

## Timeusb 12V 100Ah Pro

# Timeusb 12V 100Ah Pro LiFePO4 Battery User Manual

Model: 12V 100Ah Pro

## 1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your Timeusb 12V 100Ah Pro LiFePO4 Battery. Please read this manual thoroughly before installation and use, and retain it for future reference.

The Timeusb 12V 100Ah Pro LiFePO4 Battery is a high-performance, deep-cycle lithium iron phosphate battery designed for various applications including RVs, trolling motors, solar systems, and off-grid power solutions. It features automotive-grade battery cells, a compact Group 31 design, and an advanced Battery Management System (BMS) for enhanced safety and longevity.

## 2. SAFETY INFORMATION

Always observe the following safety precautions to prevent injury or damage to the battery and connected equipment.

- Do not short-circuit the battery terminals.
- Do not immerse the battery in water or expose it to excessive moisture.
- Do not puncture, drop, crush, burn, penetrate, shake, or strike the battery.
- Do not disassemble or modify the battery. Unauthorized modifications can lead to battery failure or other potential damage.
- Ensure proper ventilation when charging or discharging the battery.
- Use only compatible chargers designed for LiFePO4 batteries.
- Keep the battery away from heat sources, open flames, and flammable materials.
- Wear appropriate personal protective equipment (PPE) such as gloves and eye protection when handling the battery.
- This battery is **NOT** suitable for starter batteries or golf cart batteries.



Figure 2.1: Do not use for engine starting.

### 3. WHAT'S IN THE BOX

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Upon unpacking, please verify that all items listed below are included and in good condition.

- Timeusb 12V 100Ah Pro LiFePO4 Battery
- 2 x M8 (16MM) Terminal Bolts
- 2 x Insulating Caps for Bolts
- User manual (this document)
- Installation guide

### 4. PRODUCT FEATURES

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The Timeusb 12V 100Ah Pro LiFePO4 Battery offers several advanced features for reliable power delivery:

- **Automotive Grade Battery Cells:** Utilizes Grade A battery cells, providing an ideal battery cell structure for 4000-15000 cycles and a lifespan of up to 10 years. The optimized internal structure helps prevent internal damage and facilitates handling.
- **Lightweight & Compact Design:** Weighing 2.6 times lighter than traditional lead-acid batteries, this Group 31 compact design reduces case size by 1/3, offering 55Wh/lb with increased energy density. This makes it highly adaptable for various system installations.
- **High Usable Energy Output:** Provides 1280Wh of usable energy, doubling the efficiency of 12V 100Ah lead-acid batteries. Up to 16 units can be connected in a 4P4S configuration for a massive 20.48kWh energy storage, suitable for RVs, large-scale household energy storage, trolling motors, and solar systems.
- **Advanced BMS Protection:** Equipped with a built-in hardware-version 100A Battery Management System (BMS) that offers five types of protection: overcharging, over-discharging, overcurrent, short circuit, and high-temperature protection (above 70°C/158°F).



Figure 4.1: Timeusb 12.8V 100Ah Pro LiFePO4 Battery.



Figure 4.2: Built-in 100A BMS with 5 intelligent protections.

## 5. SETUP AND INSTALLATION

Follow these steps for proper setup and installation of your battery.

### 5.1 Initial Charge

It is recommended to fully charge the battery before its first use to ensure optimal performance and activate the BMS. Use a compatible LiFePO4 battery charger (14.6V recommended).



Figure 5.1: Fast charging with a 40A charger (approx. 2.5 hours).

## 5.2 Connecting Batteries (Series/Parallel)

The Timeusb 12V 100Ah Pro battery supports both series and parallel connections for increased voltage or capacity. Ensure all batteries are of the same model and fully charged before connecting.

- **Parallel Connection:** Connect positive terminals together and negative terminals together to increase total capacity (Ah) while maintaining the same voltage (12V).
- **Series Connection:** Connect the positive terminal of one battery to the negative terminal of the next battery to increase total voltage (e.g., two 12V batteries in series for 24V).
- Maximum 16 batteries can be connected in a 4P4S configuration for up to 51.2V and 20.48kWh.



Figure 5.2: Example of parallel connection.



Figure 5.3: Power expansion with multiple batteries in a 4P4S connection.

## 6. OPERATING INSTRUCTIONS

This section covers general operating guidelines for your Timeusb LiFePO4 battery.

### 6.1 Charging

Use a dedicated LiFePO4 charger with a recommended charging voltage of 14.6V. The battery can be charged using various sources:

- **LiFePO4 Battery Charger:** Provides optimal charging parameters.

- **Solar Panel System:** Connect via an MPPT solar charge controller.
- **Generator:** Use with a compatible AC-DC charger.
- **Alternator:** Use with a DC-DC charger.



Figure 6.1: Multiple charging options for the battery.

