

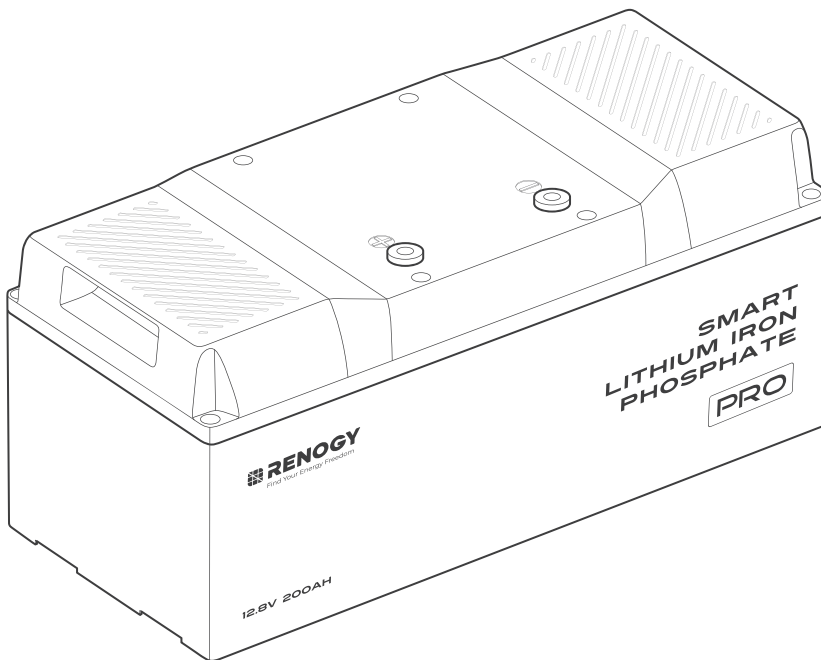
RENOGY Pro Series

Smart Lithium Iron Phosphate Battery

12.8V | 200Ah

RBT12200LFP-BT

VERSION A0



USER MANUAL

Before Getting Started

The user manual provides important operation and maintenance instructions for Renogy Pro Series 12.8V 200Ah Smart Lithium Iron Phosphate Battery (hereinafter referred to as battery).

Read the user manual carefully before operation and save it for future reference. Failure to observe the instructions or precautions in the user manual can result in electrical shock, serious injury, or death, or can damage the battery, potentially rendering it inoperable.

- Renogy ensures the accuracy, sufficiency, and the applicability of information in the user manual at the time of printing due to continual product improvements that may occur.
- Renogy assumes no responsibility or liability for personal and property losses, whether directly and indirectly, caused by the user's failure to install and use the product in compliance with the user manual.
- Renogy is not responsible or liable for any failure, damage, or injury resulting from repair attempts by unqualified personnel, improper installation, or inappropriate operation.
- The illustrations in the user manual are for demonstration purposes only. Details may appear slightly different depending on product revision and market region.
- Renogy reserves the right to change the information in the user manual without notice. For the latest user manual, visit [renogy.com](https://www.renogy.com).

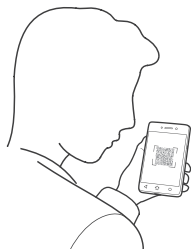
Disclaimer

Renogy Pro Series 12.8V 200Ah Smart Lithium Iron Phosphate Battery User Manual © 2023 Renogy. All rights reserved.

RENOGY and **RENOGY** are registered trademarks of Renogy.

- All information in the user manual is subject to copyright and other intellectual property rights of Renogy and its licensors. The user manual may not be modified, reproduced, or copied, in whole or in part, without the prior written permissions of Renogy and its licensors.
- The registered trademarks in the user manual are the property of Renogy. The unauthorized use of the trademarks is strictly prohibited.

