LTCP

Li Time

12.8V 20Ah

Marine Starting and More

PRODUCT (20A BMS) MANUAL

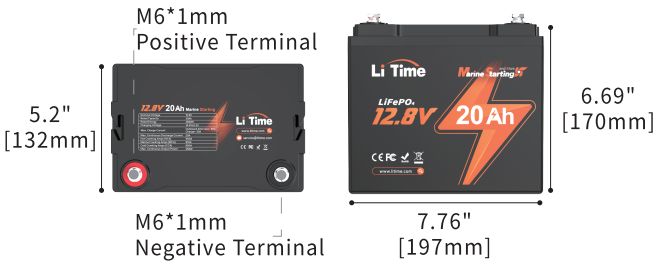
Lithium Iron Phosphate Battery (LiFePO4)

www.litime.com

PRODUCT OVERVIEW

12.8V 20AH BATTERY

- Operating Voltage: 12.8V
- Charging Voltage: 14.4V±0.2V
- Recommended Charge Current: 10A (0.5C)
- Hot Cranking Amps (HCA): 900A
- Marine Cranking Amps (MCA): 810A
- Cold Cranking Amps (CCA): 650A
- Max. Continuous Discharge Current: 20A
- Max. Continuous Output Power: 256W



ADDITIONAL COMPONENTS

M6- 15/32" [12mm] Terminal Bolts

Recommended terminal torque: 61.96 to 79.66 inch·lbs / 7 to 9 N·m.

The terminal bolts are used to secure multiple cable lugs to a single battery terminal. The bolts can be replaced with M6 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	LiFePO4
Nominal Voltage	12.8V
Rated Capacity	20Ah
Energy	256Wh
Internal Impedance	⩽40mΩ
Cranking Times	⩾5000
Battery Management System (BMS) Board	20A
Charge Method	CC/CV
Charge Voltage	14.4V±0.2V
Recommended Charge Current	10A (0.5C)
Max. Charge Current	Outboard Alternator: 80A
	Charger: 30A
Hot Cranking Amps (HCA)	900A
Marine Cranking Amps (MCA)	810A
Cold Cranking Amps (CCA)	650A

Max. Continuous Discharge Current	20A
Max. Continuous Output Power	256W
Max. Expansion	No Series, No Parallel
Dimension	L7.76*W5.2*H6.69 inch
	L197* W132 *H170 mm
Housing Material	ABS
Recommended Terminal Torque	61.96 to 79.66inch·lbs/ 7 to 9 N·m
Protection Class	IP67①
Temperature Range	Charge: 0°C to 50°C / 32°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
Low Temperature Charging Protection (LTCP) Function②	Yes
Resume Charging Temperature Under LTCP	5°C/41°F (Battery Temperature)

①This 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.

②This product supports Low Temperature Charge 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.

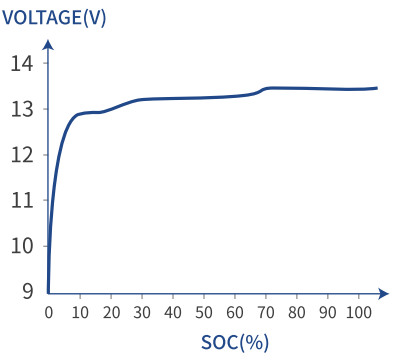
HOW TO ESTIMATE THE BATTERY CAPACITY

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.



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	⩾13.5

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.

WHAT TO DO WHEN THE BATTERY STOPS WORKING?

When the battery

Can’ t work or Can’ t be charged or Voltage < 9V

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

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 **BELOW METHOD.**

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

Activation Method

Use a charger with lithium battery activation function to fully charge the battery.

Shenzhen Litime Technology Co., Ltd