Battery balancing strategy

Reason 1

At the time of shipment, battery manufacturers reserve 40% soc in the battery.
After a long time of transportation and storage, the
The voltage of individual cells of very few batteries will drop below 2700mv and there is a significant difference between the voltage of individual cells of other batteries.
When the storage time exceeds 1 year, the total voltage will fall below 47V or even lower, LFP2600 will be below 95V

Reason 2

Dealers buy multiple batches of batteries and mixed them together that will appear the situation of voltage difference, but the same batch of batteries is unlikely to have a few V difference in voltage, we infer someone didn't turn off the batteries

Impact 1 Parallel connection

When the battery is connected in parallel with the inverter, it is recommended to measure the voltage first just in case, the voltage difference is around 1-2V can be directly connected in parallel, if it is more than 2V and more than 2 batteries are directly connected in parallel, the instant current over 100A may cause the fuse to explode.

Impact 2 series connection

When charging, the battery with high voltage is fully charged first then The whole cluster of batteries will not be charged
When discharging, the battery with low voltage stops discharging first then the whole cluster is not discharged

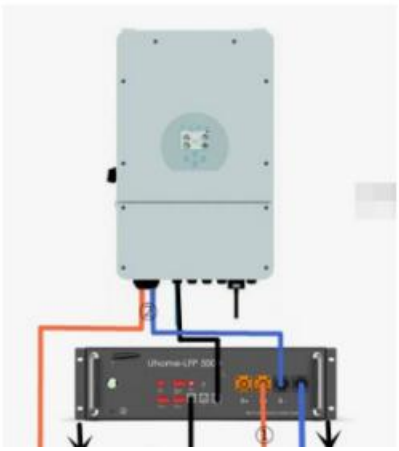
When connecting the batteries in series with the inverter, please check the voltage difference between the batteries before installation and equalize the voltage difference, if any.
Direct series connection will not cause fuse explosion, but will seriously affect the total capacity. If the voltage difference is too large, for example, 3-4V, it will cause the battery to report an alarm that excessive total voltage difference

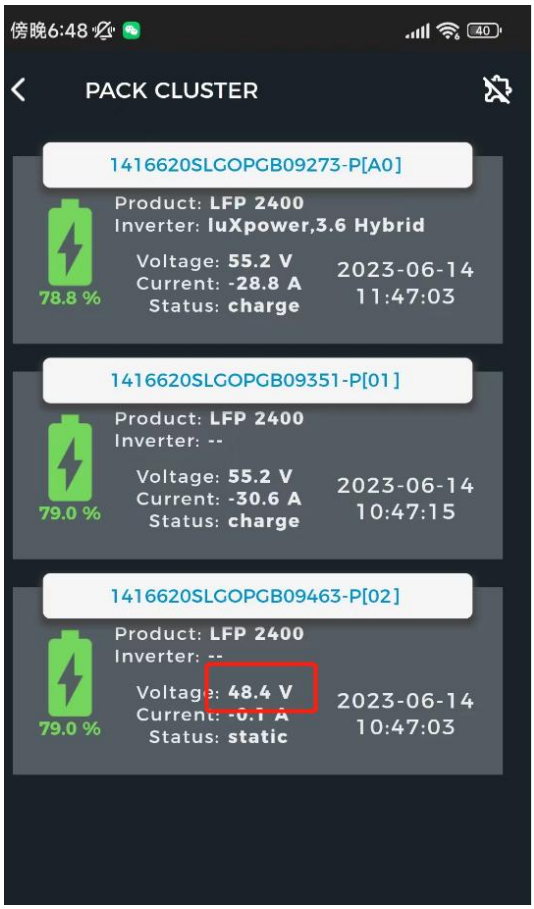
Methods for balancing voltage difference:

① When the voltage difference is less than 2V, the battery can be wired in parallel and left to stand for 1 hour (without connecting the inverter)
As shown: In case of emergency, do not connect all at once, first 2 units in parallel, and then the voltage is about the same when the third unit is connected, and so on.

② When the voltage difference is greater or much greater than 3V, you can charge or discharge a **single** battery by taking it to a low voltage inverter for a period of time.

After paralleling for a period of time, the battery voltage will be close to other batteries





For example, as above picture, it will not report level 3 alarm even if there exists 7V voltage difference.

We suggestion

If one 55V and other 50V, you can use the inverter to discharge 55V to 52V and then connect the whole parallel

Or a 48V and other 55V, you can charge the 48V to 53V and then connect the whole parallel.

One 52V and three 50V, never three 52V and one 50V

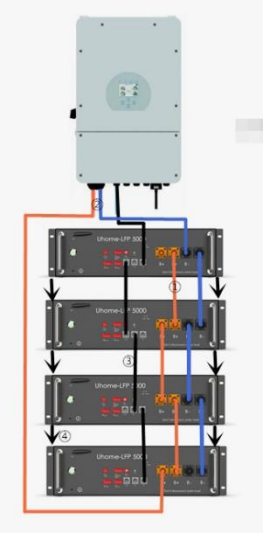
Note for series connection

Please equalize the total voltage difference of the battery to less than 0.2V before connecting in series

1 can use parallel equalization method of fast equalization

2 can

As shown in the diagram: After connecting the whole cluster of batteries in parallel and charging them with low-voltage inverter, each battery is in a full state Best suited for series connection later



PS: The best equalization effect is achieved when the batteries are fully connected in parallel.

Special situation

When the voltage of a battery is too small, less than 46V or 92V, resulting in a voltage low level 3 alarm, the relay does not close.

It is only recommended that non-professionals use DC power to recharge the battery, and can only disassemble the shell to charge the main positive and main negative.

Other batteries 50V2A recharge, charge to 49V and then charge the inverter.

LFP 2600 can only be used with high voltage DC power supply 100V 2A, operation as above.