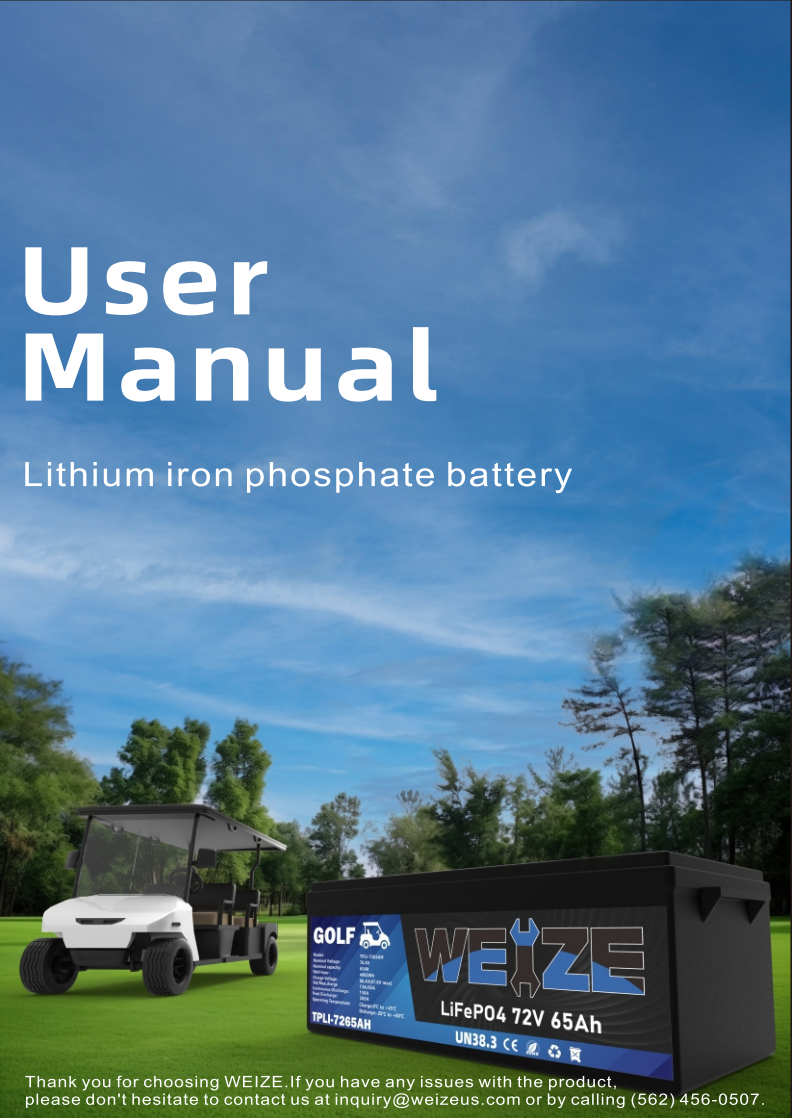
User Manual

Lithium iron phosphate battery



Thank you for choosing WEIZE.If you have any issues with the product, please don't hesitate to contact us at inquiry@weizeus.com or by calling (562) 456-0507.

Contents

Features of LiFePO4 Battery

- **Longer Cycle Life:** Offers up to 20 times longer cycle life and five times longer float/calendar life than lead acid battery, helping to minimize replacement cost and reduce total cost of owner.
- **Lighter Weight:** About 40% of the weight of a comparable lead acid battery. A 'drop in' replacement for lead acid batteries.
- **Higher Power:** Delivers twice power of lead acid battery, even high discharge rate, while maintaining high energy capacity.
- **Wider Temperature Range:** -20℃~+60℃.
- **Superior Safety:** Automatic protection with internal battery management system. Lithium Iron Phosphate chemistry eliminates the risk of explosion or combustion due to high impact, overcharging or short circuit situation.
- **Increased Flexibility:** Modular design enables deployment of up to to ten batteries in parallel.