Online Manual



User Manual



Table of Contents

Symbols Used	1
Introduction	1
Key Features.....	1
SKU	1
What's In the Box?.....	2
Required Tools & Accessories	2
Get to Know Smart Lithium Iron Phosphate Battery.....	3
Dimensions	4
How to Size Battery Adapter Cables?.....	4
Secure the Battery (Optional)	5
Step 1. Plan a Mounting Site	6
Step 2. Wear Insulating Gloves	6
Step 3. Check the Battery	6
Step 4. Install Battery Terminals	7
Step 5. Connect the Battery to Other Devices.....	7
How to Connect Renogy Pro Batteries in Parallel?.....	8
Calculate Voltage and Current in Parallel Connections	8
Balance Batteries Prior to Connection	9
Parallel Connection – Installation Steps.....	10
Battery Cell Balancing.....	10
Remote, 24/7 Monitoring via DC Home App.....	11
Charging/Discharging Parameter Settings.....	11
Battery Charging and Discharging Logic.....	12
Charging Logic.....	12
Discharging Logic	12
How to Estimate the Battery SOC?.....	13
Self-Heating Function	13
Battery Management System	13
Troubleshooting.....	15
Specifications	16
Maintenance & Storage.....	17
Important Safety Instructions	18
Renogy Support	19
Battery Recycling	19

Symbols Used

The following symbols are used throughout the user manual to highlight important information.

-  **WARNING:** Indicates a potentially hazardous condition that could result in personal injury or death.
-  **CAUTION:** Indicates a critical procedure for safe and proper installation and operation.
-  **NOTE:** Indicates an important step or tip for optimal performance.

Introduction

The Renogy Pro Series 12.8V 200Ah Smart Lithium Iron Phosphate Battery adopts a proprietary battery housing material in a smaller size for your RV application.

Weighing only half of the lead-acid counterparts, the battery can be safely discharged to 100% Depth of Discharge (DOD), delivering twice the energy. Manufactured with automotive grade battery cells, the battery features the highest safety standards and an extended 5000+ cycle life. In addition, the smart Battery Management System (BMS) provides comprehensive protection to the battery.

Key Features

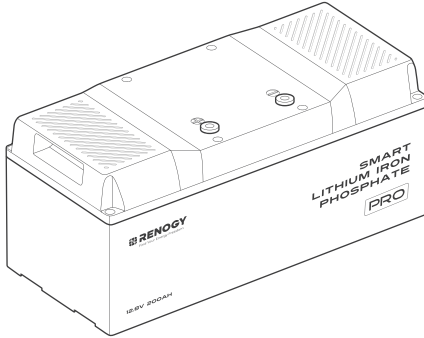
- **Unparalleled Performance**
Features a greater energy density, a deeper discharge capability, a higher round-trip efficiency, and a faster charging speed in a smaller size over counterparts in the market.
- **Uncompromising Quality**
Ensures an exceptional lifespan with more than 5000 cycles (80% DOD), a continuous charge or discharge current of up to 200A, and a wide range of operating temperatures with the automotive grade battery cells.
- **Reliable Protection Mechanisms**
Designed with a sturdy internal structure for RV use, and includes more than 60 protections and alarms through the smart battery management system.
- **Real-time Monitoring Through DC Home App**
You can easily get the battery information through the DC Home App at any time.
- **Intelligent Self-Heating Function & More Stable Performance**
The built-in heater operates automatically at low temperatures to keep the battery charging, assuring charging performance at low temperature and increasing battery lifespan.
- **Active Safety Protection with Self-Control Fuse**
Different from ordinary passive fuses, the self-control fuse can effectively prevent battery overcurrent and overvoltage failures.
- **Best-in-Class Capacity and Easy Expansion**
The battery provides a maximum capacity of more than 207Ah (up to 216Ah) for a longer-lasting application. It supports up to 8 batteries in parallel, delivering a maximum of 12.8V 1600Ah at 20.48kWh.

SKU

Renogy Pro Series 12.8V 200Ah Smart Lithium Iron Phosphate Battery	RBT12200LFP-BT
--	----------------

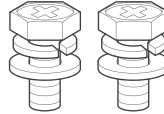
What's In the Box?

