

Use large single cell to make 150a lithium battery pack





Overview

How many cells are in a battery pack?

From the previous step, it is clear that our battery pack is made up of 3 parallel groups connected in series ($3 \times 3.7V = 11.1V$), and each parallel group has 5 cells ($3400 \text{ mAh} \times 5 = 17000 \text{ mAh}$). Now we have to arrange the 15 cells properly for making the electrical connection among them and with the BMS board.

How to make a battery pack?

To make the battery pack, you have to first finalize the nominal voltage and capacity of the pack. Either it will be in terms of Volt, mAh/ Ah, or Wh. You have to connect the cells in parallel to reach the desired capacity (mAh) and connect such parallel group in series to achieve the nominal voltage (Volt).

What is the nominal voltage of a battery pack?

The desired nominal voltage of the battery pack is 11.1V. The nominal voltage of each cell = 3.7 V No of cells required for series connection = $11.1 / 3.7 = 3$ nos Commonly cells in series are abbreviated in terms of 'S', so this pack will be known as a "3S pack".

What is the difference between 18650 and AA batteries?

The 18650 (18mm diameter and 65mm length) battery is a size classification of lithium-ion batteries. It is the same shape, but a bit larger than a AA battery. AA batteries, by comparison, are sometimes called 14500 batteries because they have a 14mm diameter and 50mm height.

How do I charge the battery pack?

Charging the Battery Pack : You can charge the battery pack by a 12.6V DC adapter like this. You can get it easily from aliexpress or eBay. Hope you enjoyed reading about my project as much as I have enjoyed building it.



What is the capacity of a 18650 battery?

Many used batteries are rewrapped as new and white-labeled. They sell the battery by marking capacity up to 5000mAh, but in actual their capacity is between 1000 to 2000 mAh. Another major problem with these cheap 18650 cells is the high risk of explosion when overheated during the charging or discharging.



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[How to Build a Lithium Ion Battery Pack: Expert Guide for Engineers](#)

Building lithium-ion battery packs requires systematic engineering across multiple disciplines, from cell selection to safety compliance. Here are the essential insights every ...

["Build a 12V 15A Powerful LiFePO4 Battery . DIY Step-by-Step ...](#)

In this detailed DIY tutorial, we show you how to safely assemble a lithium iron phosphate (LiFePO₄) battery using 4S cells, a BMS (Battery Management System), and quality components.



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