VATRER

www.vatrerpower.co.za

USER'S MANUAL

Low temp cut off protection (Charge / Discharge)

12.8V 600Ah

LiFePO4 APP Connection

CATALOGUE

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01 / PRODUCT INTRODUCTION

LiFePO4 Battery	12.8V 600Ah
Nominal Voltage	12.8V
Charge Voltage	14.2V-14.6V
Weight	48.85KG / 107.70LB
Energy	7680Wh
Max Continuous Charging Current	300A
Max Continuous Discharging Current	300A
Recommend Charge Current	60A~120A
Max Load / Inverter Power	3840W
Operating Temperature Range	Charge 0°C~50°C(32°F~122°F) Discharge -20°C~60°C(-4°F~140°F) Storage -10°C~50°C(14°F~122°F) Low temp cut off protection (Charge) 0℃ ± 4℃ (32℉ ± 7.2°F) Low temp cut off protection (Discharge) -20℃ ± 4°C(-4℉± 7.2°F)
Waterproof Class	IP65
Terminal Type	M8
Dimension	635*244*220mm 25.00*9.61*8.66inch

02 / ADVANTAGE

- Mobile with carry handles makes it easy to lift and move around.
- With a battery management system enclosed, needs no extra wiring.
- Built with LiFePO4 battery cells that are engineered to deliver superior performance & longevity.

- Battery voltage stays above 12.5V at 90% discharged.
- Maintenance Free; Nonspill.
- Perfect replacement or upgrade for a traditional lead-acid battery.

03 / WARRANTY POLICY

Disclaimer: We are not responsible for any accidents caused by non-compliance with the instructions specified in the user manual.

Warranty Service: This product comes with a VATRER POWER' s warranty from the date of manufacture. During the warranty period, if you encounter any problems, please feel free to contact us. Our after-sales service team will provide specific maintenance solutions and troubleshooting methods.

Warranty Details: For specific warranty details, please visit our official website at www.vatrerpower.co.za.

04 / CHARGING TIPS

▶ About Charging Voltage

Based on the characteristics of Lithium Iron Phosphate (LiFePO4) batteries, the voltage measured by all LiFePO4 batteries 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

Scheme 1: You can use a lithium iron phosphate 4-string (14.6V) charger to charge the battery pack.

Scheme 2: You can use photovoltaic solar panels to charge the battery through MPPT.
Scheme 3: You can use the inverter to charge the battery pack (note: the inverter needs a built-in AC to DC charging function)

Battery Charger

Use a 14.6V lithium battery charger to maximize the capacity. Recommend Charging Voltage: Between 14.2V to 14.6V.

12V 600Ah Recommend Charging Current:

120A(0.2C) The battery will be fully charged in around 5hrs to 100% capacity.
300A(0.5C) The battery will be fully charged in around 2hrs to 97% capacity.

If you use an inverter (MPPT) to connect our battery pack, please refer to the following data:

The MPPT settings of the 12V lithium iron phosphate battery are as follows:

Select "12V (14.6V) Ll (LiFePO4) Mode" or
Select "User Mode" to enter values according to below parameters:

	Parameter	Voltage/Time
Charging	Charging Limit Voltage	14.6V
	Over Voltage Disconnect Voltage	15V
	Over Voltage Reconnect Voltage	14.2V
	Equalizer Charging Voltage	14V
	Float Charging Voltage	13.8V
	Boost Charging Voltage	13.8V
	Boost Reconnect Charging Voltage	13.2V

	Parameter	Voltage/Time
Discharging	Low Voltage Disconnect Voltage	10.8V
	Low Voltage Reconnect Voltage	12.4V
	Under Voltage Warning Voltage	11.6V
	Under Voltage Warning Reconnect Voltage	12V
	Discharging Limit Voltage	10.4V
	Over Discharge Disconnect Voltage	10.4V
	Over Discharge Reconnect Voltage	11.6V
	Over-Discharge Delay Time	0.8s
Others	Equalize Duration	120min
	Boost Interval	Not suitable for lithium batteries
	Boost Duration	120min

05 / LONG-TERM STORAGE

- The battery can be operated at temperatures 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 a 50% charge level and recharge every three months if it is not going to be used for a long period of time.