Renogy Pro Series 12.8V 200Ah
Smart Lithium Iron Phosphate Battery × 1



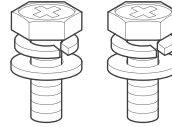
User Manual × 1

M8*1.25*12 mm



Terminal Bolts × 2

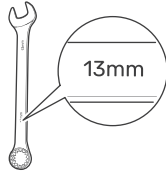
M8*1.25*16 mm



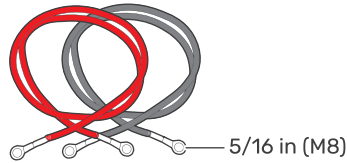
Long Terminal Bolts × 2

i Make sure that all accessories are complete and free of any signs of damage.

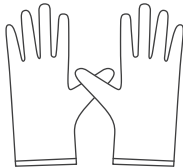
Required Tools & Accessories



Wrench (17/32 in)



Battery Adapter Cables × 2



Insulating Gloves

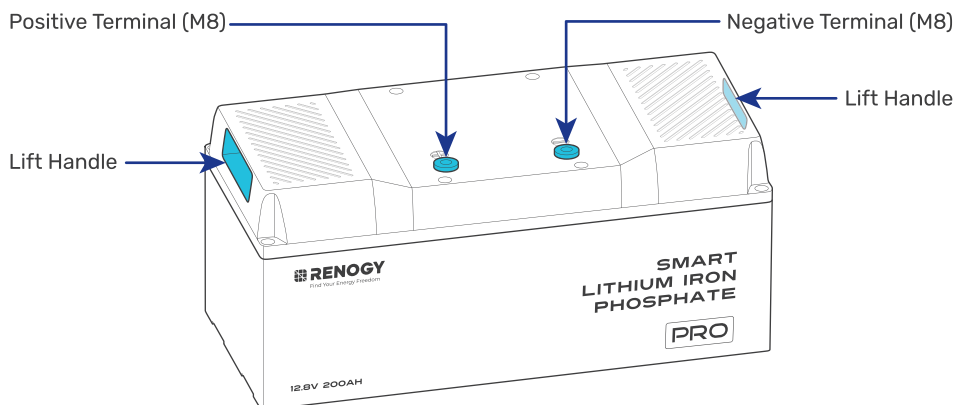


Multimeter

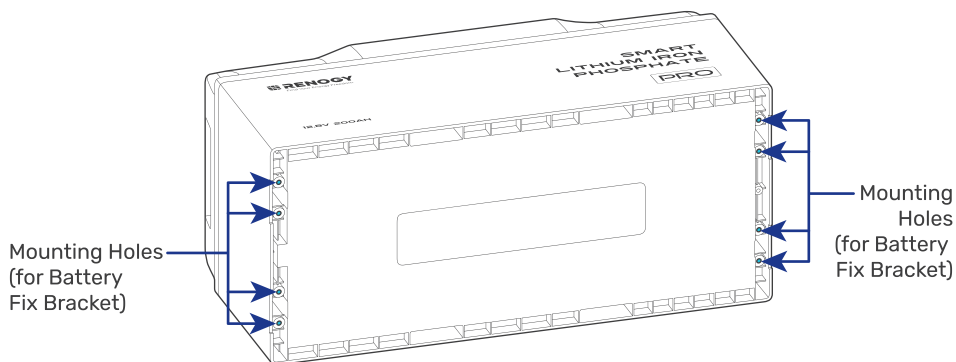
- i** Prior to installing and configuring the battery, prepare the recommended tools, components, and accessories.
- i** For how to size battery adapter cables, refer to "[How to Size Battery Adapter Cables?](#)" in this manual.

