

## A-Core Container

# Battery packs with different capacities



## Overview

---

Can you mix different capacity lithium batteries?

Yes, you can mix different capacity lithium batteries, whether a normal 12V 100Ah battery or a Lithium server rack battery. You can combine different capacity batteries in parallel. You cannot combine different capacity batteries in series. There are a few points you need to consider when wiring in parallel. Let's explore these three points.

Do batteries add up directly when connected in series?

When batteries are connected in series, their capacities do not add up directly. Instead, the capacity of the battery pack is determined by the lowest capacity battery in the series.

Can lithium ion batteries be connected in parallel?

**Combined in Parallel** When imbalanced batteries are connected in parallel, the voltages of the batteries should match, but the capacities can be different. When lithium-ion batteries are connected in parallel, their capacities are effectively combined, resulting in a higher overall capacity.

Is it possible to connect imbalanced batteries together?

Overall it's technically possible to connect imbalanced batteries together, but the capacity mismatch can lead to performance issues and potential imbalances between the batteries. **Combines in Series** When batteries are connected in series, their capacities do not add up directly.

Should I use batteries in series or in parallel?

To mitigate these risks, we recommend to only use batteries of similar voltage, capacity, chemistry, and age when connecting them in series or in parallel. If you still wish to use the batteries in series despite the capacity mismatch, it is crucial to monitor their voltages closely and ensure that they are not over-discharged.

Do all batteries have the same state of charge?

A smaller battery will be at the same voltage as a larger battery. Therefore, the state of charge will be equal in all batteries. Let me explain with a diagram where all the batteries are charged to 70%. 2. Batteries must have their own BMS

## Battery packs with different capacities

---

## Contact Us

---

For catalog requests, pricing, or partnerships, please visit:  
<https://www.a-core.pl>