

# Lithium battery packs of the same model can be used in series



## Overview

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For both series and parallel connections, you should always use identical batteries-same model, capacity, voltage, and approximate age. Mismatched batteries can lead to imbalanced charging and discharging, which reduces performance and can create a serious safety hazard. Figure 1 below shows a typical EarthX 13. 2V LiFePO4 starter battery cell configuration. This is essential for building higher-voltage systems like 24V or 48V. To wire two 12V 100Ah batteries in series, you connect the positive terminal of the first battery to the negative . A growing number of engineers struggle to choose between series and parallel wiring when they scale lithium-ion packs, which leads to underperforming systems or unexpected failures. However, proper precautions and battery management systems should be used . When designing or expanding battery-powered systems, a common question arises: Can two battery packs with the same voltage be connected in series?

The short answer is yes, but with a critical prerequisite: the voltage withstand capability of the protection circuit must be carefully evaluated.

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### How Do You Balance Lithium Battery Packs In Series?

Yes, you can charge a single battery in series without removing it from the circuit. This can be accomplished with careful planning and execution. Firstly you will need a charger rated at the

### Wiring Batteries in Series vs Parallel Design for Li-ion Packs

For lithium-ion packs, a series circuit connects cells end-to-end so voltages add while current rating stays equal to one cell, whereas a parallel circuit ties all positives together and all



### Series vs Parallel: Wiring a 12V 100Ah Lithium Battery

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### Is It Safe to Connect Lithium-Ion Batteries in Series?

Yes, it is generally safe to connect lithium-ion batteries in series, provided that they are of the same type, capacity, and charge level. This configuration increases the overall voltage while





## [Can Batteries with the Same Voltage Be Connected in Series? Key](#)

When designing or expanding battery-powered systems, a common question arises: Can two battery packs with the same voltage be connected in series? The short answer is yes, but with a critical

## [Series, Parallel, and Series-Parallel Connections of Batteries](#)

Do not connect batteries with different chemistries, rated capacities, nominal voltages, brands, or models in parallel, series, or series-parallel. This can result in potential damage to the batteries and the



## **How Should You Connect Lithium Batteries: Series vs Parallel?**

Learn how series and parallel lithium batteries affect voltage, capacity, and safety. Avoid common mistakes and boost your battery performance today!

## **Batteries in Parallel vs Series: How to Correctly Connect?**

Unlock the ultimate guide to using LiFePO4 lithium batteries in Parallel vs Series. Learn configurations, benefits, and tips for optimal performance!



## **Lithium Battery Series & Parallel Operation , Fact Sheets**

It is important to use the same battery model



with equal voltage and capacity (Ah) and never to mix batteries of a different age. Both batteries in a series configuration must have the EXACT same load,

### Can Lithium Batteries Be Safely Connected in Series or Parallel?

For modular systems (e.g., solar, RV, marine), choose lithium batteries that are designed for series/parallel scalability. Choose lithium batteries that explicitly support series and/or parallel



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