




LiFePO4

# PRODUCT MANUAL

Lithium Iron Phosphate Battery

12.8V  
100Ah

AUTO  
HEATING  
(100A BMS)

A yellow snowflake icon is positioned to the right of the text "AUTO HEATING".

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# PRODUCT OVERVIEW

## 12.8V 100Ah Battery

Operating Voltage: 12.8V

Charging Voltage:  $14.4 \pm 0.2V$

Recommend Charge Current: 20A (0.2C)

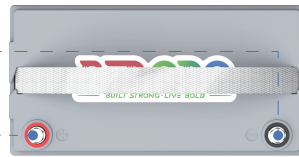
Required Minimum Charge Current (for Heating Function): 15A

Max Continuous Discharge Current: 100A

Max Continuous Load Power: 1280W

M8\*1.25mm Negative Terminal

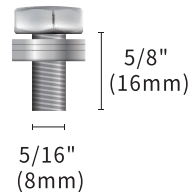
M8\*1.25mm Positive Terminal



## Additional Components

### M8- 5/8" (16mm) Terminal Bolts

The terminal bolts are used to secure multiple cable lugs to a single battery terminal. The bolts can be replaced with [M8](#) bolts of other lengths based on actual needs.



### Insulating Caps for Bolts



# BATTERY-PACK MAIN PARAMETERS

Item	Parameter
Cell	LiFePO4 Battery
Nominal Voltage	12.8V
Rated Capacity	100Ah
Energy	1280Wh
Internal Resistance	$\leq 40\text{m}\Omega$
Cycle Life	$\geq 4000$ times
Battery Management System (BMS) Board	100A
Charge Method	CC/CV
Charge Voltage	$14.4\text{V} \pm 0.2\text{V}$
Recommend Charge Current	20A (0.2C)
Required Minimum Charge Current for Heating Function <sup>①</sup>	$\geq 15\text{A}$
Max. Continuous Charge Current	100A
Max. Continuous Discharge Current	100A
Max. Discharge Current 1s	330A
Max. Continuous Output Power	1280W

①The charge current should be greater than 15A to activate the automatic self-heating function.

Item	Parameter
Dimension	L13 * W6.77 * H8.43 inch L329 * W172 * H214 mm
Housing Material	ABS (Flame Retardant Plastic)
Protection Class	IP65
Temperature Range	Charge: -20 to 50°C / -4 to 122°F Discharge: -20 to 60°C / -4 to 140°F Storage: -10 to 50°C / 14 to 122°F
Heating Temperature	Charge: -20°C to 5°C / -4°F to 41°F
Approx. Heating Time @15A	30-60mins (From -10°C / 14°F) 70-100mins (From -20°C / -4°F)





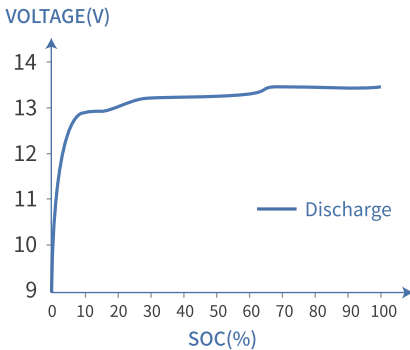
# HOW TO ESTIMATE THE BATTERY CAPACITY

## STATE OF CHARGE (SOC)

The battery capacity could be roughly estimated by its [resting voltage \(not charging/discharging voltage\)](#)<sup>①</sup>.

Since the voltage of each battery is slightly different, and the voltage measurement is affected by the measuring instrument, ambient temperature, etc., [the following parameters are for reference only](#). The actual SOC of the battery is based on the discharge capacity under load.

**Resting Voltage:** The voltage is measured after the battery has been disconnected from the charger and loads with zero current, and left alone for 3 hours.



SOC (%)	VOLTAGE (V)
0	10 to 12
25	13 to 13.15
50	13.15 to 13.2
75	13.3 to 13.33
100	≥13.33

① Based on the characteristics of LiFePO<sub>4</sub> batteries, the voltage measured by all LiFePO<sub>4</sub> batteries during charging/discharging is not the real voltage of the battery. Therefore, after charging/discharging and disconnecting the battery from the power source, the voltage of the battery will gradually drop/increase to its real voltage.



# SERIES / PARALLEL CONNECTION

## THE PREMISE OF CONNECTION

To connect in series or /and parallel, batteries should meet the below conditions:

- identical batteries with the same battery capacity (Ah) and BMS (A);
- from the same brand (as lithium battery from different brands has their special BMS);
- purchased in near time (within one month).

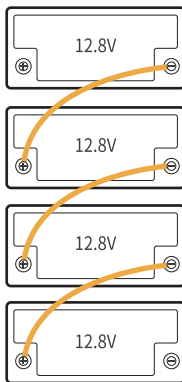
## LIMITATION FOR SERIES/PARALLEL CONNECTION

Support connecting up to 16 identical batteries for up to:

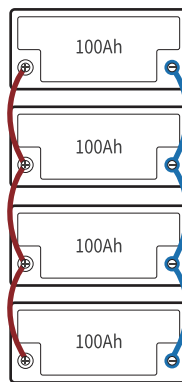
4 in series as 48V (51.2V) battery system/

4 in parallel as 400Ah battery system.

**Series Connection**  
48V(51.2V) 100Ah

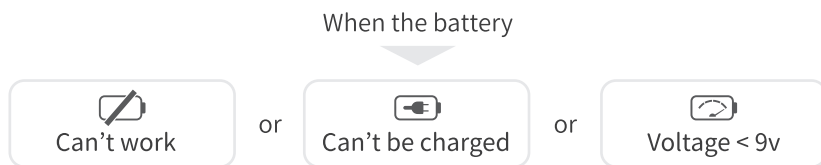


**Parallel Connection**  
12V(12.8V) 400Ah





# WHAT TO DO WHEN THE BATTERY STOPS WORKING?



It has 85% chances that BMS has shut it off for protection, and you could try one of below ways to activate the battery.

## General Steps

If the BMS has cut off the battery for protection, follow the below steps to activate it.

Step 1 [Cut off](#) all the connections from the battery

Step 2 [Leave the battery aside for 30mins](#)  
Then the battery will automatically recover itself to normal voltage (>10V) and can be used after fully charged.

If the battery is unable to recover itself after the above steps, please try activating by **ONE OF BELOW TWO METHODS.**

After activated (voltage > 10V) and fully charged by the normal charging method, it can be used normally.

## Method ①

Use a [charger with lithium battery activation function](#) to fully charge the battery.

## Method ②

Connect a [controller](#) that supports 12V LiFePO4 battery charging to charge the battery for 3~10s in sunny daytime.



**PROVIDER**

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