rebelcell
PRO

12V125 PRO
LiFePO4 Battery

Powering
the outdoors

USER MANUAL

1. INTRODUCTION

Overview of the 12V125 PRO LiFePO4 Battery

The Rebelcell 12V125 PRO is a powerful, high-performance LiFePO4 battery designed as an all-in-one power solution for demanding marine and outdoor applications. It serves simultaneously as a starter battery for petrol outboard engines and as a deep-cycle power source for depth sounders, fish finders, chartplotters, trolling motors, and other onboard electronics. As a direct drop-in replacement for a conventional 12V lead-acid start/service battery, it can also be recharged via your outboard engine's alternator.

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The 12V125 PRO combines 125Ah (1.6 kWh) of capacity with an impressive starter pulse current of up to 1200A at 15°C, making it suitable for outboard engines up to 350 HP. Compatible with Yamaha, Suzuki, Honda, and all other outboard brands with an alternator. Meets Mercury Marine® 2022 requirements for lithium starter batteries.

Compared to previous PRO Series models, the 12V125 PRO introduces several important improvements: an always-on Battery Management System (BMS) that keeps the battery active at all times, ensuring safety-critical consumers such as bilge pumps remain operational even when the boat has not been used for weeks; an emergency start button that allows the engine to be restarted even after a full discharge, a breather valve for added protection in marine environments, and full compatibility with the updated Rebelcell BT App. The Frost Control function enables safe charging at temperatures as low as -20°C, making the 12V125 PRO a reliable all-season solution.

2. QUICK START

1. UNBOXING

- Ensure the package contains the following: 12V125 PRO LiFePO4 battery and user manual.

2. INSTALLING AND CONNECTING THE REBELCELL BT APP

- Review and follow the instructions in the Rebelcell BT App section to install the app on your smartphone and connect your battery.

3. INSTALLATION OF THE BATTERY

- Your battery is equipped with screw battery terminals in size M8. Remove the protective caps on the battery terminals before use and fully charge the battery with a suitable battery charger. The battery is not fully charged yet due to transport and storage requirements.
- Connect your outboard / depth sounder / trolling motor cables (with M8 tongue connectors) to the battery terminals and securely tighten the bolts with a socket wrench. Improperly fixed terminals can be dangerous and generate heat, which can lead to irreversible damage to your equipment or battery.

  If you use your battery to power equipment such as depth sounders or a trolling motor, always use a suitable fuse between the battery and your equipment to protect both.

3. KEY FEATURES

1. **High-Quality LiFePO4 Cells:** Longer cycle life, stable performance, and enhanced safety compared to conventional lead-acid or Li-NMC alternatives. Up to 7500 charge cycles at 80% depth of discharge.
2. **All-in-One Design:** Serves simultaneously as a starter battery for petrol outboard engines up to 350 HP and as a deep-cycle power source for fish finders, chartplotters, and trolling motors. Compatible with Yamaha, Suzuki, Honda, and all other outboard brands with an alternator. Meets Mercury Marine® 2022 requirements for lithium starter batteries.
3. **Always-On BMS:** The Battery Management System keeps the battery continuously active and available, ensuring safety-critical onboard systems such as bilge pumps remain powered even when the boat has not been used for an extended period.
4. **Emergency Start Button:** A dedicated emergency start button allows the engine to be restarted even after the battery has been fully discharged.
5. **Frost Control:** The BMS automatically preheats the battery cells when the temperature drops below 0°C and a charge current from the alternator or a charger is available, enabling safe charging down to -20°C. This makes the 12V125 PRO ideal for use in cold-weather conditions throughout the year.
6. **Breather valve:** this is a safety feature which allows the battery to 'breathe' with changes in temperature, preventing overpressure and condensation within the battery. It is located on the side of the lid right below the carrying strap.
7. **IP66 Waterproof:** Fully protected against dust and powerful water jets, making the battery suitable for use in open boats, fishing, and other marine and outdoor applications.
8. **Rebelcell BT App:** Fully compatible with the updated Rebelcell BT App for real-time monitoring of battery status, charge level, current draw, estimated runtime, temperature, and cycle life.
9. **Modular Use:** Suitable for parallel connection (up to 4P) to increase capacity, or series connection (2S) to increase voltage.
10. **Advanced Protection:** Integrated BMS with comprehensive safety features including deep discharge protection, overcharge protection, short circuit protection, high temperature protection, low temperature protection, reverse polarity protection, and cell balancing.
11. **Warranty:** 5-year warranty.

