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- › A AOKLY /
- › AOKLY ALFP-1206 12V 6Ah LiFePO4 Deep Cycle Battery User Manual

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AOKLY ALFP-1206 12V 6Ah LiFePO4 Deep Cycle Battery User Manual

Model: ALFP-1206 | Brand: A AOKLY

1. INTRODUCTION

This manual provides essential information for the safe and efficient use of your AOKLY ALFP-1206 12V 6Ah LiFePO4 Deep Cycle Battery. Please read this manual thoroughly before installation and operation to ensure optimal performance and longevity of your battery.



Image 1.1: Two AOKLY ALFP-1206 12V 6Ah LiFePO4 Deep Cycle Batteries.

2. PRODUCT FEATURES

- **Extended Cycle Life:** Offers over 4000 deep cycles, significantly outperforming traditional lead-acid batteries.
- **Compact and Lightweight Design:** Each battery measures approximately 5.94 x 2.56 x 3.74 inches (15 x 6.5 x 9.5 cm) and weighs only 1.84 lbs (0.8 kg), making it 1/3 lighter than comparable lead-acid batteries while offering 20% more capacity.
- **Integrated BMS System:** Features a smart Battery Management System (BMS) for protection against overcharge, over-discharge, overcurrent, and overheating, ensuring device safety and reliability.
- **High-Efficiency Power Supply:** Provides a 76.8Wh capacity for stable and uninterrupted power delivery.
- **Environmentally Friendly:** Utilizes LiFePO4 technology, which is a safer and more sustainable battery chemistry.



Image 2.1: Internal components highlighting A+++ grade battery cells and the 6A BMS for comprehensive protection.

EXPANDABLE CAPACITY

Modules in parallel



Up to 4 pieces

Battery pack voltage :
12.8V
Discharge current :
24AH
power : **307WH**

Modules cannot be connected in series



Attention

12.8V 6AH can be
connected in parallel,
not in series.

Image 2.2: Performance comparison between AOKLY LiFePO4 and traditional lead-acid batteries.

3. SPECIFICATIONS

Attribute	Value
Model Number	ALFP-1206
Battery Type	LiFePO4 (Lithium Iron Phosphate)
Nominal Voltage	12.8V
Nominal Capacity	6Ah
Energy	76.8Wh
Dimensions (L x W x H)	5.94 x 2.56 x 3.74 inches (15 x 6.5 x 9.5 cm)
Weight (per battery)	1.84 lbs (0.8 kg)
Cycle Life	4000+ cycles
Self-Discharge Rate	Approximately 3% per month
Terminal Type	F2
Manufacturer	Guangdong Aokly Group Co., Ltd

Specification

Dimensions: 5.94*2.56*3.74in

Weight: 2.2lbs(1.0kg) Terminal Type: F2



Image 3.1: Detailed dimensions and weight of the AOKLY ALFP-1206 battery.

4. SAFETY GUIDELINES

WARNING: Failure to follow these safety guidelines can result in fire, electric shock, serious injury, or property damage.

- Do not connect batteries in series. These batteries are designed for parallel connection only to increase capacity, not voltage. Connecting them in series can damage the batteries and connected equipment, and poses a safety risk.
- Use only chargers specifically designed for LiFePO4 batteries. Using chargers for lead-acid or other battery types can cause damage or fire.
- Do not short-circuit the battery terminals.
- Do not expose the battery to fire, extreme heat, or direct sunlight for prolonged periods.
- Do not immerse the battery in water or other liquids.
- Do not disassemble, puncture, or modify the battery.

- Keep batteries out of reach of children.
- If the battery emits an unusual odor, heat, or changes shape, discontinue use immediately and contact support.



Image 4.1: Important information regarding parallel connection for capacity expansion and the prohibition of series connection.

5. INSTALLATION AND CONNECTION

5.1 Initial Charge

It is recommended to fully charge the battery before its first use. Use a compatible LiFePO4 charger.

5.2 Connecting the Battery

1. Ensure all equipment is turned off before connecting the battery.
2. Connect the positive (+) terminal of the battery to the positive (+) terminal of your device.
3. Connect the negative (-) terminal of the battery to the negative (-) terminal of your device.
4. Ensure all connections are secure and tight to prevent arcing or poor contact.

5.3 Parallel Connection (for increased capacity)

If you need more capacity, you can connect multiple ALFP-1206 batteries in parallel. **Do not connect these batteries in series.**

1. Ensure all batteries have a similar state of charge before connecting them in parallel.
2. Connect all positive (+) terminals together.
3. Connect all negative (-) terminals together.
4. Use appropriate gauge wiring for the expected current draw.