Application

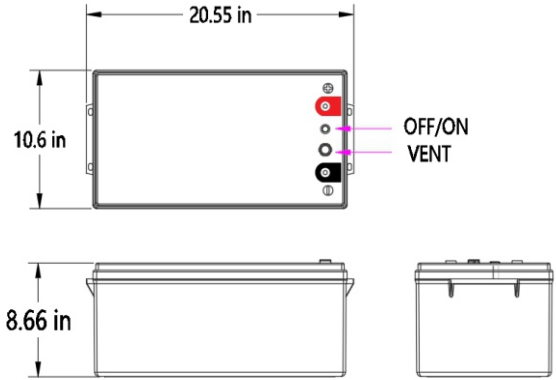
RV,Electric vehicles,Boat ; Solar/wind energy storage system; UPS, backup power ; Telecommunication; Medical equipment; Lighting.

Warranty

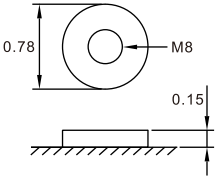
We provide 10-year warranty for all our batteries. And our 10-year battery warranty includes the following privileges when used correctly in accordance with the manual instructions.

- We'll assist to analyze customer's problem within 24 hours, and help solve problem, restore battery usage, and introduce the optimal use method;
- If the problem can't be solved, we'll send new battery replacement to the defective battery. And the defective battery needs to be returned to our US warehouse. and will be checked and tested by our technical team.

Battery Specification



Terminal Dimensions



Unit:inch

MODEL	LP76-65
Nominal Voltage	76.8V
Nominal Capacity	65Ah
Nominal Energy	4992Wh
Standard Charge Voltage	86.4V(87.6V max)
Standard Charge Current	13A
Allowed Max.Charge Current	65A
Max.Discharge Current	150A
Peak Discharge Current	500A
Terminal	F12 / M8
Dimensions L*W*H	20.55*10.6*8.66 inch
Temperature	Charge:0℃～+45℃ Discharge: -20℃～+60℃
Cycle Life	>2000 cycles @100%DOD / > 8000 cycles @ 50%DOD

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 mins.

Charging Methods

Use 87.6V lithium battery charger to maximize the capacity.
Recommend Charging Voltage: Between 85.2V to 87.6V
Recommend Charging Current:
0.2C: The battery will be fully charged to 100% capacity in approximately 5 hours.
0.5C: The battery will be approximately 97% charged in around 2 hours.

Inverter/Controller

·Select"76V(87.6V)LI(LiFeP04) Mode" or
·Select "User Mode" to enter values according to below parameters:

CHARGING	Charging Limit Voltage	87.6V
	Over Voltage Disconnect Voltage	88.0V
	Over Voltage Reconnect Voltage	85.2V
	Equalizer Charging Voltage	81.6V
DISCHARGING	Under Voltage Warning Voltage	60.0V
	Under Voltage Warning Reconnect Voltage	72.0V
	Discharging Limit Voltage	60.0V
	Over Discharge Disconnect Voltage	60.0V
	Over Discharge Reconnect Voltage	72.0V
	Over-Discharge Delay Time	0.5S

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,below parameters are for reference only. The voltage needs to be tested at rest(with zero current) after 15 mins of disconnecting from charger &loads.

Capacity	Voltage
100%	81.12V
99%	80.00V
90%	79.80V
80%	79.50V
70%	79.20V
60%	78.98V
50%	78.75V
40%	78.45V
30%	78.00V
20%	77.40V
10%	76.78V
1%	64.80V （recommend low voltage disconnect voltage）
0%	60.0V

Long-Term Storage

·The battery can be operated in temperature of -20°C to +60°C,and a temperature between +10°C to +35°C is ideal fr long-term storage.Store in a fireproof container and away from children.

·For a longer-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.

Parallel Batteries

Connection Tips

Check as below before connecting :

a. connect batteries with same capacity(Ah) ONLY.

b. connect batteries with the same brand ONLY.

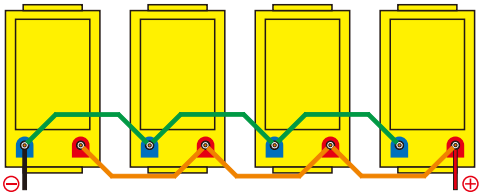
Two Necessary Steps Before Connecting:

These two steps are necessary in order to reduce the voltage difference between batteries, and through these, the battery system can perform the best of it in parallel.

Step 1: Fully charge your batteries separately.

Step 2: Connect your batteries one by one inparallel.