06 / CONNECTION TIPS

The premise of Connection: To connect in series or in parallel, batteries should meet the below conditions:

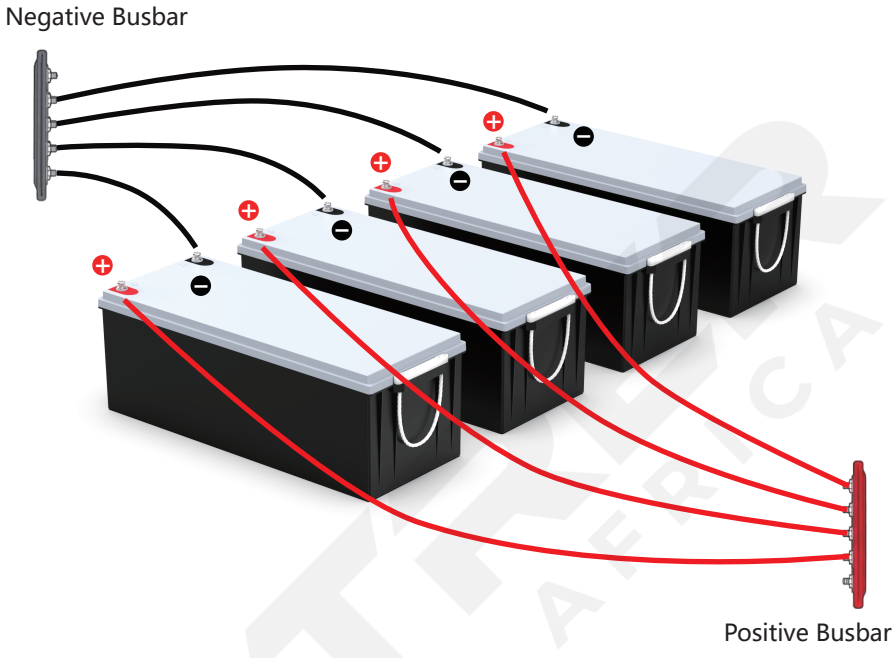
1. The same battery capacity (Ah);
2. From the same brand (as lithium batteries from different brands has their special BMS);
3. Purchased in near time (within one month).

▶ About connected in parallels and in series

The series/parallel connection limit can connect up to 16 identical batteries, but the maximum series connection is a 48v (51.2V) battery system/4 parallel battery systems. If the batteries are only connected in parallel, a maximum of 10 units can be connected in parallel.

Please refer to the following picture for the series connection

Please refer to the following picture for a parallel connection



▶ 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.

Step1.

Fully charge your batteries separately.

Step2.

Connect your batteries one by one in parallel, and leave them together for 12~24 hours.

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

07 / ABOUT OUR BATTERY'S BMS

The unique built-in battery management system (BMS) of our product's lithium battery can protect it from overcharge, deep discharge, over-load, overheating and short circuit, and low self-discharge rate. Our BMS has a high-temperature disconnect function. When the internal temperature of the battery reaches 75 ℃ (167 °F), It will automatically disconnect to protect the battery. With overcharge and over-discharge protection functions, when the voltage of the single cell of the battery exceeds 3.75V or falls below 2.2V, the battery will be disconnected automatically. We recommend the charging voltage is 14.4±0.2V, when the charging voltage is lower than 13.8V, the battery power can not be full.

HOW TO ACTIVATE THE BATTERY WHEN BMS CUT IT OFF FOR PROTECTION?

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 30 minutes. 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 (a lead-acid battery with a 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.