4. SAFETY PRECAUTIONS AND WARNINGS

Your 12V125 PRO battery has been engineered for safe and reliable operation over a long service life. To ensure optimal performance and safety, carefully review and follow these safety precautions. Failure to comply may void the warranty, cause malfunctions, or result in damage to the battery.

4.1 General Usage Warnings

- Do not use your battery as a starter battery for diesel engines or with outboard engines equipped with a charging coil (stator) instead of an alternator. Using the battery with incompatible engines or charging systems may damage the battery and void the warranty. Contact Rebelcell for advice if you are unsure about compatibility.
- When used outside the permitted standards, for example at excessive load, your battery will automatically turn off. No power will be available until the battery can operate within these standards again.
- Avoid damaging the battery by dropping it. In case of external damage, stop using the battery immediately and contact Rebelcell for inspection before further use.
- Place the battery in the coolest environment possible. Do not expose the battery to sources of direct heat such as open fire, heating systems, or direct sunlight for extended periods of time. Long-term use in high temperatures above 40°C has a negative influence on service life. At a temperature of 55°C, the battery will automatically shut itself down until a normal operating temperature is reached.
- The battery is classified as dangerous goods for transportation purposes (ADR Class 9, UN3480). Review the Material Safety Data Sheet (MSDS) on the Rebelcell website for more information.
- Your battery may only be opened by Rebelcell for repairs. If you open the battery yourself, the warranty will be void.

4.2 Connection and Operating Warnings

- Use cables of sufficient thickness and approved connectors to connect your equipment to the battery for safe use. Never use crocodile clamps to connect your equipment to the battery. These connections are not safe and can result in heat development with damage to your equipment or battery.
- Use only accessories and connectors approved by Rebelcell to avoid compatibility or safety issues. Check the Rebelcell website for an overview of all compatible accessories.
- If you use your battery to power equipment such as depth sounders or a trolling motor, always use a suitable fuse between the battery and your equipment to protect both.
- Avoid direct contact of your hands with both battery terminals: danger of electric shock.
- Avoid reversing the positive and negative battery terminals when connecting the battery. Although the battery has built-in reverse polarity protection, reversing the terminals can still potentially damage the battery and your equipment.
- Only use isolated tools when installing your battery. Keep metal objects such as jewellery away from the battery.

4.3 Water Resistance

- Your battery is waterproof according to the IP66 standard. This means the battery can withstand powerful water jets from any direction without water ingress, making it suitable for use in marine environments and open boats.
- To avoid issues, please ensure the battery is never fully submerged in water on the bottom of your boat. Fix your battery securely, for example with fixation bands, on a vibration-free surface to ensure that sliding is impossible.

4.4 Breather Valve

- Your battery is equipped with an integrated breather valve. This is a safety feature which allows the battery to 'breathe' with changes in temperature, preventing overpressure and condensation within the battery. It is located on the side of the lid right below the carrying strap. Do not block, remove, or modify the ventilation valve. Regularly inspect the ventilation valve to ensure it is clean and unobstructed.

4.5 Charging Warnings

- Only use battery chargers specifically designed to charge 12V LiFePO4 batteries with a charging profile of 14.6V CC/CV, such as the Rebelcell 14.6V20A charger (standard or waterproof) or the 14.6V35A waterproof LiFePO4 charger. The maximum charger current is 50A. Using non-compatible chargers may damage the battery and void the warranty.
- Do not use the battery charger in wet conditions or in close proximity to water.
- The Frost Control function allows the battery to be safely charged at temperatures as low as -20°C, provided a compatible charger or alternator is connected and the BMS can activate the preheating function. See section 6.2 for more information.

4.6 Automatic shut-off and Protection

- When the battery is operated outside permitted limits, for example due to excessive load or a short circuit, the BMS will automatically shut the battery down as a precautionary measure. No power will be available until the conditions are resolved. To reset the battery, disconnect the load and, in some cases, connect a charger. After a few minutes you can reconnect your equipment. Repeated automatic shutdowns may indicate a malfunction in your electrical system or overheating of the battery; contact Rebelcell or your installer if this occurs.

4.7 Emergency Start Button

- The 12V125 PRO is equipped with an emergency start button. This button can be used to restart the engine even after the battery has been fully discharged. Use this function only when necessary and charge the battery as soon as possible after use. Repeated emergency starts without recharging the battery in between may accelerate battery wear.

