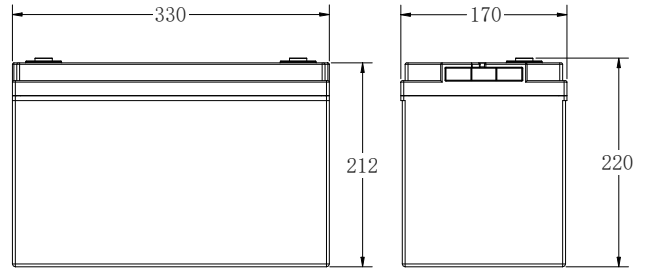


12V 100Ah LiFePO₄ Battery



LxWxH: 330*170*220mm



12.8V | 100Ah | 1280Wh

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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°C - +60°C.
- **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 four batteries in series and up to four batteries in parallel.

Application

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



Warranty

We provide five-year warranty for all our batteries. And our five-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

SKU	WY1250	WY12100	WY12200
Nominal Voltage	12.8V		
Nominal Capacity	50Ah	100Ah	200Ah
Nominal Energy	640Wh	1280Wh	2560Wh
Standard Charge Voltage	14.4V		
Discharge Cut-off Voltage	10.8V		
Standard Charge Current	10A	20A	40A
Allowed Max.Charge Current	50A	100A	100A
Max.Discharge Current	50A	100A	100A
Peak Discharge Current @10S	150A	250A	250A
Terminal	F11 M6	F12 M8	F12 M8
Temperature	Charge temperature:0℃~+45℃ / Discharge temperature -20℃~+60℃		
Cycle Life	>3000 Cycles @1C 100%DOD / >8000 Cycles @0.5C 50%DOD		

Battery Dimensions

WY12100	LxWxH=13.0x6.70x8.66 in	330*170*220mm	TH: 220mm
WY12200	LxWxH=19.7x9.50x8.66 in	500*240*220mm	TH: 220mm

BMS - Battery Management System

Protection		Protection Condition		Recovery
Current	Charging	<1.0C	Temperature Protection	a. Cut Charging 15±5S or b. Discharge > 2A or c. < +50°C and > 0°C or d. ChargeCurrent < 0.5C
		1.0~1.5C	Delay 3~10S	
		1.5~3.0C	Delay 1~3S	
		>3.0C	Delay 50~150mS	
	Discharging	<1.0C	Temperature Protection	a. Cut Discharge 15±5S or b. Charge > 2A or c. < + 65°C and > -20°C or d. DischargeCurrent < 0.5C
		<2.0C	Temperature Protection	
		3.0~4.0C	Delay 50~150mS	
		4.0~10C	Delay 5~15mS	
		>10C	Delay 300~800uS	
	Voltage	Charging	Battery	≥14.8V, Delay 1~2S
Single Cell			≥3.65V, Delay 1~2S	a. ≤3.5 V or b. Discharge > 2 A
Discharging		Battery	≤10.0V, Delay 1~2S	a. ≥12.0V or b. Charge > 2A
		Single Cell	≤2.3V, Delay 1~2S	a. ≥2.7V or b. Charge > 2A
temperature	Battery	Charging	≤0°C or ≥+50°C	≥+5°C or ≤+45°C
		Discharging	≤-20°C or ≥+70°C	≥-10°C or ≤+60°C
	BMS		≥+90°C	≤+80°C
Balance for single cell	Voltage		≥3.55V, Delay 1~10S	a. Cut Charging or b. Voltage ≤ 3,5V
	Current		36±10mA	

Explain: "C" represents the Battery Nominal Capacity

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 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	14.6V
Over Voltage Disconnect Voltage	15.0V
Over Voltage Reconnect Voltage	14.2V
Equalizer Charging Voltage	14.0V
Float Charging Voltage	13.8V
Boost Charging Voltage	13.8V
Boost Reconnect Charging Voltage	13.2V

DISCHARGING

Low Voltage Disconnect Voltage	10.8V
Low Voltage Reconnect Voltage	12.4V
Under Voltage Warning Voltage	11.6V
Under Voltage Warning Reconnect Voltage	12.0V
Discharging Limit Voltage	10.4V
Over Discharge Disconnect Voltage	10.4V
Over Discharge Reconnect Voltage	11.6V
Over-Discharge Delay Time	0.8V

OTHERS

Equalize Duration	120min
Boost Interva	Not Suitable for Lithium Batteries
Boost Duration	120min

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%	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%	12.90V
10%	12.80V
1%	10.80V (Recommend low voltage disconnect voltage)
0%	9.5V

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 for 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.