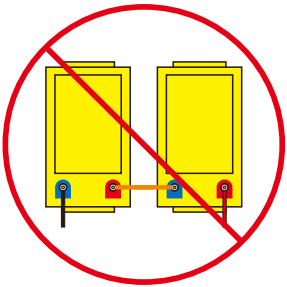
Parallel connection of batteries



Capacity of parallel battery	Battery Numbers	Limited Charge Voltage	Discharge Cut-off voltage
76.8V65Ah	1PCS	87.6V	64.8V
76.8V130Ah	2PCS	87.6V	64.8V
76.8V195Ah	3PCS	87.6V	64.8V
76.8V65Ah*n	n≤6PCS	87.6V	64.8V

Notes for parallel connection:

- Fully charge all the battery firstly, then connect them in parallel.
- The voltage difference between parallel batteries cannot ⩾0.90V
- The number of batteries in parallel is ⩽ 6PCS, Do not connect in series.
- Do not mix in series or parallel with lead-acid batteries or different types of lithium batteries ; Only use batteries with the same type and same capacities.
- Battery parallel connections need to be charged according to the standard charging voltage in the above table, and a special charger for lithium batteries is recommended;(Follow note as above when selecting proper chargers)



Do not connect in series

APP operation guide

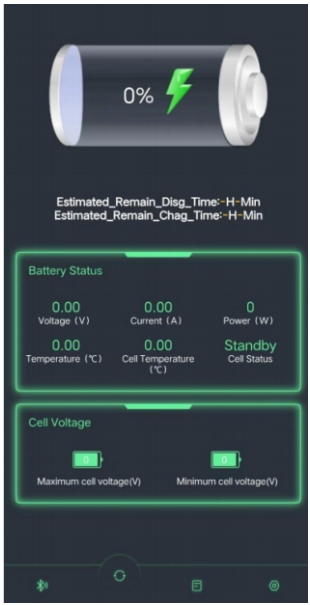
APP download connection QR code

APP icon after installation

1、Download and install the 'Lithium Battery WiFi' app: Scan the QR code below to download and install the 'Lithium Battery WiFi' app. For the iOS APP, please go to the App Store (Apple App Store) and search for "lithium battery wifi" to install it.

2、After opening the APP, search for and select the Bluetooth device you wish to connect.Note that the APP needs to obtain Bluetooth permissions and positioning permissions. If a permission pop-up window pops up when searching for Bluetooth devices, you must choose to allow the APP to obtain permissions before searching for Bluetooth devices.

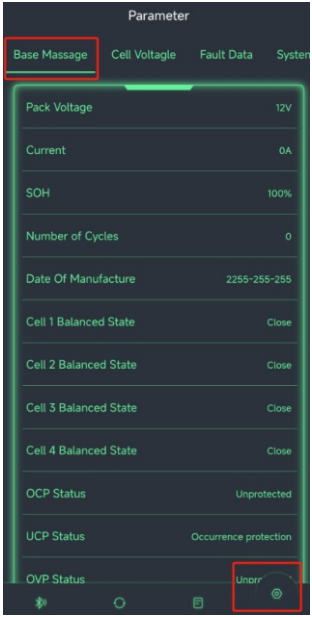
Bluetooth search connection interface



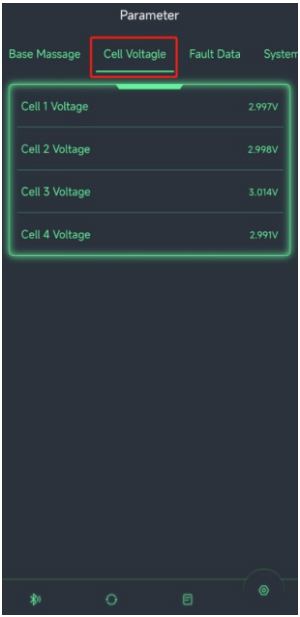
Battery homepage data interface

3、As shown below, once the Bluetooth device is successfully connected, it will automatically navigate to the home page where you can view the battery's homepage data

4、Enter the settings interface to view additional Battery Management System(BMS)paramenters.The device parameters on the Bluetooth interface are for viewing purposes only and cannot be modified.



Basic information interface



Voltage information for each section

In the settings interface, click on the upper sub-interface selection to enter the corresponding interface. Swipe left on the upper sub-interface selection area to see more sub-interface selections. Click to enter. As shown in the picture below, click on the cell voltage to enter the cell voltage display page and view the cell voltage information.