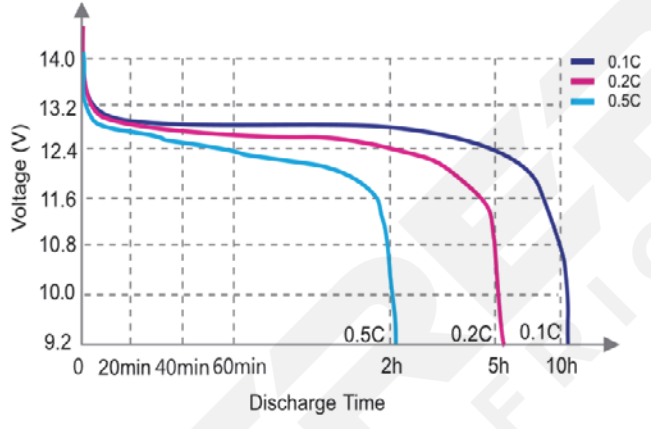
08 / PRECAUTIONS

- When recharging, use the LiFePO4 battery charger specifically for that purpose.
- Do not strike the battery with any sharp edge parts, such as Ni-tabs, pins, and needles.
- Do not immerse the battery in water and seawater.
- Do not use and leave the battery near a heat source such as a fire or heater.
- Do not reverse the position and negative terminals.
- Do not connect the battery to an electrical outlet.
- Do not discard the battery in fire or heat it, and do not bend the tab.
- The battery tabs are not so stubborn, especially for aluminum tabs.
- Do not short-circuit the battery by directly connecting the positive and negative terminals with a metal object.
- Do not transport and store the battery together with metal objects such as necklaces, hairpins, etc.

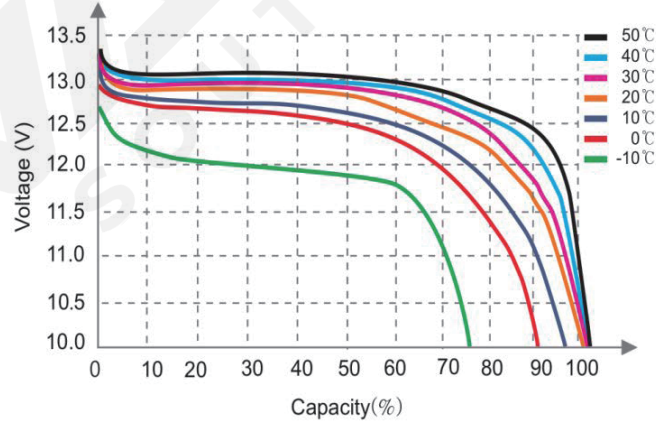
VATRER SOUTH AFRICA

09 / DISCHARGE CURVE

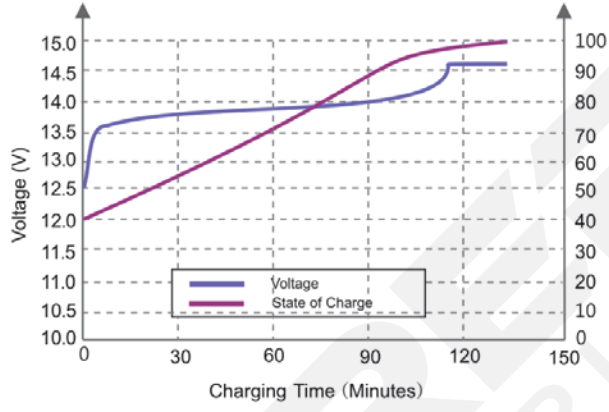
Different Rate Discharge Curve (25°C)



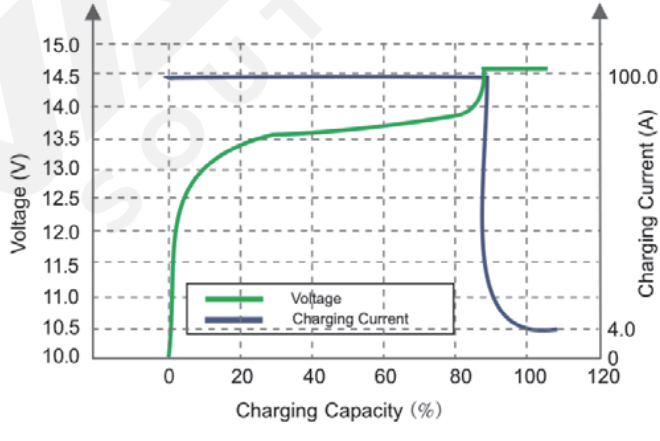
Different Temperature Discharge Curve (0.5C)



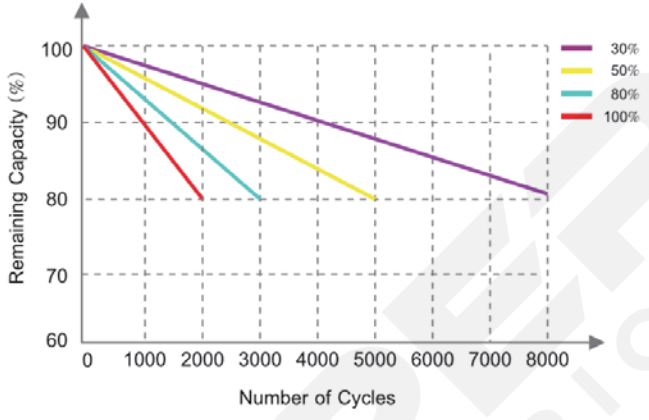
State Of Charge Curve (0.5C , 25°C)