## 6.2 Discharging

The battery is designed for deep-cycle applications. The BMS will protect the battery from over-discharge. Ensure your connected devices do not exceed the maximum continuous discharge current of 100A.

## 6.3 Typical Applications

This battery is ideal for a wide range of applications:

- RV Power
- Trolling Motors (recommended for 30-70 lbs thrust)
- Camper Power
- Solar Panel Systems
- Off-grid Systems
- Home Backup Power



Figure 6.2: Diverse usage scenarios for the battery.

## 6.4 Trolling Motor Runtime Calculation

The following table provides estimated running times for various trolling motor thrust levels based on a 12V 100Ah battery under high-speed conditions. Actual runtime may vary.

Thrust	Max AMP Draw	Circuit Breaker	Battery Capacity Need	Running Time in High-speed
30 lb	30	30 Amp @ 12 VDC	12V100Ah	3.4 hrs
40 lb, 45 lb	42	50 Amp @ 12 VDC	12V100Ah	2.42 hrs
50 lb, 55 lb	50	60 Amp @ 12 VDC	12V100Ah	1.70 hrs
70 lb	42	50 Amp @ 24 VDC	12V100Ah*2 (in series)	2.04 hrs
80 lb	56	60 Amp @ 24 VDC	12V100Ah*2 (in series)	1.7 hrs
112 lb	52	60 Amp @ 36 VDC	12V100Ah*3 (in series)	1.7 hrs

*Note: The run times calculated in the table above are based on high-speed conditions. In practice, the motor does not run at high speeds all the time, and typically a 100Ah battery can run for up to 6-7 hours.*

## 7. MAINTENANCE

Proper maintenance ensures the longevity and performance of your LiFePO4 battery.

- **Regular Inspection:** Periodically check the battery terminals for corrosion or loose connections. Clean terminals if necessary.

- **Storage:** If storing the battery for an extended period, ensure it is charged to approximately 50% of its capacity. Store in a cool, dry place between 14°F to 122°F (-10°C to 50°C).
- **Charging Frequency:** For optimal lifespan, avoid leaving the battery fully discharged for prolonged periods. Recharge as soon as possible after discharge.
- **Temperature:** Operate and store the battery within the specified temperature ranges to prevent damage and ensure safety.

## 8. TROUBLESHOOTING

This section addresses common issues you might encounter with your battery.

Problem	Possible Cause	Solution
Battery not charging	Charger not connected properly; Charger incompatible; BMS protection activated (over-discharge, over-voltage, high/low temperature)	Check all connections; Ensure charger is for LiFePO4 batteries; Allow battery to return to safe operating temperature; If deeply discharged, a specialized charger might be needed to wake up the BMS.
Battery not providing power	Battery discharged; BMS protection activated (over-discharge, overcurrent, short circuit); Loose connections	Recharge the battery; Check for short circuits or excessive load; Tighten terminal connections; Reduce load if overcurrent protection is triggered.
Reduced runtime	Battery not fully charged; High power draw; Aging battery	Ensure full charge before use; Reduce power consumption of connected devices; Consider battery replacement if significantly aged.

If you encounter issues not listed here or require further assistance, please contact Timeusb customer support.

## 9. SPECIFICATIONS

Detailed technical specifications for the Timeusb 12V 100Ah Pro LiFePO4 Battery:

Parameter	Value
Nominal Voltage	12.8V
Rated Capacity	100Ah
Rated Energy	1280Wh
Charging Voltage	14.4 ± 0.2V
Max. Continuous Charge/Discharge Current	100A
Max. Continuous Output Power	1280W
Number of Cells	4
Terminal Type	M8
Charge Temperature	32°F ~ 122°F (0°C ~ 50°C)
Storage Temperature	14°F ~ 122°F (-10°C ~ 50°C)
Discharge Temperature	-4°F ~ 140°F (-20°C ~ 60°C)
Dimensions (L x W x H)	13.00" x 6.77" x 8.50"
Weight	22 lbs (approx. 10 kg)

Parameter	Value
Lifespan	4000-15000 cycles (depending on DoD)
Safety Certifications	FCC, UL1973, CE, RoHs, PSE



Figure 9.1: Battery dimensions and weight.

## 10. WARRANTY AND SUPPORT

Timeusb is committed to providing high-quality products and excellent customer service.

### 10.1 Warranty Information

The Timeusb 12V 100Ah Pro LiFePO4 battery comes with a **5-year warranty**. This warranty covers defects in materials and workmanship under normal use and service conditions. Please retain your proof of purchase for warranty claims.

### 10.2 Customer Support

For technical assistance, troubleshooting, or warranty inquiries, please contact the Timeusb customer service team. They provide responsive and professional support to offer targeted battery solutions.

Visit the official Timeusb store for more information and support: [Timeusb Official Store](#)