Lifepo4 automotive starting battery

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Yes, LiFePO4 (Lithium Iron Phosphate) batteries can be used as starter batteries for vehicles and other applications. They provide high discharge rates, lightweight design, and longer cycle life compared to traditional lead-acid batteries. However, it’s essential to ensure that the battery’s specifications meet the starting requirements of the engine or equipment.

Using LiFePO4 Batteries as Starter Batteries: A Comprehensive Guide

As technology advances, the use of LiFePO4 batteries in various applications has gained popularity, particularly as starter batteries for vehicles. Understanding the benefits, limitations, and appropriate applications of LiFePO4 batteries can help users make informed decisions. This article will explore why LiFePO4 batteries are suitable for starting engines and how they compare to traditional lead-acid batteries.

As experts at Redway Battery, we recognize that using a LiFePO4 battery as a starter battery offers numerous advantages, including rapid discharge capabilities and longevity. However, it is crucial to ensure compatibility with your vehicle’s systems and utilize appropriate charging methods. Our commitment is to provide high-quality lithium solutions tailored to meet diverse energy needs efficiently.”

In conclusion, using a LiFePO4 battery as a starter battery can be an excellent choice due to its lightweight design, high discharge rates, and long cycle life. While there are some considerations regarding cost and compatibility, the benefits often outweigh these factors for applications requiring reliable starting power. By following best practices in battery management, users can maximize performance and longevity from their LiFePO4 starter batteries.

Shenzhen Redway Power, Inc

I"ve had an idea of using LiFePO4 battery as replacement for car battery, since 4 of those in series make nominal 12.8V which is very close to standard 12V voltage. And depending on the cell we can parallel some to get required starting current. Since LiFePO4 have much longer life then Lead-Acid, such battery should last much longer.

But there comes few problems:

Charging voltage. Since most alternators produce around 14V volts when charging it should be fine with

LiFePO4 battery since maximum voltage for those is 3.6V which gives us little headroom up to 14.4V (4*3.6V=14.4V). Individual cell balancing can be done with simple dissipative BMS which dumps excessive charge to resistor. But we don"t have possibility to disconnect alternator when battery is charged, so here is first Question: is it OK to hold LiFePO4 battery at floating charge with voltage which is close to maximum battery voltage? Or this will significantly decrease battery life?

Charging current. Some LiFePO4 cells can be configured so they can easily take all charge current produced by alternator. (assuming 70A output and 3 parallel 40152S cells) So second question: Can it overload alternator or modern alternators are smart enough to lower voltage to avoid being overloaded?

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