Technical Specifications

K2B12V10EB

12V 10Ah LiFePO4 Battery

Specification

Items	Criteria	Remarks
Typical Capacity	10Ah	0.2C charge and discharge for cut-off voltage
Combination method	4S2P	
Nominal Voltage	12.8V	
Internal Impedance	Battery: ≤200mΩ	AC 1KHz after standard charge
Charge voltage	14.6V	
Standard charge current	2A	
Max. charge current	6A	
Over charge current detection current	13±3A	
Standard dis-charge current	2A	
Max. discharge current	10A	
Over discharge current detection	33±5A	
Operating Temperature	0℃~+50℃	Charging
	-20℃~+65℃	Discharging
Storage Temperature	-20℃～+45℃	Less than 1 month
	-20℃～+35℃	Less than 6 months

Charging Tips

About Charging Voltage

Based on the characteristics of Lithium Iron Phosphate (LiFeP04) batteries, the voltage measured by all LiFeP04 batteries during charging is not the real voltage of the battery. Therefore, after charging and disconnecting the battery from the power source, the voltage of the battery will gradually drop to its real voltage. If you need to test the real voltage of the battery, please charge and disconnect the power supply and test its voltage after putting it aside for over 15 minutes.

Charging Methods

Use 14.6V lithium battery charger to maximize the capacity.

Recommend Charging Voltage: Between 14.2V to 14.6V

Recommend Charging Current:

0.2C The battery will be fully charged in around 5hrs to 100% capacity.

0.5C The battery will be fully charged in around 2hrs to around 97% capacity

Inverter/Controller

Select “12V(14.6V) Li(LiFeP04) Mode" or

Select "User Mode" to enter values according to below parameters:

CHARGING	Charging Limit Voltage	14.4V
	Over Voltage Disconnect Voltage	14.7V
	Over Voltage Reconnect Voltage	14.2V
	Equalizer Charging Voltage	14.1V
DISCHARGING	Discharging Limit Voltage	10V
	Over Discharge Disconnect Voltage	9.2V
	Over Discharge Reconnect Voltage	10.8V
	Over Discharge Delay Time	0.5~2S

State of Charge (SOC)

The battery capacity could be roughly estimated by its voltage. As there are subtle differences in the voltage of each battery, the following table of parameters is for reference only. The voltage must be tested at rest (with zero current) after 15 mins of disconnecting from charger and loads, to obtain an accurate SOC.

Capacity	Voltage
100%	13.50V
99%	13.40V
90%	13.30V
80%	13.25V
70%	13.20V
60%	13.17V
50%	13.14V
40%	13.10V
30%	13.00V
20%	12.9V
10%	12.8V
1%	10.8V (Recommended low voltage disconnect voltage)
0%	9.5V

Long-Term Storage

• The battery can be operated in temperature ranges of -20℃ to + 60℃, and a temperature range between +10℃ to +35℃ is ideal for long-term storage. Store in a fireproof container and away from children.

• For a long-lasting product, it is best to store your battery at 100% charge level and recharge every three months if it is not going to be used for a long period of time.

Connection Tips

Process for connection: To connect in series and/or in parallel, batteries should meet below conditions:

