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Zatka-12v-18ah

EPLUS Zatka 12V 18Ah Lithium LiFePO4 Battery User Manual

Model: Zatka-12v-18ah

1. Introduction

The EPLUS SHAKTI 12V 18Ah lithium ion rechargeable battery is a next-generation power solution designed for various energy needs. This high-quality lithium battery incorporates an advanced BMS (Battery Management System) for safe and reliable operation. It is suitable for powering heavy-duty spray pumps, solar inverter equipment, toys, LED lamps, solar lanterns, and other compatible devices. Its compact and durable design supports both indoor and outdoor use, offering long-term value and convenience.



Figure 1: EPLUS Zatka 12V 18Ah Lithium LiFePO4 Battery

2. Safety Instructions

Please read and follow all safety instructions carefully to prevent injury or damage to the battery and connected devices.

- **Do Not Disassemble:** Never attempt to open, disassemble, or modify the battery. This can lead to severe damage, fire, or explosion.

- **Avoid Short Circuits:** Do not short circuit the positive (+) and negative (-) terminals with any metal objects.
- **Temperature Exposure:** Do not expose the battery to direct sunlight, extreme heat, or fire. Do not store or use the battery in temperatures exceeding its specified operating range.
- **Water Exposure:** Keep the battery away from water and other liquids. Do not immerse the battery in water.
- **Charging:** Use only a charger specifically recommended for 12V LiFePO4 batteries. Using an incompatible charger can cause damage or fire.
- **Load Limits:** This battery is designed for low to medium load usage. The maximum recommended load is up to 10A only.
- **Incompatible Applications:** This battery is **NOT** suitable for inverters, UPS systems, electric vehicles, or other heavy load devices.
- **BMS Protection:** The built-in Battery Management System (BMS) protects against overcharging, over-discharging, short circuits, and overheating. However, always adhere to usage guidelines.



Figure 2: Battery top view showing caution label. Always read and follow warnings.

3. Product Features

The EPLUS Zatka 12V 18Ah LiFePO4 Battery offers the following key features:

- **Advanced BMS Protection:** Integrated Battery Management System safeguards against overcharging, over-discharging, short circuits, and overheating, extending battery life.
- **High Performance:** Utilizes high-quality lithium-ion cells for superior performance, longer lifespan, and lighter weight compared to traditional lead-acid batteries.
- **Versatile Applications:** Compatible with agriculture spray pumps (single and double motor), kids ride-on toys, emergency lights, CCTV backup, solar lanterns, LED lamps, and small DC appliances.
- **Durable Construction:** Compact and portable design with secure terminals for easy installation and reliable power delivery.
- **Rechargeable:** Designed for multiple charge cycles, providing long-term value.

4. Specifications

Specification	Value
Model Name	Zatka-12v-18ah
Voltage	12 Volts
Battery Capacity	18 Ah (18000 mAh)
Battery Cell Composition	Lithium Ion (LiFePO4)
Maximum Recommended Load	10 Amps
Reusability	Rechargeable
Battery Weight	1800 Grams
Item Dimensions (L x W x H)	15 x 10 x 10 Centimeters
Manufacturer	Jain G Powertech
Country of Origin	India

5. Setup and Installation

1. **Inspect the Battery:** Before installation, visually inspect the battery for any signs of damage. Do not use if damaged.
2. **Prepare Connections:** Ensure the device you are connecting the battery to is turned off. Identify the positive (+) and negative (-) terminals on both the battery and your device.
3. **Connect Terminals:** Connect the positive (+) terminal of the battery to the positive (+) terminal of your device. Similarly, connect the negative (-) terminal of the battery to the negative (-) terminal of your device. Ensure connections are secure and tight to prevent arcing or poor performance.
4. **Verify Polarity:** Double-check that the polarity is correct before powering on your device. Incorrect polarity can damage the battery and the connected device.

6. Operating Instructions

This battery is designed for specific applications. Adhering to these guidelines ensures optimal performance and longevity.

- **Compatible Devices:** Use this battery with devices such as agriculture spray pumps (single/double motor), kids ride-on toys, emergency lights, CCTV backup systems, solar lanterns, LED lamps, and other small DC appliances.
- **Load Limit:** Do not exceed a continuous load of 10 Amps. Overloading the battery can trigger BMS protection or cause damage.
- **Incompatible Uses:** Do NOT use this battery for inverters, UPS systems, electric vehicles, or any application requiring high current draw or sustained heavy loads.



