

Instructions for Use

Thank you for purchasing the **ToBattery LFP1208AP LiFePO4 Battery!**

Introduction

LiFePO4 chemistry is an evolution in rechargeable battery technology. It is safer, non-toxic, higher performing, and longer lasting compared to lead-acid batteries. TOBATTERY provides the highest quality LiFePO4 battery from our ISO9001 certified production facility that guarantees maximum performance. Please carefully review the information below as they are vital to the safety and performance of the battery.

Typical Applications

--- Home security alarm, Electronics, Ham Radio, LED Lights, E-Bikes, E-Scooters, etc.

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Specifications (summary)

Dimensions (LxWxH)	6x2.5x3.75 in
Weight	2.5 lbs.
Battery nominal voltage and capacity	12V, 8Ah
Charging Voltage	14.6V
Charging Current	<4A
Open Circuit Voltage Range	11-14VDC
Maximum Continuous Discharge Current	15A
Maximum Peak Pulse Current	20A (30 sec)
Operating Temperature	- 10°C to 60°C
Protection: PCM/BMS	Overcharge, overdischarge, overcurrent, balancing
Terminal / connector type	FastON

For the full specification with update, please visit www.Tobattery.com

Caution

- Do not disassemble.
- Do not short circuit positive and negative terminals.
- Recommend charge using LiFePO4 compatible chargers.
- Do not submerge in water, as the seal on the battery is not intended to be waterproof
- Do not throw in fire or otherwise dispose improperly. Recycle the battery at a facility that accepts lithium battery

Charging

1. Only use **14.5V, LiFePO4 compatible** chargers to charge the battery. The recommended charging current is **1A-4A**.
2. It be charged through the charge & discharge terminal.
3. Fully charge the battery **before first use**. This depends on the output of the charger but is typically between 3-10 hours.
4. If your battery came with a Tobattery charger, the red LED light means the battery is under constant current (CC) charging and green LED means constant voltage (CV) charging. Always charge for at least 5 hours to ensure full capacity.
5. LiFePO4 does not suffer "memory effect" so please keep the battery fully charged for daily use. Cell balancing only occurs when the battery is fully charged (top-end balancing).
6. **Do not** charge the battery in temperatures below 0°C. This can cause damage to the cells.

Discharging

1. Make sure your load accepts 12V nominal voltage.
2. Ensure the connection between the battery and the load can handle the current draw. Please consult references for the appropriate wire type.
3. The maximum continuous discharge current is **15A**.
4. The battery outputs a steady voltage around 12.8V until very little capacity remain, **do NOT** rely on voltage as an indicator of remaining capacity.

Series and Parallel Connection

We do not recommend using our LiFePO4 batteries in series or parallel connection if a single battery of equivalent size can be used instead. The PCM/BMS built into each battery is intended only for operation with a single battery and we do not guarantee the operability of multiple batteries in series or parallel configuration. Please take the information below into consideration if you must use a series or parallel configuration.

Series: **The battery design can be operated in series configuration.** A maximum of 2 batteries of the same specifications can be connected in series, and the total operating voltage must not exceed 24V.

Parallel: **Only connect batteries with equal state of charge in parallel.** Also, measure the internal resistance of each battery and only use batteries with closely matched internal resistance. It is highly recommended that resistors be used to achieve equal internal resistance among multiple batteries. It is also highly recommended to add fuse(s) to the circuit for safety reasons.

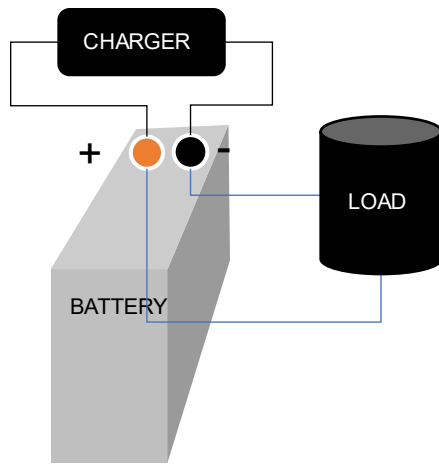
Please keep in mind a series or parallel connection can fail with a number of consequences, from early cut off to possibly a fire. Always exercise caution and observe closely at all times. The customer assumes all responsibility in the event of a series or parallel connection or connections.

Maintenance and Storage

The battery requires no manual maintenance due to the included PCM/BMS. However, please follow the below guideline for best life cycle.

1. Even though the LiFePO4 chemistry is relatively stable, protect the battery from shocks and drops to prevent internal short circuit.
2. For long term storage, fully charge the battery and then discharge to 50% of the full capacity. **Do NOT** leave the battery unattended for more than 6 months.
3. For the best life cycle, avoid using the battery in extreme temperatures and avoid highly variable pulsing loads.

Typical wiring diagram



Note: The charging terminal of this battery is internally connected to the discharging terminal

Troubleshooting

Since the battery can be used in many different configurations and equipment, we cannot provide a general troubleshooting guide. Please contact us so a technician can provide you with individualized support. Because the battery is not maintainable, you cannot disassemble the battery at any time. Once the battery swells and smokes, stop using it immediately and move it to a safe place to prevent possible fires and explosions that could cause injury or death and property loss.

Warranty

Please see the included warranty pamphlet for warranty information. You can also check www.tobattery.com for more information.

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