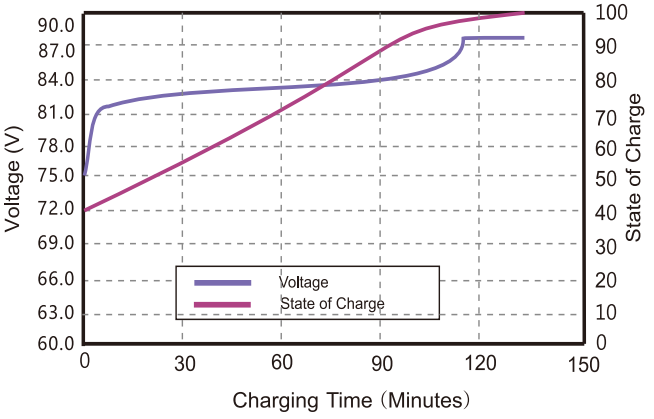
5、Fault data query

Fault record information

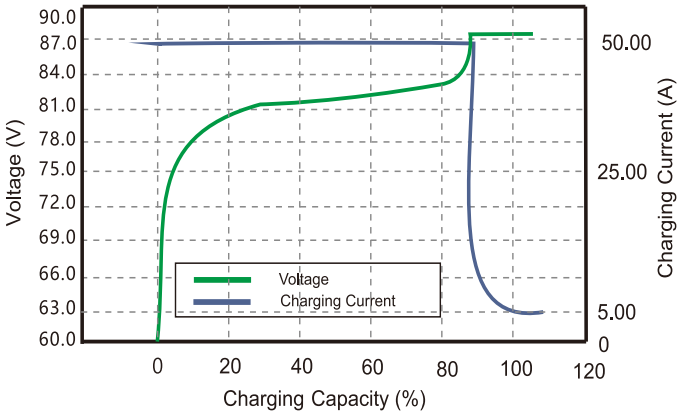
On the Fault query page, you can query battery fault records in different periods.

