

## How to connect batteries in series and parallel

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Understanding how to connect batteries in series and parallel is crucial for maximizing the performance and efficiency of your battery systems. If you're new to batteries system, you may want to know how to connect your batteries in series and parallel, even in series-parallel setup. Let's explore the answer in this blog.

However, you may be limited by the size of your battery group. Don"t worry, you have a better solution, that is connecting two or more batteries together in series and parallel. By connecting batteries in either series, parallel, or series-parallel, you can increase the voltage, amp-hour capacity, or even both -- enabling higher voltage applications or power-hungry equipment to run more efficiently.

Connecting batteries in series is a method used to increase the total voltage of your battery system while keeping the capacity (amp-hour rating) the same as a single battery. This setup is commonly used in applications where higher voltage is required, such as in electric vehicles, solar power systems, and certain industrial equipment.

To safely wire batteries in series, all batteries must have the same voltage and capacity ratings. For instance, you can connect two 6V 10Ah batteries in series, but you should not connect a 6V 10Ah battery with a 12V 20Ah battery.

Connect the negative terminals of all batteries together. Then, connect the positive terminals of all batteries together. Here are the steps to connect batteries in parallel:

In many cases, we want to more capacity and voltage for our battery system. Series-parallel connections combine the benefits of both series and parallel wiring, increasing both voltage and capacity.

You can connect six 6V 100Ah batteries to create a 12V 300Ah system. This is done by configuring three strings of two batteries in series, and then connecting these strings in parallel.

However, it's important to ensure that the charging current is appropriate for the combined capacity. In both



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cases, using a charger with the proper voltage and current rating is essential to avoid damaging the batteries or reducing their lifespan.

When connecting in series, you increase the voltage while maintaining the same capacity. In parallel, you increase the capacity while keeping the voltage the same. If you want to wire two 12V batteries to create a 24V battery system, just connect one positive on the second battery to one negative on the first battery, then connect the two free terminals to your device or application, which will now receive 24V.

Similarly, to connect four 12V batteries to create a 48V battery system, you need to connect them in series. Begin by linking the positive terminal of the first battery to the negative terminal of the second battery. Continue this pattern, connecting the positive terminal of the second battery to the negative terminal of the third, and so on. The free positive terminal of the first battery and the free negative terminal of the last battery will then provide 48V.

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