4.8 Transportation and Storage

- The battery is classified as dangerous goods for transportation purposes (ADR Class 9, UN3480). Consult the Material Safety Data Sheet (MSDS) available on the Rebelcell website for additional details.
- For long-term storage, charge the battery to approximately 50% capacity and store it in a cool, dry place between 0°C and 45°C. Disconnect all cables from the battery during storage to prevent unintended discharge. Check the capacity at least every 3 months via the BT App and charge if the capacity drops below 50%.

4.9 Prohibited Actions

- Do not attempt to repair or modify the battery yourself. Unauthorized tampering may lead to unsafe conditions and will void the warranty.

4.10 Additional Notes

- Regularly inspect your battery for signs of damage, dirt, or moisture. Clean the unit with a damp cloth and ensure it is properly maintained after use.
- If you suspect a fault or unusual behavior, contact Rebelcell support for assistance.

5. INSTALLATION AND USAGE

5.1 Using the Rebelcell BT App

The Rebelcell BT App allows you to monitor and manage the battery efficiently. Follow these instructions to set up and use the app:

Installation

1. Download and install the Rebelcell BT App from the Google Play Store (for Android devices) or the Apple App Store (for iOS devices). The Rebelcell BT App works with Android 5.0 and iOS 14 versions and up.
2. Grant location access when prompted, and enable location (GPS) on your device.
3. Open the Rebelcell App and ensure your battery is within 7 meters of your smartphone.

Connecting the app to the battery

1. Tap the Bluetooth icon on the top right of the app screen.
2. A list of compatible Rebelcell BT batteries within range will appear.
3. Select your battery from the list.
4. The app will display “Connecting,” and once successful, you can monitor the battery’s performance.

Available information

- **Battery Overview:** Displays the current capacity, voltage, current draw, estimated runtime, active status, and battery health. At the bottom of this screen you can rename your battery (the name must be between 5 and 19 characters; special symbols are not permitted).
- **Detailed Information:** Provides insight into the number of charging cycles, temperature, and in/output currents. At the bottom of this screen you will find the serial number of your battery.
- **Login Page:** Intended for advanced diagnostics and failure analysis by Rebelcell technical support only; not intended for customer use.

Troubleshooting for the Rebelcell App

- **Battery not visible in the app:**
  - Check if you have downloaded the correct Rebelcell App (look for the Rebelcell icon with white background).
  - Check that Bluetooth is enabled and your smartphone is within range.
  - Allow location access when prompted and enable location (GPS) on your device.
  - Charge your battery with your battery charger and open the app, now the battery should be visible.
- **Connection issues**
  - Restart the Rebelcell App. On iOS, swipe up to close the app completely and reopen it. On Android, use the Overview button and swipe the app off the screen to restart it.
- **Connection lost**
  - The app disconnects from the battery after a period of inactivity to save energy. Re-open the app or tap the Bluetooth icon to re-establish the connection.
- **Switching devices**
  - The app can only connect to one battery at a time. Disconnect from the current battery or restart the app before connecting to a different one.

5.2 Using trolling motors and fish finders

The 12V125 PRO is compatible with virtually all 12V trolling motors and fish finders. During use, the battery delivers a near-constant voltage, ensuring consistent thrust from your trolling motor and stable operation of your electronics. No DC voltage stabiliser is required. The battery can handle a maximum continuous discharge current of 200A.

Connect your trolling motor or fish finder cables (with M8 tongue connectors) to the battery terminals and securely tighten the bolts with a socket wrench. Always use a suitable fuse between the battery and your equipment to protect both.

5.3 Starter Battery for Your Outboard Engine

The 12V125 PRO can deliver a starter pulse current of 1200A at 15°C, 900A at -7°C, and 500A at -20°C, making it suitable as a starter battery for petrol outboard engines up to 350 HP. Compatible with Yamaha, Suzuki, Honda, and all other outboard brands with an alternator. Meets Mercury Marine® 2022 requirements for lithium starter batteries.

Connect the outboard engine cables (with M8 tongue connectors) to the battery terminals and securely tighten the bolts with a socket wrench. Improperly fixed terminals can be dangerous and generate heat, which can lead to irreversible damage to your outboard engine and battery.

After starting your outboard engine, the battery is automatically recharged via the engine's alternator. The voltage regulator in the alternator will charge the battery at the correct current and voltage (normal output voltage approximately 14.4V). The charge current is automatically reduced as the battery approaches full charge and stops when the battery is full. The maximum continuous charge current via the alternator is 150A; 165A is permitted for a maximum of 60 seconds. If the voltage regulator does not function correctly, your battery can be damaged. Any damage resulting from a malfunction of the voltage regulator will void the warranty.