Connection Tips

Premise of Connection: To connect in series or /and in parallel, batteries should meet below conditions:

- a.the same battery capacity(Ah);
- b. from same brand (as lithium battery from different brands has their special BMS);
- c.purchased in near time(within one month)

Two Necessary Steps Before Connecting:

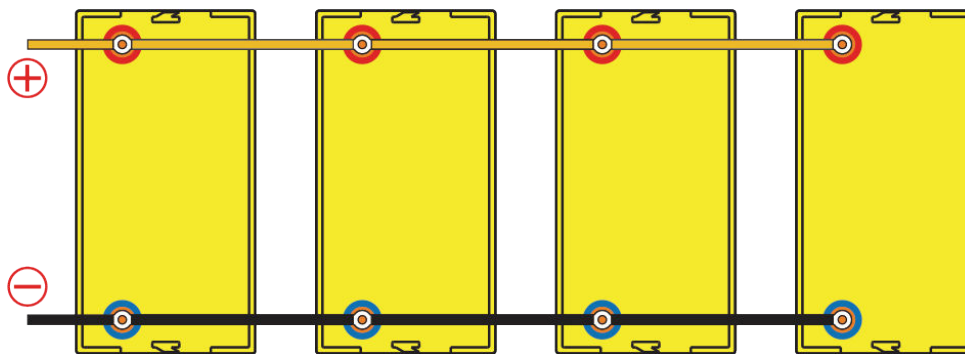
These two steps are necessary in order to reduce the voltage difference between batteries, and through these, the battery system can perform the best of it in series or/and in parallel.

Step 1: Fully charge your batteries separately.

Step 2: Connect your batteries one by one in parallel, and leave them together for 12-24hrs.

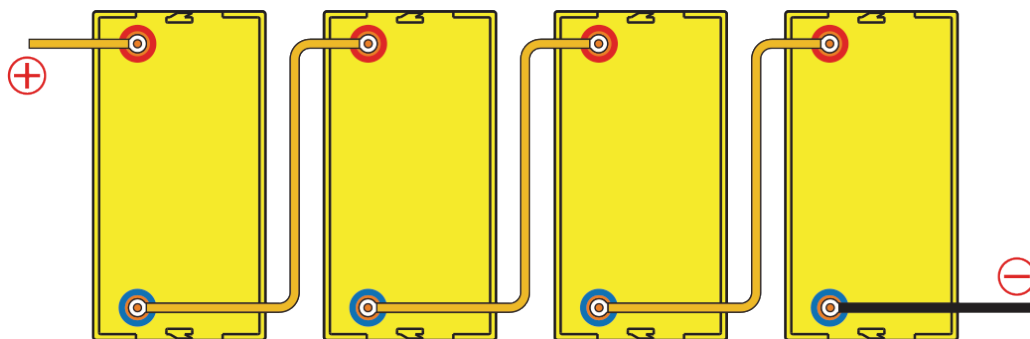
And then, you can connect your batteries in series or/and in parallel.

Parallel Connection of Batteries



Capacity of parallel battery	Battery Numbers	Limited Charge Voltage	Discharge Cut-off voltage
12.8V/Capacity*1	1 PCS	14.6V	10.8V
12.8V/Capacity*2	2 PCS	14.6V	10.8V
12.8V/Capacity*3	3 PCS	14.6V	10.8V
12.8V/Capacity*4	4 PCS	14.6V	10.8V