Get to Know Smart Lithium Iron Phosphate Battery

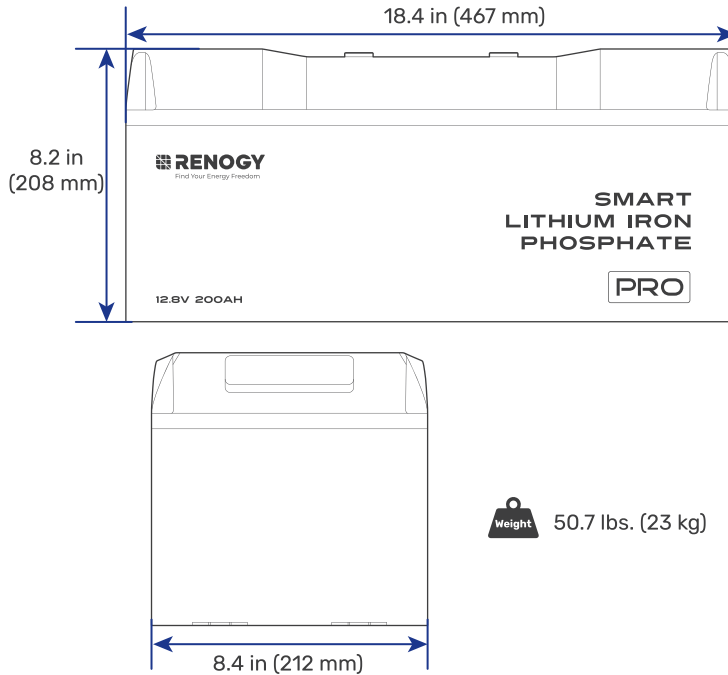
Top



Bottom



Dimensions



i Dimension tolerance: ± 0.2 in (0.5 mm)

How to Size Battery Adapter Cables?

Use appropriately sized Battery Adapter Cables (sold separately) based on expected load. Refer to the table below for copper cable ampacities with different gauge sizes.

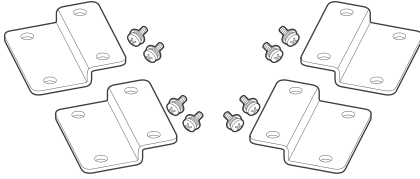
Cable Gauge Size	Ampacity	Cable Gauge Size	Ampacity
14 AWG (2.08 mm ²)	35A	2 AWG (33.6 mm ²)	190A
12 AWG (3.31 mm ²)	40A	1 AWG (42.4 mm ²)	220A
10 AWG (5.25 mm ²)	55A	1/0 AWG (53.5 mm ²)	260A
8 AWG (8.36 mm ²)	80A	2/0 AWG (67.4 mm ²)	300A
6 AWG (13.3 mm ²)	105A	4/0 AWG (107 mm ²)	405A
4 AWG (21.1 mm ²)	140A		

i The above values are from the NEC Table 310.17 for copper cables rated at 194°F (90°C), operating at an ambient temperature of no more than 86°F (30°C). Cables longer than 13 feet (4000 mm) may require thicker gauge wires to prevent excessive voltage drop in undersized wiring.

Secure the Battery (Optional)

Securing the battery prevents damage to the battery from loose cables and bumps.

Recommended Components & Tools



*Battery Fix Bracket
(with 8 M4*10 mm Fix Bolts)

ST6.3 (Recommend 15mm)



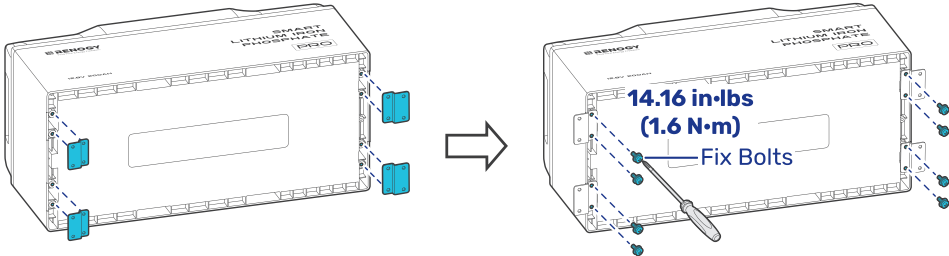
Mounting Screws × 8



Phillips
Screwdriver (#2)

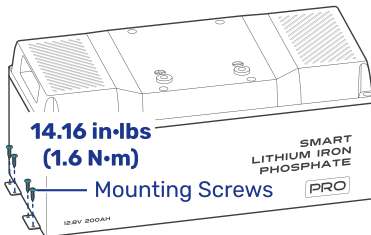
-  Recommended components marked with "*" are available on renogy.com.
-  Alternative mounting methods are allowed to meet the requirements of specific applications.
-  Choose proper mounting screws specific to your installation site. This manual takes self-tapping screws for wooden walls as an example.
-  Do not install batteries upside down.