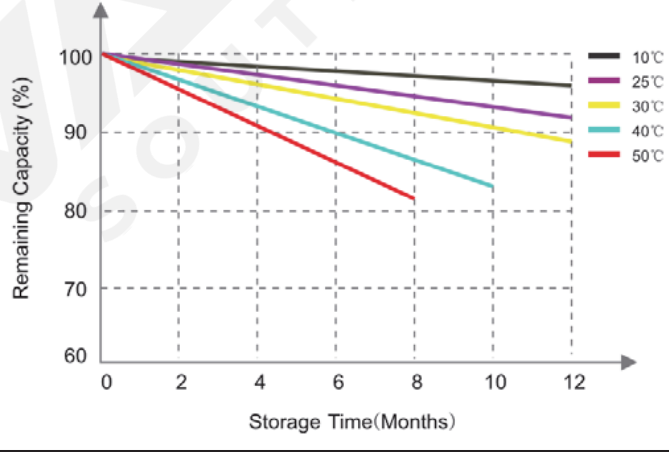
Charging Characteristics (0.5C , 25°C)



Different DOD Discharge Cycle Life Curve (0.5C)



Different Temperature Self-Discharge Curve



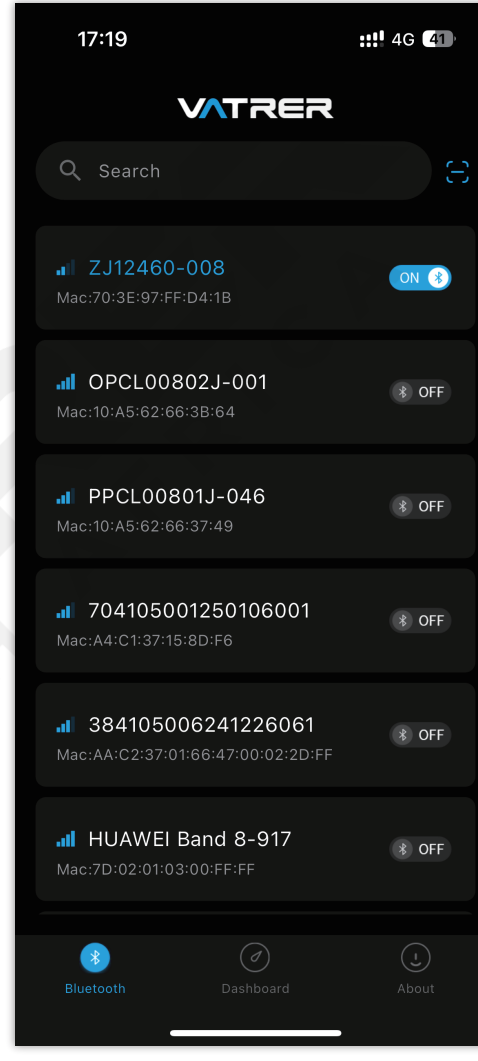
10 / APPLICATION

- RV, Camper, Trailer, Caravan, Camping Truck, Bus, etc.
- Solar System+ Wind Power System
- Home Energy System
- Boat& Fishing
- Wireless Lawn Movers, Vacuum Cleaners & Washing Machine
- Portable Video Camera& Portable Personal Computer
- Car Audio System
- Light Equipment
- Emergency Lighting Equipment
- Fire Alarm& Security Systems
- Electric Equipment& Telemeter Equipment Portable
- Toys& Consumer Electronics

11 / OPERATION INSTRUCTIONS OF APP

1. Search VATRER in the Android App Market or Apple App Store, then install VATRER app on your smartphone.
2. The system automatically searches for the Bluetooth that can be connected, find the battery Bluetooth number corresponding to the options in the list, and click "connect".
3. After the connection is completed, the current information of the battery will be displayed.
4. The bottom of the interface from left to right Bluetooth, Dashboard and About.

