Victron batteries quot prices quot

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LFP batteries are particularly efficient in off-grid systems where you have a large battery and day-to-day only use the top 20% or so. In this situation lead-acid batteries often have an efficiency of ~50% but LFP batteries can achieve ~90%.

In grid connected storage LFP batteries can still be significantly more efficient than the lead-acid equivalent. The round trip energy efficiency (discharge from 100% to 0% and back to 100% charged) of the average lead-acid battery is 80% as opposed to 92% from an LFP battery.

These batteries have integrated Cell Balancing, Temperature and Voltage control (BTV). Up to ten batteries can be paralleled and up to four batteries can be series connected (BTV"s are simply daisy-chained) so that a 48V battery bank of up to 2000Ah can be assembled.The daisy-chained BTV"s must be connected to a Victron battery management system (BMS).

BAT512120610 - The Victron Lithium-iron-phosphate (LiFePO4 or LFP) battery is the safest of the mainstream li-ion battery types. With Bluetooth cell voltages, temperature and alarm status can be monitored. Very useful to localize a (potential) problem, such as cell imbalance.

Lithium-iron-phosphate (LiFePO4 or LFP) is the safest of the mainstream li-ion battery types. The nominal voltage of a LFP cell is 3,2V (lead-acid: 2V/cell). A 12,8V LFP battery therefore consists of 4 cells connected in series; and a 25,6V battery consists of 8 cells connected in series.

A LFP battery does not need to be fully charged. Service life even slightly improves in case of partial charge instead of a full charge. This is a major advantage of LFP compared to lead-acid. Other advantages are the wide operating temperature range, excellent cycling performance, low internal resistance and high efficiency (see below).

The charge process of lead-acid batteries becomes particularly inefficient when the 80% state of charge has been reached, resulting in efficiencies of 50% or even less in solar systems where several days of reserve energy is required (battery operating in 70% to 100% charged state). In contrast, a LFP battery will still achieve 90% efficiency under shallow discharge conditions.

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