

Automatic
Self-Heating 

Li Time

12.8V 165Ah

Smart  **x Dual Purpose** and More 
BLUETOOTH 5.0

PRODUCT (150A BMS) **MANUAL**

Lithium Iron Phosphate Battery (LiFePO₄)

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PRODUCT OVERVIEW

12.8V 165AH BATTERY

Operating Voltage: 12.8V

Charging Voltage: $14.4V \pm 0.2V$

Recommended Charge Current: 33A (0.2C)

Required Minimum Charge Current for Heating Function: 15A

Hot Cranking Amps (HCA): 1500A (@77°F / 25°C)

Marine Cranking Amps (MCA): 1300A (@32°F / 0°C)

Cold Cranking Amps (CCA): 1200A (@14°F / -10°C)

Max. Continuous Discharge Current: 150A

Max. Continuous Output Power: 1920W

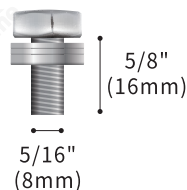


ADDITIONAL COMPONENTS

M8- 5/8" (16MM) TERMINAL BOLTS

Recommended terminal torque: 106.2 to 123.9 inch · lbs / 12 to 14 N · m.

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

Cover the battery with the insulating caps after tightening the bolts. If the cap melts, stop using the battery and reach out to service@litime.com for further analysis.

BATTERY PARAMETERS

Cell Type	LiFePO ₄
Nominal Voltage	12.8V
Rated Capacity	165Ah
Energy	2112Wh
Internal Resistance	≤40mΩ
Cycle Life Times	≥4000 times ^①
Cranking Times	≥5000 times ^①
Battery Management System (BMS) Board	150A
Charge Method	CC/CV
Charge Voltage	14.4V±0.2V
Recommended Charge Current	33A (0.2C)
Required Minimum Charge Current for Heating Function ^②	15A
Max. Charging Current	Outboard Alternator: 165A
	Charger: 150A
Hot Cranking Amps (HCA)	1500A (@77°F / 25°C)
Marine Cranking Amps (MCA)	1300A (@32°F / 0°C)
Cold Cranking Amps (CCA)	1200A (@14°F / -10°C)
Max. Continuous Discharge Current	150A

Max. Continuous Output Power	1920W
Max. Expansion (Series & Parallel)	For Starting and Deep Cycle: 4P, No Series For only Energy Storage: 4P4S
Dimension	L13*H6.77*H8.5 inch
	L330*W172*H216 mm
Housing Material	ABS
Recommended Terminal Torque	106.2 to 123.9 inch·lbs/ 12 to 14 N·m
Protection Class	IP67 ^③
Temperature Range	Charge: -20°C to 50°C / -4°F to 122°F
	Discharge: -20°C to 60°C / -4°F to 140°F
	Storage: -10°C to 50°C / 14°F to 122°F
Heating Temperature	Charge: -20°C to 5°C / -4°F to 41°F
Approx. Heating Time @15A	40-70mins (From-10°C / 14°F)
	80-120mins (From-20°C/-4°F)
Low Temperature Charging Protection (LTCP) Function ^④	Yes
Resume Charging Temperature Under LTCP	5°C/41°F (Battery Temperature)

- ① The specified number of cycles or starts only applies to single energy storage or single starting applications. If used for dual purposes, the actual number of cycles or starts will vary based on actual usage.
- ② The charge current should be at least 15A to activate the automatic self-heating function.
- ③ This product supports IP67 protection. To avoid potential issues, it is recommended to install the battery in a waterproof battery container and/or position it at a higher level. This will prevent the battery from being partially or wholly submerged in the water accumulated at the bottom of the boat.
- ④ This product supports Low Temperature Charging Protection (LTCP), where the BMS stops battery charging when the battery temperature falls below 0°C/32°F and resumes charging when the temperature rises above 5°C/41°F.

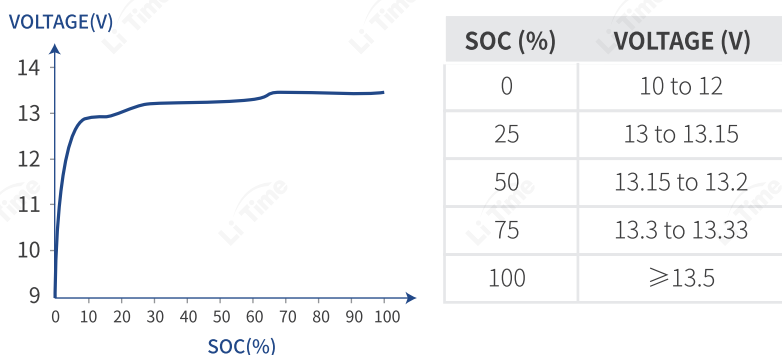
HOW TO ESTIMATE THE BATTERY CAPACITY

STATE OF CHARGE (SOC)

The battery capacity could be roughly estimated by its resting voltage (not charging/discharging voltage)^①.

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.



- ① Based on the characteristics of LiFePO₄ batteries, the voltage measured by all LiFePO₄ 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:

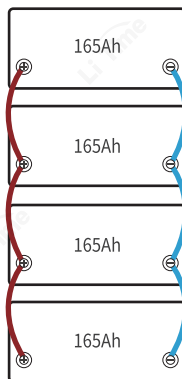
- a. identical batteries with the same battery capacity (Ah) and BMS (A);
- b. from the same brand (as lithium battery from different brands has their special BMS);
- c. purchased in near time (within one month).

LIMITATION FOR SERIES/PARALLEL CONNECTION

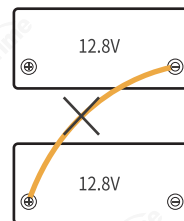
For Starting and Deep Cycle

Support connecting **up to 4 identical batteries** in parallel for up to: 12V (12.8V) 660Ah battery system.

Parallel Connection
12V(12.8V) 660Ah



DO NOT support Series Connection



For ONLY Energy Storage

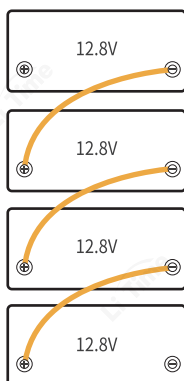
Support connecting **up to 16 identical batteries** for up to:

4 in series as **48V (51.2V)** battery system or

4 in parallel as **660Ah** battery system.

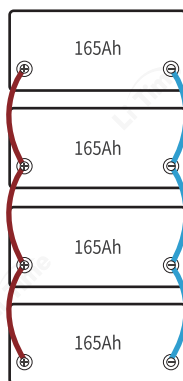
Series Connection

48V(51.2V) 165Ah



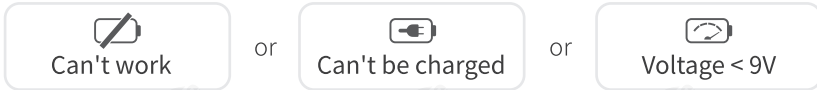
Parallel Connection

12V(12.8V) 660Ah



WHAT TO DO WHEN THE BATTERY STOPS WORKING?

When the battery



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 being 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.

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