18:33
5G
Vatrer
Cancel
VATRER
VATRER Battery
★★★★★2
桂玲 秦
Utilities
Today
Games
Apps
Search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4G
VATRER
Search
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OFF
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OFF
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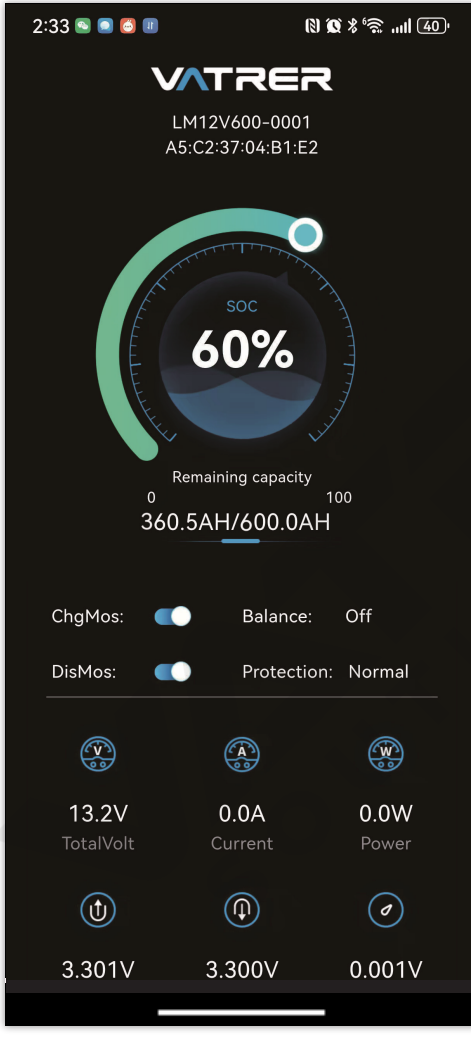
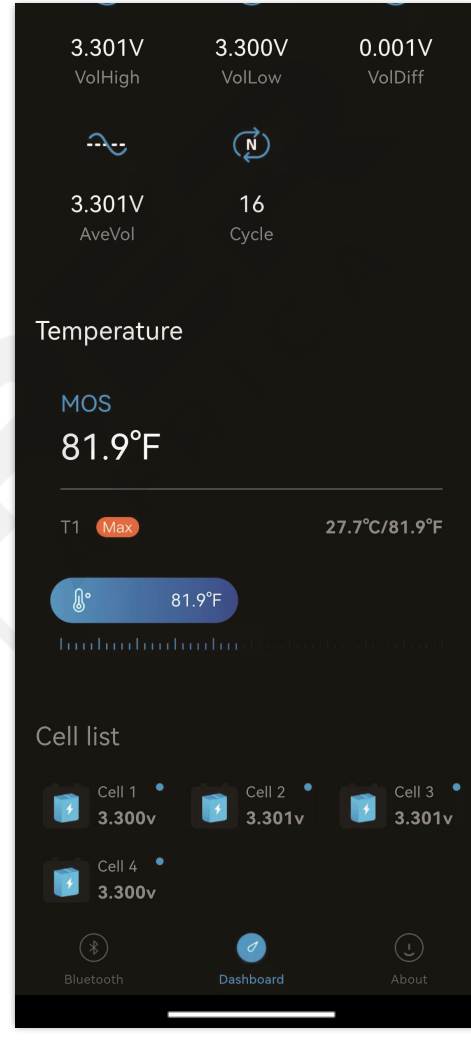
Bluetooth
Dashboard
About


2:33
VATRER
LM12V600-0001
A5:C2:37:04:B1:E2
SOC
60%
Remaining capacity
0
100
360.5AH/600.0AH
ChgMos:
Balance:
Off
DisMos:
Protection:
Normal
13.2V
TotalVolt
0.0A
Current
0.0W
Power
3.301V
3.300V
0.001V


3.301V
VolHigh
3.300V
VolLow
0.001V
VolDiff
3.301V
AveVol
16
Cycle
Temperature
MOS
81.9°F
T1
Max
27.7°C/81.9°F
81.9°F
Cell list
Cell 1
3.300v
Cell 2
3.301v
Cell 3
3.301v
Cell 4
3.300v
Bluetooth
Dashboard
About

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