Step 1: Install the battery fix bracket through the mounting holes on the battery.

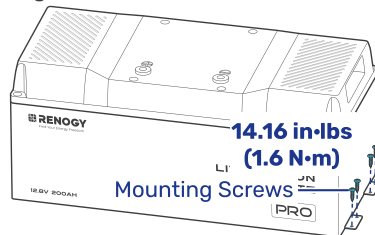


Step 2: Mount the battery on a flat surface.

Left side

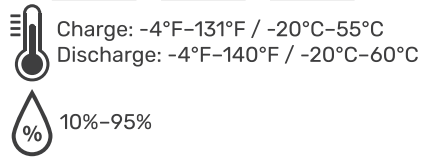
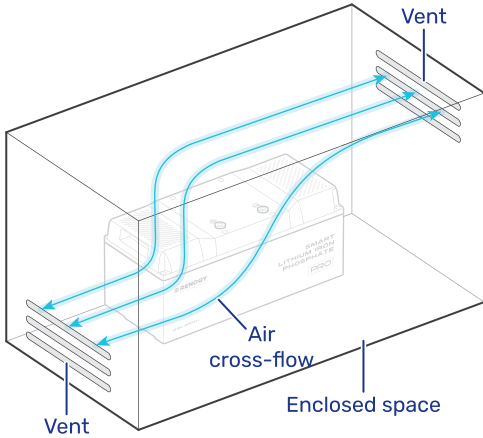


Right side



Step 1. Plan a Mounting Site

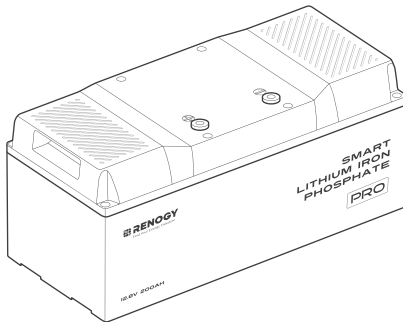
For optimal battery performance, it is recommended to install the battery in a clean, cool, and dry location, free from any accumulation of water, oil, or dirt. Accumulation of such materials on the battery can lead to current leakage, self-discharge, and even short-circuiting.



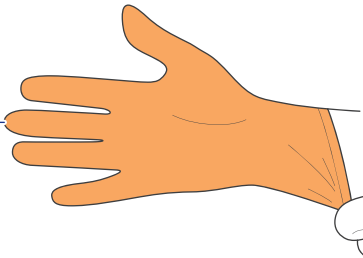
! Sufficient airflow must be provided to prevent excessive heat build-up and to minimize temperature variation between the connected batteries.

i This user manual takes a battery as an example to illustrate how to install the battery.

