2		M5	M6	M8	

Electrical Characteristics						
Voltage Window	10V-14.6V					
Charge Voltage	14.6V					
Max.Continue Discharge Current	10A	12A	20A	33A	100A	
Max. Pulse Discharge Current	20A, <5S		35A, <5S	40A, <5S	200A, <3min 300A, <5S	
Max. Continue Charge Current	5A	6A	10A	16.5A	100A, @15°C <T ≤ 45°C	

Operation Conditions						
Cycle Life(+20°C 0.2C 100%DOD)	≥2000				≥4000	
Operating Temperature	Discharge: -20°C~60°C Charge: 0°C~55°C					
Storage Temperature	-20°C~35°C					

Charging and Discharging

Charging

1. Only charge the battery with a battery charger (14.6V) or charge controller that is compatible with lithium iron phosphate batteries. For charging current, please check the battery specification in this manual according to the product model.
2. DO NOT exceed the maximum charge current to the battery.
3. Fully charge the battery before first use. This depends on the output of the charger but is typically between 2-3 hours.
4. If you want to know capacity of battery, you can use coulometer (it is not include in our battery). If the battery with Bluetooth QR code , please scan the QR code and install Bluetooth APP, you can use this app to check the battery information.
5. LiFePO4 does not suffer “memory effect” so please keep the battery fully charged for daily use.
6. Do not charge the battery in temperatures below 0°C. This can cause damage to the battery cells.

Discharging

1. Make sure your load accepts 12.8V nominal voltage. DO NOT exceed the maximum discharge current to the battery.

2. Ensure the connection between the battery and the load can handle the current draw. Please consult references for the appropriate wire type.
3. DO NOT connect large loads to the battery when it is running low.
4. The battery outputs a steady voltage around 12.8V until very little capacity remain, operating voltage range 10V - 14.6V, do NOT rely on voltage as an indicator of remaining capacity.
5. If the battery shuts off due to low state of charge (SoC), please disconnect the battery from the discharge equipment to eliminate potential parasitic loads and charge the battery as soon as possible. Failure to do so may cause irreversible damage to the battery.

Series and Parallel Connection

1. Please take the information below into consideration if you must use a series or parallel configuration.

For 12V10Ah, 12V12Ah, 12V20Ah, 12V33Ah:

- Series: It is **not** recommend to connect more than 2 batteries in series .
- Parallel: It is **not** recommend to connect more than 4 batteries in parallel.

For 12V100Ah:

- Series: It is recommend to connect Max. 2 batteries in series .
- Parallel: It is recommend to connect Max. 4 batteries in parallel.
- If you need more batteries in series and parallel, please contact our customer service and we will give you professional guidance.

2. The following diagram is a reference on how to connect batteries in series and parallel using 12V100Ah battery. Before connecting , each battery must be independtly fully charged.

- Series connecting total voltage and capacity: 24V 100Ah;
- Parallel connecting total voltage and capacity: 12V 400Ah;

3. Dos

*Before making any connections, make sure to charge each battery up to 14.6V with a proper lithium charger. **ALL BATTERIES SHOULD BE AT THE SAME STATE OF CHARGE PRIOR TO CONNECTING**, otherwise you will encounter balance issues within your system.

*All cables and connections must be able to accommodate the high currents that can be delivered by the battery. Appropriate fuses and circuit breakers are highly recommended to protect downstream components from current spikes and short circuits.

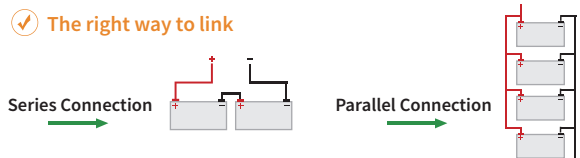
*In parallel battery banks, the cables between each battery should be of equal length to ensure that all batteries in the system can work equally together.

*To string multiple batteries in parallel, first connect the positive terminals of batteries to each other. Then do the same with the negative terminals. Finally, connect the positive and negative terminals of the first battery to the system. This type of arrangement is used to increase the overall battery capacity while keeping the voltage the same.

4. **Don'ts.**

*DO **NOT** string batteries with different chemistries, models, rated capacity in series or parallel.

