



FACT SHEET

This is a basic technical overview on our range of LiFePO4 lithium batteries.

- A LiFePO4 battery is made by combining multiple cells in series and parallel to provide the required voltage and charge capability. For a standard 12V battery this requires 4 cells in series (often expressed as 4S) with a nominal voltage of 12.8V.
- Within each battery housing exists a battery management system (BMS). This is used to oversee the well being of the overall battery pack and manages issues such as Over-voltage cut off, Low battery cut off and Over temperature shut down. It also balances the multiple single cells within the battery ensuring they are all correctly charged.
- Due to the BMS design, not all LiFePO4 batteries can be wired in series, and if they can be, there are limitations as to how many can be wired in a series string. Maximum for our range is 4 pieces. Generally there are no problems wiring the batteries in parallel. In theory, you could use unlimited batteries in parallel.
- It is important to note that prior to first use, all LiFePO4 batteries should be fully charged. Altronics LiFePO4 batteries are supplied 30% charged from the factory.
- If a LiFePO4 battery's BMS "low battery cut off" activates, it will disconnect the battery from the battery terminals. This will present a very low voltage across the battery terminals (potentially 0V) which may look like the battery is dead, but simply indicates that it is protecting itself. Chargers designed for LiFePO4 batteries will recognise this and bring the battery out of protect mode via various methods. For example our M8536A charger will pulse charging voltage into the BMS until it has charged the battery enough for the BMS to reconnect the battery (this can take up to 20 minutes). Once the battery has been reconnected, charging will proceed as normal.
- At a pinch a LiFePO4 can be charged with an SLA charger, however this will make poor use of the battery's capacity and we strongly recommend a LiFePO4 compatible charger such as M8538, M8534B or M8536B.

Lithium's offer several advantages over traditional SLA batteries.

- ✓ Weight - up to half the weight of equivalent SLA models
- ✓ Low self discharge
- ✓ Longer service life up to 10 years
- ✓ Can't be damaged by over discharging
- ✓ Built in battery management system BMS to protect the battery