

Deep cycle battery chart

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Learn about the types, characteristics and performance of deep cycle batteries for solar power systems. See voltage charts for 12V, 24V and 48V deep cycle AGM b...

As the field of solar power generation continues to develop, the various important parts and components within the solar panel system are also constantly being upgraded and modernized in order to achieve better performance. As an important part of the solar panel system to help improve the power supply capacity, the research on solar battery has been a hot topic in recent years.

Nowadays, various types of deep-cycle batteries have gradually become one of the most widely used batteries within solar panel systems, especially deep-cycle lithium iron phosphate batteries. In this article, we will introduce the voltage charts of 12V, 24V and 48V deep cycle LiFePO₄ batteries, which will help you understand the attribute data of different voltage batteries more intuitively and choose the most suitable deep cycle batteries for you according to these data and your budget and usage.

The cycle of a battery is the entire process of a battery from the completion of charging to discharging. The depth of a battery's cycle can be determined by observing the capacity of a battery when it is charged and discharged after each cycle: the greater the discharge rate of a battery when it is discharged, the deeper the depth of its cycle, which is the difference between a deep cycle battery and an ordinary battery.

Taking the battery packs in solar panel systems as an example, ordinary lithium batteries or lead-acid batteries don't start charging after they are fully discharged, but rather start charging when they are about 50% discharged, which is a lower cycle depth and discharge time, but they are able to provide a large amount of capacity in a short period of time. In contrast, the advantage of a deep cycle battery is its ability to provide a constant, lower level of charge over a longer period of time.

There are four main types of deep cycle batteries, and the difference between these four types is mainly in the materials used for the tiny components.

Batteries use coiled spiral plates, which are made of pure lead, and deep cycle lead acid batteries that use these plates have a much harder time deforming and dissolving the lead inside with each charge.

Lead tubes are used inside the batteries. These small lead tubes are filled with an active agent and a paste, which helps to hold the paste in place so that it will not easily leak or fall out. These lead tubes also help to minimize deformation of the internal plates.

Silicone electrolyte is used inside the battery, which is also known as a gel deep cycle lead acid battery.

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The batteries use glass to hold the paste in place, and a certain glass material is placed in the electrolyte inside this type of deep cycle battery, which not only helps to hold the paste in place, but also maintains the shape of the internal plates and reduces deformation. This type of battery is called an absorbent fiberglass mat deep cycle battery.

Regarding the voltage charts of deep cycle batteries, we will take lithium iron phosphate battery as an example and introduce the difference between the charts under different operating voltages.

According to the above voltage diagram of 12V lithium iron phosphate battery, it is obvious to know that its capacity from 0%-100% of the process, that is, a complete charging cycle process, its voltage range of 10.50V-13.00V. and in the process of uniform increase in the amount of power, the degree of increase in its voltage is getting smaller and smaller.

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