Figure 3: Visual guide for compatible and incompatible applications.

7. Charging Instructions

Proper charging is crucial for the lifespan and performance of your LiFePO4 battery.

1. **Use Recommended Charger:** Always use a charger specifically designed for 12V LiFePO4 batteries. Using a lead-acid charger or an incompatible charger can damage the battery.
2. **Connect Charger:** Connect the charger's positive (+) terminal to the battery's positive (+) terminal and the charger's negative (-) terminal to the battery's negative (-) terminal.
3. **Monitor Charging:** Observe the charger's indicator lights to determine the charging status. Disconnect the charger once the battery is fully charged.
4. **Avoid Overcharging:** While the BMS provides overcharge protection, it is good practice to disconnect the charger once the battery is full.

Understanding Battery State of Charge (SOC)

The following table provides a general guide for understanding your battery's health based on its voltage (no load connected).

$LiFePO_4$ Battery

State of Charge (SOC) vs Voltage (No Load)

For 12.8V (4S) Lithium Iron Phosphate Battery

Understand Your Battery Health at a Glance

Voltage (V)	State of Charge (%)	Battery Status
14.6V–14.4V	100%	Fully Charged
13.6V–13.4V	99%–90%	Excellent
13.3V–13.2V	90%–70%	Good
13.1V–13.0V	70%–50%	Medium
12.9V–12.8V	50%–30%	Low
12.7V–12.5V	30%–10%	Very Low
≤ 12.0V	⚠0%	⚠ Empty *(Cutoff Zone)*

Important Notes

- Voltage must be measured **without load** (no device connected)
- $LiFePO_4$ batteries have a **flat voltage curve** > voltage changes slowly
- Do **NOT** rely only on voltage for precise SOC in critical applications
- Built-in **BMS** may cut off near **10V–11V** (protection mode)



Common Mistake

- Many devices (UPS, inverters) are designed for **lead**-acid bateries
- They may **cutf early** (~11V~11.5V) * causing **under-utulzation** of lithium battery capacity

Why $LiFePO_4$ is Better?

- ✓ Longer life (2000+ cycles)
- ✓ Stable voltage output
- ✓ Lightweight & safer

Figure 4: LiFePO4 Battery State of Charge (SOC) vs. Voltage (No Load)

Important Notes:

- Voltage must be measured **without load** (no device connected).
- LiFePO4 batteries have a flat voltage curve; voltage changes slowly.
- Do NOT rely only on voltage for precise SOC in critical applications.
- Built-in BMS may cut off near 10V-11V (protection mode).

8. Maintenance

- **Terminal Care:** Keep battery terminals clean and free from corrosion. Use a dry cloth to wipe them if necessary.
- **Storage:** If storing the battery for an extended period, ensure it is charged to about 50-70% capacity. Store in a cool, dry place away from direct sunlight and extreme temperatures.
- **Regular Use:** For optimal performance, avoid leaving the battery fully discharged for long periods.

9. Troubleshooting

If you encounter issues with your battery, consider the following common troubleshooting steps:

- **Battery Not Powering Device:**
  - Check all connections to ensure they are secure and correctly polarized.
  - Verify the battery has sufficient charge using the voltage chart (Figure 4).
  - Ensure the device's power requirements do not exceed the battery's 10A maximum load.
- **Battery Not Charging:**
  - Confirm you are using a compatible 12V LiFePO4 charger.
  - Check the charger's connections to the battery and the power outlet.
  - Inspect the charger for any damage or malfunction.
- **Short Runtime:**
  - Ensure the battery is fully charged before use.
  - Verify the load of your device. High loads will deplete the battery faster.
  - Battery capacity can degrade over many cycles; consider battery age.

If problems persist after troubleshooting, please contact customer support.

10. Warranty and Support

Warranty Information

This EPLUS Zatka 12V 18Ah Lithium LiFePO4 Battery comes with a **6-month warranty** from the date of purchase. The warranty covers manufacturing defects under normal use. It does not cover damage caused by misuse, improper installation, unauthorized modification, or exposure to extreme conditions.

Customer Support

For technical assistance, warranty claims, or any other inquiries, please contact the manufacturer:

Manufacturer: Jain G Powertech

Address: Indore, India

Contact Number: +91 7999216874

Email: JainGPowertech@gmail.com

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