Emergency Start Button

If the battery has been fully discharged and the engine cannot be started, press the emergency start button on the battery. This will briefly unlock additional power reserves to enable the engine to be started. After using the emergency start function, charge the battery as soon as possible.

5.4 Always-On BMS and Safety-Critical Consumers

Unlike previous PRO Series models, the 12V125 PRO features an always-on BMS. The battery remains fully active at all times, which means that safety-critical onboard consumers such as bilge pumps continue to receive power even when the boat has not been used for an extended period. This is an important safety advantage in marine environments. Be aware that this continuous power supply will gradually draw down the battery capacity over time; check the battery charge level regularly via the BT App if the boat is left unattended for long periods.

5.5 Charging via battery charger

If you do not use your outboard engine regularly, the alternator will not fully charge your battery. In that case, use a compatible LiFePO4 charger to top up your battery.

Use the recommended charger

- Only use battery chargers specifically designed for 12V LiFePO4 batteries with a charging profile of 14.6V CC/CV, such as the Rebelcell 14.6V20A (standard or waterproof) or the 14.6V35A waterproof LiFePO4 charger. The maximum charge current via a charger is 50A. Approximate charging times are 6–7 hours with the 14.6V20A charger and 4–5 hours with the 14.6V35A charger. Using non-compatible chargers may damage the battery and void the warranty.

Connect and power the charger

- Read the warnings on the battery charger before use and follow the instructions.
- Ensure the charger power cord is disconnected from the AC outlet and the power switch (if applicable) is off.
- Connect the charger to the positive (+) and negative (-) terminals of the battery and tighten the connections securely with a socket wrench.
- Plug the power cord into the AC outlet and turn the power switch (if applicable) to 'on' to start charging.

Monitor charging progress

The charging status can be seen both in the Rebelcell BT app and the LED indicators on the charger:

- **Green Light:** Fully Charged
- **Red Light:** Charging in Progress

Unplug Safely

- Once the battery is fully charged, first turn the charger off (if applicable).
- Next unplug the charger's power cord from the AC outlet
- Finally disconnect the charging cables from the battery.

Additional charging notes

- **Temperature:** Charging is possible between 0°C and 45°C under normal conditions. The Frost Control function extends this range to -20°C by automatically preheating the cells before charging begins; see section 6.2 for more details.

- **Partial Charging:** The battery can be partially charged or topped up at any time. Unlike conventional lead-acid batteries, it does not suffer from a memory effect.
- **Fully Charge Regularly:** To ensure the information in the Rebelcell App remains accurate, charge the battery to 100% at least once per month. This also allows the BMS to recalibrate itself and ensures accurate state-of-charge data.
- **Storage Charging:** If the battery is stored for an extended period, charge it to approximately 50% capacity to preserve its lifespan, and charge it at least once every 3 months if the capacity drops below 50%.

Charging via Solar panel

The 12V125 PRO can be charged using a solar panel. Use a compatible solar panel with a suitable LiFePO4 solar charge controller. Connect the solar charge controller according to its instructions, ensuring it is positioned between the battery and the solar panel. Ensure the solar panel is positioned to receive optimal sunlight.

Charging via Alternator

The 12V125 PRO can be charged via the alternator of your outboard engine or campervan. A suitable DC-DC charger or range extender may be required for campervans. After starting your engine, the battery is automatically recharged via the alternator.

Discharging the battery

The battery is designed to handle full discharge without damage, thanks to its advanced Battery Management System. However, it is recommended to charge the battery as soon as possible after a full discharge to prevent the voltage from dropping below critical levels, which can irreversibly damage the battery.
If the battery is not used for an extended period, charge it to approximately 50% capacity for optimal long-term storage and disconnect all equipment. Check the charge status at least once every 3 months via the BT App and charge if the status drops below 50%.

6. BATTERY MANAGEMENT SYSTEM (BMS)

The 12V125 PRO is equipped with an advanced **Battery Management System (BMS)** that ensures safe operation, optimal performance, and a long service life. The BMS provides multiple layers of protection and continuous monitoring of the battery.