Curve Of Lithium Iron Phosphate Battery

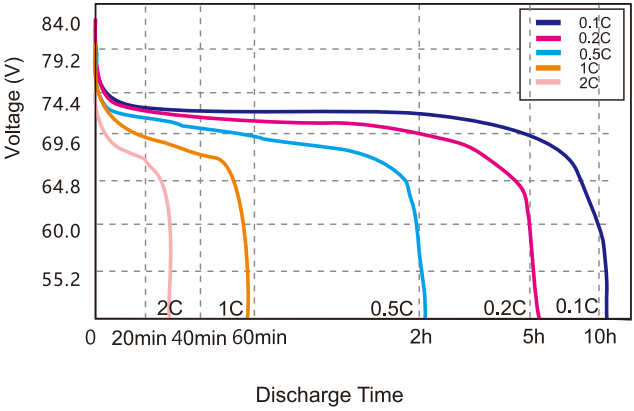
State Charge Curve @0.5C 25□



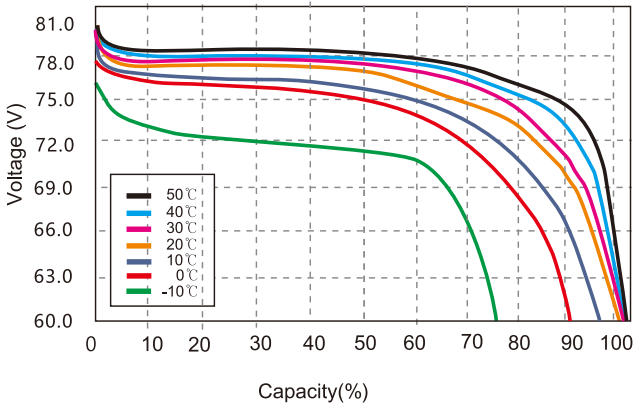
Charging Characteristics @0.5C 25℃



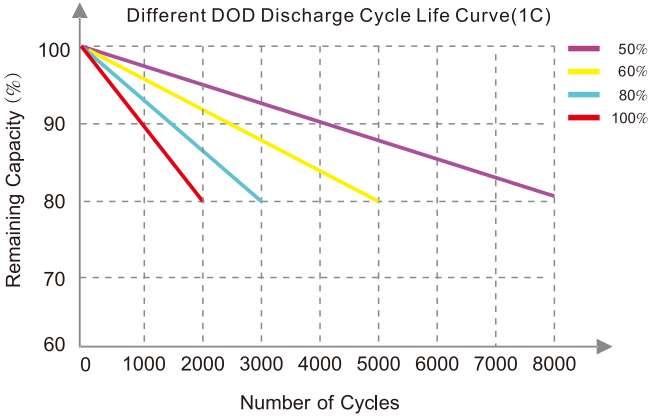
Different Rate Discharge Curve @25℃

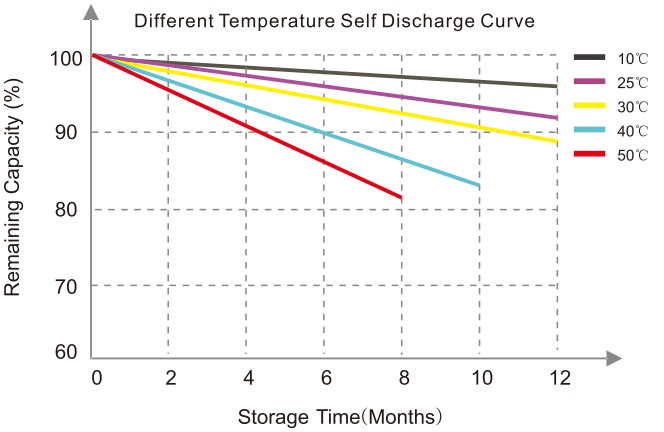


Different Temperature Discharge Curve @0.5C



Discharge Cycle Life Curve /Self Discharge Curve





How To Activate The Battery

If the BMS has cut-off the battery for protection, you need to cut off the load of the battery and put the battery aside for 30mins. Then the battery will automatically recover itself to normal voltage and can be used after fully charged.

If the battery is unable to recover itself and its voltage is too low to hold a charge, you can activate it in below two ways:

1. Use the charger with 0V charging function (it can charge the battery starting from 0V)to charge the battery. After fully charged ,the battery can be used normally.

2. Use another 72 V lithium battery to connect in parallel with the battery for a minute to activate the battery (lead-acid battery at voltage between 72 V and 87.6 V will also work). After that, fully charge the battery and it can be used normally.

Warning & Tips.

1. DO NOT disassemble or alter the battery.
2. DO NOT reversely connect or short-circuit the positive and negative poles of the battery.
3. DO NOT soak the battery in water, especially sea water.
4. DO NOT throw the battery into fire.
5. DO NOT Heat above 70°C/158°F.
6. DO NOT use the wrong charger with output below 81.0V or over 87.6V.

Troubleshooting

Can not discharge.

1.Check whether the battery is securely connected.
2.Check whether the positive and negative battery terminals are correctly connected.
3.Check whether the battery voltage is greater than 72V.If it is less than 72V, charge the battery first.
4.Check whether the load voltage matches the battery.
5.Check whether the load current is greater than the battery discharge current, Make sure it is less than the battery discharge current.
6. Ensure that the ambient discharge temperature ranges from -15 ° C to +55 ° C.

Can not charge

1. Check whether the battery is securely connected.
2. Check whether the positive and negative battery terminals are correctly connected.
3. Check the charging voltage matches the battery , the charging parameters are set correctly.
4. Check whether the charging current is greater than the maximum charging current of the battery, Make sure it is less than the maximum charging current of the battery.
5. Check whether the battery voltage is less than 60V,If it less than 60V,use the charger with 0V charging function to charge.
6. Ensure the charging environment temperature ranges from 0 ° C to +45 ° C.
7. After the battery is protected by over-discharge, disconnect the load and wait for the battery to recover the voltage before charging, or use the charger with 0V charging function to charge.

Battery heats up

1. Check whether the battery is securely connected. The connecting wire should be in contact with the battery terminal. Do not clamp screws to discharge.
2. Check whether the battery cable matches the working current. 6AWG-100A, 4AWG-150A, 2AWG-200A cable is recommended.
3. Check whether the load power exceeds the battery discharge power, ensure the load power is lower than the required battery power.
4. Ensure the working temperature is lower than 55 ° C.