6. OPERATING INSTRUCTIONS

6.1 Charging

- Use a dedicated LiFePO4 charger with a recommended charge current of 3.0A (Max 6.0A) and a charge voltage of 14.4V.
- Avoid overcharging or deep discharging the battery, although the integrated BMS provides protection against

these conditions.

6.2 Discharge

- The battery provides a stable 12.8V output.
- Monitor the battery voltage during discharge. While the BMS protects against over-discharge, it is good practice to recharge before the battery is completely depleted to maximize cycle life.



Image 6.1: Operational parameters for the AOKLY ALFP-1206 battery.

7. MAINTENANCE AND STORAGE

7.1 General Maintenance

- Keep battery terminals clean and free from corrosion.
- Regularly inspect the battery for any physical damage.

7.2 Storage

- Store the battery in a cool, dry place away from direct sunlight and extreme temperatures.
- For long-term storage, charge the battery to approximately 50-70% of its capacity.
- Recharge the battery every 3-6 months during long-term storage to prevent deep discharge.

8. TROUBLESHOOTING

- **Battery not charging:** Ensure the charger is compatible with LiFePO4 batteries and properly connected. Check for any damage to the charger or battery terminals.
- **Battery not providing power:** Check all connections for tightness. Ensure the battery is sufficiently charged. The BMS may have activated a protection mode (e.g., over-discharge); try recharging the battery.
- **Reduced runtime:** This may indicate the battery is nearing the end of its life cycle or is not fully charged. Ensure proper charging procedures are followed.

If you encounter issues not covered here, please refer to the Warranty and Support section for assistance.

9. APPLICATIONS

The AOKLY ALFP-1206 LiFePO4 battery is suitable for a wide range of 12V applications requiring reliable and long-lasting power. Common applications include:

- Uninterruptible Power Supplies (UPS)
- Fish Finders
- Kids' Electric Ride-on Cars/Jeeps
- Solar Lighting Systems
- Security Cameras and Surveillance Systems
- Camping Lights and Portable Power
- Small Marine Applications

Wide Application



Image 9.1: Examples of wide applications for the AOKLY ALFP-1206 battery.

Lithium Iron (LiFePO₄) Battery
ALFP-1206(12.8V 6Ah)

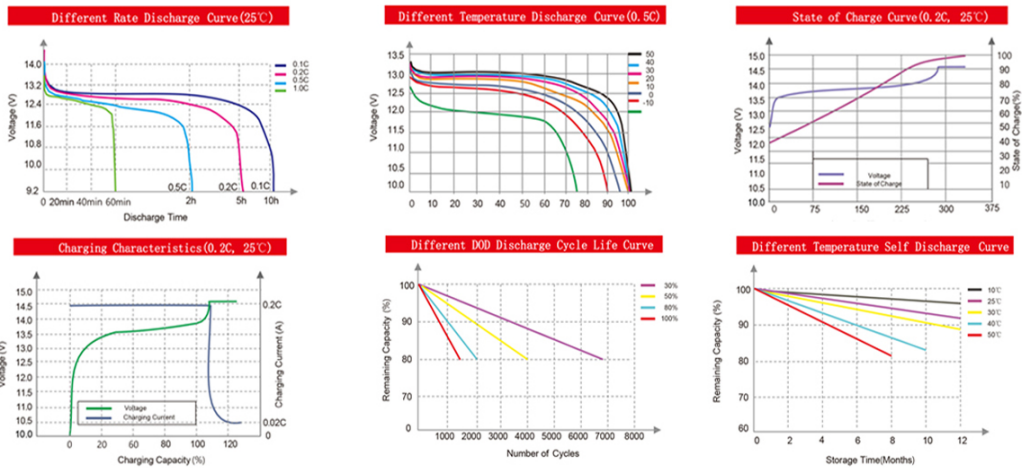


Image 9.2: Additional examples of suitable applications for the AOKLY ALFP-1206 battery.

10. WARRANTY AND SUPPORT

10.1 Warranty Information

AOKLY provides an extended 12-month warranty for the ALFP-1206 battery, covering manufacturing defects and ensuring product quality. Please retain your proof of purchase for warranty claims.

10.2 Customer Support

For technical assistance, warranty claims, or any questions regarding your AOKLY ALFP-1206 battery, please contact the manufacturer or your point of purchase. The manufacturer is Guangdong Aokly Group Co., Ltd.