6.1 BMS Features and protection

- **Deep Discharge Protection:** Prevents the battery from being discharged below critical voltage levels, avoiding irreversible damage.
- **Overcharge Protection:** Stops the charging process when the battery reaches its maximum safe voltage, ensuring long-term reliability.
- **High Temperature Protection:** Automatically shuts down the battery if its temperature exceeds safe operating limits (above 55°C). The battery will resume operation once it has cooled down.
- **Low Temperature Protection:** Prevents charging at cell temperatures below 0°C (unless Frost Control is active) to avoid damage to the cells.
- **High Discharge Current Protection:** Protects against excessive current draw to prevent overheating and damage to the battery cells.
- **Short Circuit Protection:** Protects against short circuit to prevent damage to the battery and your equipment.
- **Reverse Polarity Protection:** Provides protection against accidental reversal of the positive and negative battery terminals during connection.
- Cell Balancing: Ensures uniform voltage levels across all battery cells, maximising efficiency and extending the battery's lifespan.
- **Automatic Shutdown and Restart:** If certain safety thresholds are exceeded, the BMS will automatically shut down the battery as a precautionary measure. You can monitor fault codes in the Rebelcell App to understand the cause of the issues.

6.2 Frost Control

The Frost Control function prevents damage from charging in cold conditions. Charging a LiFePO4 battery below 0°C can cause irreversible damage to the cells. When the 12V125 PRO detects a cell temperature below 0°C and a charge current from an alternator or charger is available, the BMS automatically activates a cell preheating function, warming the cells to a sufficient operating temperature. This makes the 12V125 PRO safe to charge down to -20°C.

6.3 Always-On BMS

The 12V125 PRO features an always-on BMS, meaning the battery remains fully active at all times. This ensures instant power availability and keeps safety-critical onboard systems such as bilge pumps continuously powered, even when the vessel is left unattended for extended periods. This is particularly important for starter applications where immediate, high-current delivery is critical.

6.4 Important notes on BMS behavior

If the BMS repeatedly shuts down, this may indicate:

- A malfunction in the connected equipment.
- Overheating due to excessive environmental temperatures.
- Improper use of the battery outside of its specifications.

- **Action Required:**
  - Stop using the battery immediately and resolve the underlying issue. You can monitor the Rebelcell App to find out what is causing the issue.
  - Contact Rebelcell support or your installer for assistance if the problem persists.

8. TECHNICAL INFORMATION

GENERAL INFORMATION	
Chemistry	LiFePO4
Nominal voltage	12.8V
Capacity (C1-C20)	125Ah
Reserve capacity (RC25 @ 26.7°C)	300 min
Comparable lead battery (EqPb)	up to 12V210Ah
Self-discharge	2–4% per month
Nominal energy	1.6 kWh
Energy density	115 Wh/kg
Max continuous discharge	200A
Peak / starter current (2s) @ 15°C	1200A
Starter current @ -7°C	900A
Starter current @ -20°C	500A
Cycle life (@ 80% DoD)	7500 cycles
Cycle life (@ 100% DoD)	5000 cycles
Dimensions (mm)	327 × 173 × 225
Weight	13.3 kg
Weight incl. packaging	14.0 kg
Connectors	M8
SUITABLE CHARGERS & CHARGING TIME	
14.6V 20A LiFePO4 charger	6–7 hours
14.6V 35A LiFePO4 charger	4–5 hours

ELECTRONICS & BMS	
Bandwidth voltage	10.0V – 14.6V
Charging temperature	-20°C – 45°C (with Frost Control)
Discharge temperature	-20°C – 60°C
Storage temperature	0°C – 45°C
Charging profile	CC/CV
Charging voltage	14.6V ± 0.2V
Charging via alternator	Yes (max 150A continuous / 165A for 60 sec)
Maximum charging current (charger)	50A
Parallel connection	Yes, max 4 batteries (4P)
Series connection	Yes, max 2 batteries (2S)
State of charge indicator	Yes, via Rebelcell BT App
Emergency start button	Yes
Ventilation valve	Yes
Integrated cell balancing	Yes
High temperature protection	Yes
Low temperature protection	Yes
Frost Control	Yes, cell preheating function
Overload protection	Yes
Overvoltage protection	Yes
Undervoltage protection	Yes
Reverse polarity protection	Yes
Short circuit protection	Yes
BT App	Yes (charge status, current, estimated runtime, temperature, cycle life, battery health)

PROTECTION & CERTIFICATION	
Standard (IEC 529)	IP66
Certification	CE, MSDS, RohS, UN38.3
Shipping classification	UN3480, lithium-ion batteries, class 9
Warranty	5 years
EAN / Barcode	8720964631523
Product code	12125RELIBTA
HS Code (International/EU)	850760 / 85076000

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