Battery in Series



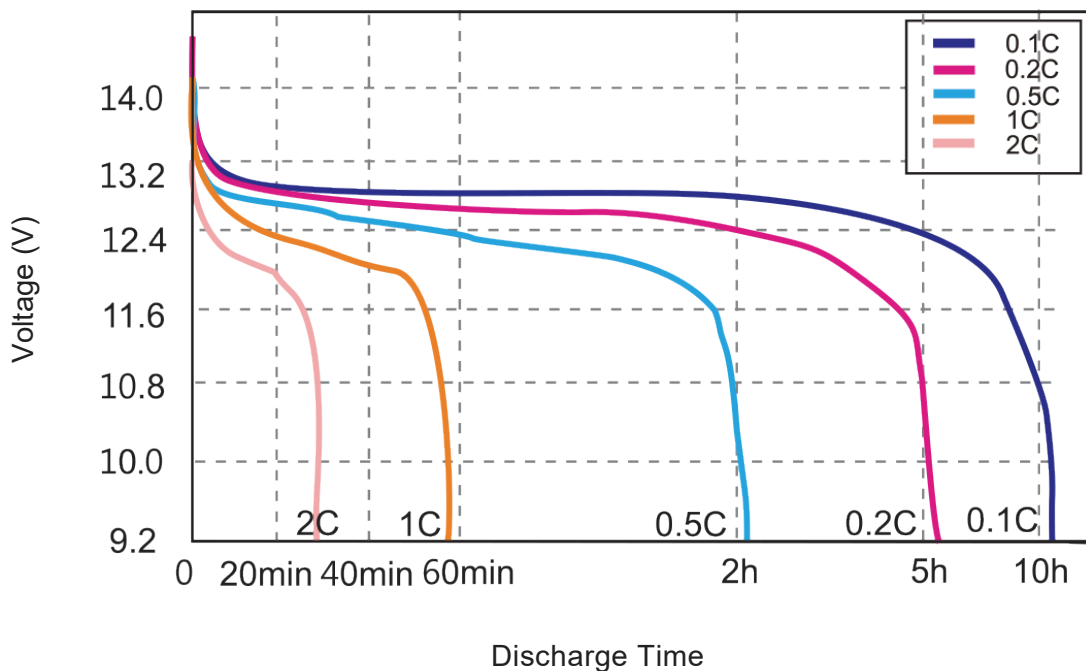
Inverter/Charger Type	Battery Numbers	Limited Charge Voltage	Discharge Cut-off voltage
12V	1 PCS	14.6V	10.8V
24V	2 PCS	29.2V	21.6V
36V	3 PCS	43.8V	32.4V
48V	4 PCS	58.4V	43.2V

Notes for Series and Parallel Connection:

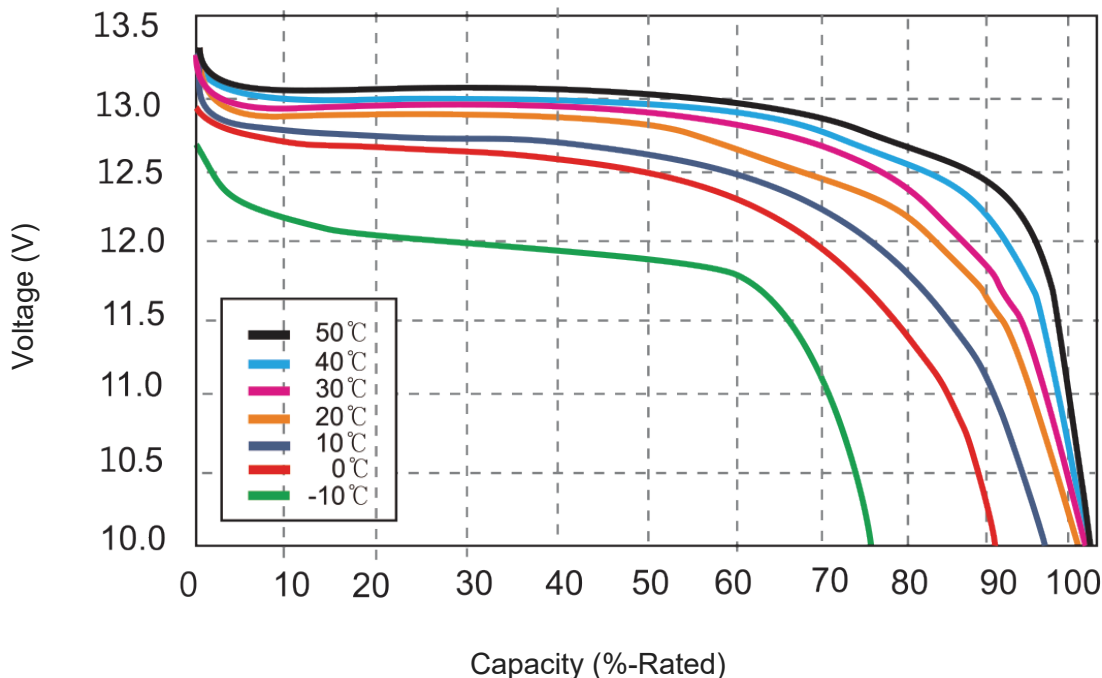
- Fully charge all the battery firstly, then connect them in series or parallel.
- The number of batteries in series is ≤ 4 PCS, and the number of batteries in parallel is ≤ 4 PCS. It is forbidden to mix multiple series connection and multiple parallels connection; (No more than 4 batteries should be used nether in series nor parallel connections; Mix use series and parallel connections are not permitted.)
- Do not mix in series or parallel with lead-acid batteries or different types of ithium batteries; (Only use batteries with the same type (lead-acid battery or lithium) and same capacities.
- Battery series and 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)