*DO **NOT** connect batteries more than recommend numbers in series or parallel



Maintain and Store

Maintain:

Our Batteries require very little maintenance. If your batteries are in series and not being charged by a multi-bank charger it is recommended that you fully charge the batteries individually once every three months if the system is used frequently. This will internally balance your batteries to ensure that they will reach their expected life span and allow you to get the full power out of them with each use. If your batteries are in parallel this is not necessary, just make sure the batteries are charged to 13.6V – 14.6V for internal balance. Our BMS has a built-in passive balancing system that will take care of this for you.

Store:

We recommend bringing the batteries to a 100% state of charge. Then, disconnect the battery from any loads by removing the negative cable from one battery. On average, the batteries lose approximately 2-3% capacity per month. This is subject to increasing if stored in extreme environmental conditions. The battery stored for a long time (more than 2 months) should be kept in a dry and cool place.

Warranty and Warranty Exclusions

We're dedicated to making the most reliable batteries on the planet. But we understand that things happen, so if anything is wrong with your product, we'll work to make it right.

Batteries < 500 Wh, 3-Year Limited Warranty; Batteries ≥500 Wh, 5-Year Limited Warranty.

This warranty applies to only the original owner and is void if the product is used commercially, structurally altered, or subjected to stress beyond the physical limits of the materials used in body or components, or is damaged as a result of abnormal use. Punctures and normal wear and tear are not warranted.

NON-TRANSFERABLE

This Limited Warranty is to the original purchaser of the Product and is not transferable to any other person or entity. Please contact the place of purchase regarding any warranty claim.

WARRANTY EXCLUSIONS

The Manufacturer has no obligation under this Limited Warranty for Product subjected to the following conditions (including but not limited to):

- Damage due to improper installation; loose terminal connections, under-sized cabling, incorrect connections (series and parallel) for desired voltage and AH requirements, or reverse polarity connections.
- Environmental damage: inappropriate storage conditions as defined by the Manufacturer; exposure to extreme hot or cold temperatures, fire or freezing, or water damage.
- Damage caused by collision.
- Damage due to improper maintenance, under or over-charging the Product, dirty terminal connections.
- Product that has been opened, modified, or tampered with.
- Product that was used for applications other than which it was designed and intended for, including repeated engine starting.
- Product that was used on an over-sized inverter/charger without the use of a Manufacturer-approved current surge limiting device.
- Product that was under-sized for the application, including an Air Conditioner or similar

device having a locked rotor start up current that is not used in conjunction with a Manufacturer-approved surge-limiting device.

- Product not stored in adherence to the Manufacturer's storage guidelines, including storage of the Product at low state-of charge.

This Limited Warranty does not cover a Product that has reached its normal end of life due to usage which may occur prior to the Warranty Period. A battery can deliver only a fixed amount of energy over its life which will occur over different periods of time depending on the application. The Manufacturer reserves the right to deny a warranty claim if the Product is determined, upon inspection, to be at its normal end of life even if within the Warranty Period.

Return & Refund

Aolithium work hard to ensure a positive shopping experience with us. We're bummed if you're not 100% satisfied with the items you received, and we gladly accept returns within 30 days of receipt for most items in new condition .

If an item is new, unused, and in the original packaging, we are happy to accept a return up to 30 days from the original invoice date with no restocking fee. If the item has been installed, used, or no longer has the original packaging, we will assess a restocking fee that will be shared when the return merchandise authorization (RMA) is issued.

Please note that Aolithium will not accept returns with product modifications as it voids our warranty policy. Any modified products received will be returned to you at your expense.

All returns must include the following:

Copy of receipt or invoice

Video or photo of the faulty product (if applicable)

Mailing address

Contact telephone number

Return Shipping Method

1. Please send us email to get your RMA number.
2. We will email you with your RMA number as soon as we can. After receiving return instructions from us, please package up the item(s) to be returned with the original packing.
3. Drop off your package at the local post office.
4. Most returns are processed within 5 business days after we receive your package. An email will be sent when your return is processed.

If you have any questions about our battery, please feel free to let us know. Email :

support@aolithium.com .

Shipping

We've partnered with FedEx to offer free ground shipping on any order that is delivered to the continental U.S. We ask for direct signature on orders with FedEx ground to ensure your product has safely reached your final destination.

Shipping to Alaska and Hawaii is available, and shipping quotes can be provided upon request.

International shipments are available via a US-based freight forwarder, but all additional charges are the responsibility of the customer, including duties, taxes, freight, and any potential warranty return.