A. the same battery capacity (Ah);

B. from same brand (as lithium battery from different

C. purchased in near time (within one month)

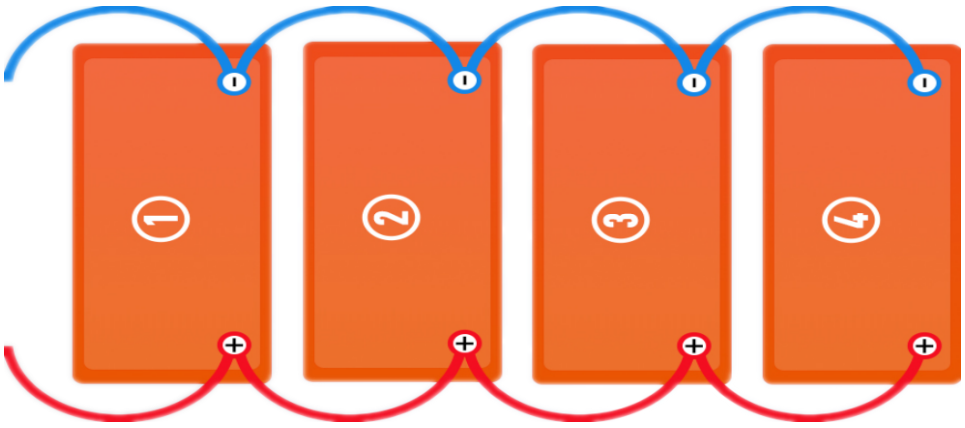
Two Necessary Steps Before Connecting:

These two steps are necessary in order to reduce the voltage difference between batteries, and this way the battery system can perform best in series and/or in parallel.

Step 1: Fully charge your batteries separately.

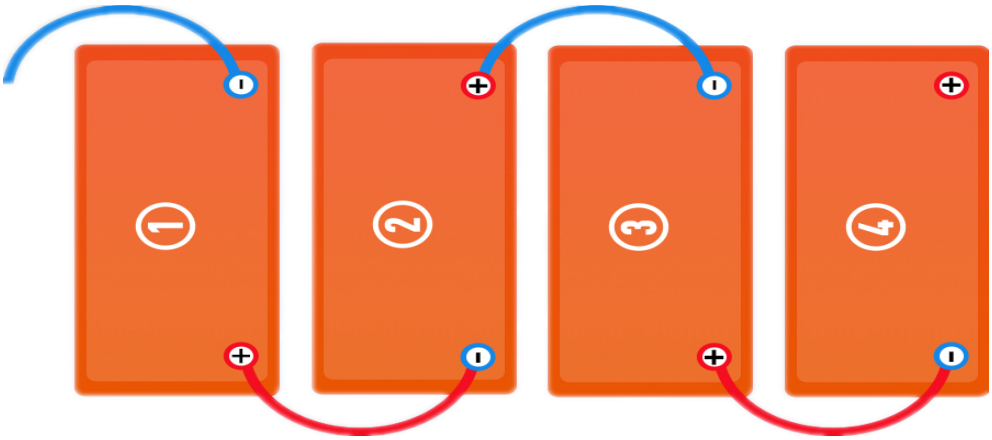
Step 2: Connect your batteries one by one in parallel, and leave them together for 12-24hrs. After this you can connect your batteries in series and/or in parallel.

Parallel connection of batteries



Capacity of parallel battery	Battery Numbers	Limited Charge Voltage	Discharge Cut-off voltage
12.8VCapacity *1	1PCS	14.4V	9.2V
12.8V Capacity *2	2PCS	14.4V	9.2V
12.8V Capacity *3	3PCS	14.4V	9.2V
12.8V Capacity *4	4PCS	14.4V	9.2V

Battery in series



Voltage of series battery	Battery Numbers	Limited Charge Voltage	Discharge Cut-off voltage
12.8V	1PCS	14.4V	9.2V
25.6V	2PCS	28.8V	18.4V
38.4V	3PCS	43.2V	27.6V
51.2V	4PCS	57.6V	36.8V

Notes for series and parallel connection:

- Fully charge all batteries firstly, then connect them in series or parallel.
- The number of batteries in series is ≤4PCS. and the number of batteries in parallel is ≤4PCS.
- Remember: Do not mix in series or parallel with lead-acid batteries or different types of lithium batteries [Only use batteries with the same type (lead-acid battery or lithium), same capacity and same brand]
- Battery series and parallel connections need to be charged according the standard charging voltage in the above table, and a special charger for lithium batteries is recommended. (Follow notes above when selecting suitable charger)