Lithium battery pack 3 series 4 parallel

Are series and parallel connection of lithium batteries safe?

The series and parallel connection of lithium batteries is a key technology to increase voltage and capacity,but it also contains safety risks. This article will analyze in detail the principles,methods and precautions of series and parallel connection of lithium batteries to help you avoid potential risks and build a battery system correctly.

Why is a lithium battery a series-parallel combination?

Due to the limited voltage and capacity of the single battery, in actual use, a series-parallel combination is required to obtain a higher voltage and ability to meet the existing power supply requirements of the equipment. Lithium batteries in series: the voltage is added, the capacity remains unchanged, and the internal resistance increases.

How to charge parallel lithium battery packs?

Specific principles must be followed when charging parallel lithium battery packs: Use a matching charger: The voltage must be suitable for the nominal voltage of the individual batteries. The current setting is reasonable: usually 0.2-0.5C of the total capacity after parallel connection.

What is lithium battery parallel connection?

Lithium battery parallel connection is to connect the positive poles of multiple batteries together,and the negative poles together,so that the total capacity can be increased while keeping the voltage unchanged.

What is a series-parallel battery?

The series-parallel configuration can give the desired voltage and capacity in the smallest possible size. You can see two 3.6 V 3400mAh cells connected in parallel in the image below,which doubles the current capacity from 3400 mAh to 6800 mAh. Because these parallel packs are connected in series,the voltage also doubles from 3.6 V to 7.2 V.

How many volts can a 3.7V lithium battery get?

For example,4 pieces of 3.7V lithium batteries connected in series can get an output voltage of 14.8V,but the capacity remains unchanged. Series connection is the most common method to make the battery pack reach the required operating voltage. Series connection is the best choice when you need more voltage rather than more capacity.

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