Step 2. Wear Insulating Gloves



Insulating
Gloves



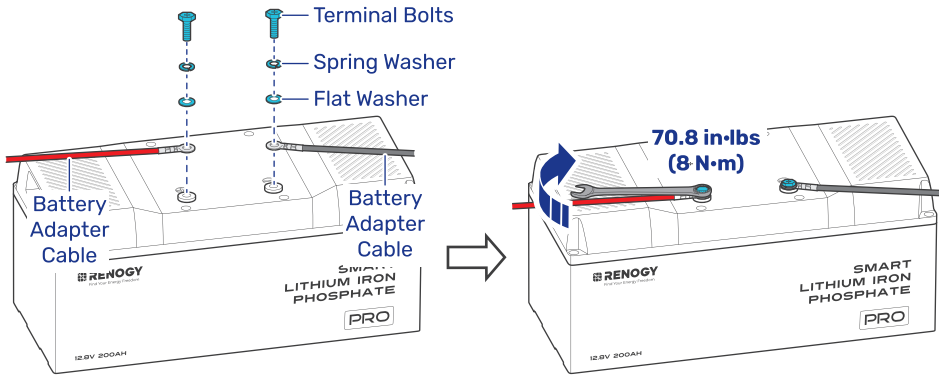
Step 3. Check the Battery

Inspect the battery for any visible damage including cracks, dents, deformation, and other visible abnormalities. All connector contacts shall be clean, free of dirt and corrosion, and dry.

! Do not touch the exposed electrolyte or powder if the battery is damaged.

! If uncovered electrolyte or powder contacts your skin or eyes, flush it out immediately with plenty of clean water and seek medical attention.

Step 4. Install Battery Terminals

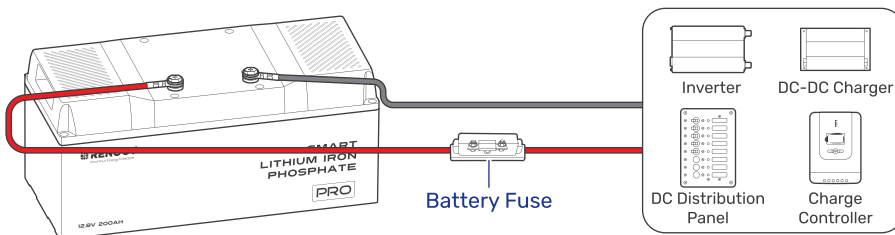


- ⚠ Ensure the cable lug and the top surface of the terminal are in contact, and place the washers on top of the lug. Do not place the washers between the battery terminal and the cable lug to avoid high resistance and excessive heating.
- ⚠ Avoid short-circuiting the battery terminals to prevent irreversible damage to the system and battery caused by current bursts.
- ⚠ Verify polarity before wiring to avoid irreversible battery damage due to polarity reversal.
- ⚠ Do not touch the positive and negative terminals of the battery with your hands.
- ℹ To ensure safe and reliable operation of the system, please follow the torque specifications recommended by the manufacturer when securing cable connections. Over-tightening can result in terminal breakage, while loose connections can lead to terminal meltdown or fire. When securing multiple cable lugs on a single battery terminal, use the included Long Terminal Bolts.

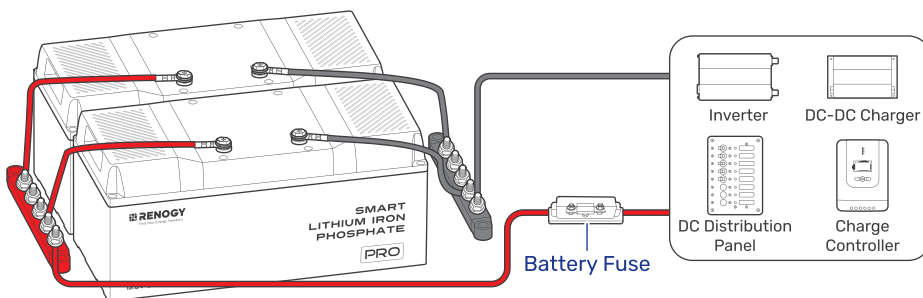
Step 5. Connect the Battery to Other Devices

- ⚠ Please use circuit breakers, fuses, or disconnects appropriately sized by a certified electrician, licensed installers, or regional code authorities to protect all electrical equipment.

For a Single Battery

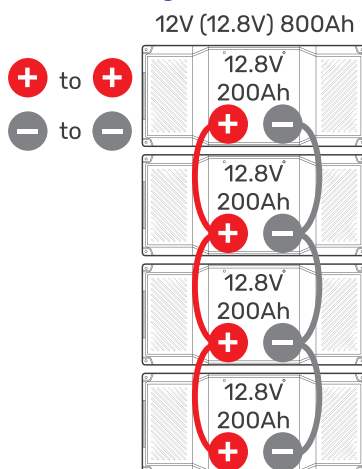


For Batteries in Parallel



How to Connect Renogy Pro Batteries in Parallel?