Characteristics of LiFePO₄ Battery

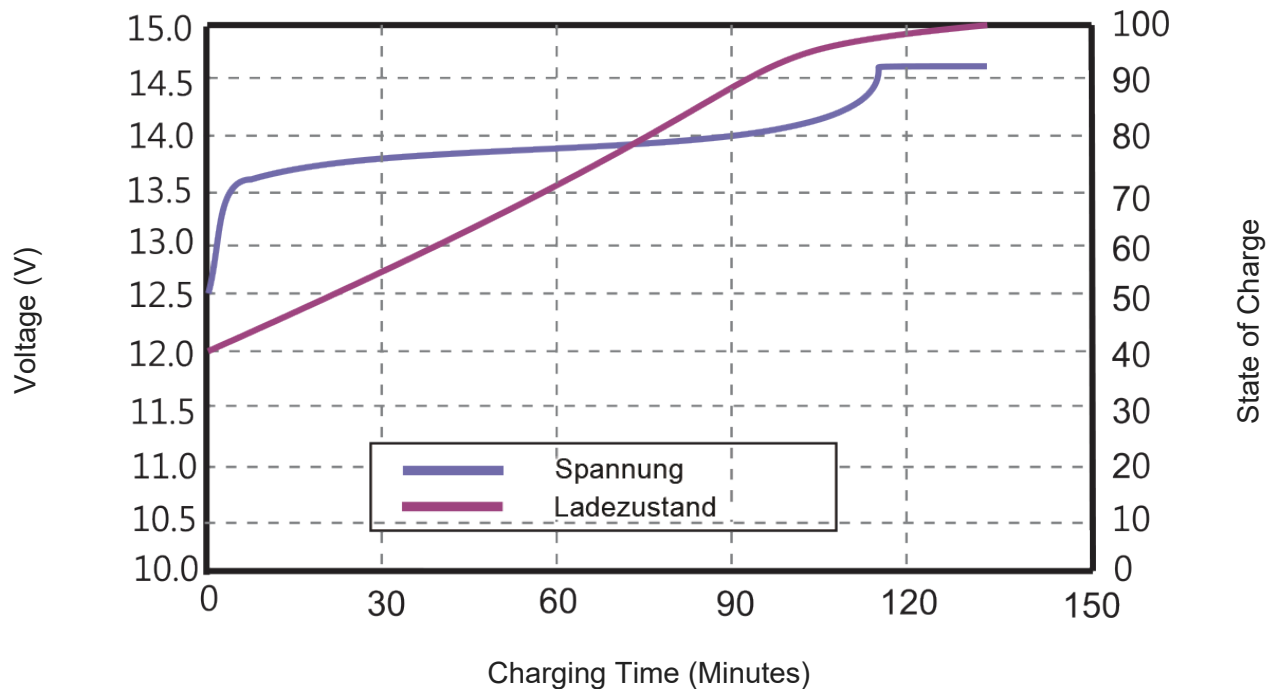
Different Rate Discharge Curve @25°C



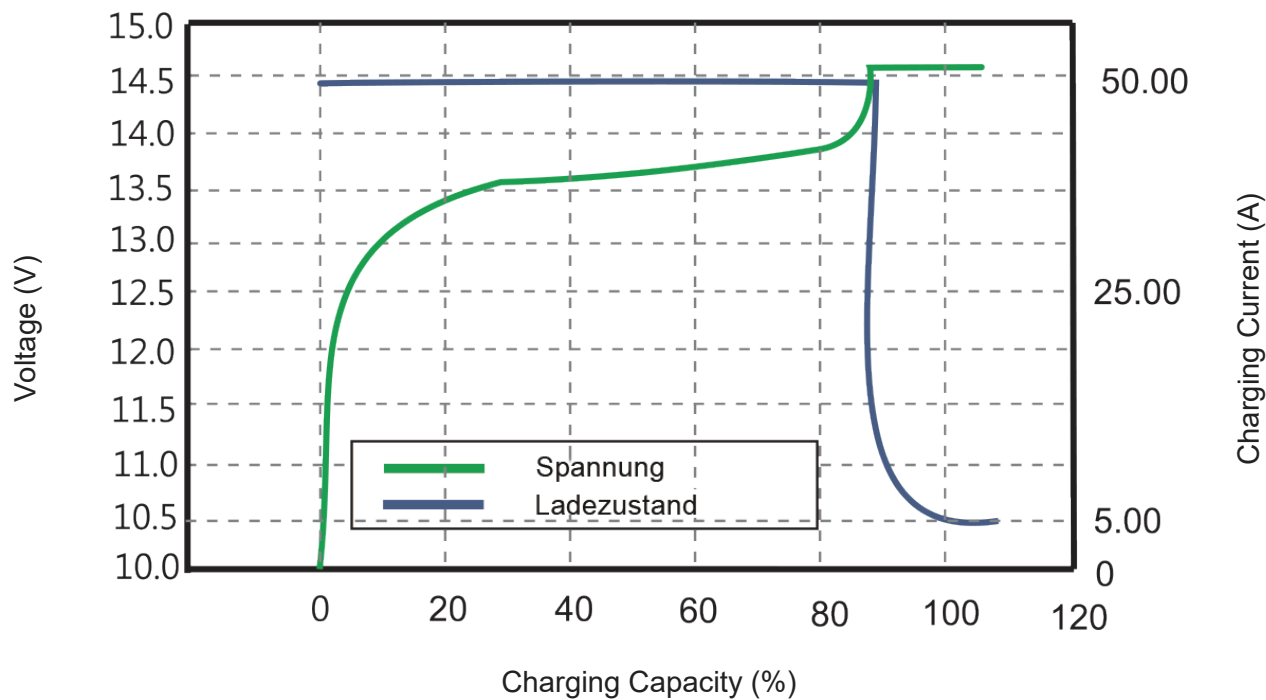
Different Temperature Discharge Curve @0.5C