Calculate Voltage and Current in Parallel Connections



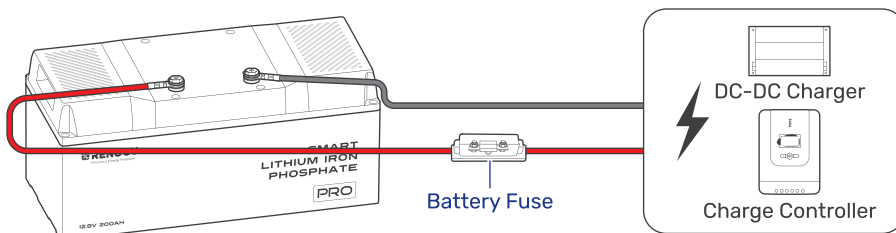
System Voltage	System current
12.8V	Sum of the individual battery currents

-  This battery is designed for parallel use only.
-  Long terminal bolts (M8 * 1.25 * 16 mm) should be used to secure the battery adapter cables. The recommended torque is 70.8 in-lbs (8 N·m).
-  Do not connect batteries with different chemistries, rated capacities, nominal voltages, brands, or models in parallel or in series. This can result in potential damage to the batteries and the connected devices, and can also pose safety risks.
-  Avoid connecting batteries that have been purchased for more than half a year. Over time, batteries can degrade and their performance may decrease, which can affect their ability to deliver reliable power and may lead to safety hazards.
-  The cables between each connected battery should be of equal length to ensure that all batteries can work equally together.

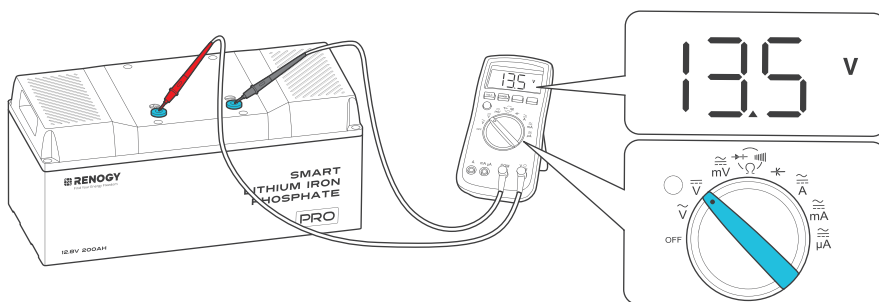
Balance Batteries Prior to Connection

Before connecting batteries in parallel, it is important to balance them to reduce voltage differences and optimize their performance. Follow these three steps:

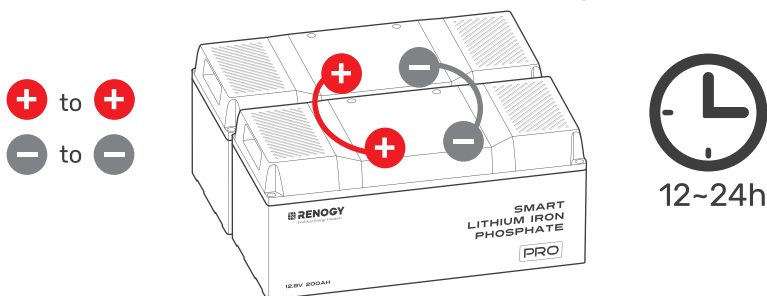
Step 1: Charge each battery individually to its full capacity using a suitable charger.



Step 2: Use a voltmeter to measure the voltage of each battery. It is best to keep the voltage difference of each battery less than 0.1V.



Step 3: Connect all the batteries in parallel and allow them to rest together for 12 to 24 hours.



i It is recommended to periodically rebalance the battery voltages every six months when connecting multiple batteries as a battery system. Slight voltage differences can occur among batteries over time due to factors like battery chemistry, capacity, temperature, and usage patterns.