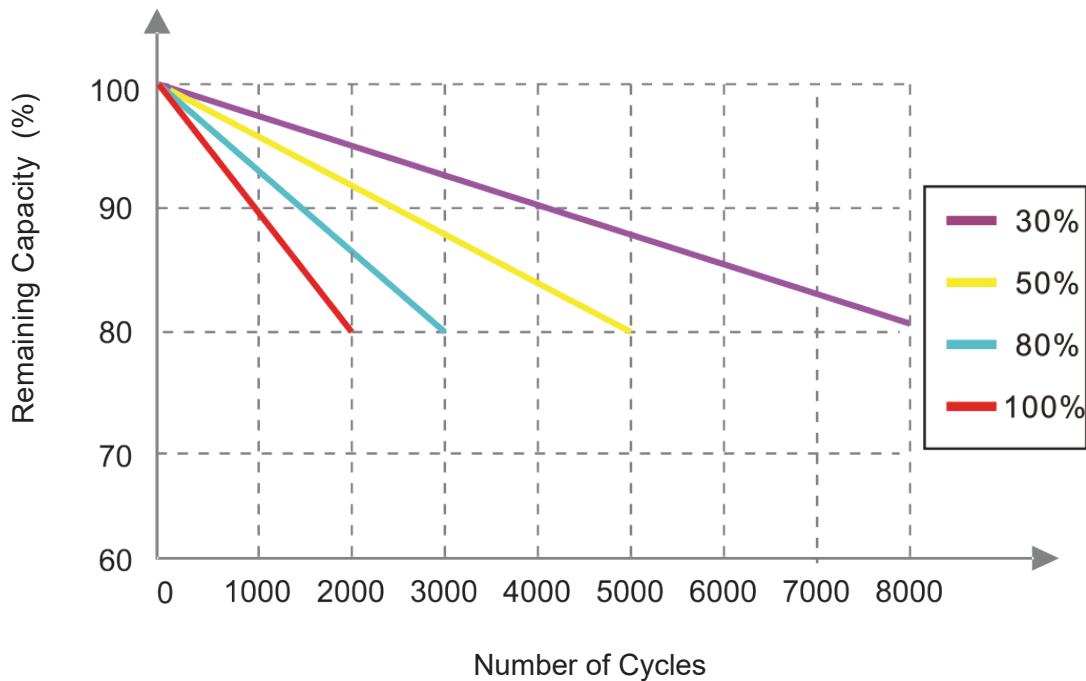
State Charge Curve @0.5C 25°C



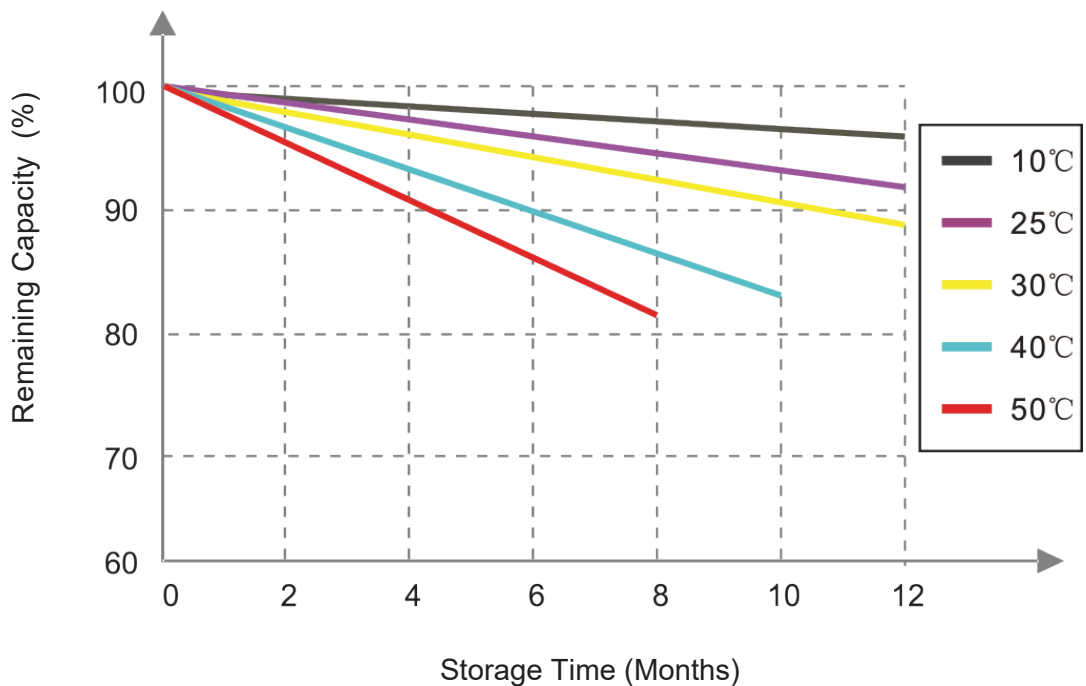
Charging Characteristics @0.5C 25°C



Different DOD Discharge Cycle Life Curve @1C



Different Temperature Self Discharge Curve



Troubleshooting

Solutions to general failures of lithium iron phosphate batteries:

Problem	Solution
The battery pack cannot be discharged properly	1.Check whether the battery connection is loose or not
	2.Make Sure the battery terminal posts were connected correctly and firmly
	3.Switch off the load and switch on again after 3 seconds
The battery pack cannot be charged properly	1.Use chargers with compatible output;
	2.Only connect to electric appliances with compatible input.
The battery heats up when using	1.Make sure the appliance connected are compatible and not overloaded
	2.Connect the battery packs correctly and firmly

Warning & Tips

- ⚠ Disassemble or modify the battery is forbidden.
- ⚠ Do not reversely connect or short-circuit the positive and negative poles of the battery; do not mix the battery with metal objects avoid short circuit from metal objects touch the positive and negative electrodes of the battery,damaging the battery or even causing danger.
- ⚠ It is strictly forbidden to immerse the battery in sea water or throw it into fire.
- ⚠ It is strictly prohibited to use chargers that do not meet the requirements for charging.
- ⚠ Avoid frequent overcharging.Overcharging will cause the internal temperature rise and harmful to the lithium-ion battery and charger

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 12V lithium battery to connect in parallel with the battery for a minute to activate the battery (lead-acid battery with voltage more than/equal to 12V and less than/equal to 14.6V will also work). After that, fully charge the battery and it can be used normally.

Danger

- Protect the battery from high temperatures. Otherwise, the battery may heat up, catch fire, lose some functions and shorten its lifespan.
- If the battery is empty, please charge it in time (<15 days) to avoid damage.
- Please use a suitable or recommended charger for this battery.
- If the battery has a strange smell, heat, deformation or other abnormalities, please stop using it.
- If battery fluid gets into your eyes or on your skin, do not wipe it, rinse it with clean water and seek medical attention immediately.
- Please keep it away from children and pets.